CITY OF HOBART

SUPPORTING INFORMATION

SPECIAL PLANNING AUTHORITY COMMITTEE MEETING

OPEN PORTION OF THE MEETING

TUESDAY, 16 DECEMBER 2025
AT 4.00PM
VENUE: COUNCIL CHAMBER, TOWN HALL

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Ref: 22 Anglesea St

Senior Planner
City of Hobart
16 Elizabeth Street,
Hobart 7000

29 September 2025

Dear Planner,

Re: Planning Permit Application 22 Anglesea Street, South Hobart - Partial demolition, addition, new outbuilding, alterations to front fence.

This cover letter accompanies the Architectural Drawings for comprising the Planning Permit Application for the aforementioned address.

22 Anglesea Street is a stately federation era home set on a large block. The red brick front facade features a bay window to the left with a central front door. The windows feature sandstone sills and lintels. The frosted glass front door and thin, curved awning appear to be more recent adaptations. The home features a red metal roof, white gutters and predominantly white timber windows.

A weatherboard lean-to / verandah to the rear of the home contains a small bathroom, laundry and sunroom / makeshift bedroom. The family requires an updated bathroom, laundry and an improved bedroom for their child. An additional living / work from home space is also required. As part of the application, the rear verandah is proposed to be removed and replaced with a new structure. The junction between the old and new building elements is mediated by a 'flat roof' element. This delineates the main forms of the old and new.

As part of the proposed works, dilapidated outbuildings will be removed and replaced with a new shed structure on the rear boundary along with under floor storage in the addition.

The new built elements are restricted to match the width of the home and as such will not be visible from the street. The two storey part of the addition is located away from the neighbouring property (20 Anglesea St) to eliminate overshadowing and over-looking. The new addition is proposed to be clad in white weatherboards (as per the original lean-to / closed in verandah) as is common with early 20th century subservient building elements.

As part of the works, the unsympathetic low masonry front fence is to be modified with a more period appropriate paling fence incorporating an electric hinged gate for vehicular access to the existing driveway.

The proposed works are modest in footprint and scale, respectful of the heritage home and neighbours.

Yours sincerely,
Erin Jenkins

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PLANNING APPLICATION

22 ANGLESEA ST, SOUTH HOBART

CLIENTS: LAURA EDWARDS & MIKE MESTON
PROPERTY ID: 5564278
TITLE REFERENCE: 116115/1
LOT SIZE: 599 m²
TASMANIAN PLANNING SCHEME - HOBART LOCAL PROVISIONS SCHEDULE ZONING : INNER RESIDENTIAL
TASMANIAN PLANNING SCHEME - HOBART LOCAL PROVISIONS SCHEDULE OVERLAY: HERITAGE PRECINCT

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DA 1.03	EXISTING MAIN FLOOR PLAN
DA 1.04	EXISTING ROOF PLAN
DA 1.05	DEMOLITION LOWER FLOOR PLAN
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DA 6.06	EXISTING/PROPOSED 3PM EQUINOX SUN STUDY

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

COVER SHEET
DRAWING TITLE

24-06 PROJECT NO.
Alterations and Addition
PROJECT

Laura and Mike
CLIENT

22 Anglesea St, South Hobart
SITE ADDRESS

MAGUIRE + DEVINE ARCHITECTS
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ABN 13 606 222 089

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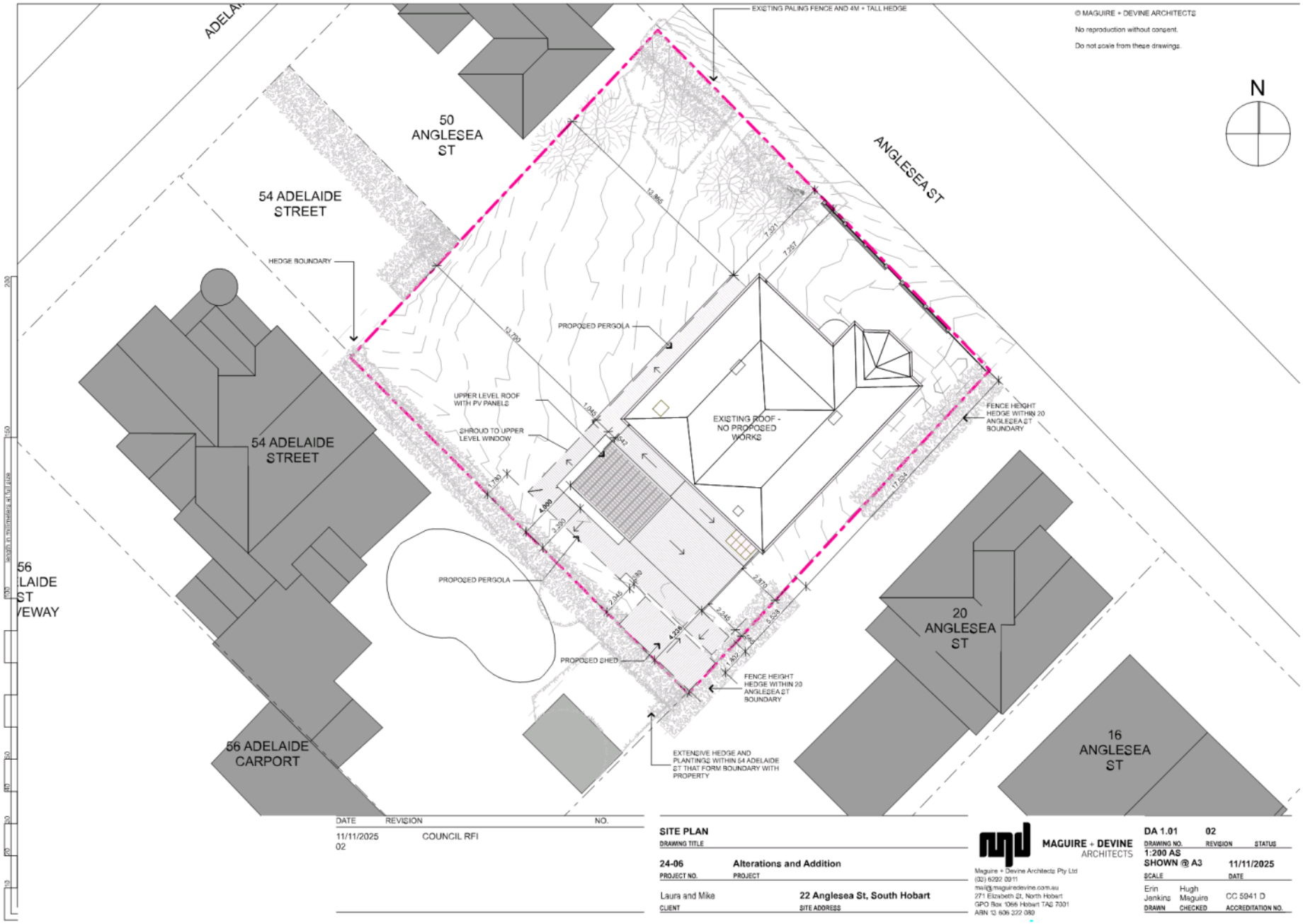
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N
EXISTING PALING FENCE AND 4M + TALL HEDGE
50 ANGLESEA ST
ANGLESEA ST
54 ADELAIDE STREET
HEDGE BOUNDARY
PROPOSED PERGOLA
UPPER LEVEL ROOF WITH PV PANELS
SHROUD TO UPPER LEVEL WINDOW
EXISTING ROOF - NO PROPOSED WORKS
FENCE HEIGHT HEDGE WITHIN 20 ANGLESEA ST BOUNDARY
PROPOSED PERGOLA
PROPOSED SHED
FENCE HEIGHT HEDGE WITHIN 20 ANGLESEA ST BOUNDARY
EXTENSIVE HEDGE AND PLANTINGS WITHIN 54 ADELAIDE ST THAT FORM BOUNDARY WITH PROPERTY
54 ADELAIDE STREET
56 ADELAIDE CARPORT
20 ANGLESEA ST
16 ANGLESEA ST
DATE REVISION NO.
11/11/2025 COUNCIL RFI 02
SITE PLAN
DRAWING TITLE
24-06 Alterations and Addition
PROJECT NO. PROJECT
Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS
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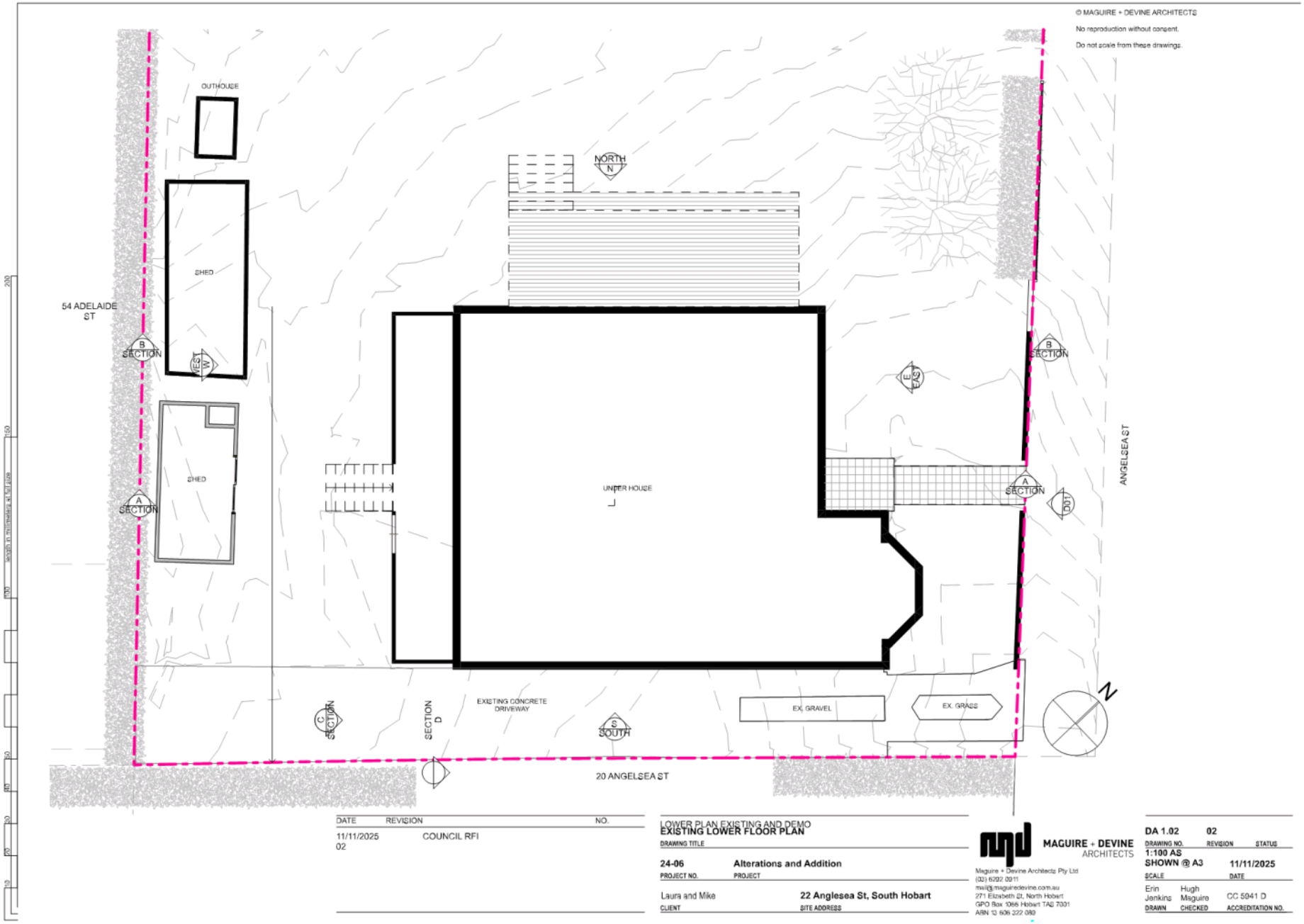
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OUTHOUSE
SHED
SHED
54 ADELAIDE ST
NORTH N
B SECTION
WEST W
A SECTION
UNDER HOUSE
EAST E
B SECTION
A SECTION
DOT
ANGELSEA ST
EXISTING CONCRETE DRIVEWAY
C SECTION
SECTION D
SOUTH S
EX. GRAVEL
EX. GRASS
N
20 ANGELSEA ST
DATE REVISION NO.
11/11/2025 COUNCIL RFI 02
LOWER PLAN EXISTING AND DEMO
EXISTING LOWER FLOOR PLAN
DRAWING TITLE
24-06 Alterations and Addition
PROJECT NO. PROJECT
Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS
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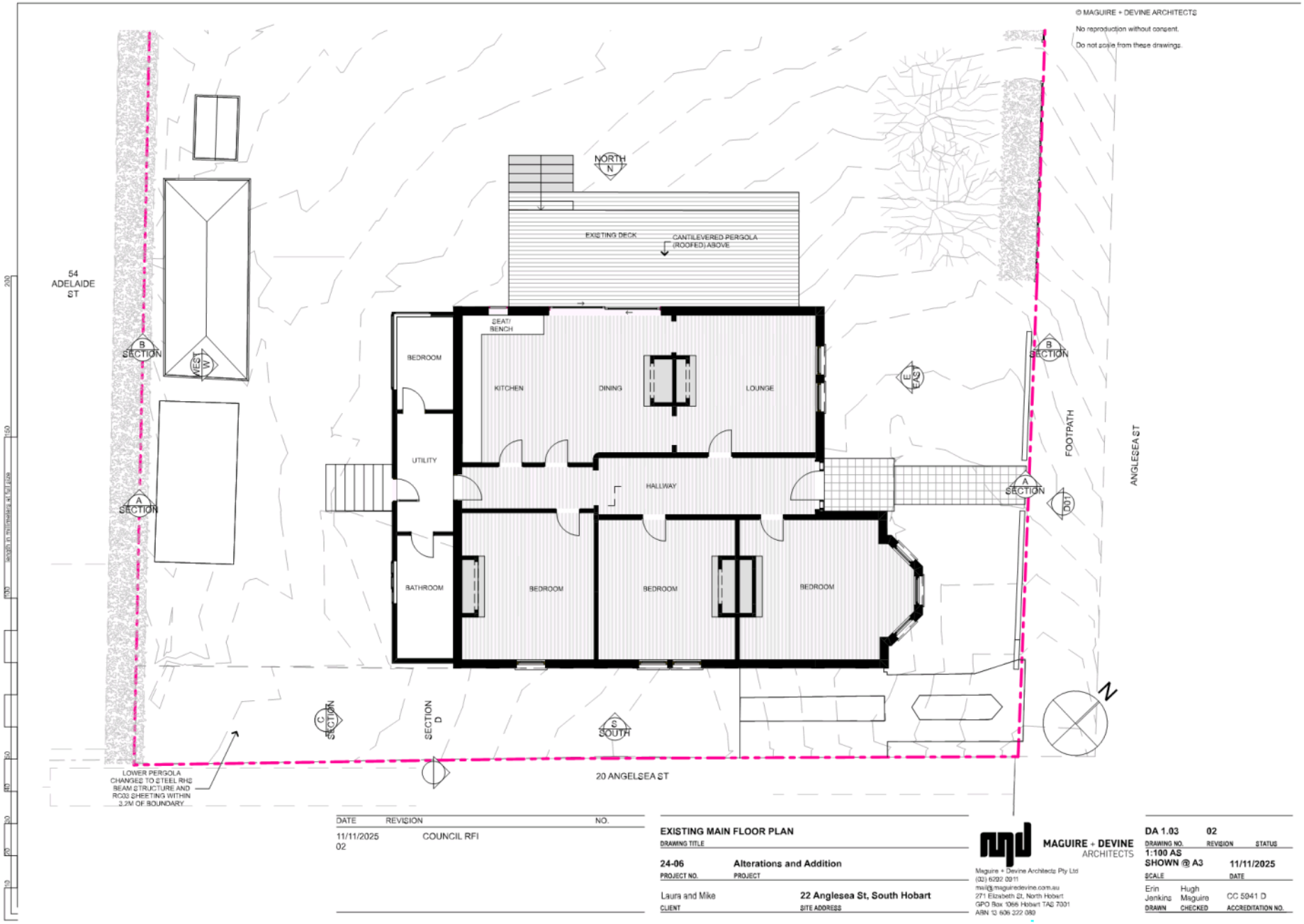

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EXISTING MAIN FLOOR PLAN
DRAWING TITLE

24-06 — Alterations and Addition
PROJECT NO. — PROJECT

Laura and Mike — CLIENT
22 Anglesea St, South Hobart — SITE ADDRESS

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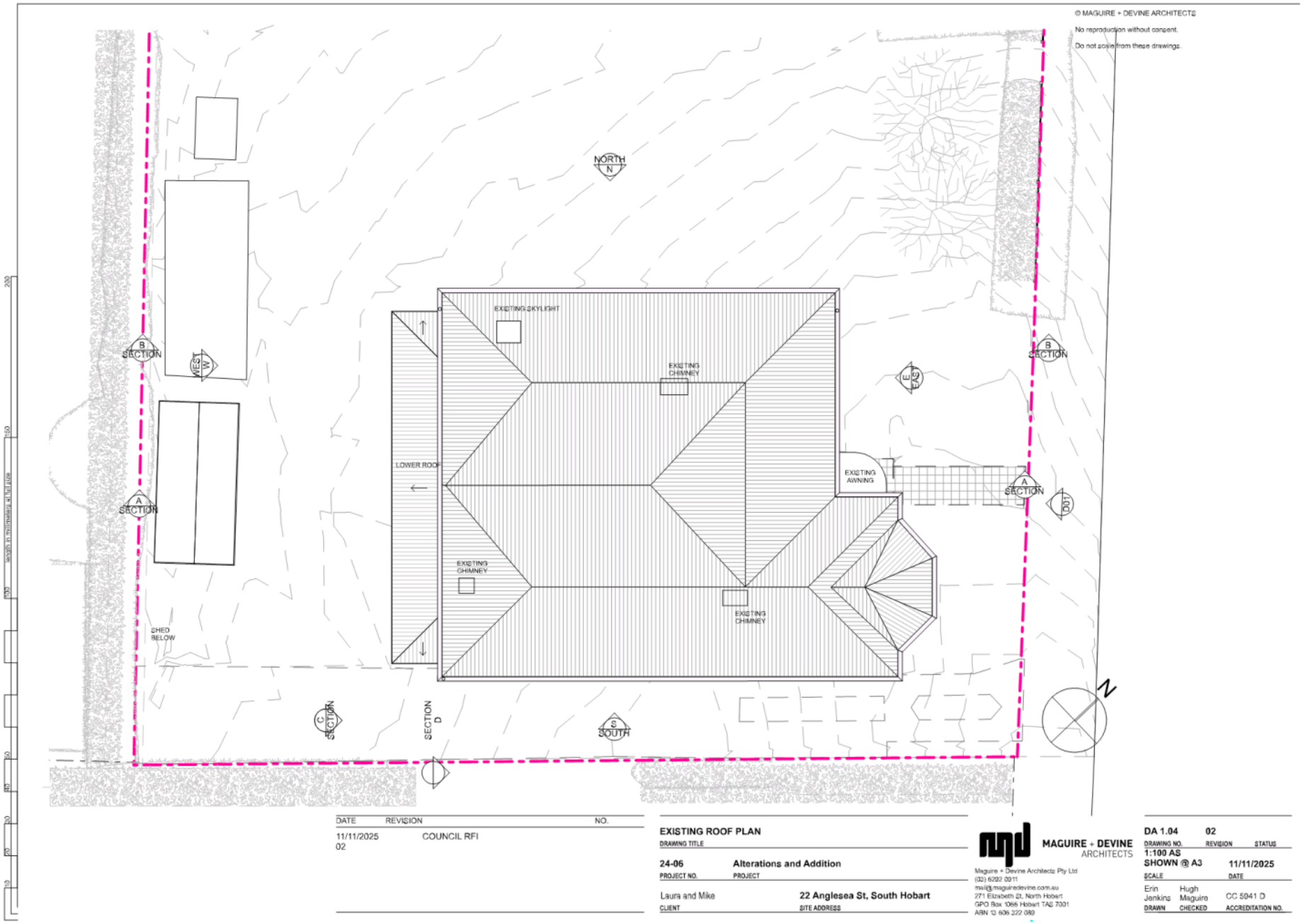

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EXISTING ROOF PLAN
DRAWING TITLE

24-06 PROJECT NO. — **Alterations and Addition** PROJECT

Laura and Mike CLIENT — **22 Anglesea St, South Hobart** SITE ADDRESS

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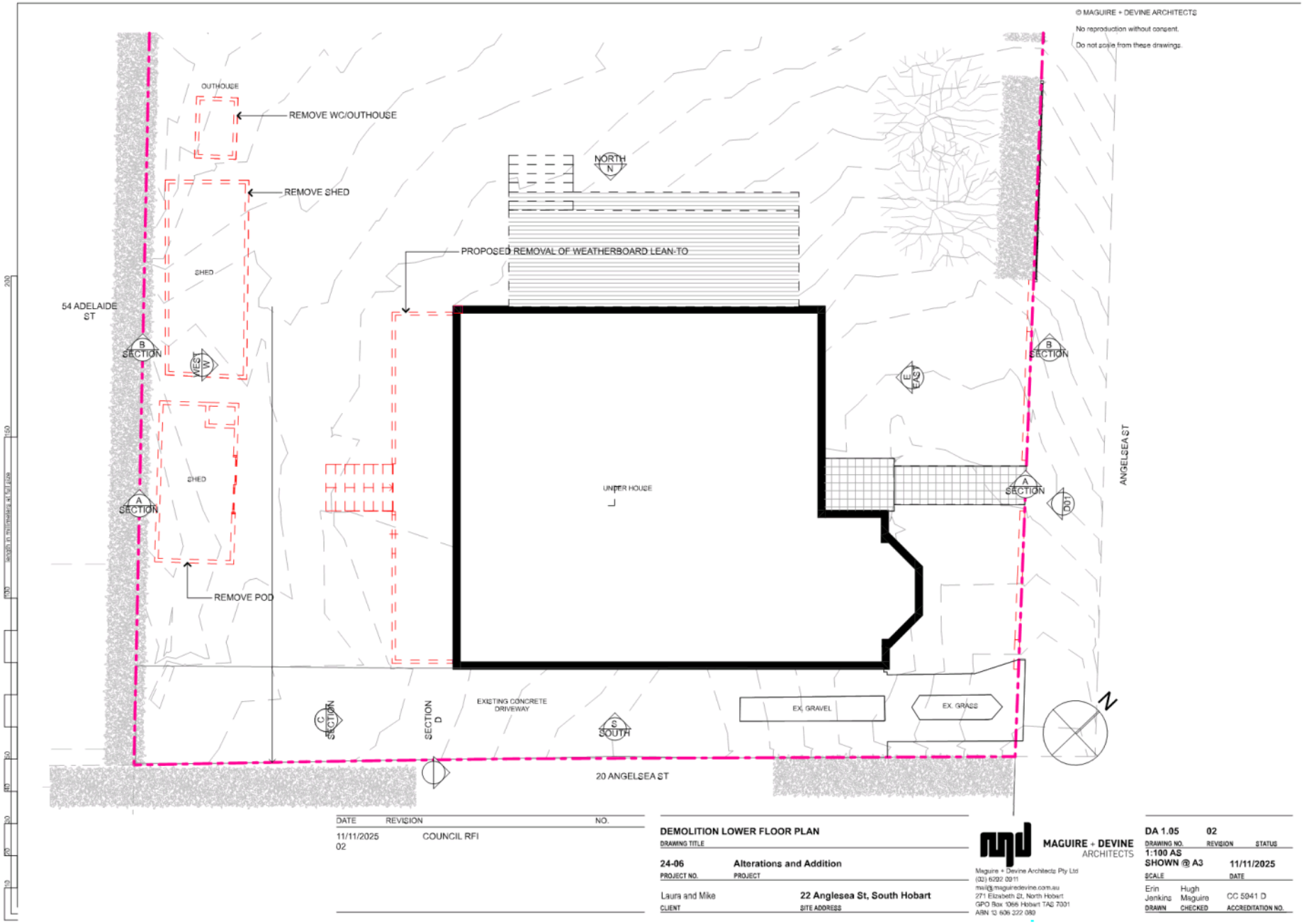
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OUTHOUSE
REMOVE WC/OUTHOUSE
REMOVE SHED
SHED
SHED
NORTH
N
PROPOSED REMOVAL OF WEATHERBOARD LEAN-TO
54 ADELAIDE ST
B SECTION
WEST W
EAST E
B SECTION
UNDER HOUSE
A SECTION
DOT
ANGELSEA ST
REMOVE POD
C SECTION
SECTION D
EXISTING CONCRETE DRIVEWAY
SOUTH S
EX. GRAVEL
EX. GRASS
N
20 ANGELSEA ST
DATE REVISION NO.
11/11/2025 COUNCIL RFI 02
DEMOLITION LOWER FLOOR PLAN
DRAWING TITLE
24-06 Alterations and Addition
PROJECT NO. PROJECT
Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS
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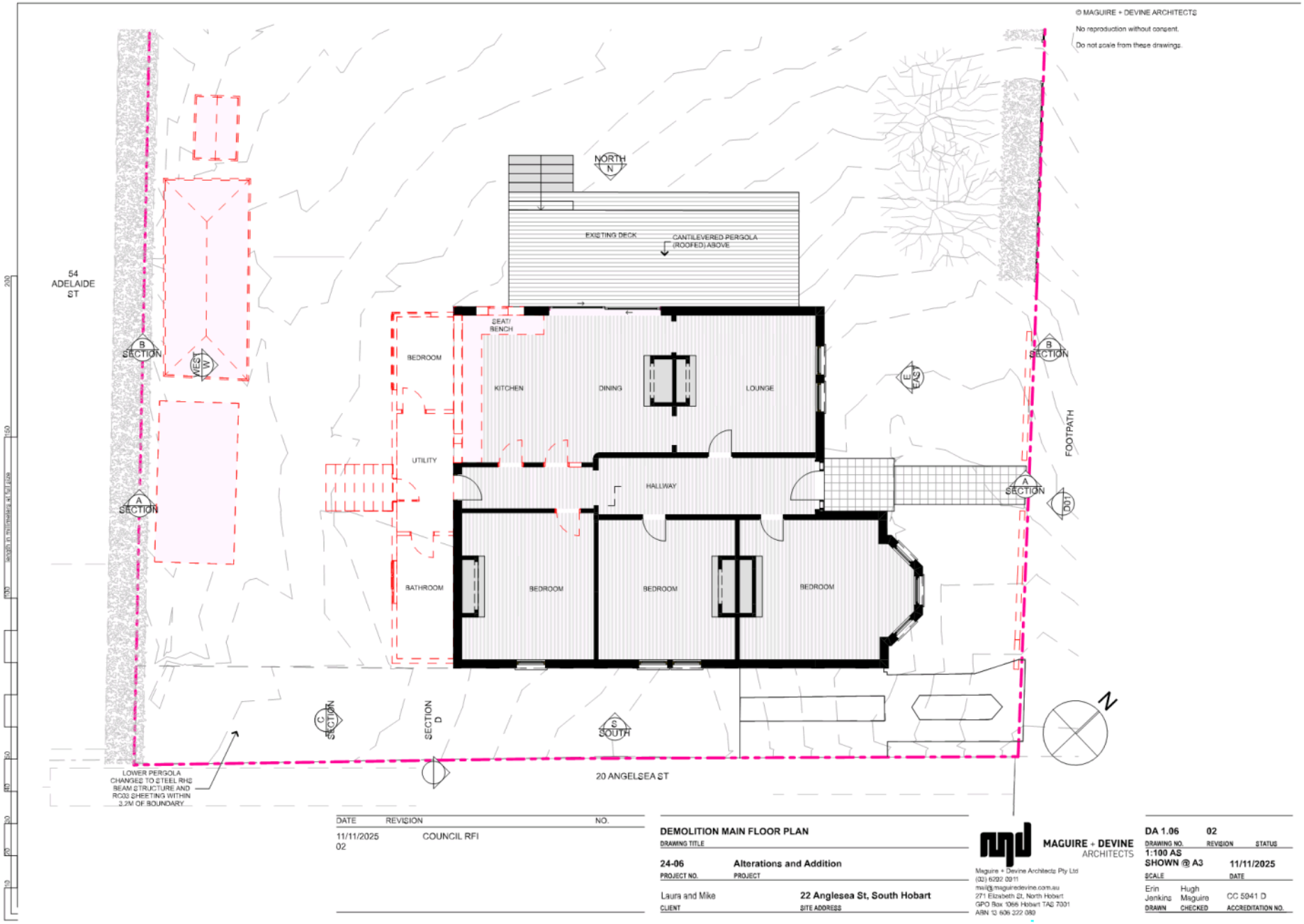
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NORTH
N
EXISTING DECK
CANTILEVERED PERGOLA (ROOFED) ABOVE
54 ADELAIDE ST
SEAT/ BENCH
BEDROOM
KITCHEN
DINING
LOUNGE
UTILITY
HALLWAY
BATHROOM
BEDROOM
BEDROOM
BEDROOM
B SECTION
WEST W
EAST E
A SECTION
FOOTPATH
D01
C SECTION
SECTION D
SOUTH S
LOWER PERGOLA CHANGEE TO STEEL RHS BEAM STRUCTURE AND RC03 SHEETING WITHIN 3.2M OF BOUNDARY
20 ANGELSEA ST
N
DATE REVISION NO.
11/11/2025 COUNCIL RFI 02
DEMOLITION MAIN FLOOR PLAN
DRAWING TITLE
24-06 PROJECT NO.
Alterations and Addition PROJECT
Laura and Mike CLIENT
22 Anglesea St, South Hobart SITE ADDRESS
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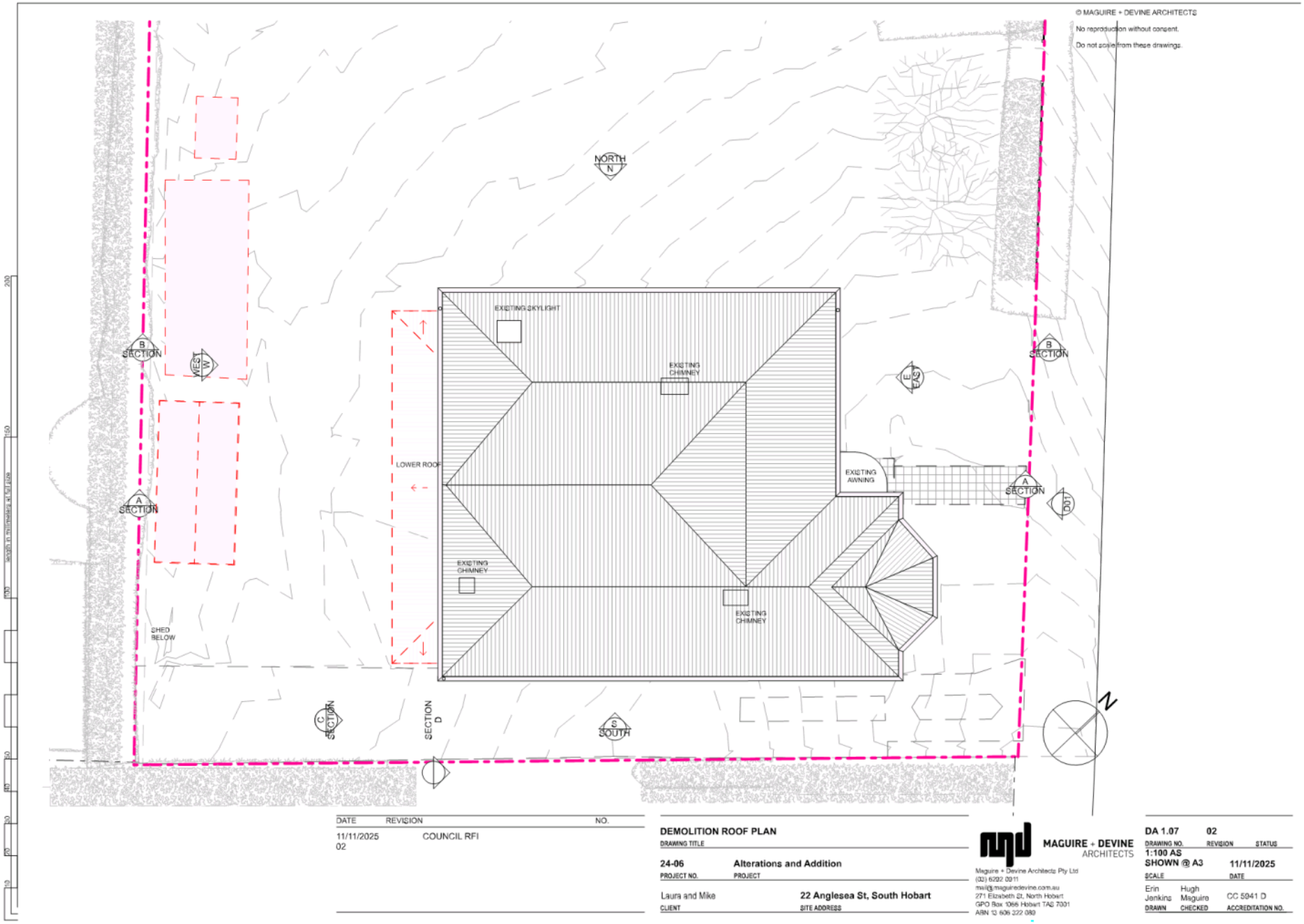

DATE	REVISION	NO.
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DEMOLITION ROOF PLAN
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24-06	Alterations and Addition
PROJECT NO.	PROJECT
Laura and Mike	22 Anglesea St, South Hobart
CLIENT	SITE ADDRESS

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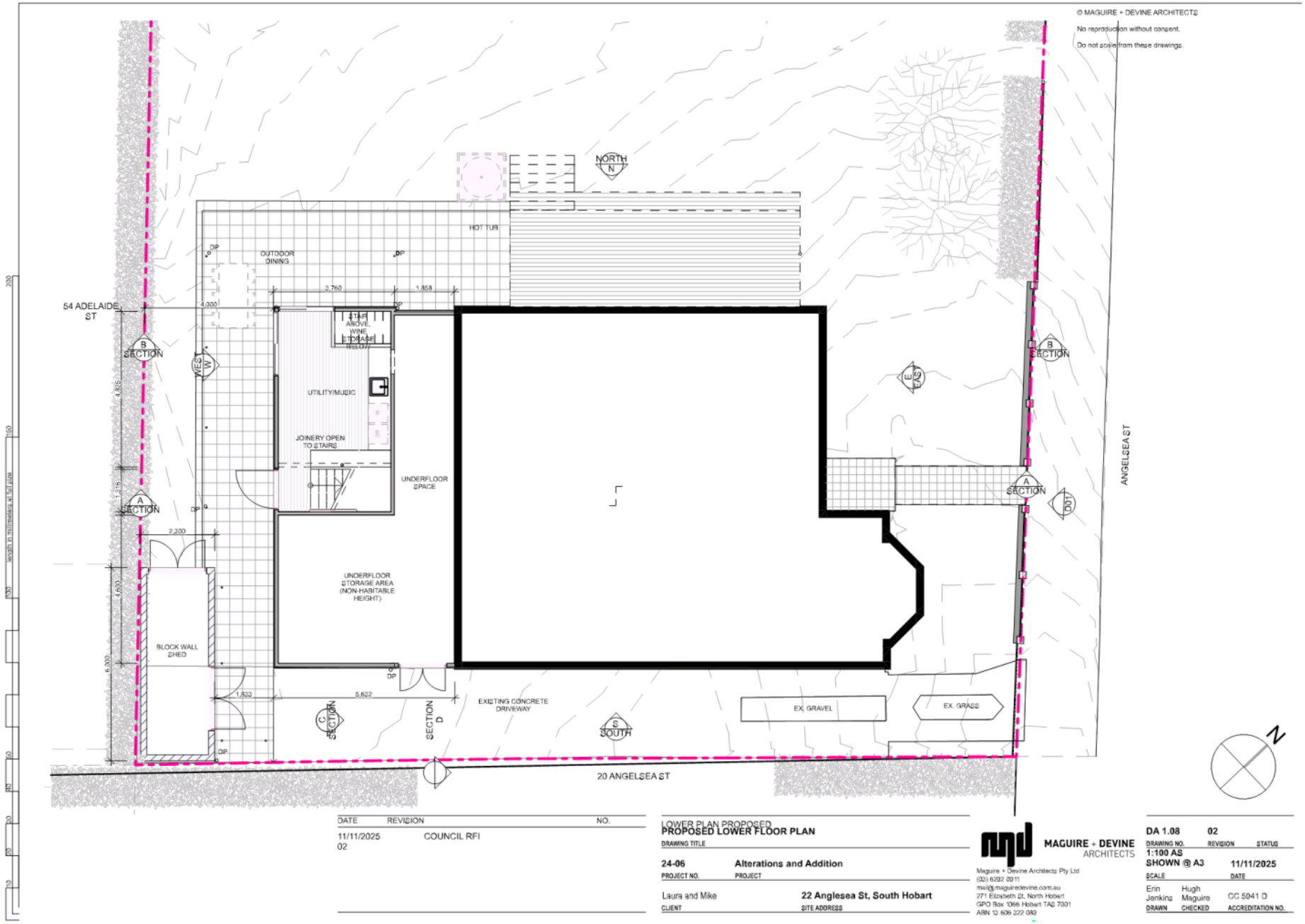

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

LOWER PLAN PROPOSED
PROPOSED LOWER FLOOR PLAN
DRAWING TITLE

24-06 PROJECT NO. — **Alterations and Addition** PROJECT

Laura and Mike CLIENT — **22 Anglesea St, South Hobart** SITE ADDRESS

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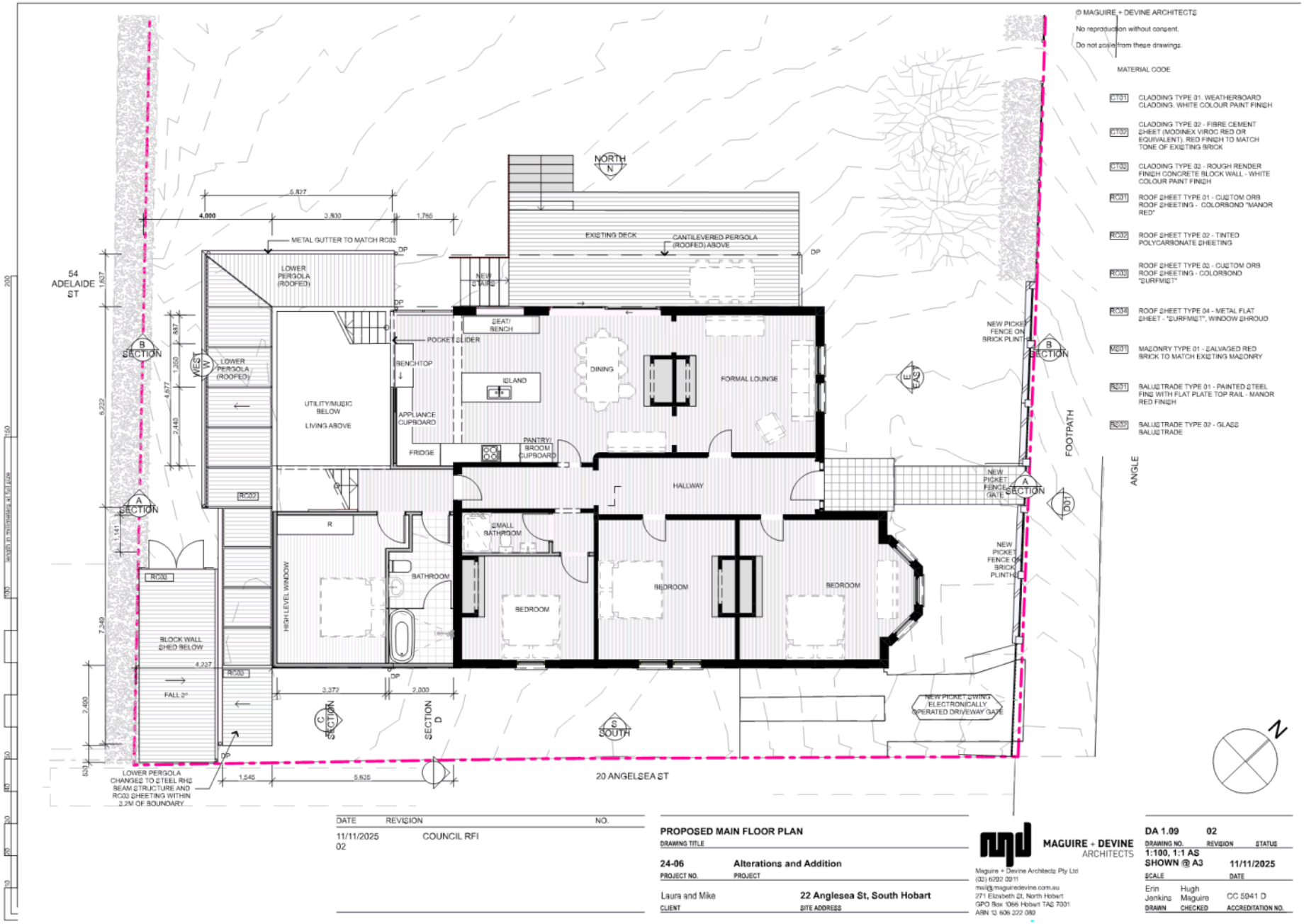
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CT02 CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
CT03 CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01 ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02 ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03 ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04 ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01 MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BA01 BALUSTRADE TYPE 01 - PAINTED STEEL FINZ WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BA02 BALUSTRADE TYPE 02 - GLASS BALUSTRADE
54 ADELAIDE ST
20 ANGELSEA ST
FOOTPATH
ANGLE
NORTH
SOUTH
EAST
WEST
SECTION A
SECTION B
SECTION C
SECTION D
METAL GUTTER TO MATCH RC03
LOWER PERGOLA (ROOFED)
EXISTING DECK
CANTILEVERED PERGOLA (ROOFED) ABOVE
NEW STAIRS
SEAT/ BENCH
POCKET SLIDER
BENCHTOP
ISLAND
DINING
FORMAL LOUNGE
UTILITY/MUSIC BELOW LIVING ABOVE
APPLIANCE CUPBOARD
FRIDGE
PANTRY/ BROOM CUPBOARD
HALLWAY
SMALL BATHROOM
BATHROOM
BEDROOM
BEDROOM
BEDROOM
HIGH LEVEL WINDOW
BLOCK WALL SHED BELOW
FALL 2°
LOWER PERGOLA CHANGES TO STEEL RHS BEAM STRUCTURE AND RC03 SHEETING WITHIN 3.2M OF BOUNDARY
NEW PICKET FENCE ON BRICK PLINTH
NEW PICKET FENCE GATE
NEW PICKET FENCE ON BRICK PLINTH
NEW PICKET SWING ELECTRONICALLY OPERATED DRIVEWAY GATE
DP
R
RC01
RC02
RC03
D01
5,827
4,000
3,800
1,765
1,637
887
1,360
4,677
2,440
5,222
1,141
7,349
4,237
2,490
533
3,372
2,000
1,545
5,625
DATE REVISION NO.
11/11/2025 COUNCIL RFI 02
PROPOSED MAIN FLOOR PLAN
DRAWING TITLE
24-06 Alterations and Addition
PROJECT NO. PROJECT
Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS
MAGUIRE + DEVINE ARCHITECTS
Maguire + Devine Architects Pty Ltd
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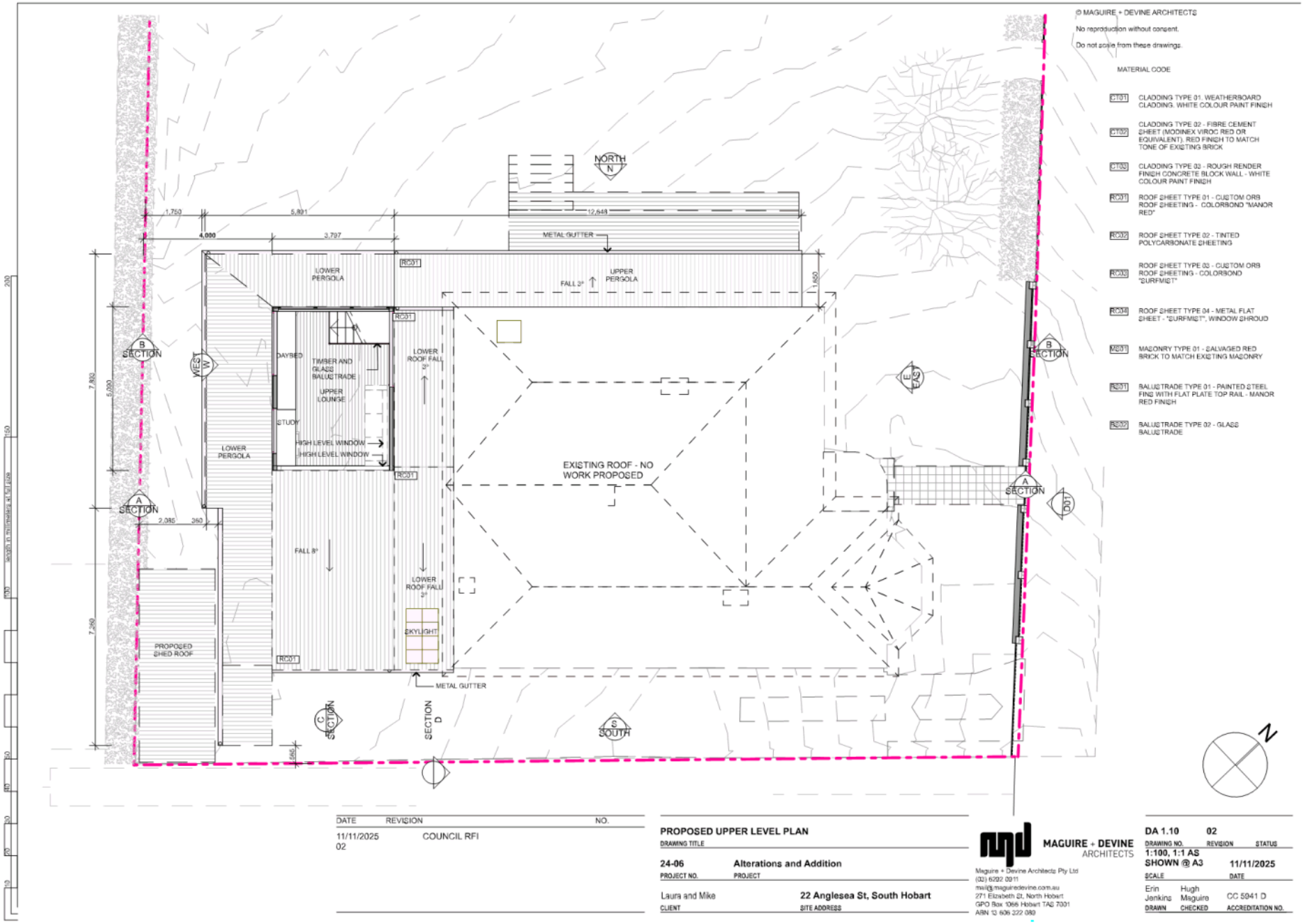
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NORTH
N
METAL GUTTER
LOWER PERGOLA
UPPER PERGOLA
FALL 3°
RC01
DAYBED
TIMBER AND GLASS BALUSTRADE
UPPER LOUNGE
STUDY
LOWER ROOF FALL 3°
HIGH LEVEL WINDOW
EXISTING ROOF - NO WORK PROPOSED
FALL 8°
SKYLIGHT
PROPOSED SHED ROOF
B SECTION
A SECTION
C SECTION
SECTION D
SOUTH
WEST
EAST
D01
1,750
4,000
5,891
3,797
12,648
1,650
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5,000
7,260
2,085
360
565
N
DATE REVISION NO.
11/11/2025 COUNCIL RFI 02
PROPOSED UPPER LEVEL PLAN
DRAWING TITLE
24-06 Alterations and Addition
PROJECT NO. PROJECT
Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS
MAGUIRE + DEVINE ARCHITECTS
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mail@maguiredevine.com.au
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ABN 13 606 222 089
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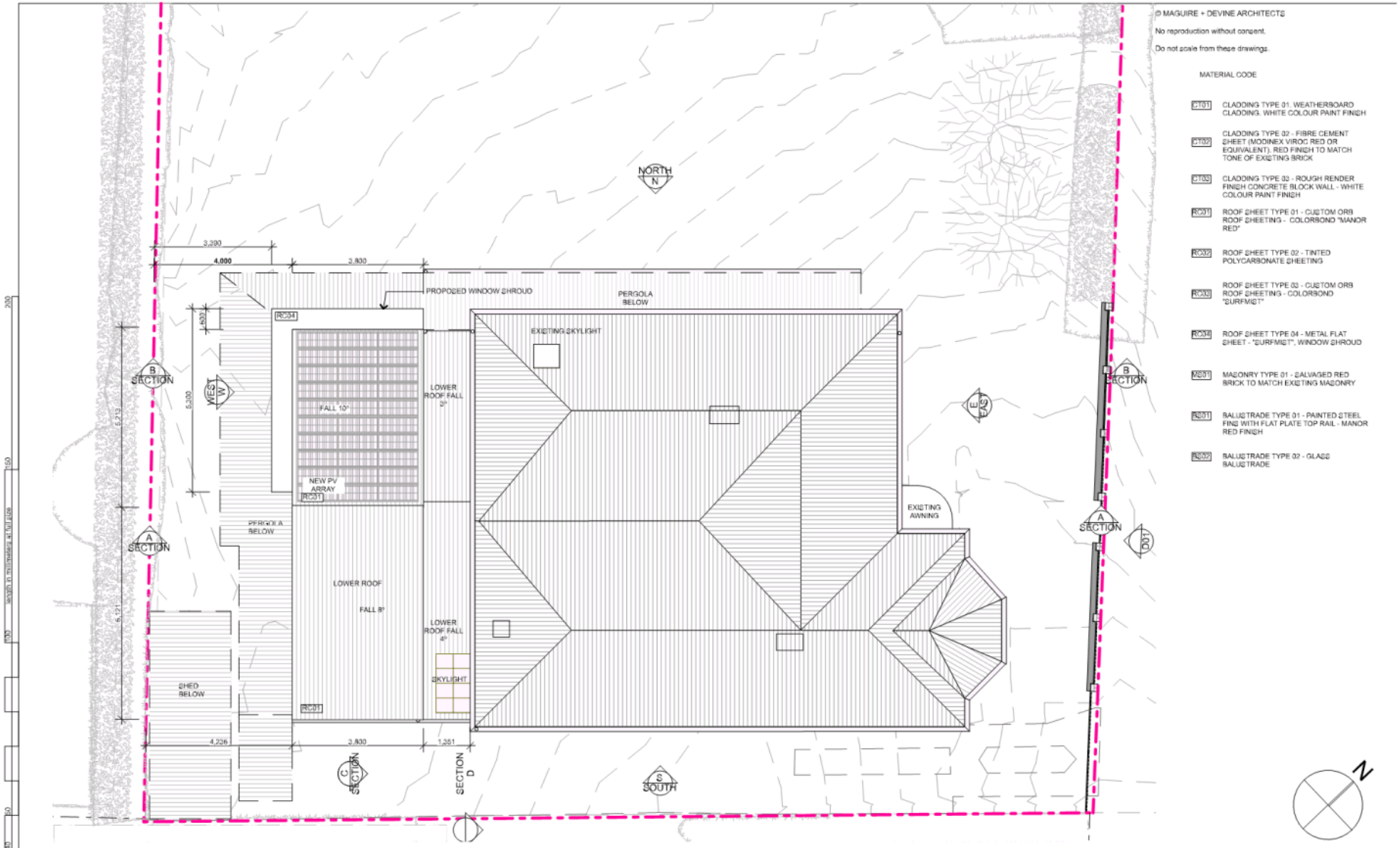
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MATERIAL CODE
CT01 CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
CT02 CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
CT03 CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01 ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02 ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03 ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04 ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01 MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BA01 BALUSTRADE TYPE 01 - PAINTED STEEL RING WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BA02 BALUSTRADE TYPE 02 - GLASS BALUSTRADE
NORTH
N
PROPOSED WINDOW SHROUD
PERGOLA BELOW
EXISTING SKYLIGHT
LOWER ROOF FALL 3°
FALL 10°
NEW PV ARRAY
RC01
LOWER ROOF
FALL 8°
LOWER ROOF FALL 4°
SKYLIGHT
SHED BELOW
EXISTING AWNING
WEST
W
EAST
E
SOUTH
S
SECTION A
SECTION B
SECTION C
SECTION D
3,390
4,000
3,800
1,351
4,236
5,300
6,213
6,121
D01
DATE REVISION NO.
11/11/2025 COUNCIL RFI 02
PROPOSED ROOF PLAN
DRAWING TITLE
24-06 PROJECT NO.
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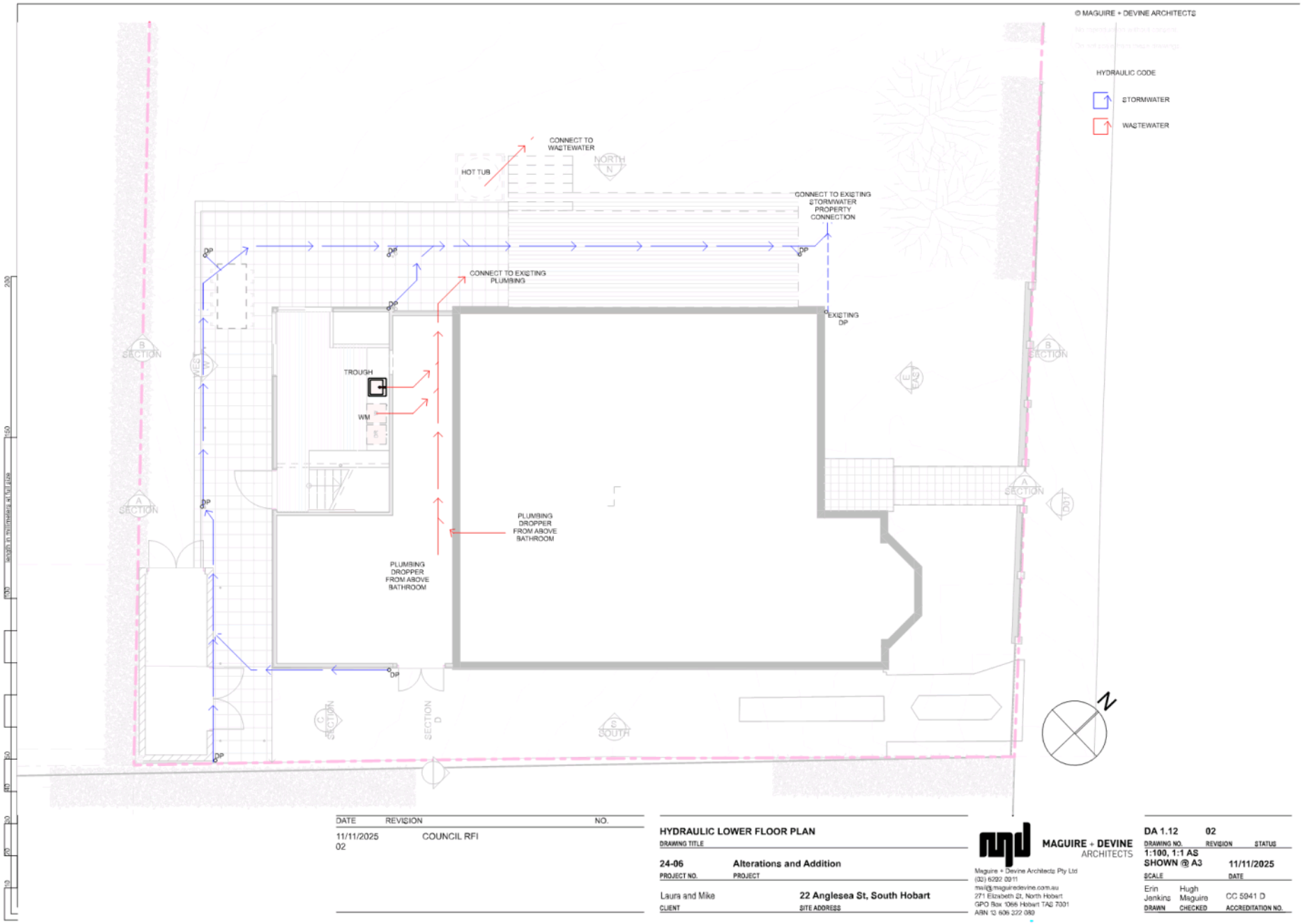
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HYDRAULIC CODE
STORMWATER
WASTEWATER
CONNECT TO WASTEWATER
HOT TUB
NORTH
CONNECT TO EXISTING STORMWATER PROPERTY CONNECTION
CONNECT TO EXISTING PLUMBING
EXISTING DP
TROUGH
WM
PLUMBING DROPPER FROM ABOVE BATHROOM
PLUMBING DROPPER FROM ABOVE BATHROOM
DP
B SECTION
A SECTION
C SECTION
SECTION D
SOUTH
EAST
WEST
DST
N
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11/11/2025 COUNCIL RFI
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HYDRAULIC LOWER FLOOR PLAN
DRAWING TITLE
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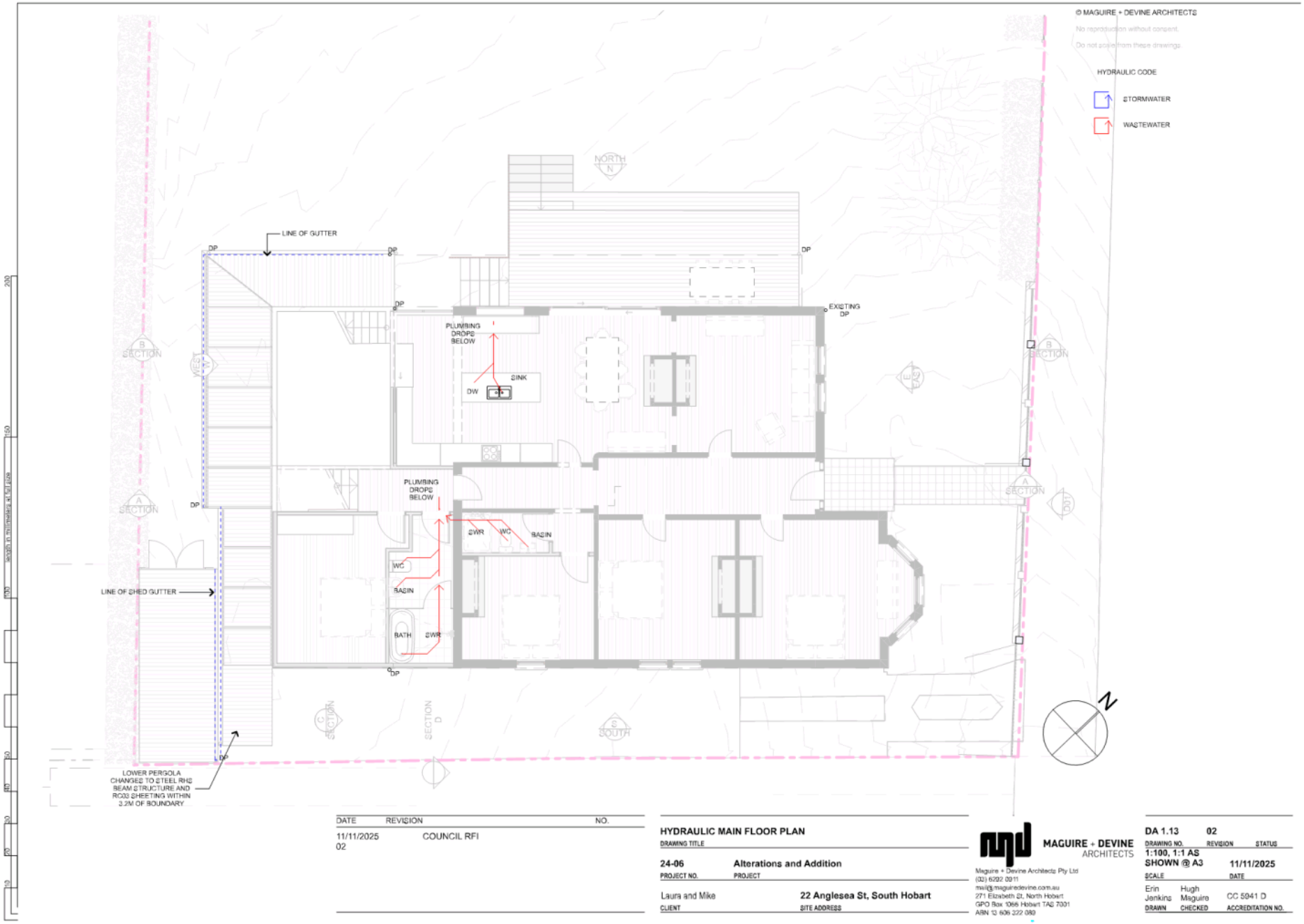

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HYDRAULIC MAIN FLOOR PLAN
DRAWING TITLE

24-06 — Alterations and Addition
PROJECT NO. — PROJECT

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22 Anglesea St, South Hobart — SITE ADDRESS

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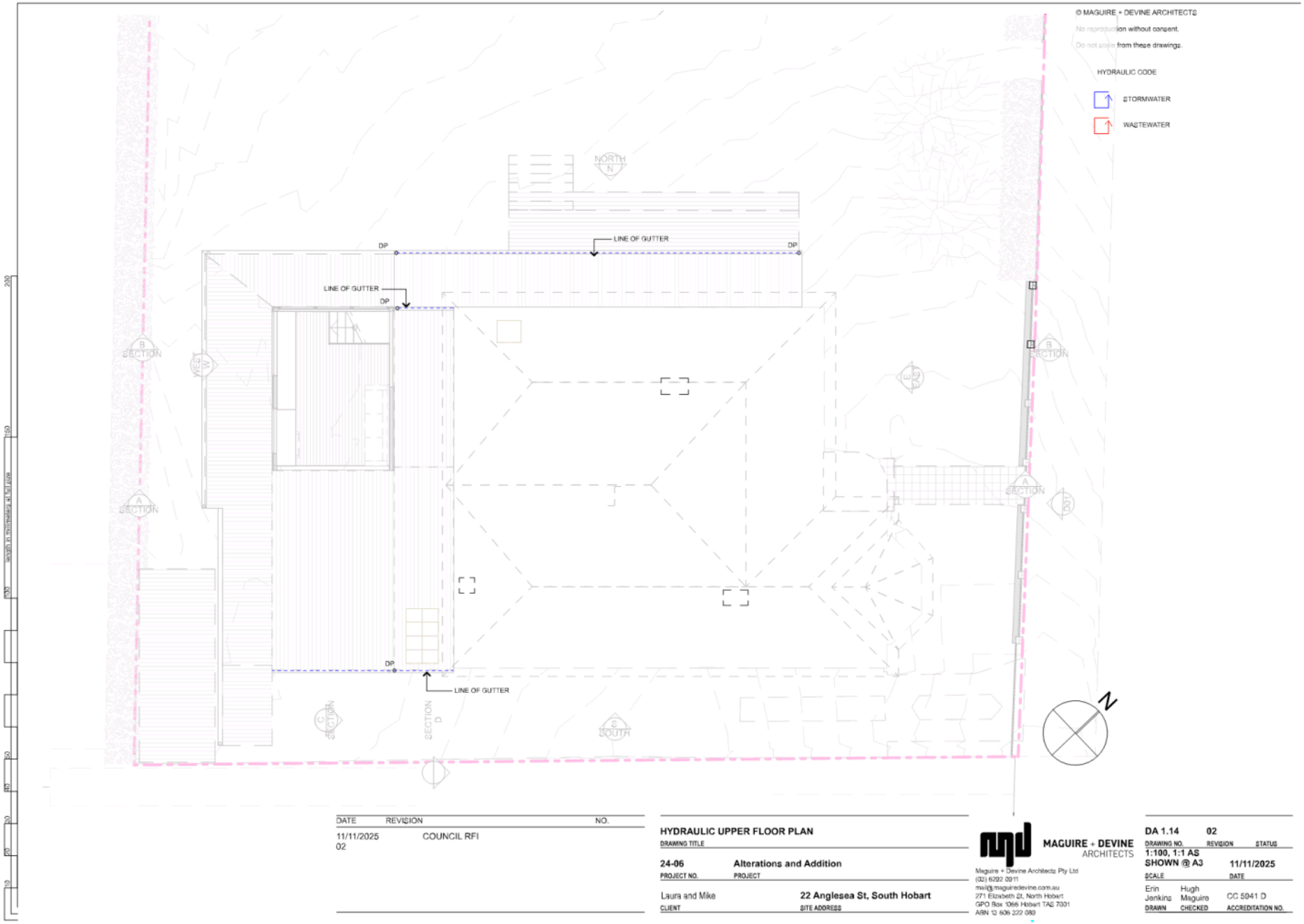
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HYDRAULIC CODE
STORMWATER
WASTEWATER
NORTH
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LINE OF GUTTER
DP
LINE OF GUTTER
DP
DP
DP
LINE OF GUTTER
B SECTION
A SECTION
C SECTION
SECTION D
SOUTH
WEST
EAST
DST
N
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DRAWING TITLE
24-06 Alterations and Addition
PROJECT NO. PROJECT
Laura and Mike 22 Anglesea St, South Hobart
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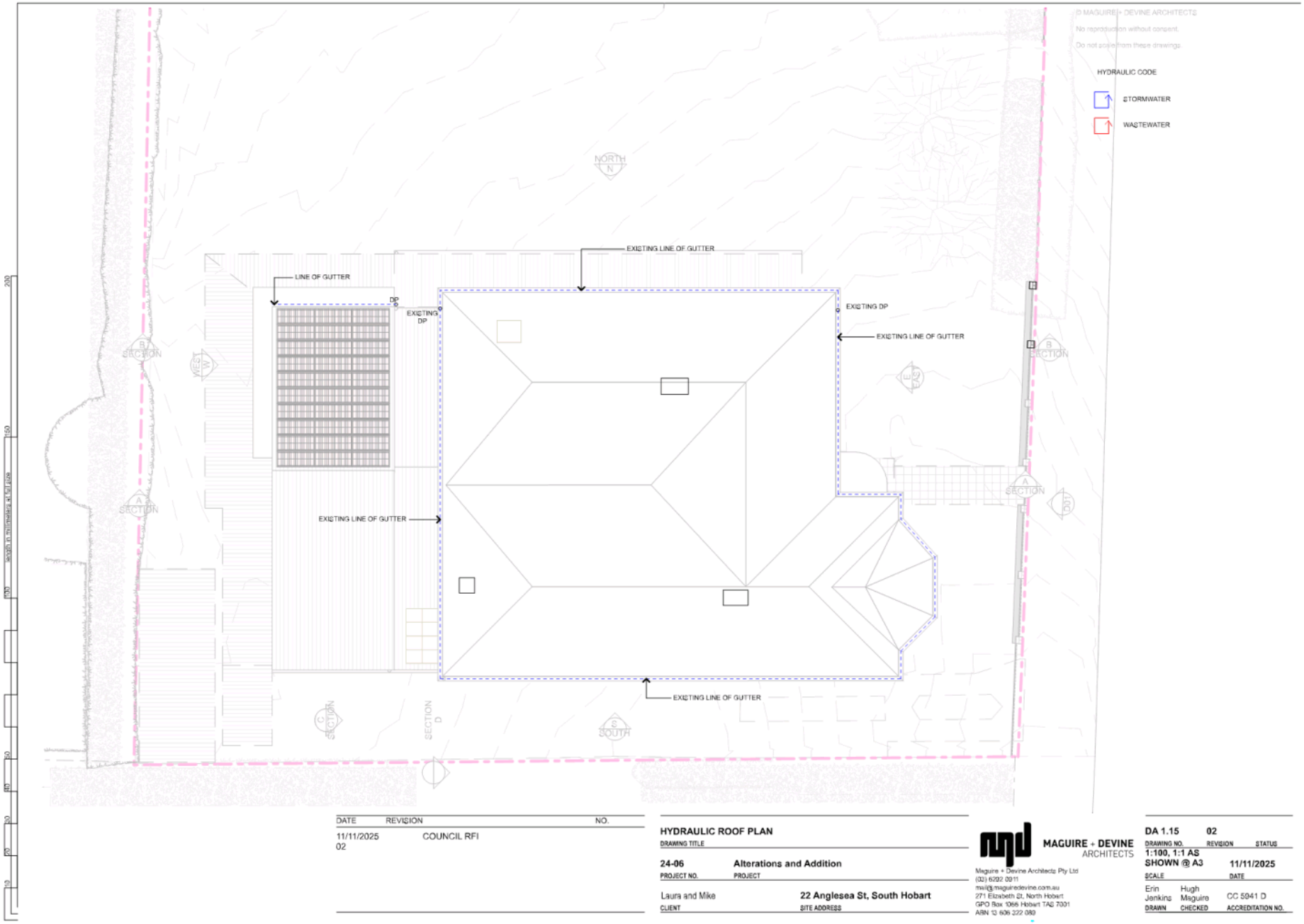
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HYDRAULIC CODE
STORMWATER
WASTEWATER
NORTH
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EXISTING LINE OF GUTTER
LINE OF GUTTER
DP
EXISTING DP
EXISTING DP
EXISTING LINE OF GUTTER
EXISTING LINE OF GUTTER
EXISTING LINE OF GUTTER
B SECTION
A SECTION
WEST
EAST
SOUTH
C SECTION
SECTION D
DATE
REVISION
NO.
11/11/2025
02
COUNCIL RFI
HYDRAULIC ROOF PLAN
DRAWING TITLE
24-06
PROJECT NO.
Alterations and Addition
PROJECT
Laura and Mike
CLIENT
22 Anglesea St, South Hobart
SITE ADDRESS
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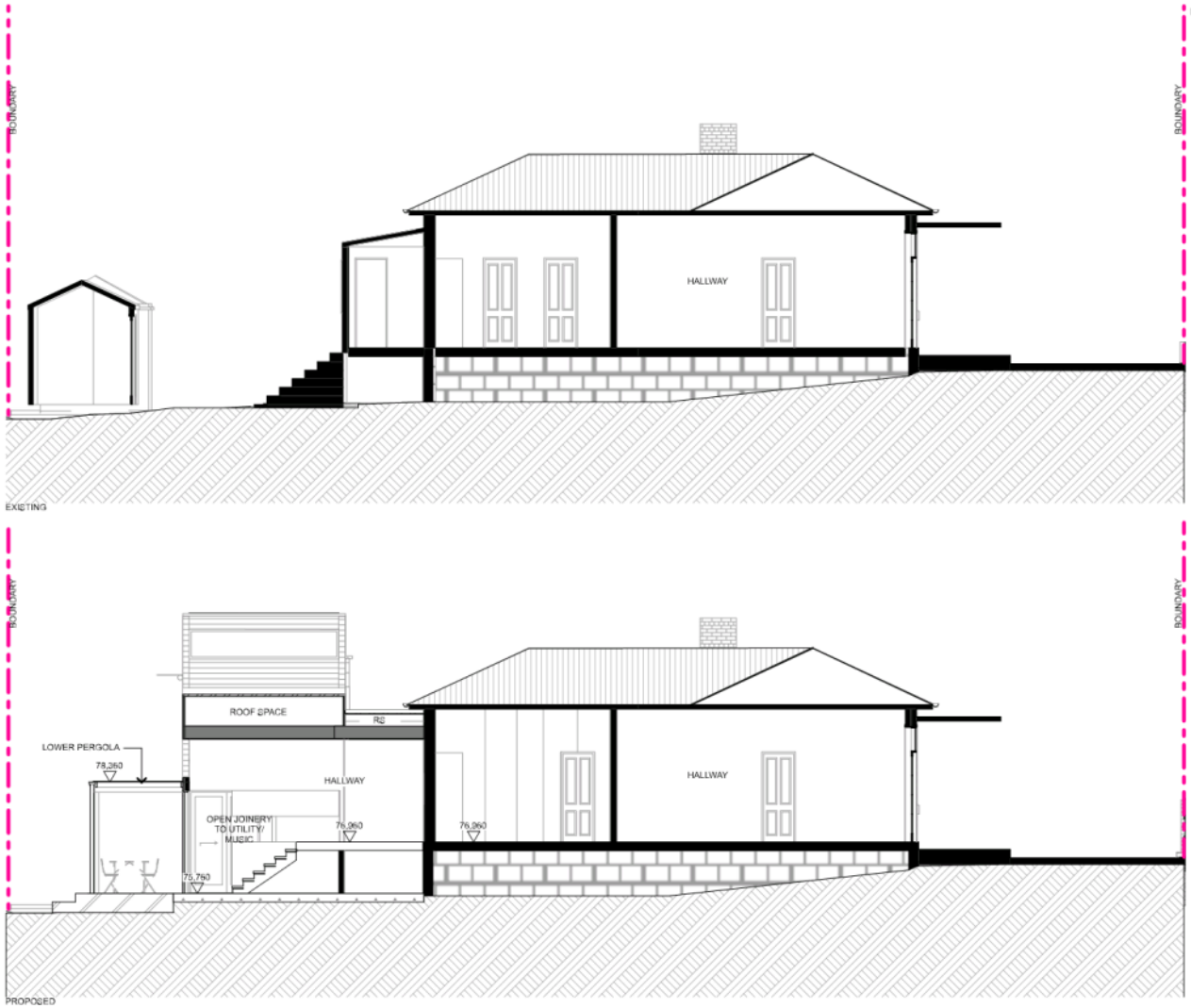
MATERIAL CODE

CT01	CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
CT02	CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
CT03	CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01	ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
MS01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH



DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	
02		

EXISTING/PROPOSED SECTION A
DRAWING TITLE

24-06 PROJECT NO. **Alterations and Addition** PROJECT

Laura and Mike CLIENT **22 Anglesea St, South Hobart** SITE ADDRESS

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CT03	CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01	ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BA01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BA02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

EXISTING/PROPOSED SECTION B
DRAWING TITLE

24-06 Alterations and Addition
PROJECT NO. PROJECT

Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS

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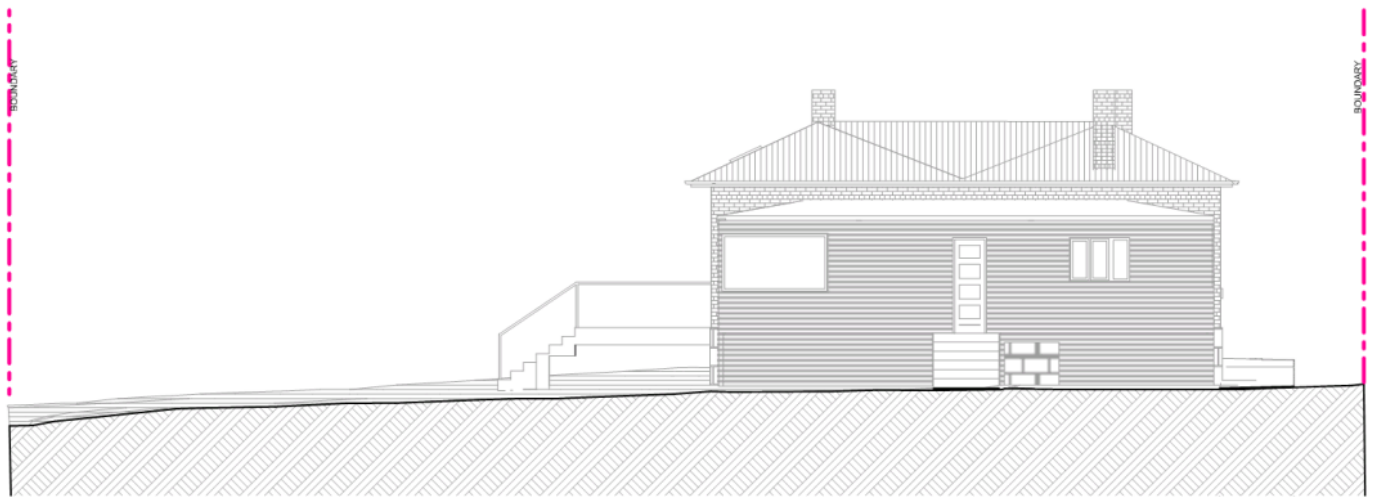
CT03	CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01	ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BA01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BA02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE



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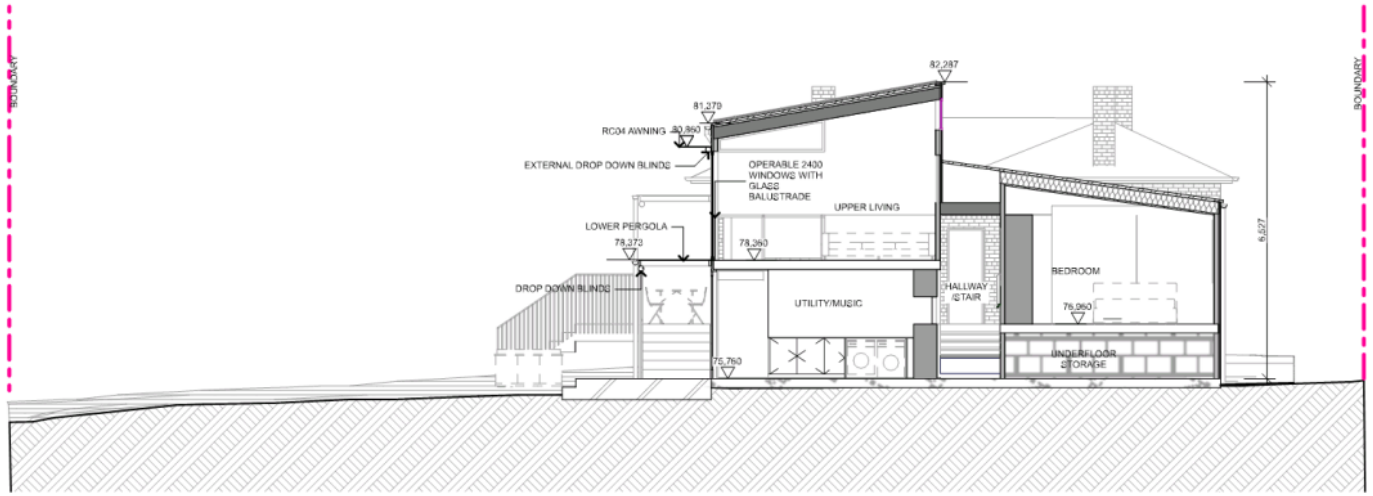

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DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

EXISTING/PROPOSED SECTION C
DRAWING TITLE

24-06 Alterations and Addition
PROJECT NO. PROJECT

Laura and Mike 22 Anglesea St, South Hobart
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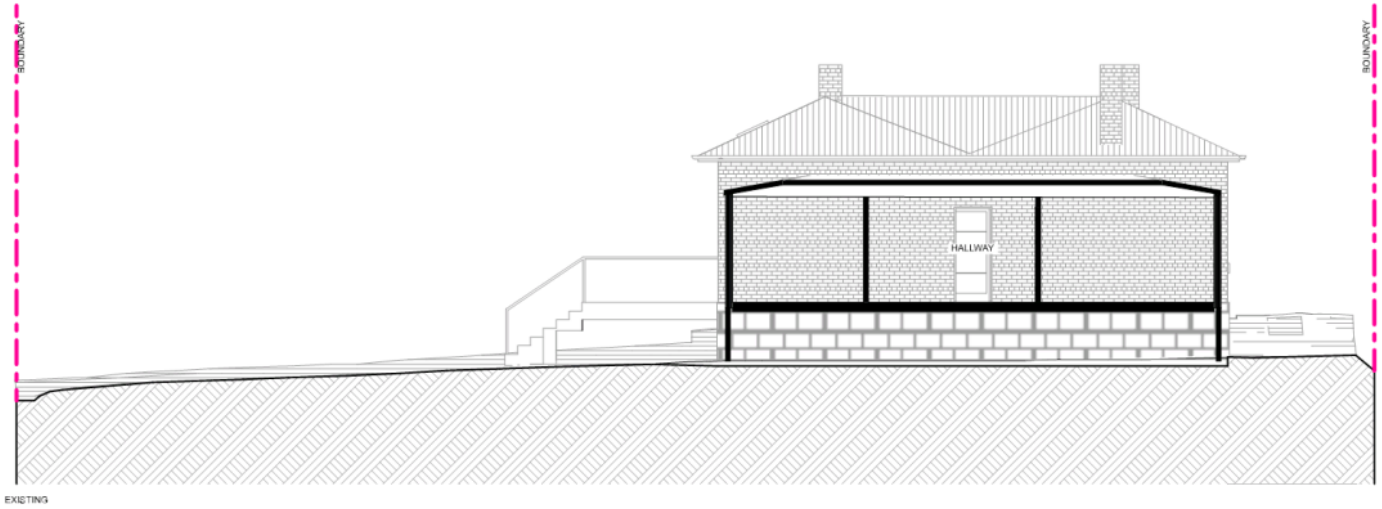
C101	CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
C102	CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
C103	CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01	ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BS01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BS02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE



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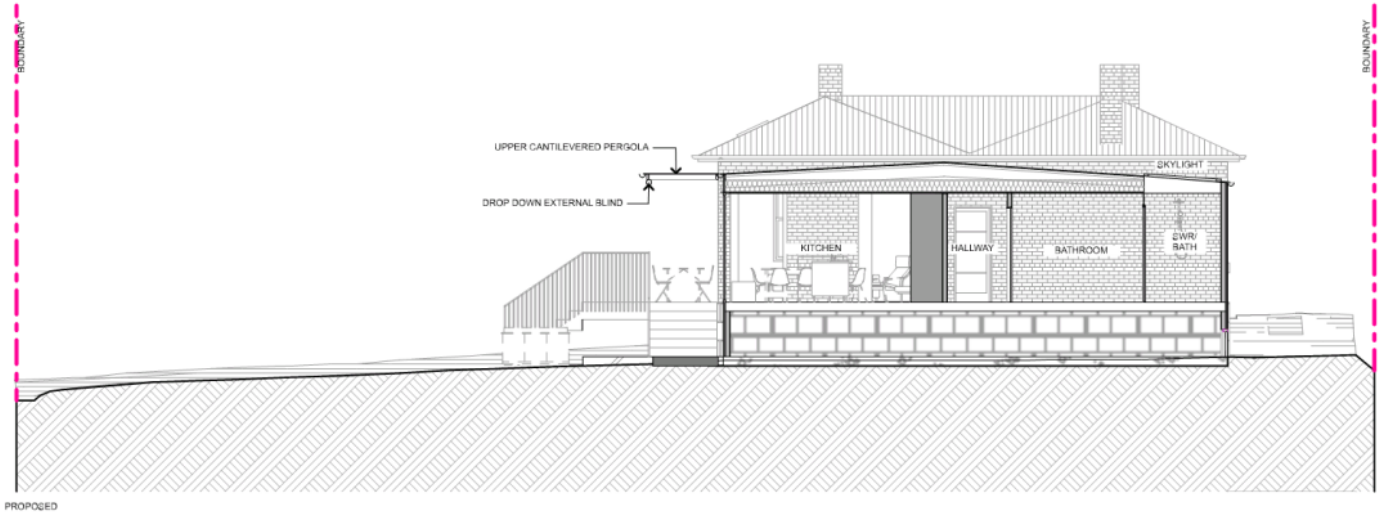

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EXISTING/PROPOSED SECTION D
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24-06 PROJECT NO. — **Alterations and Addition** PROJECT

Laura and Mike CLIENT — **22 Anglesea St, South Hobart** SITE ADDRESS

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CT03 CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH

RC01 ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"

RC02 ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING

RC03 ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"

RC04 ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD

MS01 MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY

BS01 BALUSTRADE TYPE 01 - PAINTED STEEL RAIL WITH FLAT PLATE TOP RAIL - MANOR RED FINISH

BS02 BALUSTRADE TYPE 02 - GLASS BALUSTRADE

EXISTING

PROPOSED

EXISTING
NEW
RC01 ROOFED PERGOLA CANTILEVERING OFF EXISTING BUILDING
METAL GUTTER TO MATCH RC01
DROP DOWN EXTERNAL BLIND
DP TO MATCH RC01
EX. DOOR
RC04 AWNING
DROP DOWN EXTERNAL BLIND
GLASS BALUSTRADE INSIDE
RC02 ROOFED PERGOLA
GUTTER
DP TO MATCH RC03
SHED BEYOND
OPEN BELOW PERGOLA
PV
CH2
COL

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

EXISTING/PROPOSED NORTH WEST ELEVATION
DRAWING TITLE

24-06 Alterations and Addition
PROJECT NO. PROJECT

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BS01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BS02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE

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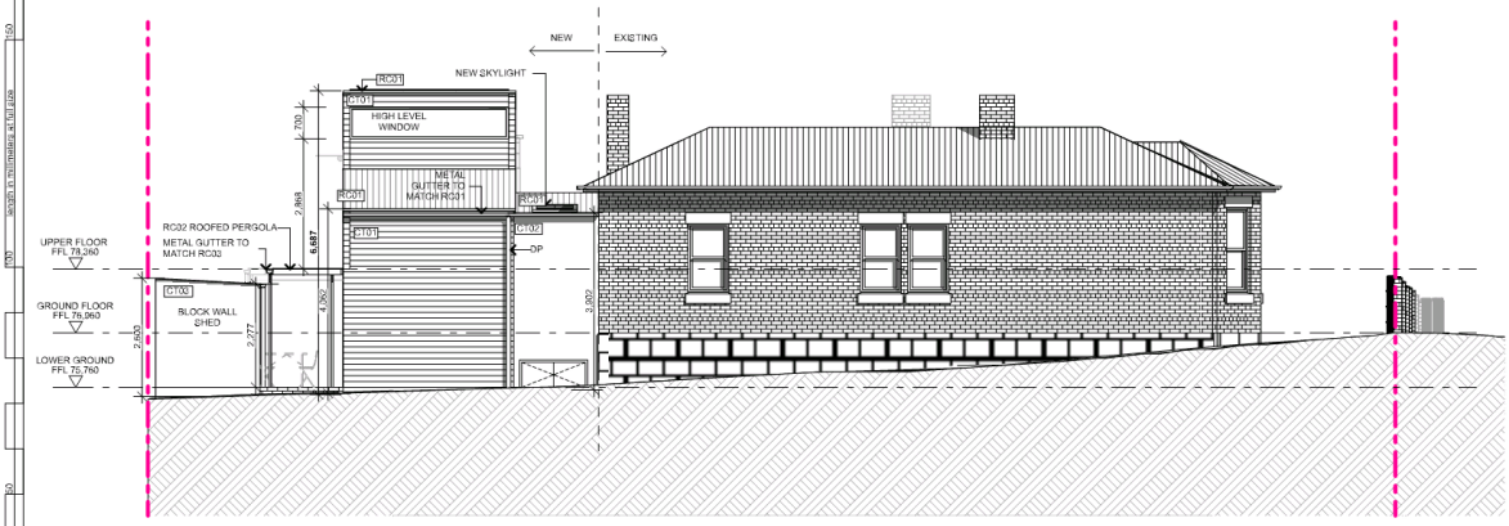

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DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	
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EXISTING/PROPOSED SOUTH EAST ELEVATION
DRAWING TITLE

24-06 PROJECT NO. — **Alterations and Addition** PROJECT

Laura and Mike CLIENT — **22 Anglesea St, South Hobart** SITE ADDRESS

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MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BA01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BA02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE

DATE	REVISION	NO.
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EXISTING/PROPOSED SOUTH WEST ELEVATION
DRAWING TITLE

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Laura and Mike — CLIENT

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MATERIAL CODE

CT01	CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
CT02	CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
CT03	CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01	ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BA01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BA02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE

DATE	REVISION	NO.
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EXISTING/PROPOSED NORTH EAST ELEVATION
DRAWING TITLE

24-06 — PROJECT NO.
Alterations and Addition — PROJECT

Laura and Mike — CLIENT
22 Anglesea St, South Hobart — SITE ADDRESS

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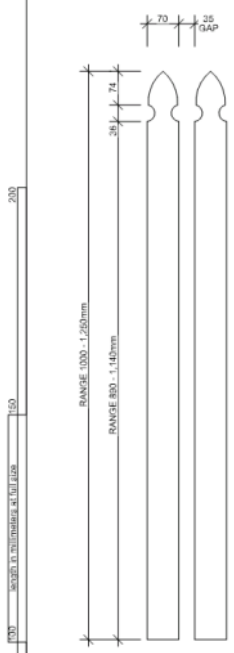
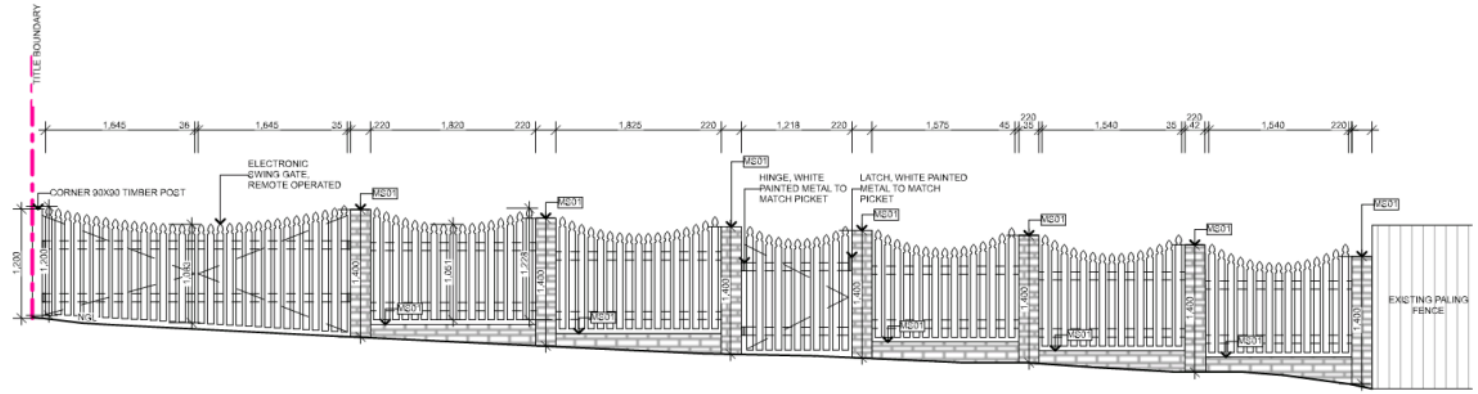
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
MS01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
MS02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE



FRENCH GOTHIC PICKET STYLE, WHITE PAINT FINISH



2 NEW FRONT FENCE DETAIL ELEVATION 1:50

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DETAIL 01 - PICKET FENCE
DRAWING TITLE

24-06 PROJECT NO. **Alterations and Addition** PROJECT

Laura and Mike CLIENT **22 Anglesea St, South Hobart** SITE ADDRESS

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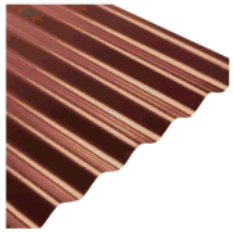
CT01 - WEATHERBOARD CLADDING IN WHITE PAINT FINISH - LINEA WEATHERBOARD PANEL JAMES HARDIER OR EQUIVALENT

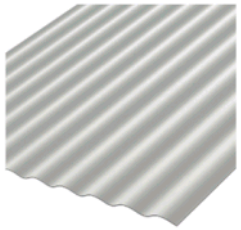
CT02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT) RED FINISH TO MATCH TONE OF EXISTING BRICK.

CT03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH

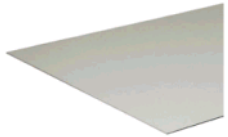


RC01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"

RC02 - TINTED POLYCARBONATE CORRUGATED SHEETING GREY SOLARSMART SOLAR CONTROL



RC03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"



RC04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD

UPPER PERGOLA, NEW KITCHEN WINDOWS AND SC01- MANOR RED FINISH

LOWER PERGOLA, WINDOWS AND DOORS ON EXTENSION, FRONT FENCE - SURFMIST PAINT/ POWDERCOATED FINISH

MS01 - MASONRY TYPE 01 - SALVAGED RED BRICK FROM DEMOLITION TO REAR CORNER OF THE PROPERTY. ADDITIONAL BRICKS NEEDED WILL BE MATCHED EXACTLY

STRAIGHT DROP CANVAS ROLLER BLINDS - UPPER PERGOLA TO HAVE CANVAS THAT MATCHES MANOR RED SHADE. LOWER PERGOLA TO HAVE CANVAS THAT MATCHES SURFMIST SHADE. UPPER LIVING EXTERNAL WINDOWS TO NORTHWEST AND SOUTH WEST TO HAVE ELECTRONICALLY OPERATED EQUIVALENT IN SURFMIST SHADE. IMAGE FROM LUXAFLEX OUTDOOR AWNING BROCHURE 2025.

INSPIRATION FOR ROOFED PERGOLA STRUCTURES (NOT THE YELLOW COLOUR) - DUNGTAN BY SIDH - PHOTOGRAPHED BY PIER CARTHEW 2024. SLENDER CHS VERTICAL SUPPORT (50MM COLUMNS) AND 120X45MM BEAM STRUCTURE.

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MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BS01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BS02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

MATERIAL SELECTIONS AND COLOUR PALETTE
DRAWING TITLE

24-06 — PROJECT NO.
Alterations and Addition — PROJECT

Laura and Mike — CLIENT
22 Anglesea St, South Hobart — SITE ADDRESS

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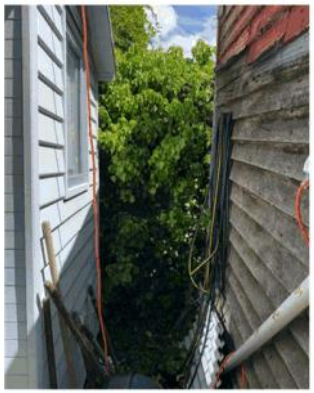
VIEW OF BOUNDARY FROM WESTERN CORNER OF THE PROPERTY LOOKING TOWARDS HEDGE OF 54 ADELAIDE ST. PHOTO BY OWNER, OCTOBER 2025.

EXISTING SHED AND OUTHOUSE WITH HEDGE BOUNDARY TO 54 ADELAIDE ST IN BACKGROUND. PHOTO BY OWNERS, OCTOBER 2025.



CLOSEUP VIEW OF EVERGREEN HEDGE AS SEEN BETWEEN THE TWO EXISTING SHEDS ON THE PROPERTY. PHOTO BY OWNERS, OCTOBER 2025.

EXTENSIVE HEDGING AND GREENERY INSIDE THE BOUNDARY OF 20 ANGLESEA STREET. PLANTINGS OVERSHADOW THEIR OWN PROPERTY EXTENSIVELY

EXTENSIVE HEDGING AND GREENERY INSIDE THE BOUNDARY OF 54 ADELAIDE STREET. PLANTINGS OVERSHADOW THEIR OWN PROPERTY EXTENSIVELY

AERIAL PHOTO FROM REAL ESTATE PHOTOGRAPHER. PHOTO BY WOLF PROPERTY, 2022.

DATE	REVISION	NO.
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SITE PHOTOS AND CONDITION OF BOUNDARIES
DRAWING TITLE

24-06 PROJECT NO. **Alterations and Addition** PROJECT

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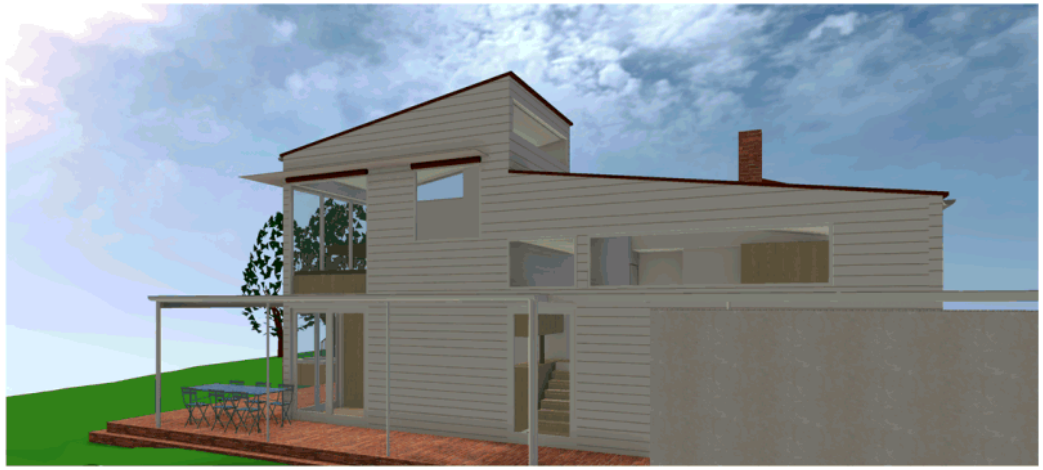

DATE	REVISION	NO.
11/11/2025 02	COUNCIL RFI	

3D SKETCH PERSPECTIVE PAGE 1
DRAWING TITLE

24-06 PROJECT NO.
Alterations and Addition PROJECT

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3D SKETCH PERSPECTIVE PAGE 2
DRAWING TITLE

24-06 PROJECT NO.
Alterations and Addition PROJECT

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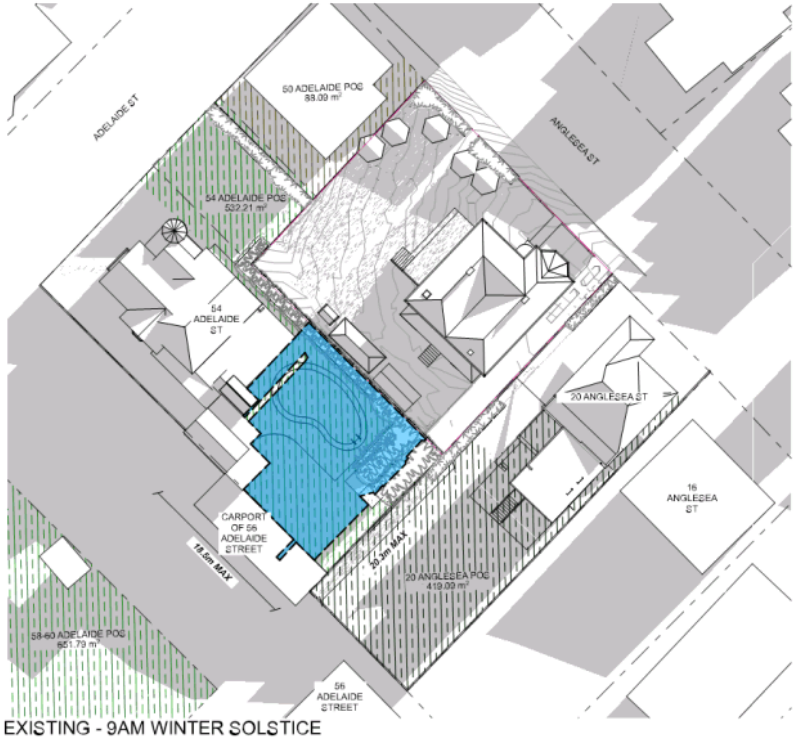
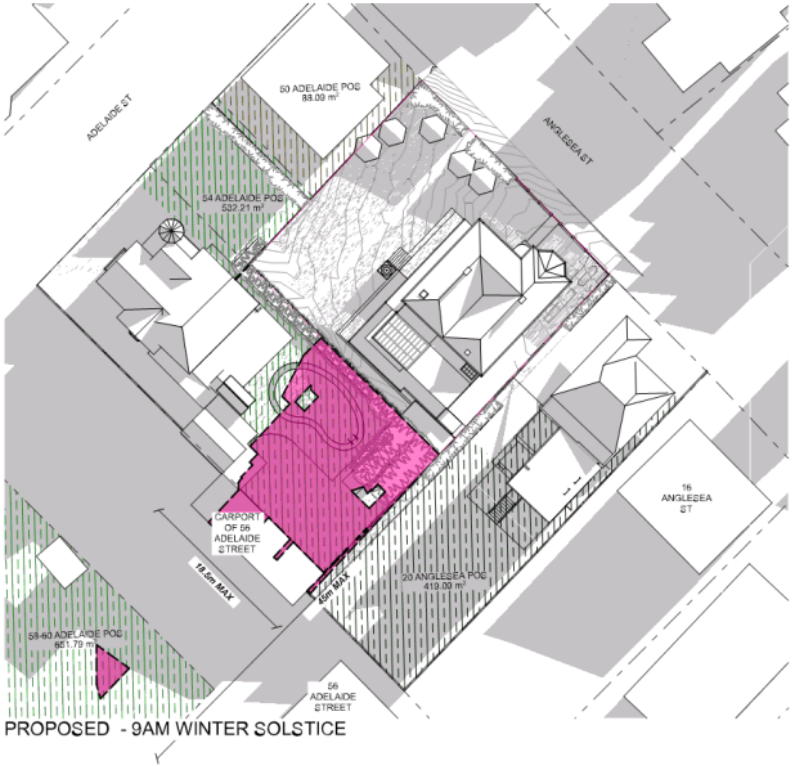
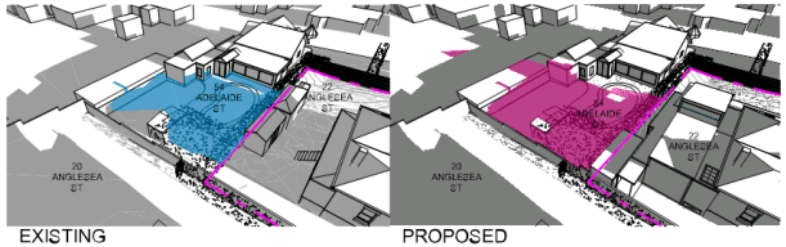


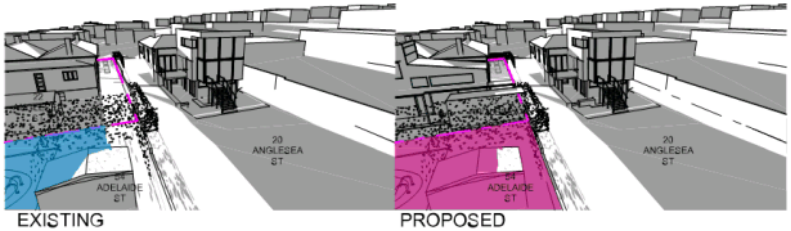
EXISTING - 9AM WINTER SOLSTICE



PROPOSED - 9AM WINTER SOLSTICE



EXISTING PROPOSED
54 ADELAIDE ST SHADOW PERSPECTIVE



EXISTING PROPOSED
20 ANGLESEA ST SHADOW PERSPECTIVE

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	
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EXISTING/PROPOSED 9AM WINTER SOLSTICE SUN STUDY
DRAWING TITLE

24-06 PROJECT NO. **Alterations and Addition** PROJECT

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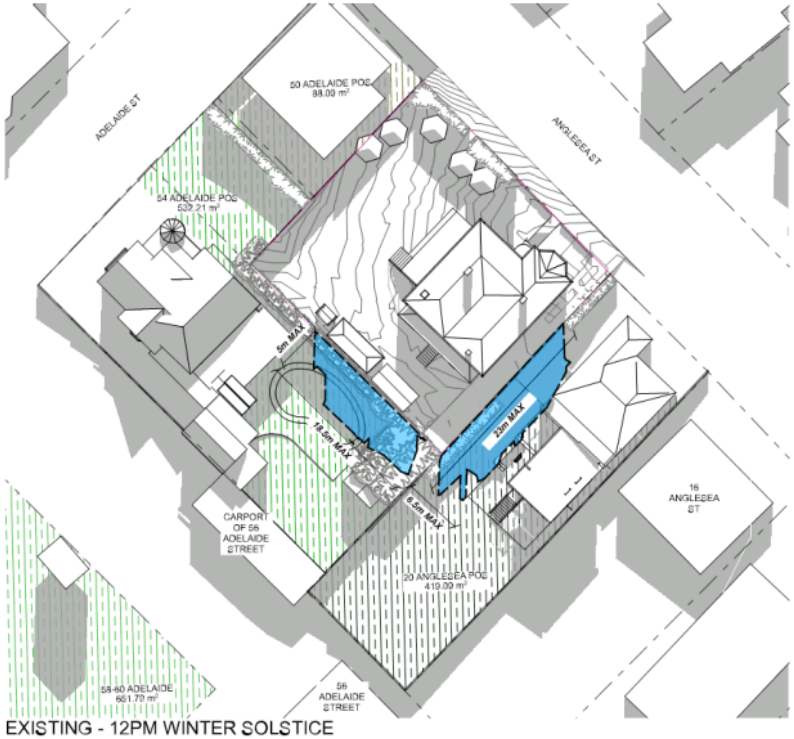

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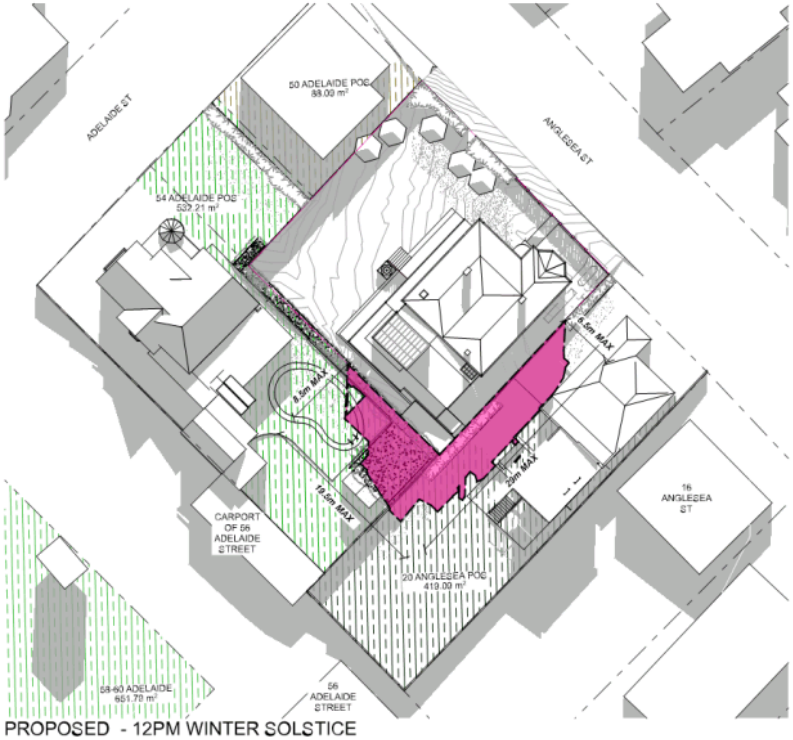
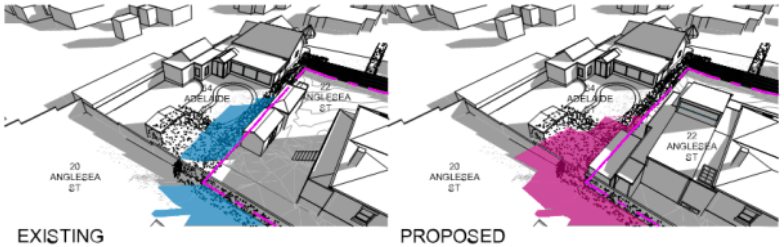


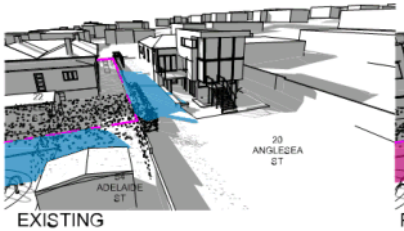
PROPOSED - 12PM WINTER SOLSTICE



EXISTING

PROPOSED

54 ADELAIDE ST SHADOW PERSPECTIVE



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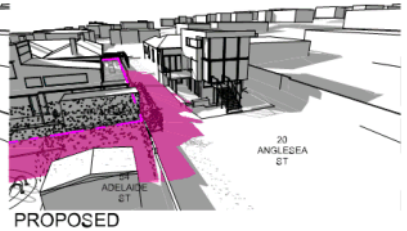

PROPOSED

20 ANGLESEA ST SHADOW PERSPECTIVE

DATE	REVISION	NO.
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EXISTING/PROPOSED 12PM WINTER SOLSTICE SUN STUDY
DRAWING TITLE

24-06 — PROJECT NO.
Alterations and Addition — PROJECT

Laura and Mike — CLIENT
22 Anglesea St, South Hobart — SITE ADDRESS

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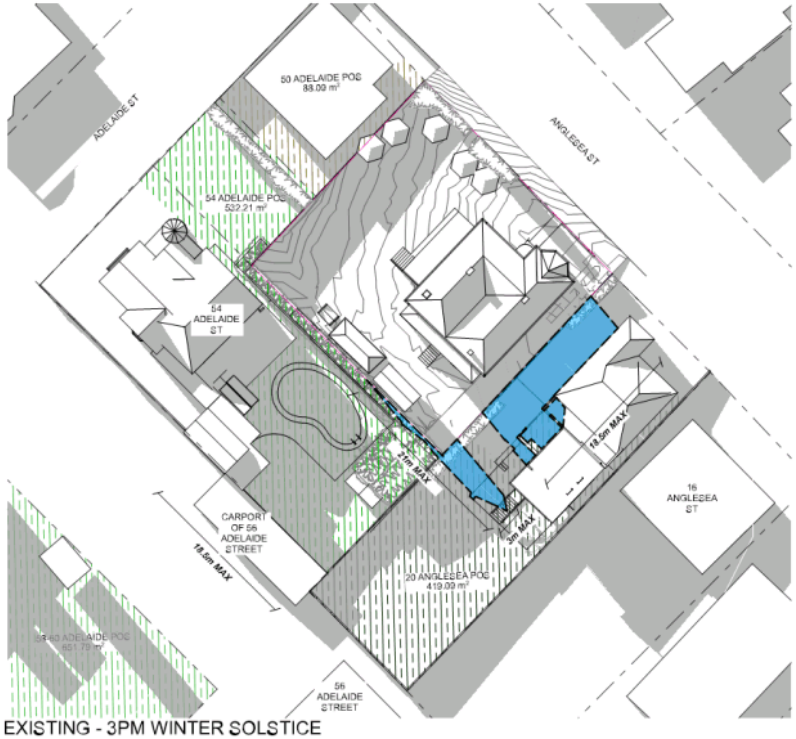
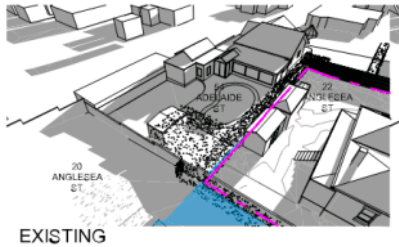


EXISTING - 3PM WINTER SOLSTICE

PROPOSED - 3PM WINTER SOLSTICE



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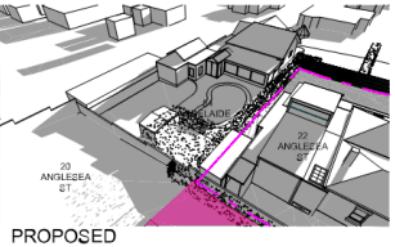
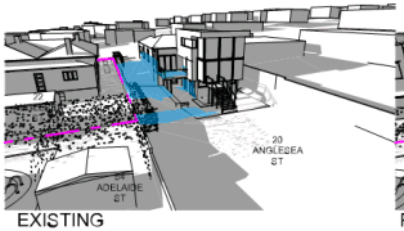


PROPOSED

54 ADELAIDE ST SHADOW PERSPECTIVE



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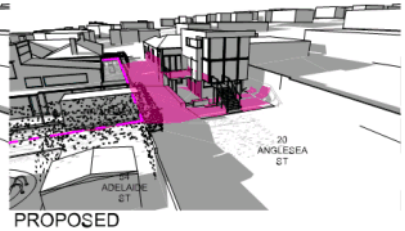

PROPOSED

20 ANGLESEA ST SHADOW PERSPECTIVE

DATE	REVISION	NO.
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EXISTING/PROPOSED 3PM WINTER SOLSTICE SUN STUDY
DRAWING TITLE

24-06 PROJECT NO. **Alterations and Addition** PROJECT

Laura and Mike CLIENT **22 Anglesea St, South Hobart** SITE ADDRESS

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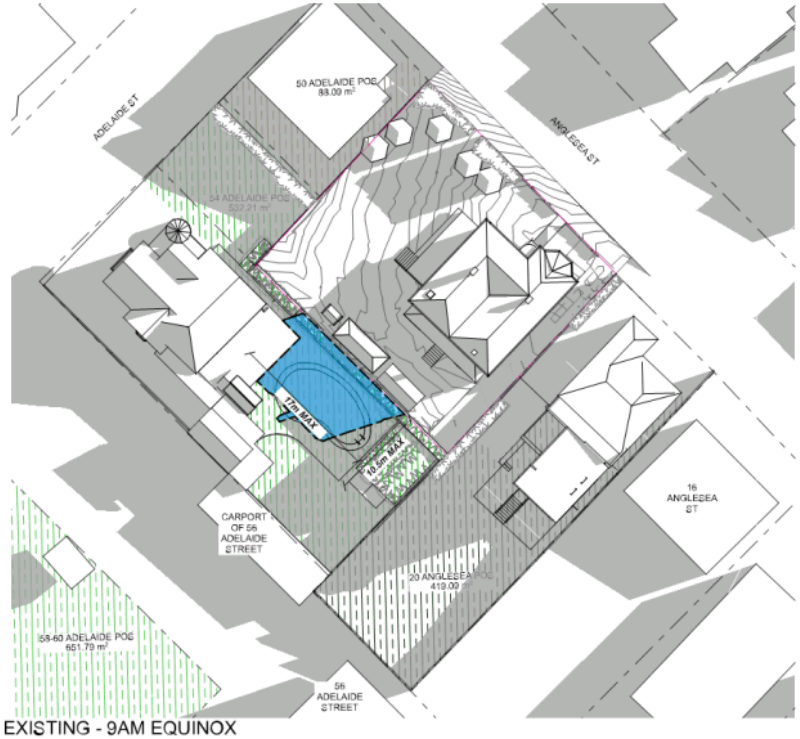
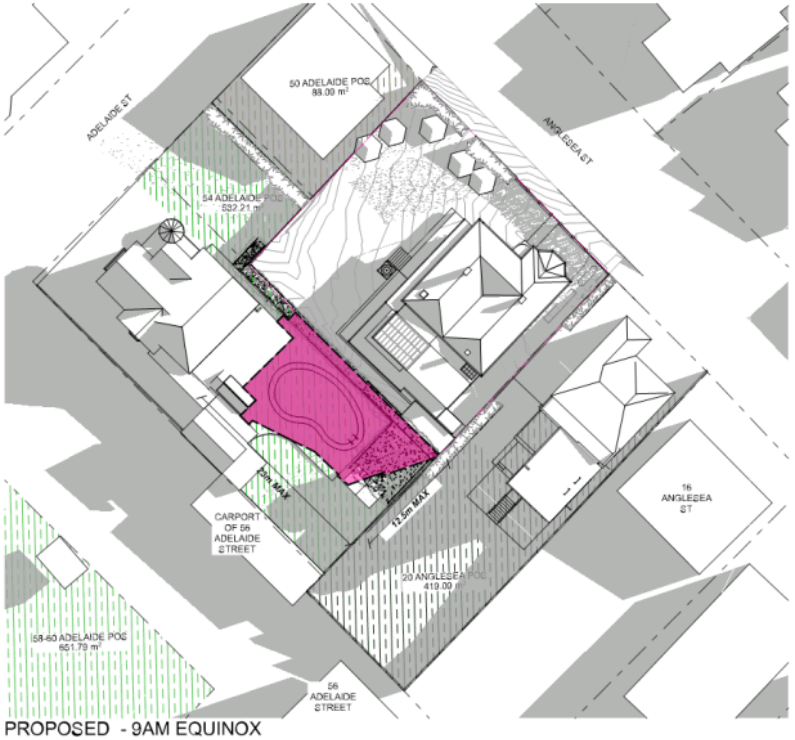
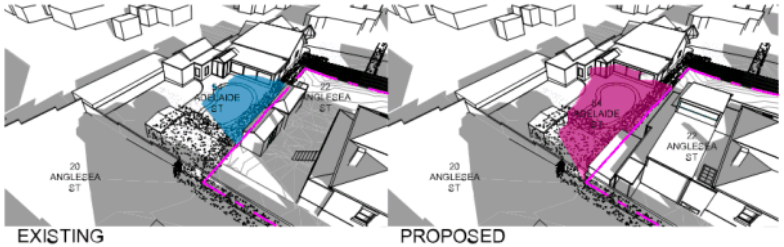


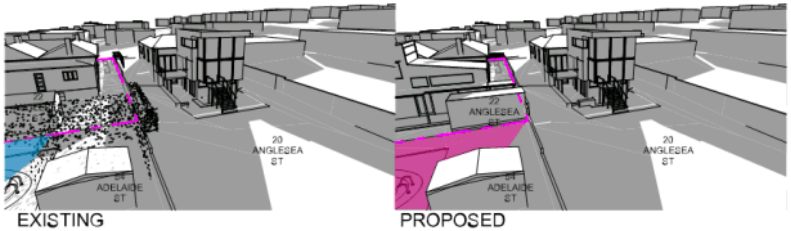
EXISTING - 9AM EQUINOX



PROPOSED - 9AM EQUINOX



EXISTING
PROPOSED
54 ADELAIDE ST SHADOW PERSPECTIVE



EXISTING
PROPOSED
20 ANGLESEA ST SHADOW PERSPECTIVE

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

EXISTING/PROPOSED 9AM EQUINOX SUN STUDY
DRAWING TITLE

24-06 PROJECT NO. — Alterations and Addition PROJECT

Laura and Mike CLIENT — 22 Anglesea St, South Hobart SITE ADDRESS

MAGUIRE + DEVINE ARCHITECTS
Maguire + Devine Architects Pty Ltd
(03) 6292 0911
mail@maguiredevine.com.au
271 Elizabeth St, North Hobart
GPO Box 1066 Hobart TAS 7001
ABN 13 606 222 089

DRAWING NO.	REVISION	STATUS
DA 6.04	02	

1:200, 1:500 AS SHOWN @ A3 — SCALE
11/11/2025 — DATE

DRAWN	CHECKED	ACCREDITATION NO.
Erin Jenkins	Hugh Maguire	CC 5941 D

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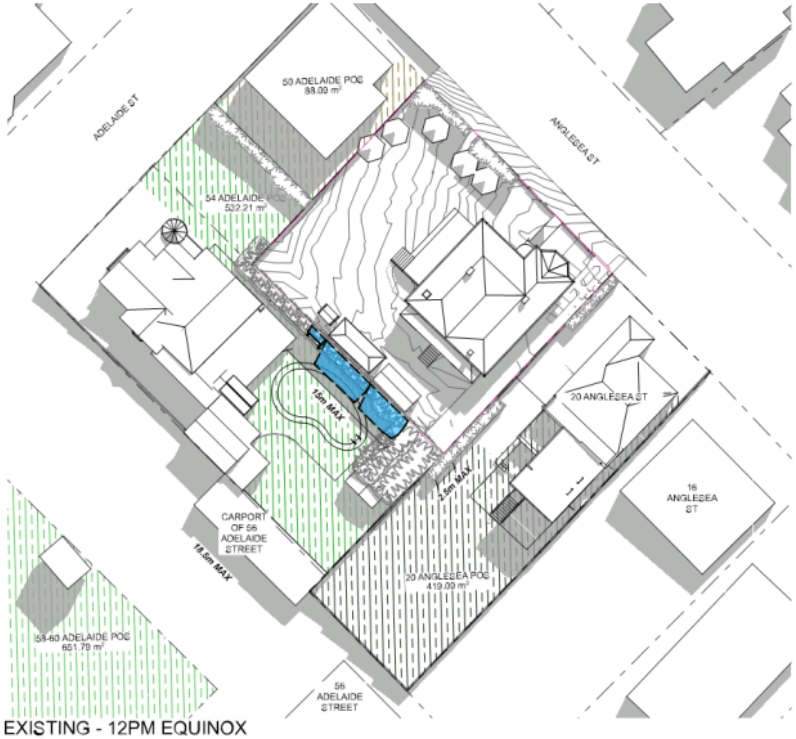

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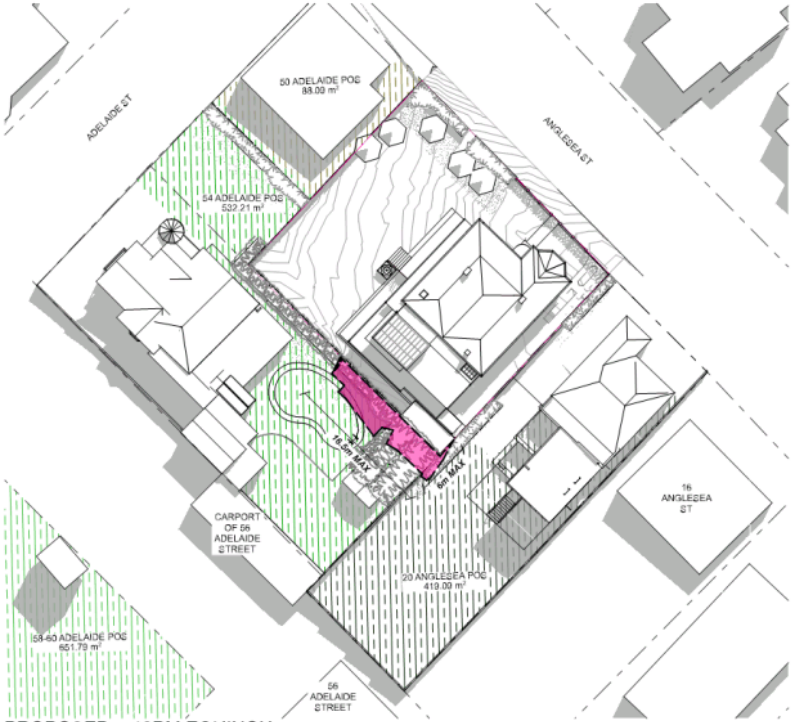

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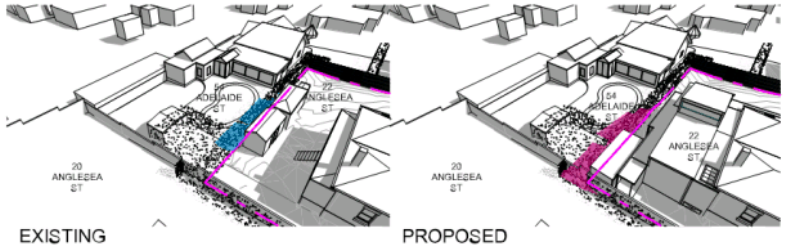
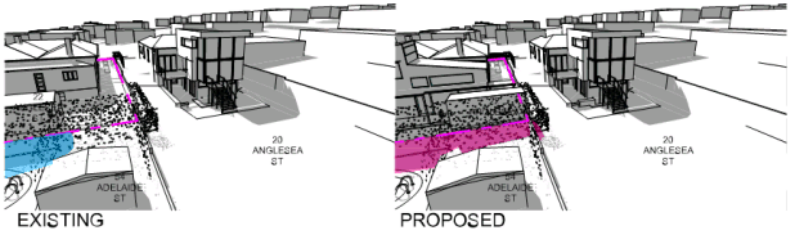


EXISTING
54 ADELAIDE ST SHADOW PERSPECTIVE

PROPOSED



EXISTING
20 ANGLESEA ST SHADOW PERSPECTIVE

PROPOSED

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	
02		

EXISTING/PROPOSED 12PM EQUINOX SUN STUDY
DRAWING TITLE

24-06 PROJECT NO. **Alterations and Addition** PROJECT

Laura and Mike CLIENT **22 Anglesea St, South Hobart** SITE ADDRESS

MAGUIRE + DEVINE ARCHITECTS
Maguire + Devine Architects Pty Ltd
(03) 6292 0911
mail@maguiredevine.com.au
271 Elizabeth St, North Hobart
GPO Box 1066 Hobart TAS 7001
ABN 13 606 222 089

DA 6.05 DRAWING NO. **02** REVISION STATUS
1:500, 1:200 AS SHOWN @ A3 SCALE **11/11/2025** DATE
Erin Jenkins DRAWN Hugh Maguire CHECKED CC 5941 D ACCREDITATION NO.

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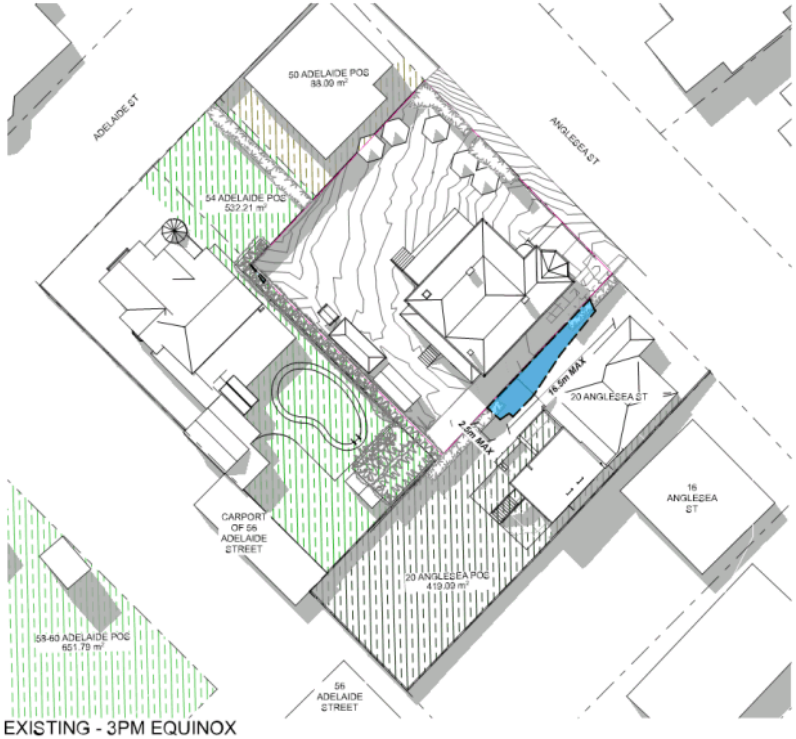

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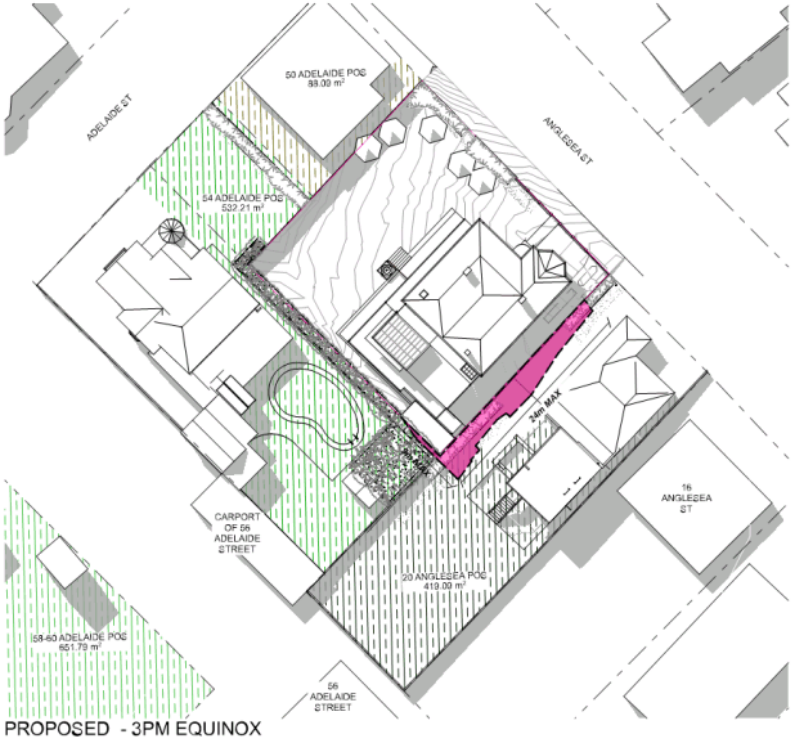
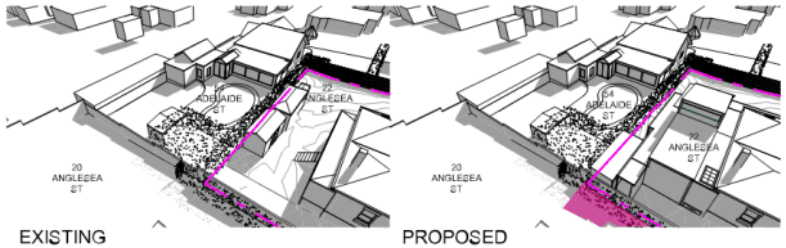


PROPOSED - 3PM EQUINOX

PRIVATE OPEN SPACE OF NEIGHBOURS

EXISTING SHADOW FROM 22 ANGLESEA ST BUILDINGS

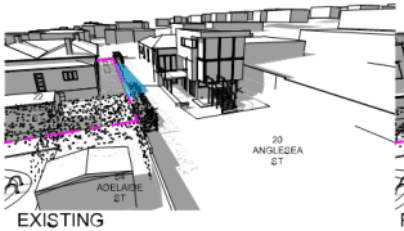
PROPOSED SHADOW FROM 22 ANGLESEA ST BUILDINGS



EXISTING

PROPOSED

54 ADELAIDE ST SHADOW PERSPECTIVE



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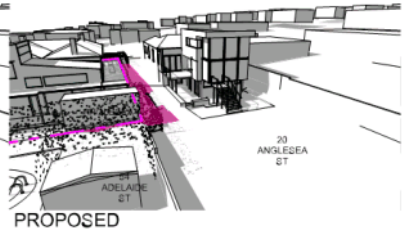

PROPOSED

20 ANGLESEA ST SHADOW PERSPECTIVE

DATE	REVISION	NO.
11/11/2025	COUNCIL RFI	02

EXISTING/PROPOSED 3PM EQUINOX SUN STUDY
DRAWING TITLE

24-06 PROJECT NO. — Alterations and Addition PROJECT

Laura and Mike CLIENT — 22 Anglesea St, South Hobart SITE ADDRESS

MAGUIRE + DEVINE ARCHITECTS
Maguire + Devine Architects Pty Ltd
(03) 6292 0911
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271 Elizabeth St, North Hobart
GPO Box 1066 Hobart TAS 7001
ABN 13 606 222 089

DRAWING NO.	REVISION	STATUS
DA 6.06	02	

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11/11/2025 — DATE

DRAWN	CHECKED	ACCREDITATION NO.
Erin Jenkins	Hugh Maguire	CC 5941 D

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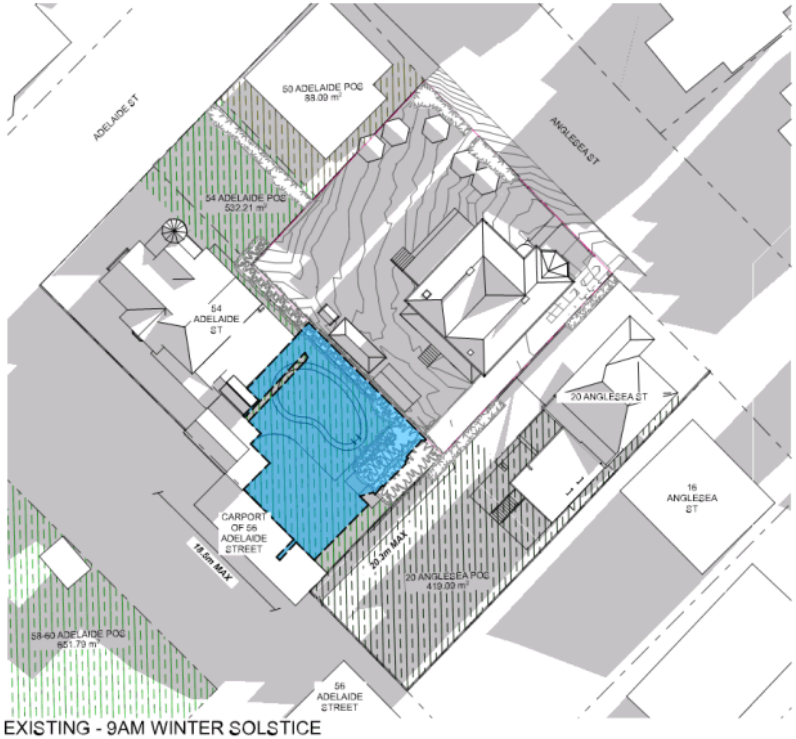

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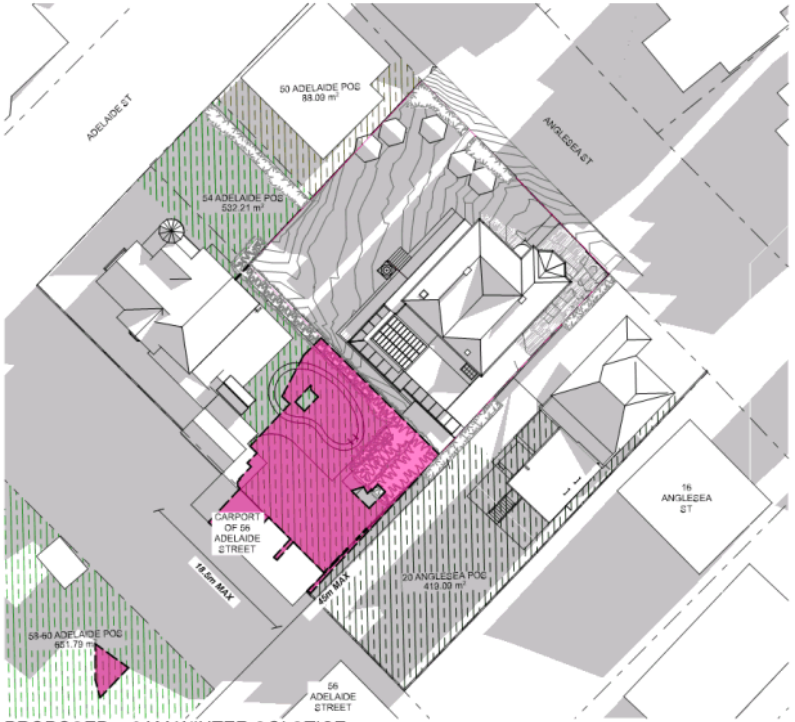
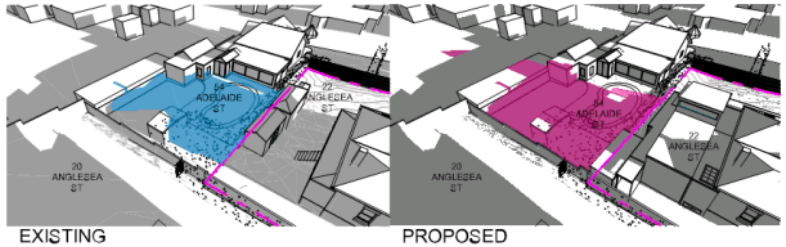


PROPOSED - 9AM WINTER SOLSTICE

PRIVATE OPEN SPACE OF NEIGHBOURS

EXISTING SHADOW FROM 22 ANGLESEA ST BUILDINGS

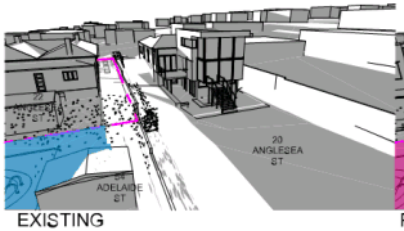
PROPOSED SHADOW FROM 22 ANGLESEA ST BUILDINGS



EXISTING

PROPOSED

54 ADELAIDE ST SHADOW PERSPECTIVE



EXISTING

PROPOSED

20 ANGLESEA ST SHADOW PERSPECTIVE

DATE	REVISION	NO.
3/11/2025	COUNCIL RFI	01

EXISTING/PROPOSED 9AM WINTER SOLSTICE SUN STUDY
DRAWING TITLE

24-06 — PROJECT NO.
Alterations and Addition — PROJECT

Laura and Mike — CLIENT
22 Anglesea St, South Hobart — SITE ADDRESS

MAGUIRE + DEVINE ARCHITECTS
Maguire + Devine Architects Pty Ltd
(03) 6292 0911
mail@maguiredevine.com.au
271 Elizabeth St, North Hobart
GPO Box 1066 Hobart TAS 7001
ABN 13 606 222 089

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1:500, 1:200 AS SHOWN @ A3 — SCALE
3/11/2025 — DATE

DRAWN	CHECKED	ACCREDITATION NO.
Erin Jenkins	Hugh Maguire	CC 5941 D

City of HOBART

REQUEST FOR INFORMATION

Reference
PLANNA-HOB-2025-4040

Application Reference
PLN-HOB-2025-0508

Address
22 ANGLESEA ST SOUTH HOBART TAS 7004

Titles
116115/1

Information Requested

#	Reason	Origin
1	PLNFi1 - Planning - Generic To enable the Council to assess the application against the Development Standards of the Inner Residential Zone of the *Tasmanian Planning Scheme - Hobart*, please provide the following: 1. Amended site plan showing: • setback of the addition and pergola to the rear boundary 2. Amended Proposed Main Floor Plan showing: • proposed roof of the pergola of the existing deck (currently this is too light to see on the plan) 3. Amended (front) elevation to show the proposed outbuilding and section of the pergola which extends beyond the side elevation of the dwelling 4. show the maximum height of the extension on each proposed elevation 5. Amend the existing/proposed north west elevation to show that the windows on the upper living addition to show that there is a glass balustrade 6. clearly show the finished floor level of the first floor living area and bedroom within the existing/proposed south west elevation and the distance between the finished floor level and the sill height within each room. 7. please confirm whether or not the pergola will be roofed, and if so in what material. 8. Please confirm the style of the awnings proposed, including the width of the awning and material of construction.	LUPAA 1993
2	PLNFi6 - Planning - Residential Zones Shadow and Sunlight Diagrams To enable the Council to assess the application against the development standards for buildings and works in the Inner Residential Zone of the *Tasmanian Planning Scheme - Hobart*, please provide: 1. Fully dimensioned shadow diagrams, prepared at a suitable scale, showing the extent of shadowing on the private open space of any dwellings on adjoining lots, or on any adjoining vacant lot, at 9.00am, 12.00pm and 3.00pm on March and June 21st, cast by the proposed development and by the existing development on the site. 2. Solar access diagrams showing the sunlight to habitable rooms (excluding bedrooms) of any dwellings on adjoining lots, at 9.00am, 12.00pm and 3.00pm on March and June 21st, with the proposed development and with the existing development on the site. *Advice:* • *The definition of adjoining means more than abutting, and includes properties on the other side of the road, as well as those separated from the subject site by a pedestrian right of way, battle axe lot handles, driveways, etc.* • *Three dimensional diagrams may be required to adequately satisfy the above request.* These diagrams have been requested as the proposed outbuilding is less than 1.5m from the rear boundary.	LUPAA 1993
3	PLNFi3 - Planning - Front Fence To enable the Council to assess the application against the development standards for buildings and works of the Inner Residential Zone and C6.0 Local Historic Heritage Code of the *Tasmanian Planning Scheme -Hobart*, please provide: 1. confirm the fence is wholly within the property boundary 2. the width of the pickets and gaps. 3. confirm the both the vehicle gate and pedestrian gate will swing/slide within the property boundary	LUPAA 1993
4	HER Fi1 - Heritage Code - Heritage To enable the Council to assess the application against the relevant provisions of the Local Historic Heritage Code of the *Tasmanian Planning Scheme - Hobart* please: 1. Confirm whether the material RC03 Tinted Polycarbonate Sheeting is proposed for use in the works and if so, indicate the location on the elevations. It is noted that this roof sheet type is included in the material code although does not appear to be included elsewhere in the documentation. 2. Provide the proposed materials and colours of the blockwork shed, including roof and wall cladding. 3. Confirm whether the new picket fence is proposed in timber or another material, and the proposed colour.	LUPAA 1993

Response comments

Response to Request for Further Information
Hi Deanne,

Please find attached to this response Revised Development application documentation that seeks to reflected answers to the requested information.

As a supplementary response, here are some further comments related to each of information items.

PLNiF1 - Planning - Generic

7. Refer to the newly added DA 4.02 sheet for visual palettes to assist with understanding design intent and finishes accompanied by an updated material code. To confirm the the pergola above the existing deck will be constructed from Manor Red painted structural timber beams and has intention to cantilever off the existing structure (client specific request), which will be resolved with future structural engineers. This pergola will be roofed in RC01, which is Manor Red Custom Orb roof sheeting. The gutters will be metal to match RC01. The downpipes will be metal with a Manor red finish to match the other elements.
The lower pergola is to also to be constructed from Surfmist painted structural timber that will be supported with matching Surfmist painted CHS columns. The lower pergola will be roofed with RC02 which is a tinted polycarbonate. Where the lower pergola meets the boundary of 20 Anglesea street, the structure changes to RHS steel beams in the colour surfmist and RC03 sheet roofing (all structure pergola structure between the edge of the proposed extension and boundary, refer to proposed main floor plan for RC03 position). Refer to DA 4.02 and the updated material code for further information

8. Please refer to DA 4.02 for design intent and materials of awnings. The awning above the upper living windows as indicated by the code RC04 will be a 600mm deep 4mm steel flat sheet window shroud. All canvas drop down awnings that sit on the outer edge of the upper pergola and the north western edge of the lower pergola are to be Straight drop canvas external blinds, which are to be manually operated. Additional drop canvas blinds that sit between the RC04 flat sheet awning/shroud and the upper living windows are to be straight drop canvas external blinds that are to be operated remotely. The intent for all these additional shading devices is to give maximum control to the owners to balance their desire to maintain views to kunanyi and the foothills whilst control the intensive afternoon solar gain the house has/will have with this extensive amount of glazing.

2. PLANiF6 - Residential Zones Shadow and Sunlight Diagrams

As discussed over the phone, the existing boundary with 54 Adelaide Street is made up of a hedge that was planted inside the neighbouring boundary, with leaves encroaching. There is also some hedging sitting on the boundary between 22 Anglesea and 20 Anglesea (hedge within 20 Anglesea boundary) (refer also to DA4.03 for a 2023 aerial perspective of the property). Please refer to newly added drawings DA 6.01-DA6.06 that demonstrate dimensioned existing and proposed shadow diagrams for the 21st of June and march equinox, as well as specific 3d perspectives of the two impacted neighbouring properties to the south east and south west. It can be seen with that whilst there is some increase in overshadowing to private open space on the two adjacent properties, it can be argued that both properties hedges are impacting their own winter sunlight.

3. PLNiF3 - Planning - Front Fence

After further consultation with the owners, we propose that the newly instated front fence will be a French gothic picket with MS01 brick posts and a base plinth that follows the natural ground level.
It can noted that the new fence does sit within the property boundary. The front face sits in line with the centre line of the existing mid century low masonry fence that is to be demolished. Please refer to the revised proposed main floor plan for details.
Please refer to DA4.01 for details and an elevation of the fence. This includes spacing and width of the pickets as well as a height range.
We can also confirm that the vehicle gate and the pedestrian gate swing into the property boundary.

4. HER Fi7 - Heritage Code - Heritage

Apologies, there was an error in correct material coding in the original DA submission, please refer to material codes and the newly created drawing DA 4.02 for material palette.

It should also be noted that the pickets are timber. The pickets will be painted with Dulux Surfmist or equivalent.

Documents

Version	Document Date	Document Type	Description	Prepared By
1	3 Nov 2025	Architectural Plans	Revised Architectural Plans	Miss Erin Jenkins

Submitted on **04/11/2025**

RESULT OF SEARCH

ASSISTANT RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
116115	1
EDITION	DATE OF ISSUE
5	10-Aug-2023

SEARCH DATE : 08-Oct-2025
SEARCH TIME : 04.04 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 116115
Being the land described in Conveyance No. 59/3821
Derivation : Part of 1-3-7 Granted to J. A. Thomson
Derived from W2570

SCHEDULE 1

M975769 TRANSFER to MICHAEL DAVID STEPHENS and LAURA JESSICA EDWARDS Registered 10-Aug-2022 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
E355775 MORTGAGE to Westpac Banking Corporation Registered 10-Aug-2023 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

ASSISTANT RECORDER OF TITLES

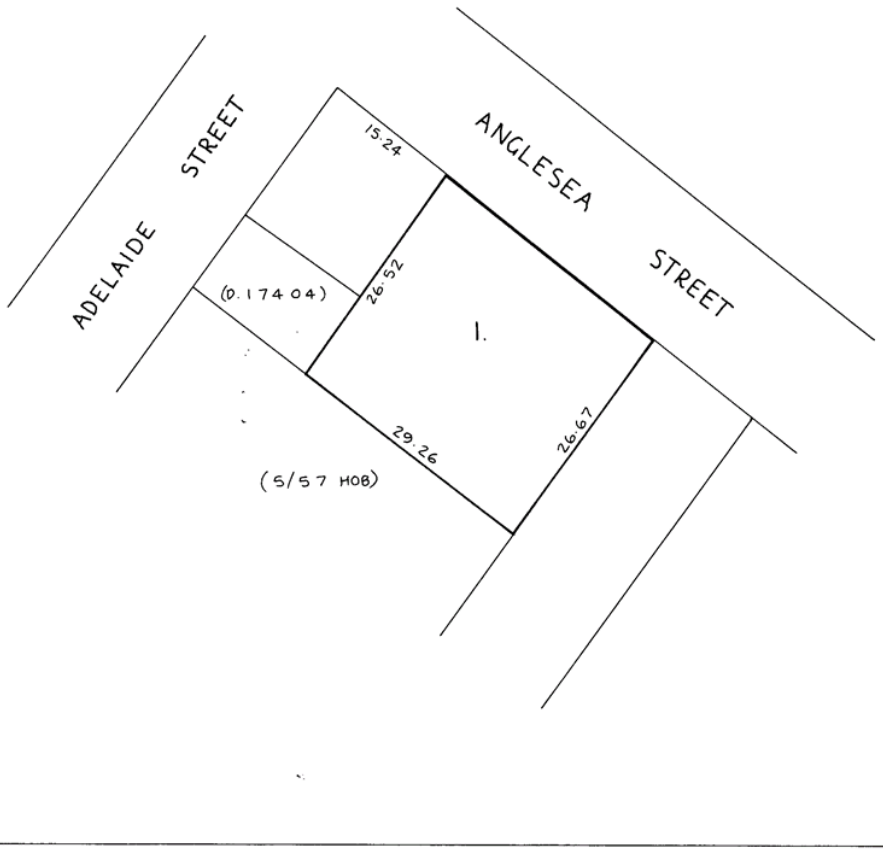
Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

FILE NUMBER W. 2570 GRANTEE PART OF 1A · 3R · 7P · GTD. TO JAMES ALEXANDER THOMSON.	**CONVERSION PLAN** LOCATION CITY OF HOBART CONVERTED FROM 59/3821 NOT TO SCALE LENGTHS IN METRES	REGISTERED NUMBER P116115 APPROVED 1 FEB 1995 Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 21	LAST UPI No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN / DRAWN DJB

SKETCH BY WAY OF ILLUSTRATION ONLY

"EXCEPTED LANDS"



A-183

Tasmanian Government

PlanBuild TASMANIA

PLANNING APPLICATION

Status:

Reference
PLN-HOB-2025-0508

Address
22 ANGLESEA ST SOUTH HOBART TAS 7004

Titles
116115/1

Before you start

Before you start your application, you will need to know if you require planning approval or not.

If you are unsure if you require a permit, use the PlanBuild Tasmania Enquiry Service to lodge a request for advice from the relevant Council.

Once your application has been submitted the Council will review your application. If payment has not been made, you will be sent a request for the payment of application fees via PlanBuild Tasmania.

Once the fees have been paid and the Council is satisfied with the information provided, the application will be assessed and you will be notified of the outcome.

If further action is required to assess your application you will receive an email notification containing a task to complete.

Pre-Application Advice

Have you spoken with anyone at Council about this application?

- ☐ Yes - enter details below
- ☑ No - continue to the next section

If yes, provide the name of the person you contacted

Applicant

Name	Email	Phone	Address	Involvement
[redacted]	[redacted]	[redacted]	Personal Information removed	[redacted]
[redacted]	[redacted]	[redacted]	Personal Information removed	[redacted]

Owners

Name	Email Address	Address
[redacted]		Personal Information removed

Certificate(s) of Title

Selected Titles

Total Area: 0m^2

116115/1

Owner Notification

Are you the sole owner of the land?

- ☐ Yes - continue to the next section
- ☑ No - answer question below

If no, have you notified all owners, joint or part owners of your intention to submit this application?

- ☑ Yes - enter owner details below
- ☐ No - you must notify all owners before proceeding with this application

List all owners, joint or part owners as recorded on the Title documents notified:

Enter the date that the last owner, joint or part owner was notified

Declaration

- [x] I declare that all land owners, joint or part owners have been notified of this planning application.

Crown Land Consent

Is Crown Land involved in the proposed use or development?

- [ ] Yes - complete question below
- [x] No - continue to the next section - see further information below
- [ ] Unsure

If yes, has written Crown Land consent been obtained?

- [ ] Yes - upload written consent
- [ ] No - application will not be progressed until consent has been provided

General Manager Consent

Is Council-owned or administered land involved in the proposed use or development?

- [ ] Yes - complete question below
- [x] No - continue to the next section
- [ ] Unsure

If yes, has written consent been obtained from the Council General Manager?

- [ ] Yes - upload written consent
- [ ] No - application will not be progressed until consent has been provided

Proposed Use or Development

What is the reason for your planning application?

- [ ] I want to change how the property is used
- [ ] I want to use the property for visitor accommodation
- [ ] I want to subdivide
- [x] I want to undertake a new development or alteration
- [ ] I want to do a minor boundary adjustment
- [ ] I want to put up a sign(s)
- [x] I want to demolish
- [ ] I want to do works only
- [ ] Other

If your application is to subdivide, please enter the number of proposed lots.

0

If your application is for signage, please enter the number of signs.

Is the property a Tasmanian Heritage Listed Property?

- [ ] Yes
- [x] No

Is the application for an EPA Activity under the Environmental Management and Pollution Control Act 1994?

- [ ] Yes
- [x] No
- [ ] Unsure

Is the proposed use or development permitted or discretionary?

- [x] Permitted
- [ ] Discretionary
- [ ] Unsure if permitted or discretionary

Provide a full description of the proposed use or development

Demolition of existing lean-to and dilapidated outbuildings, new split level extension to the rear of the existing house with new

pergolas. New outbuilding (shed). House and new extension to be used as Primary dwelling for family.

Will the proposed use or development involve a road reserve?

- [ ] Yes - complete the section below
- [x] No - continue to the next section
- [ ] Unsure

If yes, enter the address(es) or locations below:

If yes, how will the road reserve be affected?

Value of Works

What is the estimated value of the works?
500000

Supporting Documents

Version	Document Date	Document Type	Description	Prepared By
1	8 Oct 2025	Property Title Document	FolioPlan-116115-1.pdf	Miss Erin Jenkins
1	29 Sept 2025	Architectural Plans	Planning Permit Architectural documentation	Miss Erin Jenkins
1	8 Oct 2025	Property Title Document	FolioText-116115-1.pdf	Miss Erin Jenkins
1	29 Sept 2025	Cover Letter	Planning letter to accompany Architectural documentation	Miss Erin Jenkins

Next steps

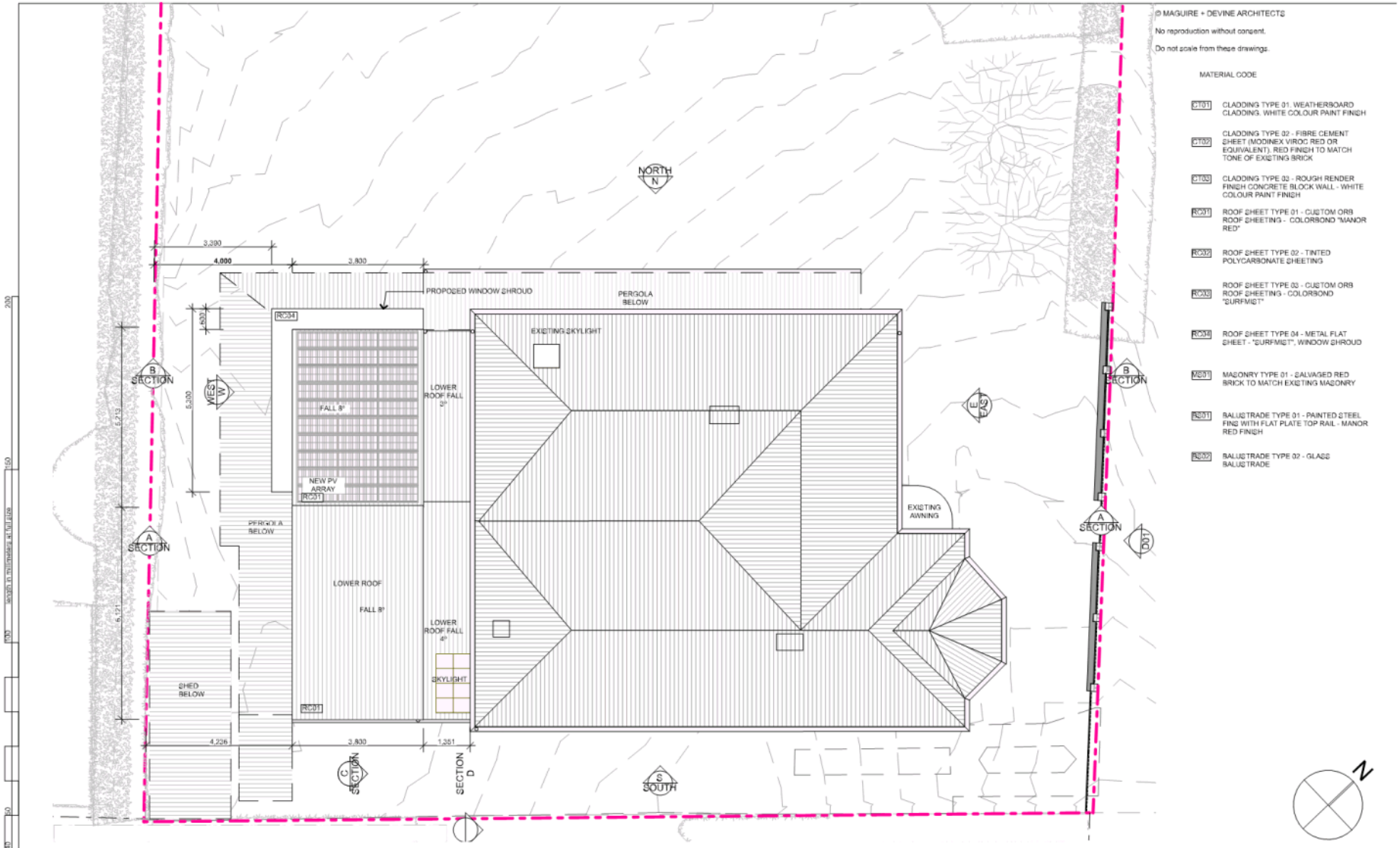
When you have completed all the necessary fields and attached all required documents to support your application, click on the green 'Save & Submit' button at the top right of this form.

Once submitted, the Council will review your application. A request for the payment of application fees will be sent to you via PlanBuild Tasmania.

Once the fees have been paid and the Council is satisfied with the information provided, the application will be assessed and you will be notified of the outcome.

If further action is required to assess your application you will receive an email notification from PlanBuild which will tell you what you need to provide to continue the application.

Form published: 14/05/2025 15:58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MATERIAL CODE
CT01 CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
CT02 CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
CT03 CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01 ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02 ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03 ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04 ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01 MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BS01 BALUSTRADE TYPE 01 - PAINTED STEEL FINZ WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BS02 BALUSTRADE TYPE 02 - GLASS BALUSTRADE
NORTH
N
PROPOSED WINDOW SHROUD
PERGOLA BELOW
EXISTING SKYLIGHT
LOWER ROOF FALL 3°
FALL 8°
NEW PV ARRAY
RC01
EXISTING AWNING
LOWER ROOF
FALL 8°
LOWER ROOF FALL 4°
SKYLIGHT
SHED BELOW
WEST
W
EAST
E
SOUTH
S
SECTION A
SECTION B
SECTION C
SECTION D
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4,000
3,800
1,351
4,236
5,300
6,213
6,121
DO1
DATE REVISION NO.
5/12/2025 COUNCIL RFI 03
PROPOSED ROOF PLAN
DRAWING TITLE
24-06 PROJECT NO.
Alterations and Addition PROJECT
Laura and Mike CLIENT
22 Anglesea St, South Hobart SITE ADDRESS
MAGUIRE + DEVINE ARCHITECTS
Maguire + Devine Architects Pty Ltd
(03) 6292 0911
mail@maguiredevine.com.au
271 Elizabeth St, North Hobart
GPO Box 1066 Hobart TAS 7001
ABN 13 606 222 089
DA 1.11 DRAWING NO.
03 REVISION
STATUS
1:100, 1:1 AS SHOWN @ A3 SCALE
5/12/2025 DATE
Erin Jenkins DRAWN
Hugh Maguire CHECKED
CC 5941 D ACCREDITATION NO.

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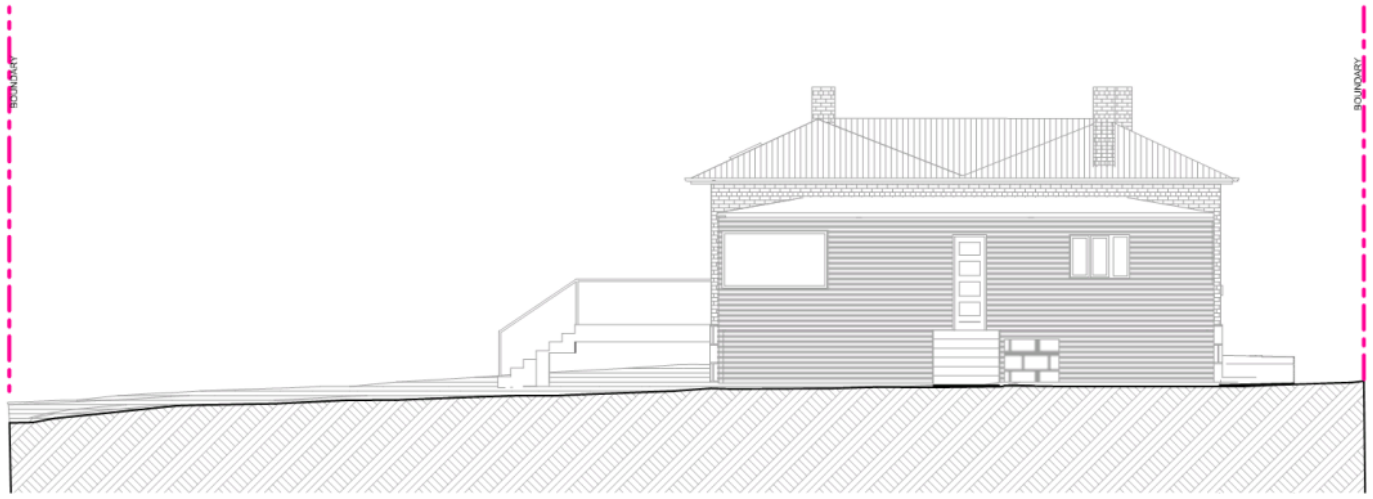

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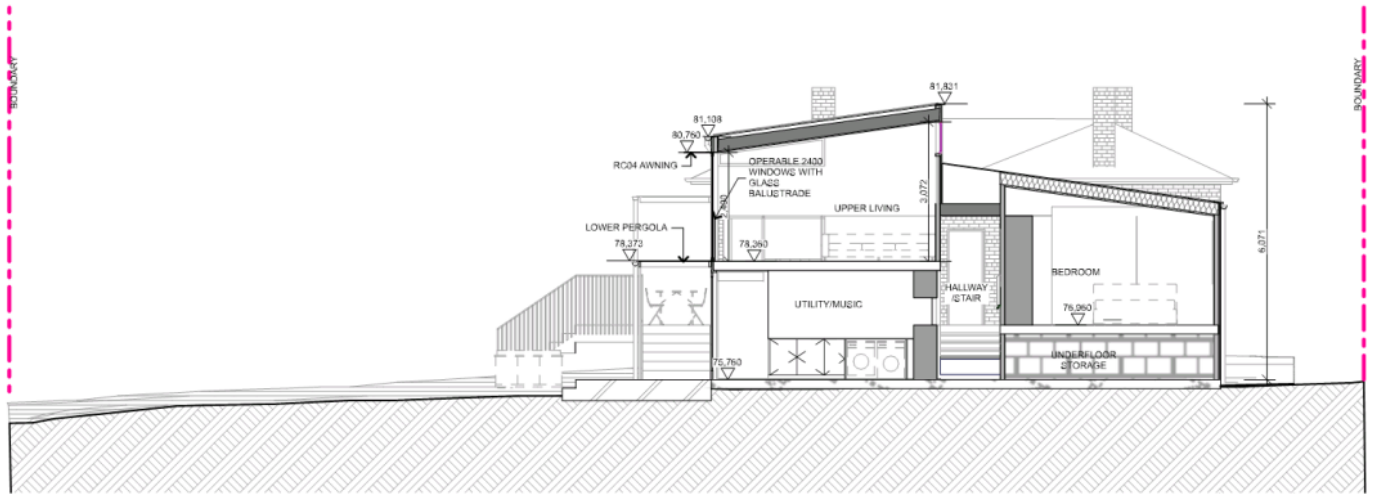

PROPOSED

MATERIAL CODE

C101	CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
C102	CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
C103	CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01	ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BA01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BA02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE

DATE	REVISION	NO.
5/12/2025	COUNCIL RFI	03

EXISTING/PROPOSED SECTION C
DRAWING TITLE

24-06 Alterations and Addition
PROJECT NO. PROJECT

Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS

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GPO Box 1066 Hobart TAS 7001
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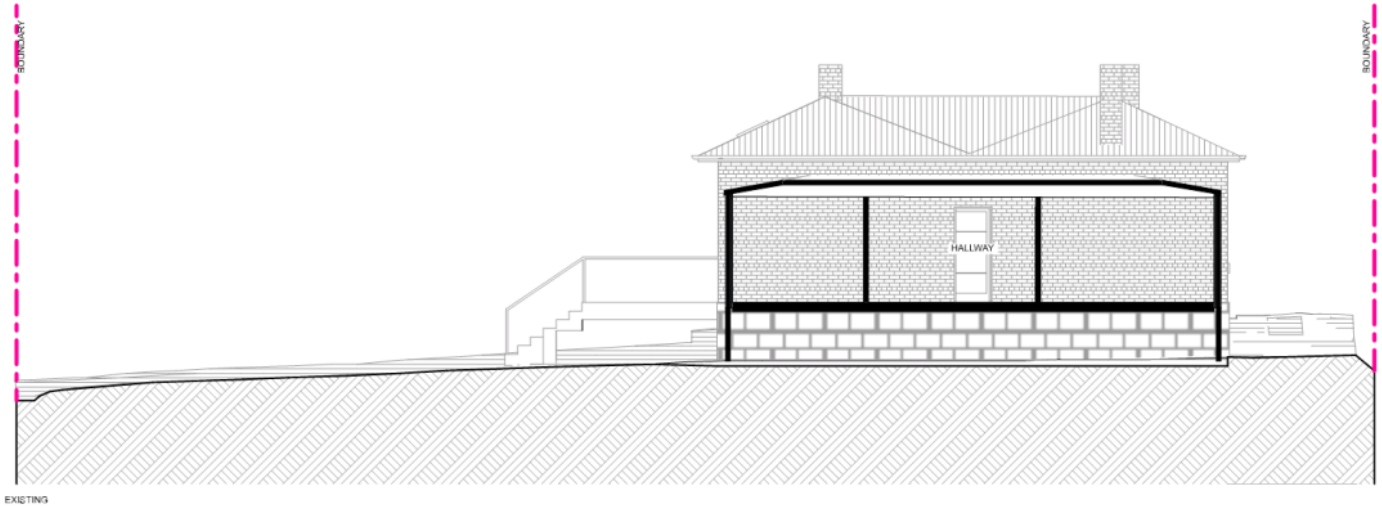

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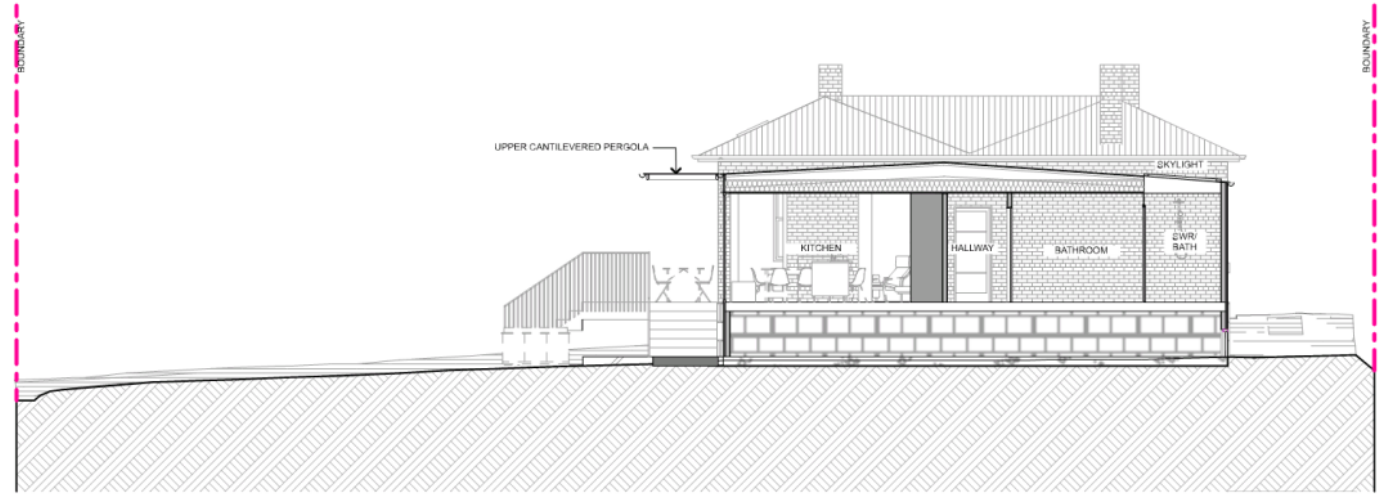

PROPOSED

MATERIAL CODE

C101	CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
C102	CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK
C103	CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH
RC01	ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"
RC02	ROOF SHEET TYPE 02 - TINTED POLYCARBONATE SHEETING
RC03	ROOF SHEET TYPE 03 - CUSTOM ORB ROOF SHEETING - COLORBOND "SURFMIST"
RC04	ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD
MS01	MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY
BS01	BALUSTRADE TYPE 01 - PAINTED STEEL FINS WITH FLAT PLATE TOP RAIL - MANOR RED FINISH
BS02	BALUSTRADE TYPE 02 - GLASS BALUSTRADE

DATE	REVISION	NO.
5/12/2025	COUNCIL RFI	03

EXISTING/PROPOSED SECTION D
DRAWING TITLE

24-06 Alterations and Addition
PROJECT NO. PROJECT

Laura and Mike 22 Anglesea St, South Hobart
CLIENT SITE ADDRESS

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ABN 13 606 222 089

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MATERIAL CODE

C101	CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH
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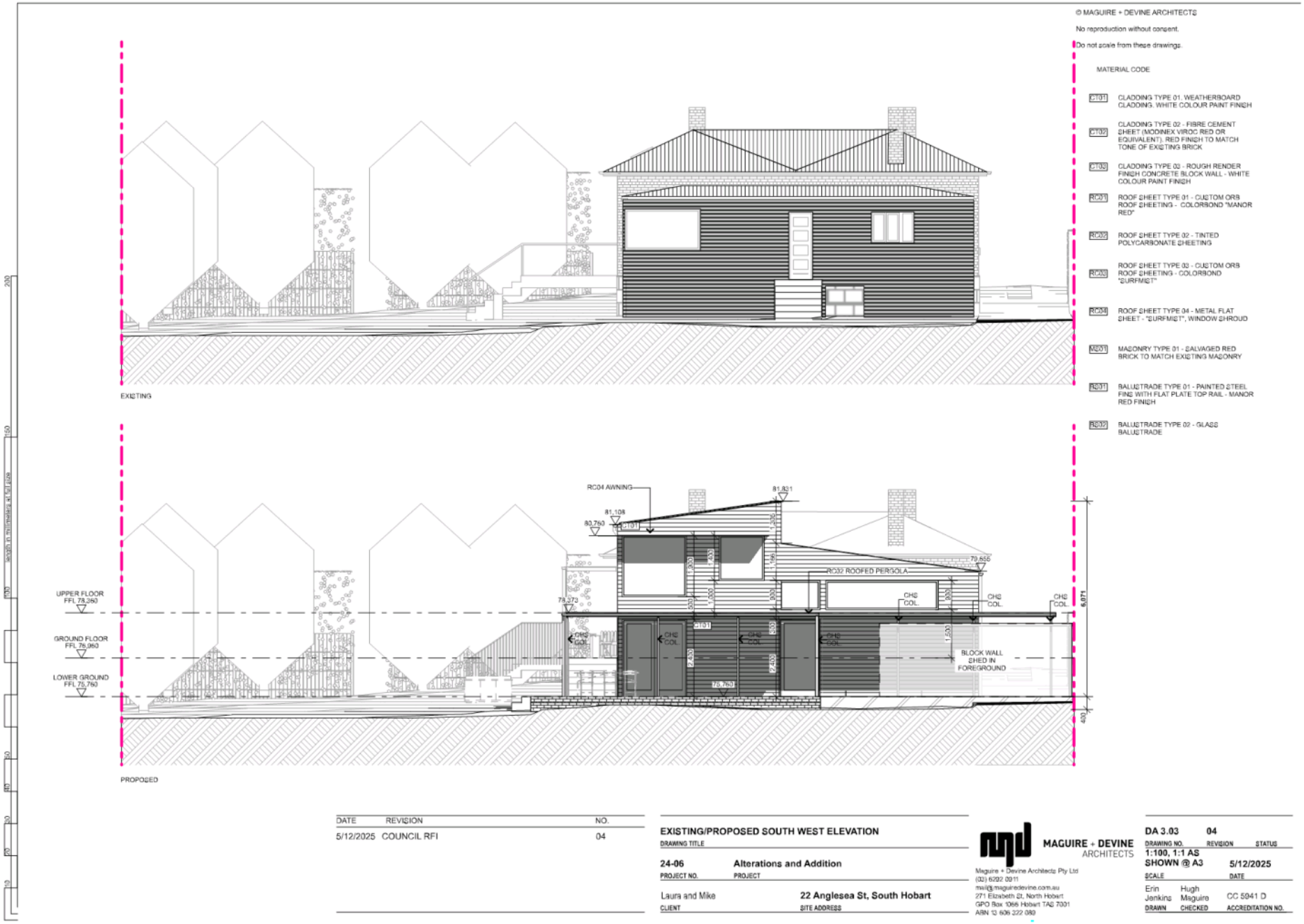

DATE	REVISION	NO.
5/12/2025	COUNCIL RFI	04

EXISTING/PROPOSED SOUTH WEST ELEVATION
DRAWING TITLE

24-06 PROJECT NO. — **Alterations and Addition** PROJECT

Laura and Mike CLIENT — **22 Anglesea St, South Hobart** SITE ADDRESS

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ABN 13 606 222 089

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MATERIAL CODE

CT01 CLADDING TYPE 01. WEATHERBOARD CLADDING. WHITE COLOUR PAINT FINISH

CT02 CLADDING TYPE 02 - FIBRE CEMENT SHEET (MODINEX VIROC RED OR EQUIVALENT). RED FINISH TO MATCH TONE OF EXISTING BRICK

CT03 CLADDING TYPE 03 - ROUGH RENDER FINISH CONCRETE BLOCK WALL - WHITE COLOUR PAINT FINISH

RC01 ROOF SHEET TYPE 01 - CUSTOM ORB ROOF SHEETING - COLORBOND "MANOR RED"

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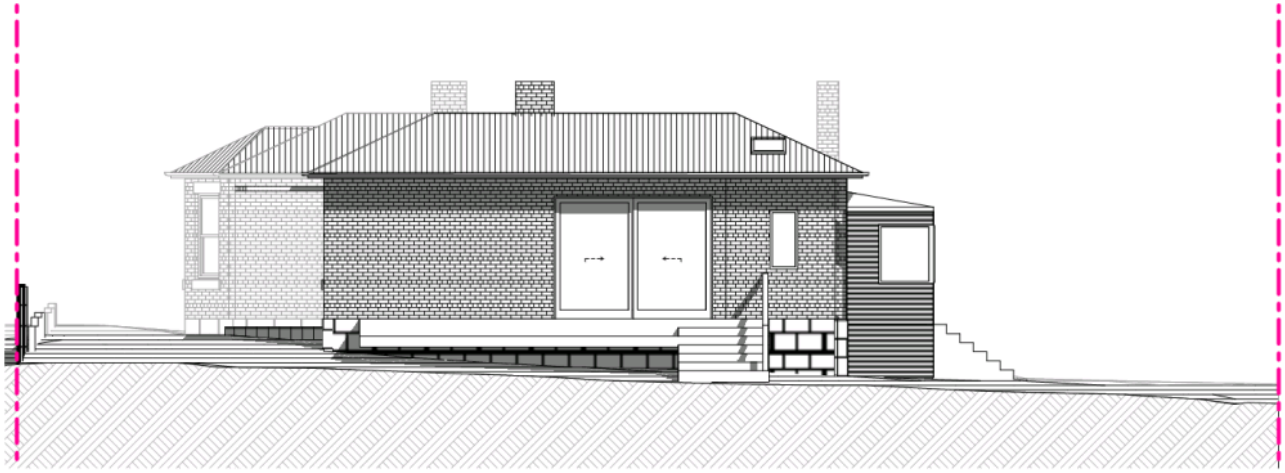
RC04 ROOF SHEET TYPE 04 - METAL FLAT SHEET - "SURFMIST", WINDOW SHROUD

MS01 MASONRY TYPE 01 - SALVAGED RED BRICK TO MATCH EXISTING MASONRY

BS01 BALUSTRADE TYPE 01 - PAINTED STEEL RING WITH FLAT PLATE TOP RAIL - MANOR RED FINISH

BS02 BALUSTRADE TYPE 02 - GLASS BALUSTRADE

EXISTING



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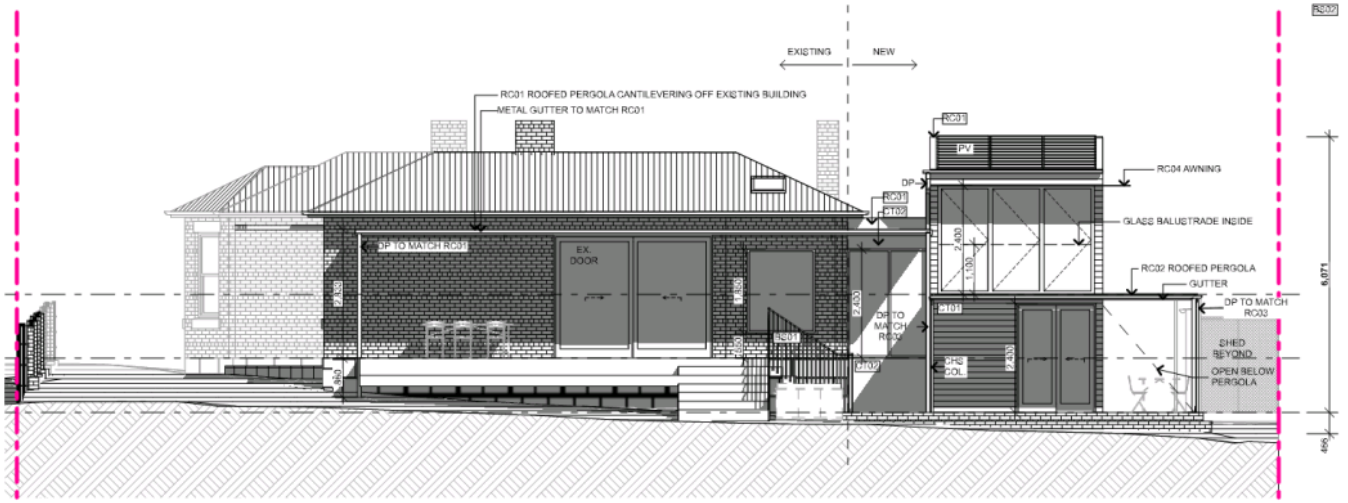

DATE	REVISION	NO.
5/12/2025	COUNCIL RFI	03

EXISTING/PROPOSED NORTH WEST ELEVATION
DRAWING TITLE

24-06 PROJECT NO.
Alterations and Addition PROJECT

Laura and Mike CLIENT
22 Anglesea St, South Hobart SITE ADDRESS

MAGUIRE + DEVINE ARCHITECTS
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ABN 13 606 222 089

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5/12/2025 DATE
Erin Jenkins DRAWN | Hugh Maguire CHECKED | CC 5941 D ACCREDITATION NO.

Tasmanian Government

PlanBuild TASMANIA

PLANNING APPLICATION

Status:

Reference
PLN-HOB-2025-0483

Address
136 WENTWORTH ST SOUTH HOBART TAS 7004

Titles
66346/1, 201675/1, 198497/1, 94118/1, 82059/3, 131798/1

Before you start

Before you start your application, you will need to know if you require planning approval or not.

If you are unsure if you require a permit, use the PlanBuild Tasmania Enquiry Service to lodge a request for advice from the relevant Council.

Once your application has been submitted the Council will review your application. If payment has not been made, you will be sent a request for the payment of application fees via PlanBuild Tasmania.

Once the fees have been paid and the Council is satisfied with the information provided, the application will be assessed and you will be notified of the outcome.

If further action is required to assess your application you will receive an email notification containing a task to complete.

Pre-Application Advice

Have you spoken with anyone at Council about this application?

- [x] Yes - enter details below
- [ ] No - continue to the next section

If yes, provide the name of the person you contacted
Shannon Avery

Applicant

Name	Email	Phone	Address	Involvement
Personal Information Removed				

Owners

Name	Email Address	Address
Personal Information Removed		

Certificate(s) of Title

Selected Titles Total Area: 0m^2

66346/1	201675/1	198497/1	94118/1	82059/3	131798/1

Owner Notification

Are you the sole owner of the land?

- [ ] Yes - continue to the next section
- [x] No - answer question below

If no, have you notified all owners, joint or part owners of your intention to submit this application?

- [x] Yes - enter owner details below
- [ ] No - you must notify all owners before proceeding with this application

List all owners, joint or part owners as recorded on the Title documents notified:

Enter the date that the last owner, joint or part owner was notified

Declaration

- [x] I declare that all land owners, joint or part owners have been notified of this planning application.

Crown Land Consent

Is Crown Land involved in the proposed use or development?

- [ ] Yes - complete question below
- [x] No - continue to the next section - see further information below
- [ ] Unsure

If yes, has written Crown Land consent been obtained?

- [ ] Yes - upload written consent
- [ ] No - application will not be progressed until consent has been provided

General Manager Consent

Is Council-owned or administered land involved in the proposed use or development?

- [x] Yes - complete question below
- [ ] No - continue to the next section
- [ ] Unsure

If yes, has written consent been obtained from the Council General Manager?

- [x] Yes - upload written consent
- [ ] No - application will not be progressed until consent has been provided

Proposed Use or Development

What is the reason for your planning application?

- [ ] I want to change how the property is used
- [ ] I want to use the property for visitor accommodation
- [ ] I want to subdivide
- [x] I want to undertake a new development or alteration
- [ ] I want to do a minor boundary adjustment
- [ ] I want to put up a sign(s)
- [ ] I want to demolish
- [ ] I want to do works only
- [ ] Other

If your application is to subdivide, please enter the number of proposed lots.

0

If your application is for signage, please enter the number of signs.

Is the property a Tasmanian Heritage Listed Property?

- [ ] Yes
- [x] No

Is the application for an EPA Activity under the Environmental Management and Pollution Control Act 1994?

- [ ] Yes
- [x] No
- [ ] Unsure

Is the proposed use or development permitted or discretionary?

- [x] Permitted
- [ ] Discretionary
- [ ] Unsure if permitted or discretionary

Provide a full description of the proposed use or development

Upgrade sports field lighting to 245lux (ave), including replacing fittings on 4 x existing 20m Light Poles and install 2 x new 20m Light

Poles with new LED fittings.

Will the proposed use or development involve a road reserve?

- [ ] Yes - complete the section below
- [x] No - continue to the next section
- [ ] Unsure

If yes, enter the address(es) or locations below:

If yes, how will the road reserve be affected?

Value of Works

What is the estimated value of the works?
257950

Supporting Documents

Version	Document Date	Document Type	Description	Prepared By
1	18 Sept 2025	Geotechnical Report	GEOTECH Memo	Mr Murray Roberts
1	31 July 2025	Lighting Plan	Decrolux Lighting Design	Mr Murray Roberts
1	1 Sept 2025	Details	Lighting Proposal	Mr Murray Roberts

Next steps

When you have completed all the necessary fields and attached all required documents to support your application, click on the green 'Save & Submit' button at the top right of this form.

Once submitted, the Council will review your application. A request for the payment of application fees will be sent to you via PlanBuild Tasmania.

Once the fees have been paid and the Council is satisfied with the information provided, the application will be assessed and you will be notified of the outcome.

If further action is required to assess your application you will receive an email notification from PlanBuild which will tell you what you need to provide to continue the application.

Form published: 14/05/2025 15:58

City of HOBART

REQUEST FOR INFORMATION

Reference
PLANNA-HOB-2025-4029

Application Reference
PLN-HOB-2025-0483

Address
136 WENTWORTH ST SOUTH HOBART TAS 7004

Titles
66346/1, 201675/1, 198497/1, 94118/1, 82059/3, 131798/1

Information Requested

#	Reason	Origin
1	(sent 16 October 2025) **Flood lighting** Please advise the hours that for the proposed flood lights will be illuminated. If it is proposed to operate the lights between the hours of 11pm and 7am, please demonstrate compliance with clause 28.3.1 P2.	
2	**PCL 1 - Potentially Contaminated Land Excavation** Confirmation that no more than 1m2 of land (to any depth) is being disturbed. If more than 1m2 of land is being disturbed, please provide the previously submitted *ENVIRONMENTAL SITE ASSESSMENT Wellesley Park, 136 Wentworth Street, South Hobart, Tasmania, dated February 2025 For South Hobart Soccer Club*, submitted by G.E.S Geo-Environmental Solutions. *Advice:* *The information is being requested because 136 Wentworth Street, South Hobart (PID: 5598152) is listed as being potentially contaminated. If you have any questions, please contact Environmental Health Officer David Bradford on 6238 2115.*	LUPAA 1993

Response comments

Response to Request for Further Information
There is no planned change to the current use.
These are Ground Lights for nighttime use which are an upgrade to existing lighting.
Upon consultation with Shannon Avery, Program Leader Sport and Recreation regarding current hours of use, he advises that "the planning permit doesn't specify a definite time for lights out but does note they will not be used during curfew hours which are 11:00pm - 6:00am.
The club is happy to continue to abide by this.

Documents

Version	Document Date	Document Type	Description	Prepared By
1	1 Feb 2025	Geotechnical Report	Environmental report	Mr Murray Roberts

Submitted on **22/10/2025**

Form published: 28/11/2024 08:21

City of HOBART

REQUEST FOR INFORMATION

Reference
PLANNA-HOB-2025-4131

Application Reference
PLN-HOB-2025-0483

Address
136 WENTWORTH ST SOUTH HOBART TAS 7004

Titles
66346/1, 201675/1, 198497/1, 94118/1, 82059/3, 131798/1

Information Requested

#	Reason	Origin
1	(sent 22 October 2025) **Flood lighting** Please advise the hours that for the proposed flood lights will be illuminated. If it is proposed to operate the lights between the hours of 11pm and 7am, please demonstrate compliance with clause 28.3.1 P2. *Advice from information submitted on 17 October 2025: - it is not clear if the lights are intended to be used between 6am and 7am. If they are it invokes a discretion assessment under clause 28.3.1 P2.*	

Response comments

Response to Request for Further Information
The lights will not be operated between 11:00pm and 7:00am

Documents

No Documents.

Submitted on **27/10/2025**

Form published: 28/11/2024 08:21

Luminaire Schedule			
Symbol	Qty	Label	LLF
	16	Invictus II 1500 O1	0.890

Calculation Summary							
Project: Calculations							
Label	Units	Avg	Max	Min	Min/Avg	Min/Max	UG
CalcPts_Football	Lux	245.37	386	153	0.62	0.40	1.25
CalcPts_Training	Lux	182.46	255	113	0.62	0.44	1.38

Calculation Summary		
Project: Glare		
Label	CalcType	Max
GR_1	Glare Rating	36
GR_1	Glare Rating	25
GR_1	Glare Rating	38
GR_1	Glare Rating	42
GR_1	Glare Rating	49
GR_1	Glare Rating	45
GR_1	Glare Rating	36
GR_1	Glare Rating	23
GR_1	Glare Rating	37
GR_1	Glare Rating	41
GR_1	Glare Rating	49
GR_1	Glare Rating	48
GR_1	Glare Rating	46
GR_1	Glare Rating	42
GR_1	Glare Rating	47
GR_1	Glare Rating	46
GR_1	Glare Rating	44
GR_1	Glare Rating	42
GR_1	Glare Rating	44

Luminaire Location Summary		
LumNo	Label	Tilt
1	Invictus II 1500 O1	40
2	Invictus II 1500 O1	40
3	Invictus II 1500 O1	41
4	Invictus II 1500 O1	41
7	Invictus II 1500 O1	46
8	Invictus II 1500 O1	44
9	Invictus II 1500 O1	47
10	Invictus II 1500 O1	47
17	Invictus II 1500 O1	48
18	Invictus II 1500 O1	48
19	Invictus II 1500 O1	48
20	Invictus II 1500 O1	48
21	Invictus II 1500 O1	47
22	Invictus II 1500 O1	46
23	Invictus II 1500 O1	46
24	Invictus II 1500 O1	46

Obtrusive Light - Compliance Report
AS/NZS 4282:2023, A3 - Medium District Brightness, Non-Curfew L1
Filename: Wellesley Park V6
31-07-2025 11:59:47

Illuminance
Maximum Allowable Value: 10 Lux

Calculations Tested (20):

Calculation Label	Test Results	Max. Illum.
ObtrusiveLight_2_Ill_Seg1		PASS 2
ObtrusiveLight_2_Ill_Seg2		PASS 2
ObtrusiveLight_2_Ill_Seg3		PASS 1
ObtrusiveLight_3_Ill_Seg1		PASS 4
ObtrusiveLight_3_Ill_Seg10	PASS	0
ObtrusiveLight_3_Ill_Seg2		PASS 3
ObtrusiveLight_3_Ill_Seg3		PASS 3
ObtrusiveLight_3_Ill_Seg4		PASS 2
ObtrusiveLight_3_Ill_Seg5		PASS 2
ObtrusiveLight_3_Ill_Seg6		PASS 1
ObtrusiveLight_3_Ill_Seg7		PASS 2
ObtrusiveLight_3_Ill_Seg8		PASS 1
ObtrusiveLight_3_Ill_Seg9		PASS 1
ObtrusiveLight_4_Ill_Seg1		PASS 0
ObtrusiveLight_4_Ill_Seg2		PASS 1
ObtrusiveLight_4_Ill_Seg3		PASS 0
ObtrusiveLight_4_Ill_Seg4		PASS 1
ObtrusiveLight_4_Ill_Seg5		PASS 1
ObtrusiveLight_4_Ill_Seg6		PASS 3
ObtrusiveLight_4_Ill_Seg7		PASS 2

Luminous Intensity (Cd) At Vertical Planes
Maximum Allowable Value: 12500 Cd

Calculations Tested (20):

Calculation Label	Test Results
ObtrusiveLight_2_Cd_Seg1	PASS
ObtrusiveLight_2_Cd_Seg2	PASS
ObtrusiveLight_2_Cd_Seg3	PASS
ObtrusiveLight_3_Cd_Seg1	PASS
ObtrusiveLight_3_Cd_Seg10	PASS
ObtrusiveLight_3_Cd_Seg2	PASS
ObtrusiveLight_3_Cd_Seg3	PASS
ObtrusiveLight_3_Cd_Seg4	PASS
ObtrusiveLight_3_Cd_Seg5	PASS
ObtrusiveLight_3_Cd_Seg6	PASS
ObtrusiveLight_3_Cd_Seg7	PASS
ObtrusiveLight_3_Cd_Seg8	PASS
ObtrusiveLight_3_Cd_Seg9	PASS
ObtrusiveLight_4_Cd_Seg1	PASS
ObtrusiveLight_4_Cd_Seg2	PASS
ObtrusiveLight_4_Cd_Seg3	PASS
ObtrusiveLight_4_Cd_Seg4	PASS
ObtrusiveLight_4_Cd_Seg5	PASS
ObtrusiveLight_4_Cd_Seg6	PASS
ObtrusiveLight_4_Cd_Seg7	PASS

Upward Waste Light Ratio (UWLR)
Maximum Allowable Value: 2.0 %

Calculated UWLR: 1.4 %
Test Results: PASS

REVISION	REV
V6	S.B.
Poles are 20MH	

Disclaimer: If no CAD drawings or site measurements are included with the design brief, all calculations are based on a scaled aerial image. Whilst we try ensure accuracy of scales, using a scaled aerial image inevitably leads to some inaccuracies. The presented calculations are a close estimate of anticipated lighting levels. Before installation, all calculations should be verified with precise site measurements, ideally using a surveyed CAD drawing that includes relevant field markings and surrounding residential boundaries.

PROJECT NAME
Wellesley Park V6.AGI

Lighting system performance meets the minimum lighting criteria of AS 2560.2 2021 Sports Lighting - Football 200 Lux

Design is compliant with AS 4282:2023 Obtrusive Light. A3 L1. Obtrusive Lighting is calculated at 1.0MF

decrolux
illuminating spaces. inspiring growth.

Date:31-07-2025 | Page 1 of 4

Decrolux
11a East Goderich St
Deloraine TAS 7304
ABN 74 642 067 221

REVISION	REV
V6	S.B.
Poles are 20MH	

Disclaimer: If no CAD drawings or site measurements are included with the design brief, all calculations are based on a scaled aerial image. Whilst we try ensure accuracy of scales, using a scaled aerial image inevitably leads to some inaccuracies. The presented calculations are a close estimate of anticipated lighting levels. Before installation, all calculations should be verified with precise site measurements, ideally using a surveyed CAD drawing that includes relevant field markings and surrounding residential boundaries.

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decrolux
illuminating spaces. inspiring growth.

Date:31-07-2025 | Page 2 of 4

Decrolux
11a East Goderich St
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REVISION	REV
V6	S.B.
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Disclaimer: If no CAD drawings or site measurements are included with the design brief, all calculations are based on a scaled aerial image. Whilst we try ensure accuracy of scales, using a scaled aerial image inevitably leads to some inaccuracies. The presented calculations are a close estimate of anticipated lighting levels. Before installation, all calculations should be verified with precise site measurements, ideally using a surveyed CAD drawing that includes relevant field markings and surrounding residential boundaries.

PROJECT NAME

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decrolux
illuminating spaces. inspiring growth.

Date:31-07-2025 | Page 3 of 4

Decrolux
11a East Goderich St
Deloraine TAS 7304
ABN 74 642 067 221

Calculation Summary

Label	CalcType	Units	Max
CalcPts_Football	Illuminance	Lux	386
CalcPts_OB	Illuminance	Lux	387
CalcPts_Training	Illuminance	Lux	255
GR_1	Glare Rating	N.A.	36
GR_1	Glare Rating	N.A.	25
GR_1	Glare Rating	N.A.	38
GR_1	Glare Rating	N.A.	42
GR_1	Glare Rating	N.A.	49
GR_1	Glare Rating	N.A.	45
GR_1	Glare Rating	N.A.	36
GR_1	Glare Rating	N.A.	23
GR_1	Glare Rating	N.A.	37
GR_1	Glare Rating	N.A.	41
GR_1	Glare Rating	N.A.	49
GR_1	Glare Rating	N.A.	48
GR_1	Glare Rating	N.A.	46
GR_1	Glare Rating	N.A.	42
GR_1	Glare Rating	N.A.	47
GR_1	Glare Rating	N.A.	46
GR_1	Glare Rating	N.A.	44
GR_1	Glare Rating	N.A.	42
GR_1	Glare Rating	N.A.	44
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ObtrusiveLight_2_Cd_Seg2	Obtrusive - Cd	N.A.	9206
ObtrusiveLight_2_Cd_Seg3	Obtrusive - Cd	N.A.	6828
ObtrusiveLight_2_Ill_Seg1	Obtrusive - Ill	Lux	2
ObtrusiveLight_2_Ill_Seg2	Obtrusive - Ill	Lux	1
ObtrusiveLight_2_Ill_Seg3	Obtrusive - Ill	Lux	1
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ObtrusiveLight_3_Cd_Seg10	Obtrusive - Cd	N.A.	5972
ObtrusiveLight_3_Cd_Seg2	Obtrusive - Cd	N.A.	8322
ObtrusiveLight_3_Cd_Seg3	Obtrusive - Cd	N.A.	7634
ObtrusiveLight_3_Cd_Seg4	Obtrusive - Cd	N.A.	7690
ObtrusiveLight_3_Cd_Seg5	Obtrusive - Cd	N.A.	8160
ObtrusiveLight_3_Cd_Seg6	Obtrusive - Cd	N.A.	7731
ObtrusiveLight_3_Cd_Seg7	Obtrusive - Cd	N.A.	6597
ObtrusiveLight_3_Cd_Seg8	Obtrusive - Cd	N.A.	6519
ObtrusiveLight_3_Cd_Seg9	Obtrusive - Cd	N.A.	6639
ObtrusiveLight_3_Ill_Seg1	Obtrusive - Ill	Lux	4
ObtrusiveLight_3_Ill_Seg10	Obtrusive - Ill	Lux	0
ObtrusiveLight_3_Ill_Seg2	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg3	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg4	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg5	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg6	Obtrusive - Ill	Lux	1
ObtrusiveLight_3_Ill_Seg7	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg8	Obtrusive - Ill	Lux	1
ObtrusiveLight_3_Ill_Seg9	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Cd_Seg1	Obtrusive - Cd	N.A.	5143
ObtrusiveLight_4_Cd_Seg2	Obtrusive - Cd	N.A.	5916
ObtrusiveLight_4_Cd_Seg3	Obtrusive - Cd	N.A.	6066
ObtrusiveLight_4_Cd_Seg4	Obtrusive - Cd	N.A.	6738
ObtrusiveLight_4_Cd_Seg5	Obtrusive - Cd	N.A.	8748
ObtrusiveLight_4_Cd_Seg6	Obtrusive - Cd	N.A.	9168
ObtrusiveLight_4_Cd_Seg7	Obtrusive - Cd	N.A.	8381
ObtrusiveLight_4_Ill_Seg1	Obtrusive - Ill	Lux	0
ObtrusiveLight_4_Ill_Seg2	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Ill_Seg3	Obtrusive - Ill	Lux	0
ObtrusiveLight_4_Ill_Seg4	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Ill_Seg5	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Ill_Seg6	Obtrusive - Ill	Lux	3
ObtrusiveLight_4_Ill_Seg7	Obtrusive - Ill	Lux	2

UWLR Area Summary

Label	Total Watts	UWLR
UWLR	24316.8	0.014

Notes and Assumptions:

1) This Lighting Design is issued subject to the information / brief / drawings provided by the client and normal accuracies and tolerances of photometry and software as described within AS 3827.
2) Design complies with LTPs of:
   a. AS 2560.2 100 lux for Football / Rugby Amateur Level Club Competition
   b. AS 2560.2 100 lux for Football / Rugby Semi-professional Level Match Practice
   c. AS 2560.2 100 lux for Football / Rugby Professional Level Ball & Physical Training
   d. AS 4282 Zone A3 Non-Curfew L1 limits for obtrusive lighting
3) Refer luminaire location summary table on Page 1 for mounting height & tilt information
4) This Amended Design achieves same level of Compliance as Approved Design 07191-WPFC dated 31/07/2024 i.e. both designs are compliant to the maximim allowable LTPs of AS 4282 Zone A3 Non-Curfew L1 limits for Obtrusive Lighting

REVISION	REV
V6	S.B.
Poles are 20MH	

Disclaimer: If no CAD drawings or site measurements are included with the design brief, all calculations are based on a scaled aerial image. Whilst we try ensure accuracy of scales, using a scaled aerial image inevitably leads to some inaccuracies. The presented calculations are a close estimate of anticipated lighting levels. Before installation, all calculations should be verified with precise site measurements, ideally using a surveyed CAD drawing that includes relevant field markings and surrounding residential boundaries.

PROJECT NAME

Wellesley Park V6.AGI

Lighting system performance meets the minimum lighting criteria of AS 2560.2 2021 Sports Lighting - Football 200 Lux

Design is compliant with AS 4282:2023 Obtrusive Light. A3 L1. Obtrusive Lighting is calculated at 1.0MF

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Date:31-07-2025 | Page 4 of 4

Decrolux
11a East Goderich St
Deloraine TAS 7304
ABN 74 642 067 221

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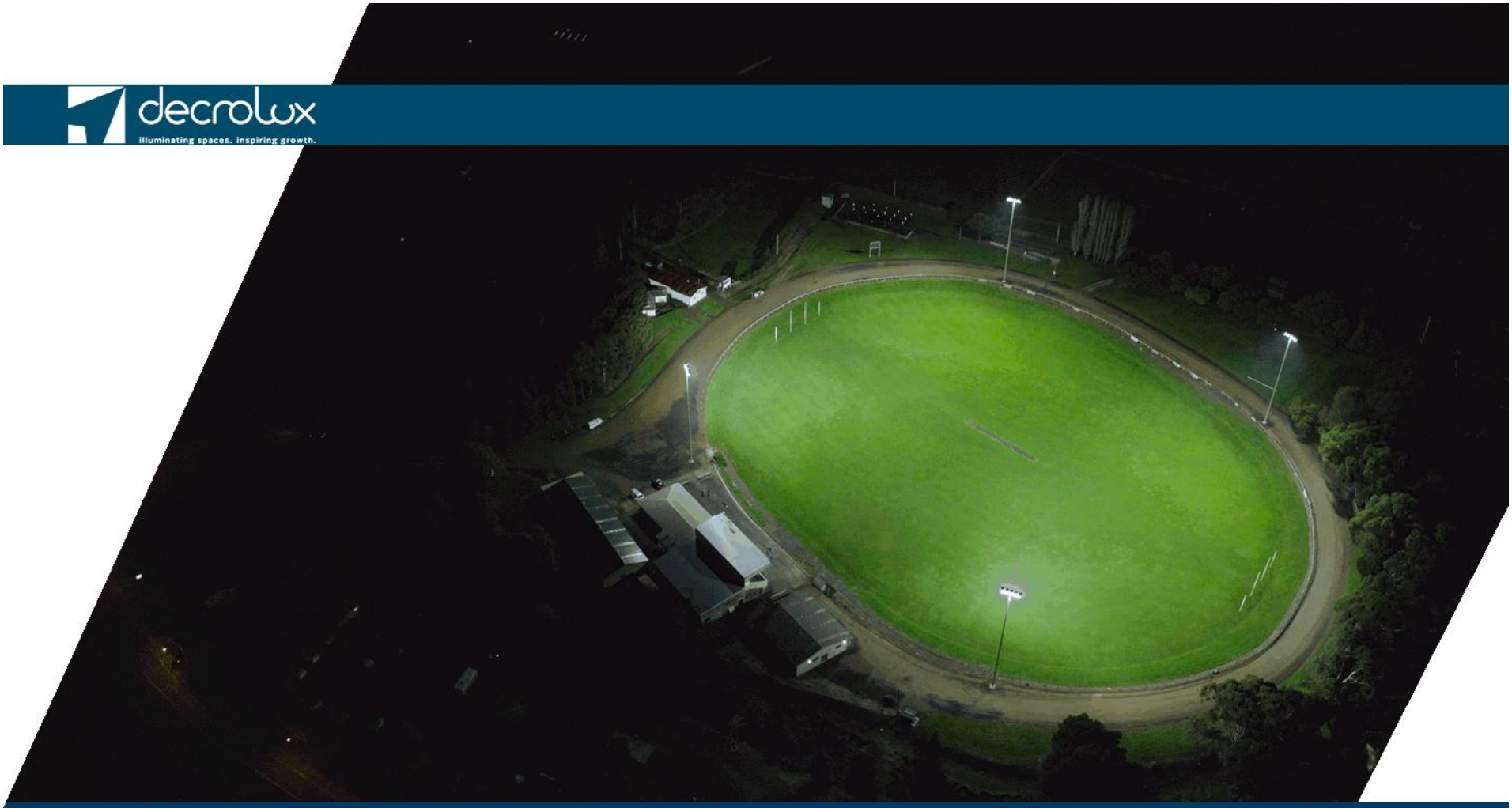


2213: Wellesley Park, South Hobart

Job Reference	DQ3016	**Prepared by**	Andrew Grace
Prepared for	Wellesley Park		
Address	Wellesley Park Oval, South Hobart TAS	**Submitted on**	1st Sept 2025

decrolux.com.au

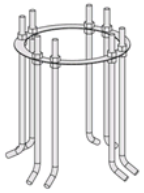
Our proposal

We are pleased to provide a Lighting Solution for the ***Wellesley Park, South Hobart Football Club***, located in Tasmania.

All the best,

Andrew Grace

Type	Code/Description	Product	Qty
	[LC7690] INVICTUS 1500W Floodlight, Black, External Driver, 5000K, Medium Flood Asymmetric **Colour Temperature** 5000K **Ingress Protection** IP66 **Dimming** DALI **Warranty** 10 Year Replacement* **Lumen Output** 210,000lm **Finish** Black **Operating Temperature (Ta)** -40°C - +50°C **Dimensions** 1175mm (L) x 396mm (W) x 95mm (D) **Impact Rating** IK09		16
	The Installation for the 1500W Invictus HV fittings requires 4 core + earth, 1.5mm2. Supplied by contractor, in this case Lifestyle Electrical. Drivers remote mounted. Current lead time is 4-5 weeks from order confirmation for INVICTUS.		
	[CAS1200HD-101] Straight Cross Arm 1200mm, Heavy Duty, 101mm Spigot to suit 89mm OD **Finish** Hot Dip Galvanised **Spigot Size** 60mm/ 76mm/ 89mm/ 101mm Suits 2 floodlights, overslung. Existing Poles. Spigot Mount TBC.		4
	[CAS2500HD-101] Straight Cross Arm 2500mm, Heavy Duty, 101mm Spigot to suit 89mm OD **Finish** Hot Dip Galvanised Suits 4 floodlights, overslung		2
	[HMC200-89] Horizon High Mast Column 20m, 89mm Spigot, Heavy Duty, Hot Dip Galv **Finish** Galv. **Spigot Size** 88.9mm (Dia) x 200mm (L) **Dimensions** 110-500mm (Dia) x 20,000mm (H) **Pole Weight** 838kg **Door Opening** 610 x 190 Access Door **Base Plate Dimensions** 450mm (Outside Dia)		2

Type	Code/Description	Product	Qty
	[M33X620X8] M33 Bolts x 8, and Hold-down Template (620mm Dia) **Dimensions** 640mm Pitch Circle Diameter		2
	[8M20-720-3200] Reo Cage 20mm 8-Bar 720mm(Dia) x 3200mm(D) **Hole Diameter (mm)** 900mm **Cage Bars** 8-N24 **PCD (mm)** 720 PCD Cage subject to Soil Test & Engineering. To be manufactured locally.		2
	[EGF] Engineering Fee Allowing for 2 locations.		2
	[CBF] Cage/Ragbolt Freight - Early/ Separate Delivery, One Drop		1
	[PLF] Pole Freight - One Drop, offloading by others - Standard Tray Truck		1

Type	Code/Description	Product	Qty
	Sales Proposal based off Design V6, and new Product Drawings.		
	Lead-time for Poles/Cages/Crossarms, allow approx. 12 weeks from date of order.		

INVICTUS 1500W
Sports Floodlight

Project: **2213: Wellesley Park, South Hobart**
Type:

The INVICTUS 1500W Floodlight is a striking, low-profile design and advanced in-built thermal management. Made in Australia. The latest generation floodlight is a highly reliable fitting that requires very low maintenance. Producing a vivid white light that renders colours as they are meant to be seen, this revolutionary fitting has helped redefine high-output illumination as we know it.

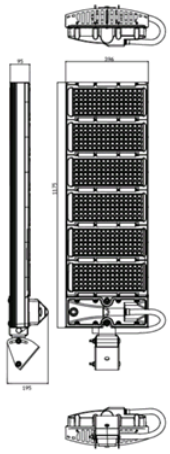
Using a versatile 240V-415V remote driver, it has an inbuilt thermostat, which will dim the light to 25% if the lights are overheating. *When installed correctly, these lights are guaranteed with a 10-year warranty.

Sail Area @ 40 degrees = 0.320.

IP66

VARIATION

LC7690	INVICTUS 1500W Floodlight , Black , Medium Flood Asymmetric , DALI , 5000K , 210,000lm



SPECIFICATIONS

Material Specifications

Material	Aluminium Body
Dimensions	1175mm (L) x 396mm (W) x 95mm (D)
Windage	Sail Area @ 40° = 0.320
Ingress Protection	IP66
Impact Rating	IK09
Weight	26kg exc. drivers (remote mounted)
Warranty	10 Year Replacement*

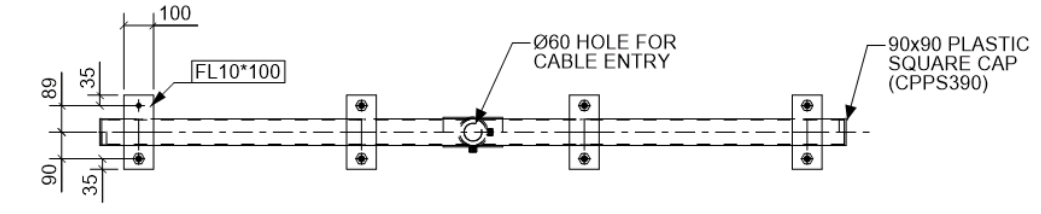
Electrical Specifications

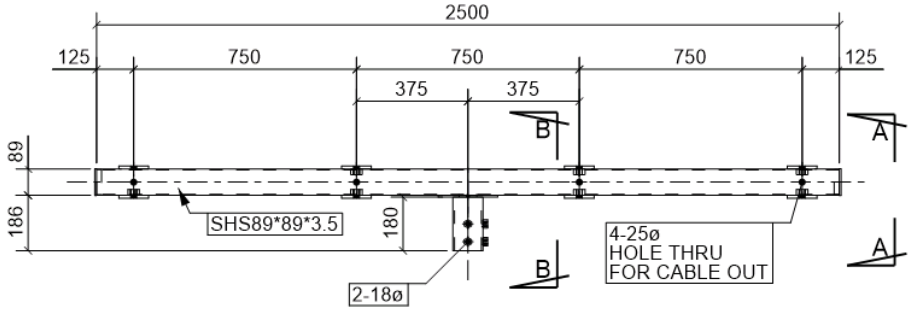
Input Voltage	200 - 415VAC, 50/60 Hz
Operating Temperature (Ta)	-40°C - +50°C

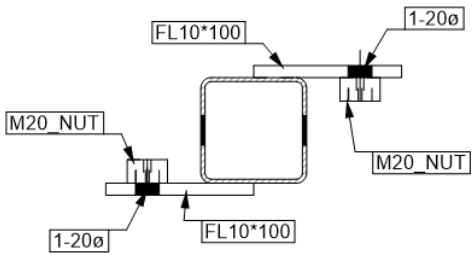
Optic Specifications

Light Source	Osram 3030 LED
Optics	Medium Flood Asymmetric/ 120° Symmetrical
Efficacy	150lm/W
CRI	>70Ra
Calculated L70 (Hours)	>100,000 Hrs

WEIGHT : 36.1 kg
FINISH : Hot-Dipped Galvanized







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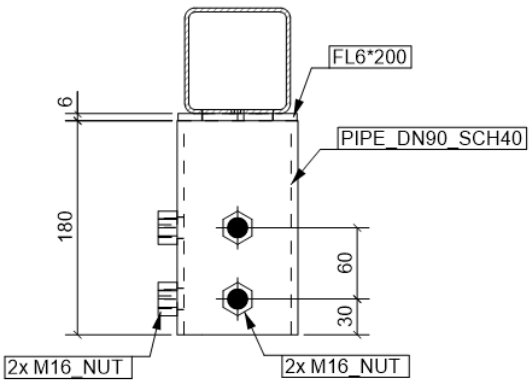
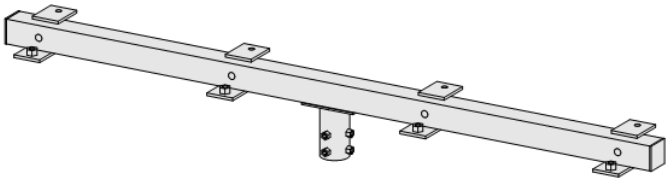


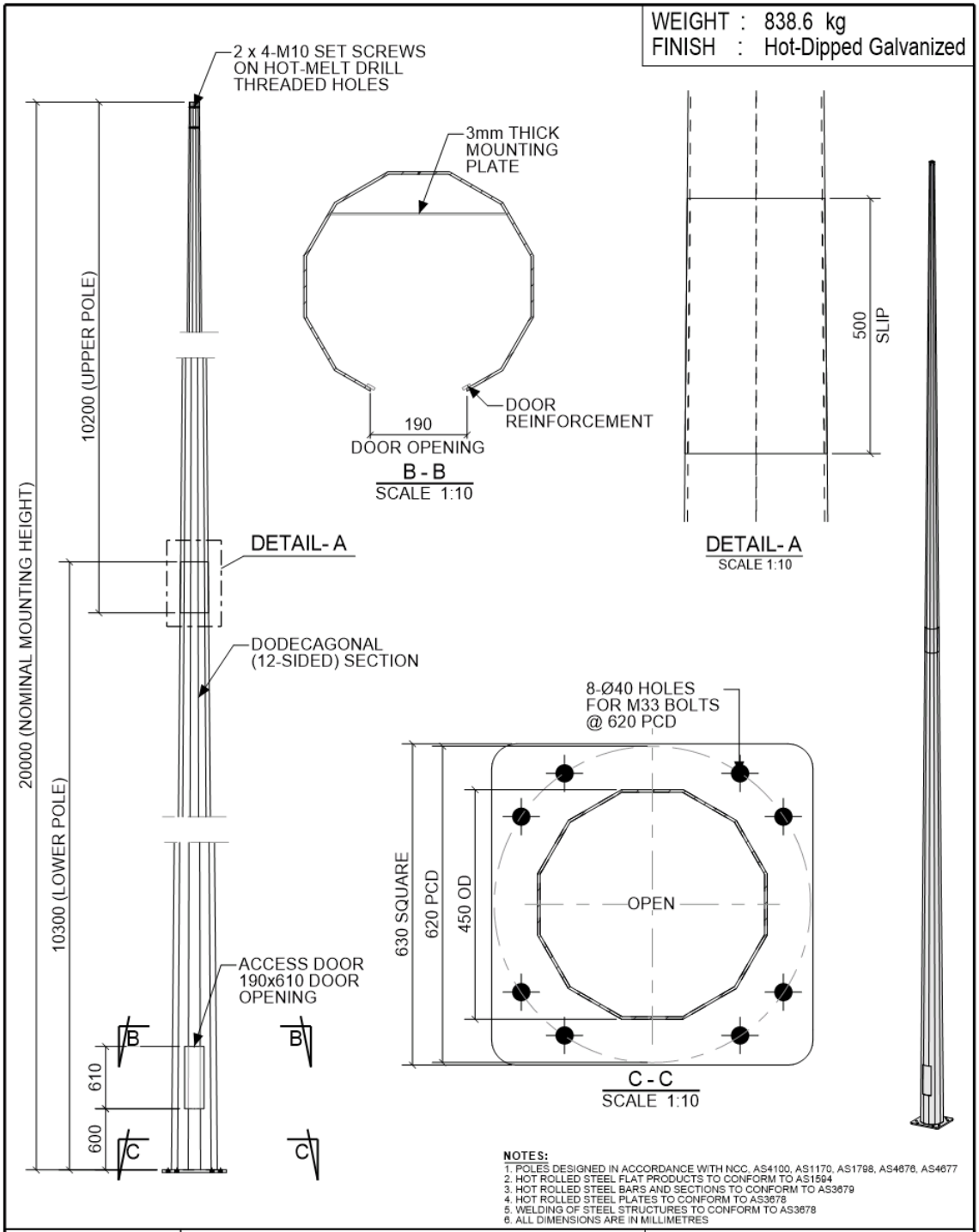
B - B
SCALE 1:5



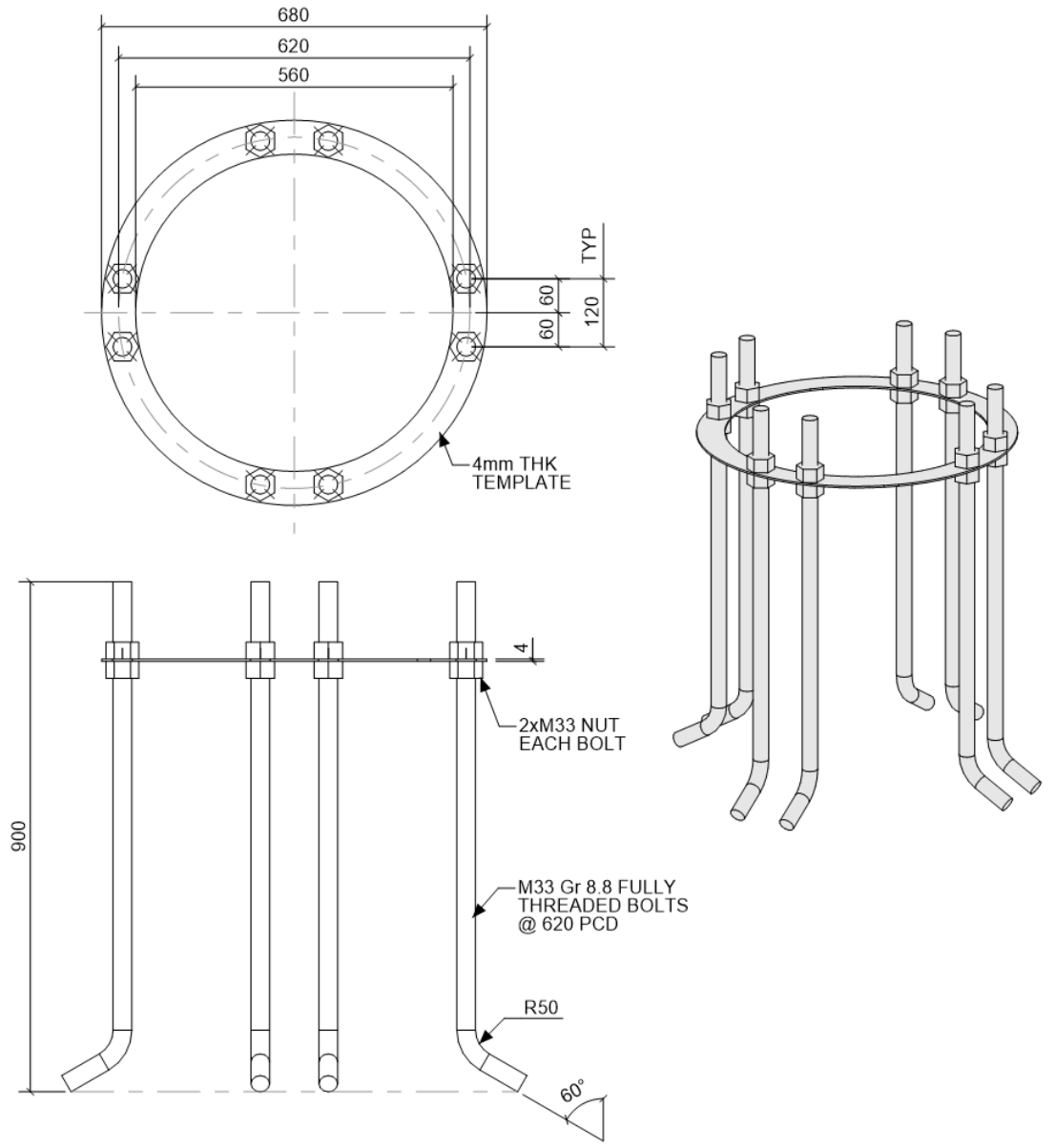
NOTES:
1. POLES DESIGNED IN ACCORDANCE WITH NCC, AS4100, AS1170, AS1798, AS4678, AS4677
2. HOT ROLLED STEEL FLAT PRODUCTS TO CONFORM TO AS1594
3. HOT ROLLED STEEL BARS AND SECTIONS TO CONFORM TO AS3679
4. HOT ROLLED STEEL PLATES TO CONFORM TO AS3678
5. WELDING OF STEEL STRUCTURES TO CONFORM TO AS3678
6. ALL STEEL ITEMS TO BE FULLY HOT DIP GALVANISED AFTER FABRICATION TO SD4680
7. ALL DIMENSIONS ARE IN MILLIMETRES

PROJECT REF	DESCRIPTION	HORIZON POLES
LAST UPDATED: 12-06-2024	Straight Cross Arm 2500mm, Heavy Duty, 101mm Spigot to suit 89mm OD	
DRAWN BY / CHECKED BY: AC / JG		HORIZON POLES DETAILS: *DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE*

PAGE	PRODUCT CODE	DWG NO.	SCALE
1	CAS2500HD-101		1:20

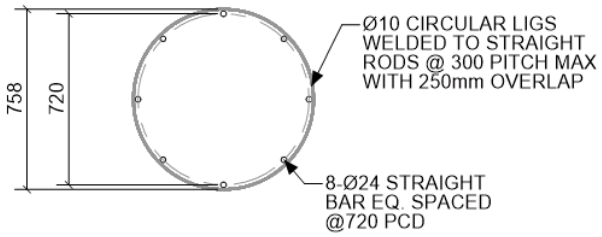

WEIGHT : 838.6 kg
FINISH : Hot-Dipped Galvanized
2 x 4-M10 SET SCREWS ON HOT-MELT DRILL THREADED HOLES
3mm THICK MOUNTING PLATE
DOOR REINFORCEMENT
190
DOOR OPENING
B - B
SCALE 1:10
500 SLIP
DETAIL- A
SCALE 1:10
20000 (NOMINAL MOUNTING HEIGHT)
10200 (UPPER POLE)
10300 (LOWER POLE)
DETAIL- A
DODECAGONAL (12-SIDED) SECTION
8-Ø40 HOLES FOR M33 BOLTS @ 620 PCD
630 SQUARE
620 PCD
450 OD
OPEN
C - C
SCALE 1:10
ACCESS DOOR 190x610 DOOR OPENING
610
600
B
C
NOTES:
1. POLES DESIGNED IN ACCORDANCE WITH NCC, AS4100, AS1170, AS1798, AS4676, AS4677
2. HOT ROLLED STEEL FLAT PRODUCTS TO CONFORM TO AS1594
3. HOT ROLLED STEEL BARS AND SECTIONS TO CONFORM TO AS3679
4. HOT ROLLED STEEL PLATES TO CONFORM TO AS3678
5. WELDING OF STEEL STRUCTURES TO CONFORM TO AS3678
6. ALL DIMENSIONS ARE IN MILLIMETRES
PROJECT REF
DESCRIPTION
Horizon High Mast Column 20m,
89mm Spigot, Heavy Duty, Hot Dip Galv
LAST UPDATED
21-08-2025
HORIZON POLES
DRAWN BY / CHECKED BY
AC / JG
APPROVED BY CLIENT:
SIGNED:
DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE
PAGE
1
PRODUCT CODE
HMC200-89
DWG NO.
SCALE
1:10
REVISION

BILL OF MATERIALS		
ITEM	DESCRIPTION	QTY
M33X620X8	M33 Grade 8.8 Threaded Bolts 900mm(L)	8
BTM3308620	4mm Thick Bolt Template @ 680mm Dia	1

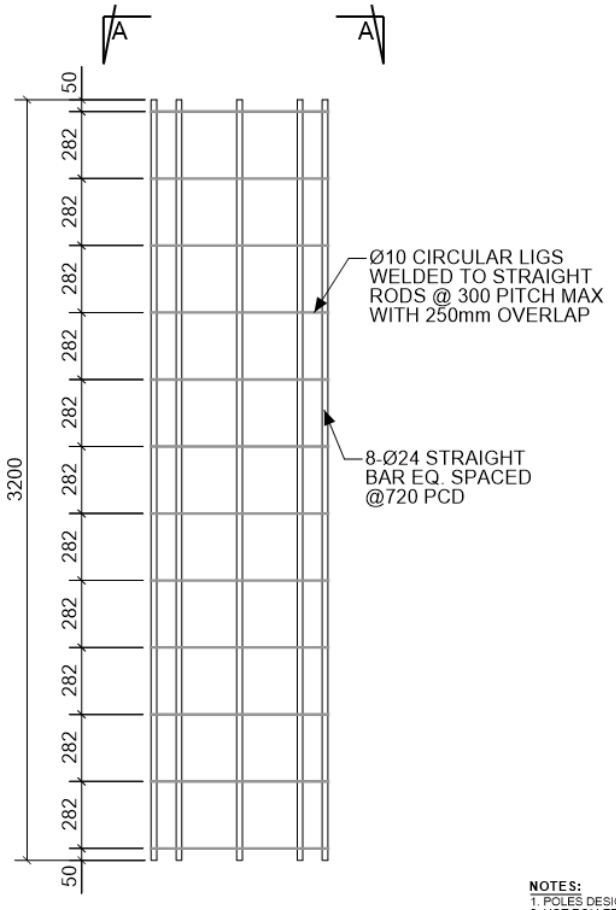


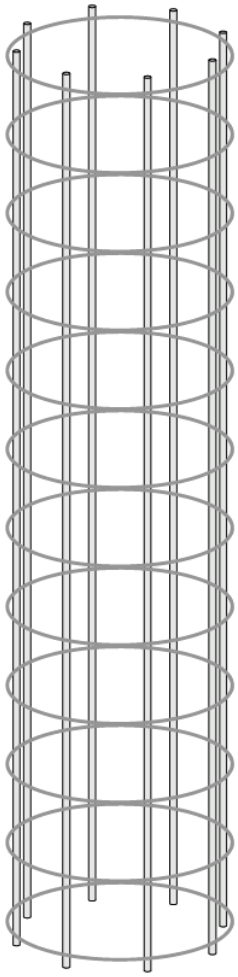
NOTES:
1. POLES DESIGNED IN ACCORDANCE WITH NCC, AS4100, AS1170, AS1798, AS4676, AS4677
2. HOT ROLLED STEEL FLAT PRODUCTS TO CONFORM TO AS1594
3. HOT ROLLED STEEL BARS AND SECTIONS TO CONFORM TO AS3679
4. HOT ROLLED STEEL PLATES TO CONFORM TO AS3678
5. WELDING OF STEEL STRUCTURES TO CONFORM TO AS3678
6. ALL DIMENSIONS ARE IN MILLIMETRES

PROJECT REF	DESCRIPTION		
	M33 Bolts x 8 (900mm L), and Hold-down Template (680mm Dia)		HORIZON POLES
LAST UPDATED: 21-08-2025			
DRAWN BY / CHECKED BY: AC / JG	APPROVED BY CLIENT:	SIGNED:	DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE
PAGE: 1	PRODUCT CODE: M33X620X8	DWG NO.	SCALE: 1:1 / REVISION



A - A
SCALE 1:25





NOTES:
1. POLES DESIGNED IN ACCORDANCE WITH NCC, AS4100, AS1170, AS1798, AS4676, AS4677
2. HOT ROLLED STEEL FLAT PRODUCTS TO CONFORM TO AS1594
3. HOT ROLLED STEEL BARS AND SECTIONS TO CONFORM TO AS3679
4. HOT ROLLED STEEL PLATES TO CONFORM TO AS3678
5. WELDING OF STEEL STRUCTURES TO CONFORM TO AS3678
6. ALL DIMENSIONS ARE IN MILLIMETRES

PROJECT REF	DESCRIPTION				HORIZON POLES
	Reo Cage 24mm 8-Bar 720mm(Dia) x 3200mm(D)				
LAST UPDATED 21-08-2025					
DRAWN BY / CHECKED BY AC / JG	APPROVED BY CLIENT:		SIGNED:		DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE
PAGE 1	PRODUCT CODE 8M20-720-3200	DWG NO.	SCALE 1:20	REVISION	

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AUSTRALIA

Contact

11a East Goderich St, Deloraine, TAS 7304

1300 827 284

sales@decrolux.com

www.decrolux.com.au

18/09/2025

Craig Cooper
c/o South Hobart Soccer Club
136 Wentworth Street
South Hobart, TAS 7004

GES geo-environmental solutions

136 WENTWORTH STREET, SOUTH HOBART, TAS 7004 – GEOTECH MEMO

Geo-Environmental Solutions Pty Ltd (GES) was contracted by Craig Cooper (on behalf of South Hobart Soccer Club) via email dated 19th of August to undertake further geotechnical investigations to inform design of proposed upgradation of light pole tower in the soccer ground.

Preliminary investigations via GeoProbe drilling were undertaken in January 2025 and July 2025 by GES for environmental site assessment (refer '20250214 ESA Wellesley Park.pdf' dated February 2025) and ground proving to confirm fill depths (refer email correspondence in Appendix A dated 11th of July 2025) wherein refusal was encountered within 4-5m below ground level in the soils and not considered adequate for 28.0m high light poles. The initial site for proposed tower locations (Pole 3 and Pole 4; refer Appendix B for Site Plan) consisted of large quantities of uncontrolled man-made deposits of building debris, woodchips, tree roots, etc which is not considered a suitable founding material for the proposed new light poles. The proposed locations for light poles have since been updated and moved to the eastern and western portions of the oval (refer Appendix C for V6 site plans).

GES has undertaken further geotechnical investigations which involved drilling two boreholes (hollow auger through soils with Standard Penetrometer Tests (SPTs) every 1.5m in natural material and HQ coring through rock) to minimum depth of 3.0m into bedrock via a Geotechnical Drill rig (refer Appendix C for BH location plan). Borehole logs (refer Appendix D) have been prepared in accordance with AS1726:2017 along with Point Load Strength Index (PLSI) testing to assess rock strength and provide geotechnical parameters to inform light pole design based on a generalised subsurface profile and geological cross-section (refer Appendix E).

I trust this memo meets your current requirements. Please do not hesitate to contact undersigned for any further queries.

Regards,

Vinamra Gupta
Senior Geotechnical Engineer
MEng (Civil), BEng (Civil), CPEng, NER, MIEAust

Geo-Environmental Solutions Pty Ltd
ABN 24 115 004 834
29 Kirksway Place
Battery Point
TAS, 7004

P: +61 3 6223 1839
E: office@geosolutions.net.au
W: geosolutions.net.au

APPENDIX A – EMAIL CORRESPONDENCE FOR PREVIOUS INVESTIGATION

Vinamra Gupta

From: Aaron Plummer
Sent: Wednesday, 6 August 2025 11:23 AM
To: Vinamra Gupta
Subject: FW: Wellesley V4 lighting proposal

More works required for new pole locations etc, I have requested plans etc

Cheers,

Aaron Plummer
GES geo-environmental solutions
E: aplummer@geosolutions.net.au
P: 03 6223 1839
M: 0400 821 977
A: 29 Kirksway Place, Battery Point, TAS 7004
W: https://www.geosolutions.net.au/

From: Craig Cooper <craigcooper@internode.on.net>
Sent: Wednesday, 6 August 2025 10:04 AM
To: Aaron Plummer <aplummer@geosolutions.net.au>
Cc: 'Murray Roberts' <murray@leservices.com.au>; GES Office <office@geosolutions.net.au>
Subject: RE: Wellesley V4 lighting proposal

Thanks Aaron,

The lighting diagram has come back with poles in these positions and its shows good numbers.

Can you please proceed and book in the drillers for these 2 locations and provide a guide to the cost?

Can you also provide an invoice for outstanding costs from the previous work done to date?

Thanks,

Craig

From: Aaron Plummer <aplummer@geosolutions.net.au>
Sent: Wednesday, 6 August 2025 9:06 AM
To: Craig Cooper <craigcooper@internode.on.net>
Cc: 'Murray Roberts' <murray@leservices.com.au>; GES Office <office@geosolutions.net.au>
Subject: RE: Wellesley V4 lighting proposal

Hi Craig,

It was not abundantly clear if 'rubbish' was encountered as we obtained refusal on unknown material and then we went deeper with the 'blind' tip which is only a pointed tip that can punch through material until it is unable to penetrate or refuses.

The drillers should be ok within the next couple weeks.

Let me know what you want to do.

Cheers,

Aaron Plummer

GES geo-environmental solutions

E: aplummer@geosolutions.net.au
P: 03 6223 1839
M: 0400 821 977
A: 29 Kirksway Place, Battery Point, TAS 7004
W: https://www.geosolutions.net.au/

From: Craig Cooper <craigcooper@internode.on.net>
Sent: Thursday, 31 July 2025 3:24 PM
To: Aaron Plummer <aplummer@geosolutions.net.au>
Cc: 'Murray Roberts' <murray@leservices.com.au>; GES Office <office@geosolutions.net.au>
Subject: RE: Wellesley V4 lighting proposal

Hi Aaron,

Just waiting on a new lighting design with the poles located in those 2 positions before progressing.

Can you please confirm that they did not hit 'rubbish' from the tip when they took the samples on day (per email below)?
This might suggest we are away from the landfill area?

If we are looking to get the Geotech drilling guys back, what is the diary looking like at the moment?

Thanks,

Craig

From: Aaron Plummer <aplummer@geosolutions.net.au>
Sent: Friday, 11 July 2025 10:38 AM
To: Craig Cooper <craigcooper@internode.on.net>
Cc: 'Murray Roberts' <murray@leservices.com.au>; GES Office <office@geosolutions.net.au>
Subject: RE: Wellesley V4 lighting proposal

Hi Craig,

Our field tech was out there on Monday as Maddie explained, it looks like he got refusal on the Eastern area at approx. 3.1m depth, it's not clear if this is refusal on rock however.

On the Western side, he drilled to 2.7m then was unable to proceed with coring tube, so he went deeper with the 'blind' tip and achieved refusal at approx. 5.4m, this could possibly be rock interface, but again hard to define without Geotech drilling.

I hope this is some info for you to think about and see what you want to do from here.

See photos attached from the day.

Cheers,

Aaron Plummer

E: aplummer@geosolutions.net.au
P: 03 6223 1839
M: 0400 821 977
A: 29 Kirksway Place, Battery Point, TAS 7004
W: https://www.geosolutions.net.au/

From: GES Office <office@geosolutions.net.au>
Sent: Wednesday, 9 July 2025 8:34 AM
To: Craig Cooper <craigcooper@internode.on.net>; Aaron Plummer <aplummer@geosolutions.net.au>
Cc: JP Cumming <jcumming@geosolutions.net.au>; 'Murray Roberts' <murray@leservices.com.au>
Subject: RE: Wellesley V4 lighting proposal

Morning Craig,

I can confirm we attended on Monday as planned.
I will let Aaron get back to you on how we went (he is currently on site with minimal reception though).

Thank you

Kind regards,
Maddison Poprawski

E: office@geosolutions.net.au
P: 03 6223 1839
A: 29 Kirksway Place, Battery Point, TAS 7004
W: https://www.geosolutions.net.au/

From: Craig Cooper <craigcooper@internode.on.net>
Sent: Tuesday, 8 July 2025 5:55 PM
To: Aaron Plummer <aplummer@geosolutions.net.au>
Cc: JP Cumming <jcumming@geosolutions.net.au>; GES Office <office@geosolutions.net.au>; 'Murray Roberts' <murray@leservices.com.au>
Subject: RE: Wellesley V4 lighting proposal

Hi Aaron,

Did you get to Wellesley to Monday?
If so, how did you go?

Thanks,

Craig

From: Aaron Plummer <aplummer@geosolutions.net.au>
Sent: Wednesday, 2 July 2025 4:35 PM
To: Craig Cooper <craigcooper@internode.on.net>
Cc: JP Cumming <jcumming@geosolutions.net.au>; GES Office <office@geosolutions.net.au>
Subject: RE: Wellesley V4 lighting proposal

Hi Craig,

I'll try get our field tech(s) there on Monday.

Cheers,

Aaron Plummer

GES
GEO-ENVIRONMENTAL SOLUTIONS

E: aplummer@geosolutions.net.au
P: 03 6223 1839
M: 0400 821 977
A: 29 Kirksway Place, Battery Point, TAS 7004
W: https://www.geosolutions.net.au/

From: Craig Cooper <craigcooper@internode.on.net>
Sent: Wednesday, 2 July 2025 12:34 PM
To: 'Murray Roberts' <murray@leservices.com.au>; 'Shannon Avery' <shannon.avery@hobartcity.com.au>; Aaron Plummer <aplummer@geosolutions.net.au>
Subject: RE: Wellesley V4 lighting proposal

Hi all,

Thank you very much for your time this morning.

@Shannon Avery can you please let us know what permits are required to install the V4 lighting proposal as per Murray's email below?
Can it just be a minor amendment and if so how do we complete that?

Can you also please make sure that Aaron has the permits he requires to visit the site next week to do the investigational holes as discussed?

Were you able to find the results of any previous drilling done at the site?

@Aaron Plummer can you please let us know what day next week you are available to go to site?

@Murray Roberts once we have direction from the above items, I hope that we can progress with Decrolux.

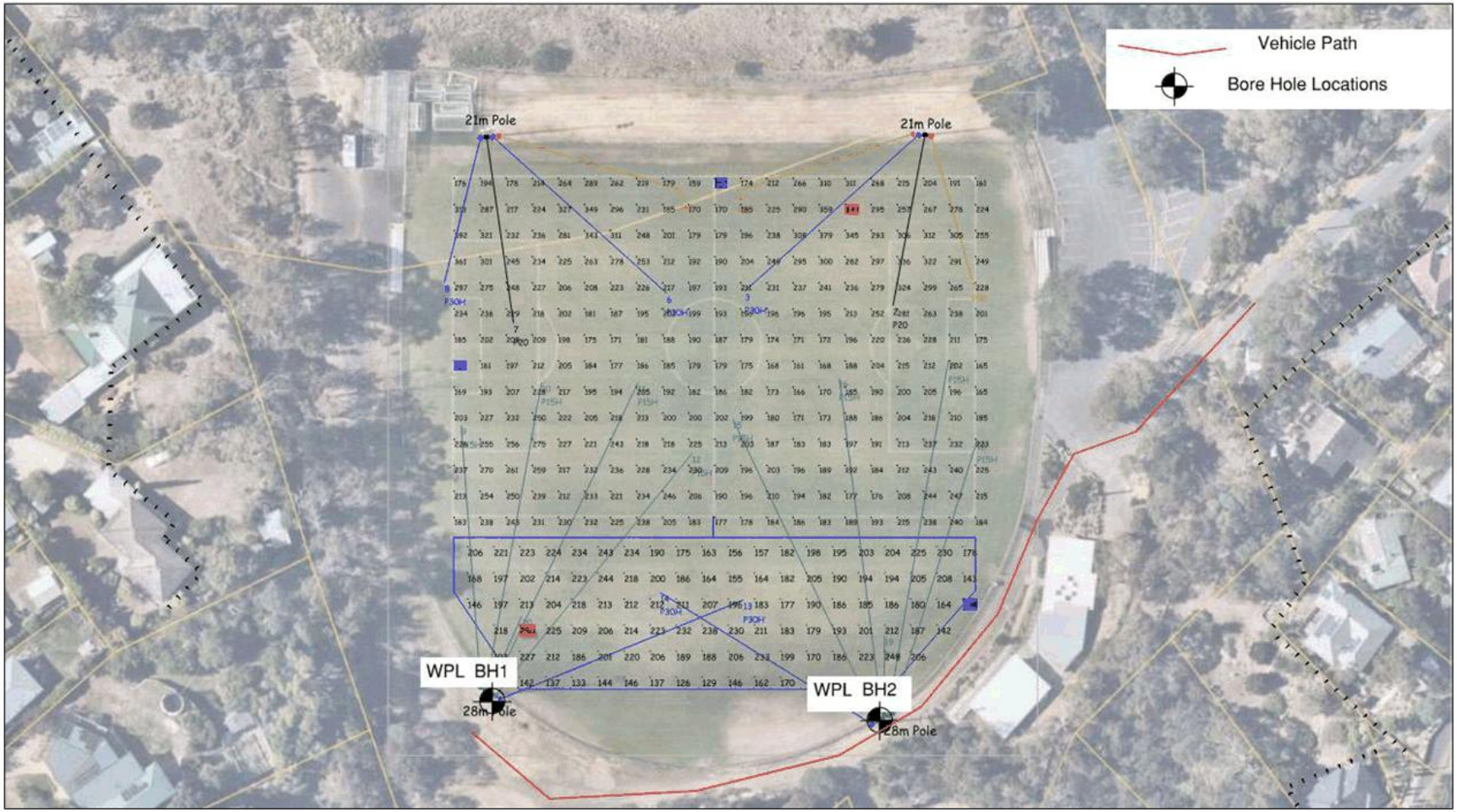
Let me know if you require anything further from me to advance.

Thanks,

Craig

SOUTH HOBART F.C. 1910

APPENDIX B – ORIGINAL SITE PLAN



APPENDIX C - UPDATED SITE PLAN V6.AGI WITH BOREHOLE LOCATIONS

APPENDIX D – BOREHOLE LOGS AND CORE TRAY PHOTOS

GES geo-environmental solutions

PROJECT TITLE: Wellesley Park	PROJECT NO.: J11302
CLIENT: Craig Cooper	INVESTIGATION ID: WPLBH03

DATE: 20-08-2025 LOCATION:
LOGGED BY: AP CONTRACTOR: TAS Drilling Services
CHECKED BY: VG RIG TYPE: Hanjin DB8
ELEVATION: 137 m COORD. E 524320 N 5250496

Boring Method	Depth	Graphic Log	USCS / Rock Symbol	Lithologic Description	Moisture	Consistency/Rel. Density	Sample Type	Comments/Observations In-situ test results	Depth
				Ground Surface at 137 m EL 137 m					
HA (150 mm)	0		102	FILL - Sandy GRAVEL (GW): fine to coarse grained, grey/brown, dry, medium dense	D	MD			0
				0.1 m EL 136.9 m					
			102	FILL - Sandy CLAY (CI): medium plasticity, pale brown, w≈PL, stiff	w≈PL	St			
	1			1 m EL 136 m					1
			102	FILL - Sandy CLAY (CI): medium plasticity, brown, w≈PL, stiff	w≈PL	St			
				1.7 m EL 135.3 m					
			402	Clayey SAND (SC): fine to coarse grained, grey, moist, medium dense	M	MD			
	2			1.9 m EL 135.1 m					2
			203	Sandy CLAY with silt (CH): high plasticity, grey/brown, w≈PL, stiff	w≈PL	St			
				2.7 m EL 134.3 m					
			402	Clayey SAND (SC): fine to coarse grained, grey, moist, medium dense	M	MD			
	3			2.9 m EL 134.1 m					3
			203	Sandy CLAY with silt (CH): high plasticity, grey/brown, w≈PL, stiff	w≈PL	St			
				4 m EL 133 m					
HQ3T (90 mm)	4			SANDSTONE: pale grey with orange, medium to high strength, distinctly weathered, sub-horizontally bedding with 45° joints spacing 50-100mm. (Knocklofty Formation).			SPT	@4.0m-4.27m: 7/29/ref, N=R, Recovery = 270mm	4
	5		SSt						5
	6								6

SHEET: 1 of 2

RSLog / 1. GES Soil Log / geo-environmental-solutions / admin / September 18, 2025 02:23 PM

Photo 1 – WPLBH3: 0m to 8.0m

GES geo-environmental solutions

PROJECT TITLE:	PROJECT NO.:
Wellesley Park	J11302
CLIENT:	**INVESTIGATION ID:**
Craig Cooper	**WPLBH03**

DATE: 20-08-2025 LOCATION:
LOGGED BY: AP CONTRACTOR: TAS Drilling Services
CHECKED BY: VG RIG TYPE: Hanjin DB8
ELEVATION: 137 m COORD. E 524320 N 5250496

Boring Method	Depth	Graphic Log	USCS / Rock Symbol	Lithologic Description	Moisture	Consistency/Rel. Density	Sample Type	Comments/Observations In-situ test results	Depth
HQ3T (90 mm)	6		SSt	*(continued)* SANDSTONE: pale grey with orange, medium to high strength, distinctly weathered, sub-horizontally bedding with 45° joints spacing 50-100mm. (Knocklofty Formation).					6
	7								7
	8			8 m EL 129 m Test Hole WPLBH03 Terminated at 8 m					8
	9								9
	10								10
	11								11
	12								12

SHEET: 2 of 2

RSLog / 1. GES Soil Log / geo-environmental-solutions / admin / September 18, 2025 02:23 PM

GES geo-environmental solutions

PROJECT TITLE: Wellesley Park	PROJECT NO.: J11302
CLIENT: Craig Cooper	INVESTIGATION ID: WPLBH04

DATE: 20-08-2025 LOCATION:
LOGGED BY: AP CONTRACTOR: TAS Drilling Services
CHECKED BY: RIG TYPE: Hanjin DB8
ELEVATION: 137 m COORD. E 524431 N 5250428

Boring Method	Depth	Graphic Log	USCS / Rock Symbol	Lithologic Description	Moisture	Consistency/Rel. Density	Sample Type	Comments/Observations In-situ test results	Depth
				Ground Surface at 137 m EL 137 m					
HA (150 mm)	0		102	FILL - Garden Mulch: dark brown, moist, soft 0.05 m	M	S			0
			102	EL 136.95 m FILL - Sandy CLAY (CH): high plasticity, pale brown, w≈PL, stiff 0.3 m	w≈P L	St			
			102	EL 136.7 m FILL - Clayey SAND: orange-brown, moist, medium dense 0.8 m	M	MD			
	1		102	EL 136.2 m FILL - Clayey SILT: pale grey/cream, w≈PL, firm 1.2 m	w≈P L	St			1
			C/L	EL 135.8 m CORE LOSS 1.9 m	w≈P L				
	2		102	EL 135.1 m FILL - Clayey SILT with gravel: medium plasticity, pale grey/cream/grey-brown, w≈PL, firm; assorted debris 2.5 m	w≈P L	St			2
			SC-SM	EL 134.5 m Clayey SAND with silt: grey/pale orange, dry, medium dense; extremely weathered siltstone/mudstone 2.7 m	D	MD			
			702	EL 134.3 m Sandy SILTSTONE: pale orange, very low strength, extremely weathered 3 m					
HQ3T (90 mm)	3		SSt	EL 134 m SANDSTONE: pale orange, medium to high strength, distinctly weathered, sub-horizontally bedded, joint spacing 100-500mm. (Knocklofty Formation). 4.5 m					3
	4		702	EL 132.5 m Sandy SILTSTONE: pale grey/yellow, very low strength, extremely to highly weathered; highly fractured 5 m					4
	5		SSt	EL 132 m SANDSTONE: pale orange, medium to high strength, distinctly weathered, sub-horizontally bedded, joint spacing 100-500mm; interbedded with Mudstone, grey/pale brown, medium strength, moderately weathered, laminations spaces 2-10mm. (Knocklofty Formation).					5
	6								6

SHEET: 1 of 2

Photo 2 – WPLBH4: 0m to 6.5m

APPENDIX E – GEOLOGICAL CROSS-SECTION AND GENERALISED SUBSURFACE PROFILE

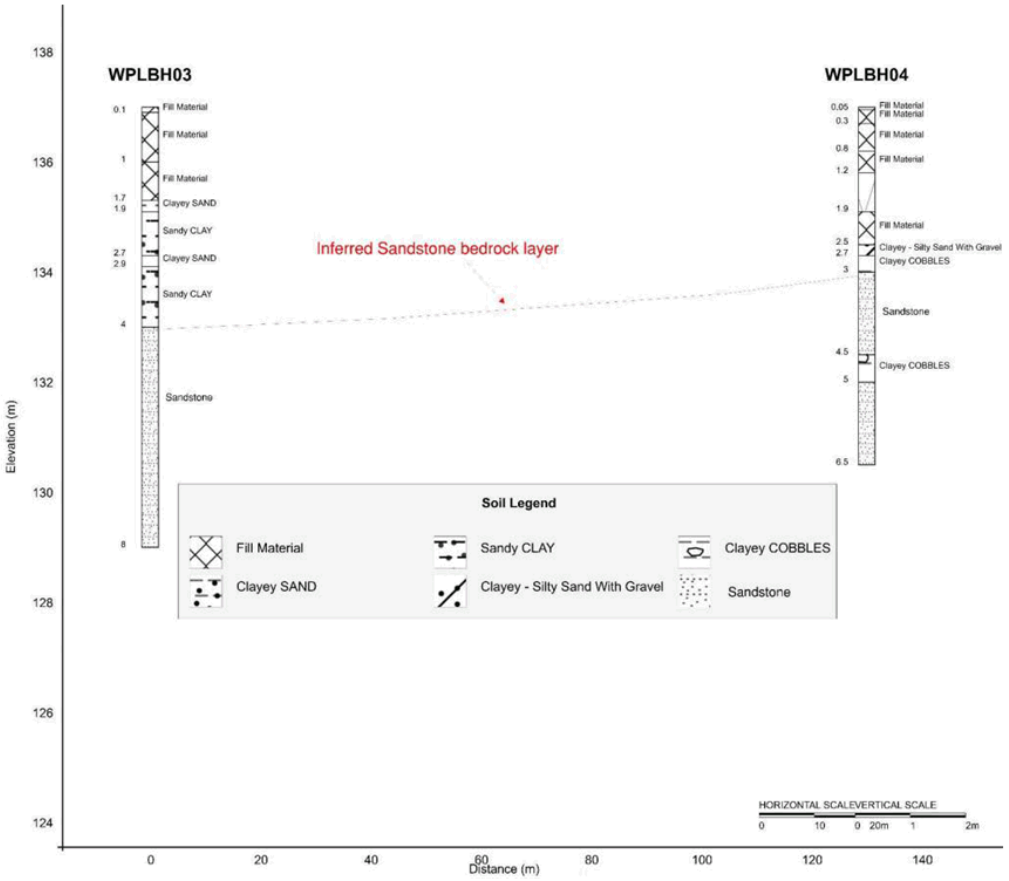


Table 1 – Generalised Subsurface Profile

Unit	*Material Description (consistency/strength)*	*Layer extent (m)*	*γ (kN/m³)*	*Cu (kPa)*	*c' (kPa)*	*Φ (°)*	*E (MPa)*	*Ult. Skin Friction (kPa)*	*Ult. End Bearing (MPa)*	*Allowable Bearing Capacity (kPa)**
-	FILL: Manmade Deposits^	Top 2.5m is ignored								
2	Sandy CLAY (Very Stiff)	2.5-4.0m (WPLBH03)	19	150-200	8	28	25	50-60	0.9**	250
3	HW interbedded SANDSTONE/SILTSTONE (Medium to High strength)	Contact Varies from 3 to 4.0m bgl	22	UCS – 150MPa GSI – 50 - 60			1,500	2,500	60	1,500 - 2,000†

*Allowable bearing capacity based on limiting settlements to be equal to or less than 1% of the least footing dimension. Values estimated for a 1.0m wide strip footing for a factor of safety of 3.0 (for estimating long term allowable bearing pressure) without taking into consideration any embedment, proposed load spread dimension and impact of groundwater table.

^Not recommended for any foundation including piles/pad footing to be founded in FILL layer

**Assuming pile to be founded beyond 2.5m below ground level

†Pile to be founded at depth beyond clayey cobble layer encountered in WPLBH04 location. Adopt a geotechnical strength reduction factor of 0.45.

C_u – Undrained Cohesion

c' – Effective Cohesion

ϕ – Friction Angle

E – Youngs Modulus

UCS – Unconfined Compressive Strength

GSI – Geological Strength Index

GES

GEO-ENVIRONMENTAL

SOLUTIONS

ENVIRONMENTAL SITE ASSESSMENT

Wellesley Park

136 Wentworth Street, South Hobart, Tasmania

February 2025

For South Hobart Soccer Club

Geo-Environmental Solutions P/L 29 Kirksway Place, Battery Point, 7004. Ph 6223 1839 E: Office@geosolutions.net.au

DOCUMENT CONTROL

Title	Version	Author	Date Written	Reviewed By	Date Reviewed
Environmental Site Assessment: Wellesley Park, 136 Wentworth Street, South Hobart, Tasmania	Version 1	S. Joyce & M. Downie	17th February 2025	JP Cumming	18th February 2025

EXECUTIVE SUMMARY

Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at 136 Wentworth Street, South Hobart Tasmania - hereby referred to as 'The Site'. GES was commissioned by The South Hobart Soccer Club to conduct the site assessment. This ESA has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in National Environmental Protection Measure [Assessment of Site Contamination] (NEPM ASC 2013).

The site is currently considered a potentially contaminated site by Hobart City Council due the past landuse of landfill. The objective of the report is to prove or disprove the presence or absence of contamination at the site. The ESA will compare contamination against E2.6.2 Excavation code of the Potentially Contaminated Land Code of the Hobart Council Interim Planning Scheme of 2015.

The following information was gathered during the desktop investigation:

- There is a proposal to replace two light towers at the Wellesley Park soccer grounds at 136 Wentworth Street, South Hobart, Tasmania. The site is zoned *Recreation* under the *Hobart Council Interim Planning Scheme of 2015*.
- The geology of the investigation area is mapped as a geological boundary with Quaternary man-made deposits (Qhmm), bordering with Triassic sediments (Rqpc) at Light Tower #3, and bordering with Undifferentiated Quaternary sediments of Colluvium (Qhcp) at Light Tower #4. The site is situated approximately 135m above sea level and considerable distance from sea level or from an inland water body which makes it unlikely that acid sulfate soil exists at the site.
- The Environment Protection Authority Tasmania lists the site as a historic landfill site that is owned by Hobart City Council. The Hobart City Council considers that the site may be a potentially contaminated site due to the former waste disposal area.
- Historical gas monitoring reports by GHD, held by the Hobart City Council confirm that landfill gas (methane and carbon dioxide) is present, and it will continue to be generated at the main landfill site. Another report by GHD confirmed some soil contamination on the main landfill site, including benzo(a)pyrene and the total sum of PAHs which exceed Health Investigation Limits (HIL) guidelines.
- Historical Aerial photographs since 1946 confirmed that the site was sparesly covered vacant bushland until the early 1960s when the site was used as a landfill. The 1969 photograph shows site remediation works for change of use at the site from a landfill to an oval and recreation area.
- The former waste disposal area is the only contamination source that has been identified. Down gradient the closest ecological receptor is the Hobart Rivulet, which is 400 metres away.
- Contaminants of potential concern at the site include the following: Total Petroleum/Recoverable Hydrocarbons; Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene; Polynuclear Aromatic Hydrocarbons; Heavy Metals; and Per- and polyfluoroalkyl substances. Landfill gasses such as methane may be present but were not tested during this investigation. Groundwater was not encountered during this investigation.

From the soil assessment, it is concluded that:

- Rubbish from historic landfill is present below a clay capping at approximately 0.8-2.8m below ground surface at Light Tower #3 area. It is expected that the soil will be highly variable in nature due to historical landfill, and unidentified areas of contamination may be present.
- Zinc exceeded ecological guideline limits in one sample, and a risk to ecological receptors is present if excavated soil is to come into contact with any ecological receptors.
- There were no human health guideline exceedances for dermal contact, indoor hydrocarbon vapour risk or trench worker specific risk. The site is not a risk to human health receptors given the observed results and the future intended use of the land.
- Excavated soil management: two soil samples are considered Level 2 Material (low level contaminated material) due to Zinc and Benzo(a)pyrene in line with Investigation Limits (ILs) of EPA Tasmania IB105 for solid waste classification.

The following is recommended:

- All material excavated should be treated as potentially contaminated. Given the past landuse as a landfill area, and the uncovering of rubbish fragments in excavations, there is opportunity for soil contamination not already identified in this report to be present. All personnel should maintain good personal hygiene protocols during construction. If soil is excavated that appears contaminated by unusual staining or odour, then an Environmental Consultant must be called to the site to investigate the material.
- Future soil disposal: We recommend handling and disposal of excavated soil in line with EPA Tasmania IB105 for Level 2 Material. As the contamination status of the soil is highly variable, the client may choose to stockpile material based on appearance and location for further sampling and testing in accordance with the EPA Tasmania's IB105, to delineate areas of Level 1 Material.
- Risk to Ecological Receptors: Given a risk to ecological receptors is present if any soil or sediment was to migrate off-site, a Soil and Water Management Plan (SWMP) is required to prevent the movement of soil and sediment off-site during the construction phase.
- Landfill Gas: An assessment of landfill gas is beyond the scope of this report, however the site has previously been identified as containing landfill gases such as methane and carbon dioxide. It will be a requirement that a Lower Explosive Limit (LEL) landfill gas monitor be used to alert site workers to any elevated levels of methane or carbon dioxide, and to alert any site workers of explosive risks due to landfill gas.

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ABREVIATIONS

AEC	Areas of Environmental Concern
AHD	Australian Height Datum
ALS	Analytical Laboratory Services
BAP	Benzo(a)pyrene
BGS	Below Ground Surface
BH	Borehole
BTEXN	Benzene Toluene Ethylbenzene Xylene Naphthalene
COA	Certificate of Analysis
COC	Chain of Custody
COPC	Contaminant of Potential Concern
CRC CARE	Corporative Research Centre for Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
EOH	End Of Hole
EIL	Ecological Investigation Levels
ESL	Ecological Screening Levels
EPA	Environmental Protection Authority
ESA	Environmental Site Assessment
GES	Geo-Environmental Solutions Pty. Ltd.
HIL	Health Investigation Levels
HSL	Health Screening Levels
IL	Investigation Levels
LEL	Lower Explosive Limit
LOR	Limits of Reporting
MDL	Mean Detection Limit
NATA	National Association of Testing Authorities
NEPM ASC	National Environmental Protection (Assessment of Site Contamination) Measure
NHMRC	National Health and Medical Research Council
NL	Non Limiting
NRMMC	Natural Resource Management Ministerial Council
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per- and polyfluoroalkyl substances
PHC	Petroleum Hydrocarbons
PID	Photo-Ionisation Detector
PVI	Petroleum Vapour Intrusion
SWMP	Soil and Water Management Plan
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
USCS	Unified Soil Classification System

1 INTRODUCTION

1.1 General

This report presents the findings of an Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at 136 Wentworth Street, South Hobart Tasmania - hereby referred to as 'The Site'. GES was commissioned by The South Hobart Soccer Club to conduct the site assessment. The site location in context of the greater Hobart area is presented in Figure 1.

The site is currently considered a potentially contaminated site by Hobart City Council because the area is associated with a historic landfill area. The objective of the report is to prove or disprove the presence or absence of contamination at the site. The ESA will compare contamination against E2.6.2 Excavation code of the Potentially Contaminated Land Code.

This ESA has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in National Environmental Protection [Assessment of Site Contamination] Measure (NEPM ASC 2013) guidelines and key regulations and policies identified in the References section of this document. Personnel engaged in preparing this ESA are listed in Appendix 1 along with their relevant qualifications and years of experience.

Figure 1 Site Location (Image source TheLIST)

1.2 Site Layout

An aerial image of the existing site layout is presented in Figure 2.

Figure 2 Existing Site Layout (Image source TheList)

1.3 Investigation Objectives

The objective of this ESA was to investigate the site for contamination, by addressing E2.6.2 performance criteria under the *Hobart Council Interim Planning scheme 2015* for excavation. To assess the suitability and safety of the soil for excavation at a typical depth for foundation excavation, and any human or environmental risks of the soil present on site.

1.4 Scope of Works

The scope of work for this ESA was to conduct a desktop review and an invasive soil investigation at the site. Work included the:

- Drill two soil bores and collect nine primary samples, selecting 7 for analysis.
- Primary samples were sent for analysis to a National Association of Testing Authorities (NATA) accredited laboratory.
- Analysis included total recoverable hydrocarbons (TRH) Benzene Toluene Ethylbenzene Xylene Naphthalene (BTEXN), Polynuclear Aromatic Hydrocarbons (PAH), a suit of fifteen (15) metals, one sample was tested in accordance with Environment Protection Authority (EPA) Tasmania's Information Bulletin IB105 for disposal requirements and one sample was tested for PFAS – full suite of 30 analytes.
- Soil samples were sent with quality assurance/ quality control (QA/QC) samples including one duplicate split sample (DUPLICATE from primary sample: Pole 4 0.1) and one rinsate blank sample (Rinsate).
- Results were compared against the relevant guidelines to determine the presence or absence and if present the level of site contamination of the site.
- Conduct a risk assessment, known as a Conceptual Site Model (CSM); and
- Report findings in an Environmental Site Assessment Report, detailing specific onsite human health or environmental risk which may source from potentially detected contamination.

1.5 Site Details

Site details are presented in Table 1.

Table 1 Site Details

SITE LOCATION: Wellesley Park, 136 Wentworth Street, South Hobart, Tasmania.
INVESTIGATION AREA The location of two light poles that are proposed to be replaced.
SITE ELEVATION & GRADIENT The site at Wellesley Park is approximately 135 m AHD and flat as it is a sports ground.
SITE SURFACING The surface of the site is covered in grass at the edge of the sports ground.
TITLE REFERENCES 136 Wentworth Street 'Wellesley Park': CT 131798/1; PID 5598152. Hobart City Council.
SITE OWNER Hobart City Council
PREVIOUS LANDUSE 136 Wentworth Street was the site of a waste disposal area c1963-1967, prior to McRobies Gully Waste Management Centre opening in 1967.
SITE SURROUNDING LAND ZONING *Tasmanian Interim Planning Scheme 2015 – Recreation, surrounded by General Residential.*
SITE LAND USE Recreation; sporting oval and dog exercising area.
PROPOSED LAND USE Recreation – site use to remain unchanged.

2 PLANNING

2.1.1 Proposed Development

The client is proposing to replace light towers #3 and #4, refer to Appendix 2 for previous planning report dated November 2014, and more recent correspondence from November 2024 granting council consent to make a planning application for a planning permit for development (lighting upgrade).

2.1.2 Acceptable Solutions

As the history of the site suggests that potentially contaminating activities may have taken place on the site (former use of a waste disposal area), for any future potential ***excavation*** at the site, there are no acceptable solutions to proposed works, and therefore E2.6.2 P1 performance criteria are to be addressed.

2.1.3 Excavation Works E2.6.2 P1

As there is proposed excavation works at the site, there are no acceptable solutions to proposed works, E2.6.2 P1 performance criteria are to be addressed. The performance criteria identify that the excavation works must not adversely impact on health and the environment, having regard to:

(a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or

(b) a plan to manage contamination and associated risk to human health and the environment that includes:

  i. an environmental site assessment;

  ii. any specific remediation and protection measures required to be implemented before excavation commences; and

  iii. a statement that the excavation does not adversely impact on human health or the environment.

2.1.4 Statement of Suitability

A statement based on the results of the Environmental Site Assessment that the excavation as part of the planned works will not adversely impact on human health or the environment is to be provided (subject to implementation of any identified remediation and/or protection measures as required).

3 DESKTOP STUDY

3.1 Site Zoning

The site is zoned *Recreation* under the Hobart Councils Interim Planning Scheme of 2015. The land use surrounding the site is *General Residential*, *Recreation* and *Utilities* (Figure 3). The proposed use of the site is unchanged and will continue as recreation.

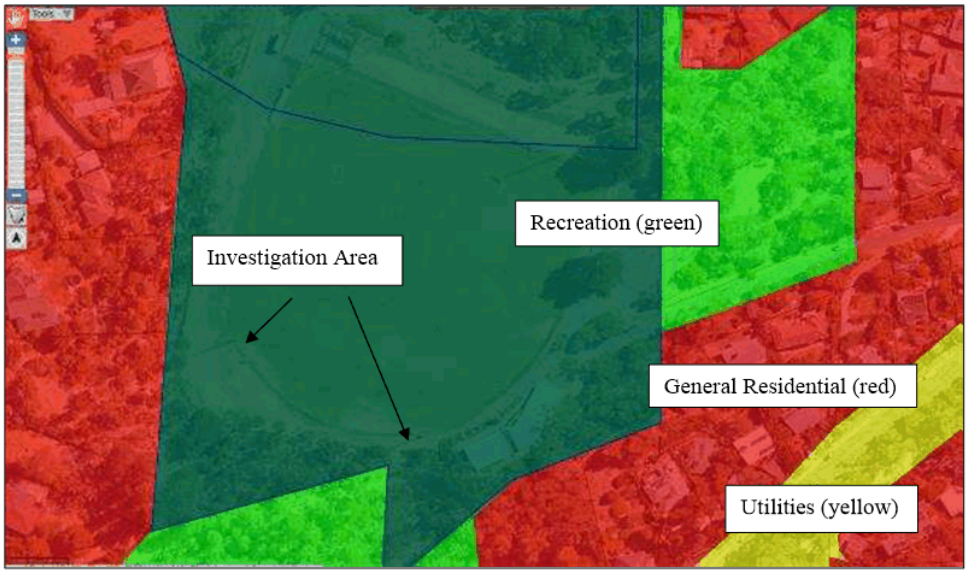


Figure 3 Hobart Councils Interim Planning Scheme Zones 2015 (Image source: TheList)

3.2 MRT Geology Mapping

The 1:25,000 scale geology map of the Greater Hobart area is shown in Figure 4. The mapping indicates that the site is underlain by man-made deposits (the former tip site).

The mapping units used in Figure 4 include;

Qhmm: Quaternary - Man-made deposits (yellow)

Qhcp: Undifferentiated Quaternary sediments of Colluvium - sand derived from Upper Parmeener rocks.

Rqpc: Parmeener Supergroup - Late Carboniferous to Triassic sedimentary sequences. Predominantly interbedded siltstone shale and mudstone and planar-bedded, ripple cross-laminated or cross-bedded sandstone, red-purple, green or carbonaceous siltstone at places (part of Knocklofty Formation)

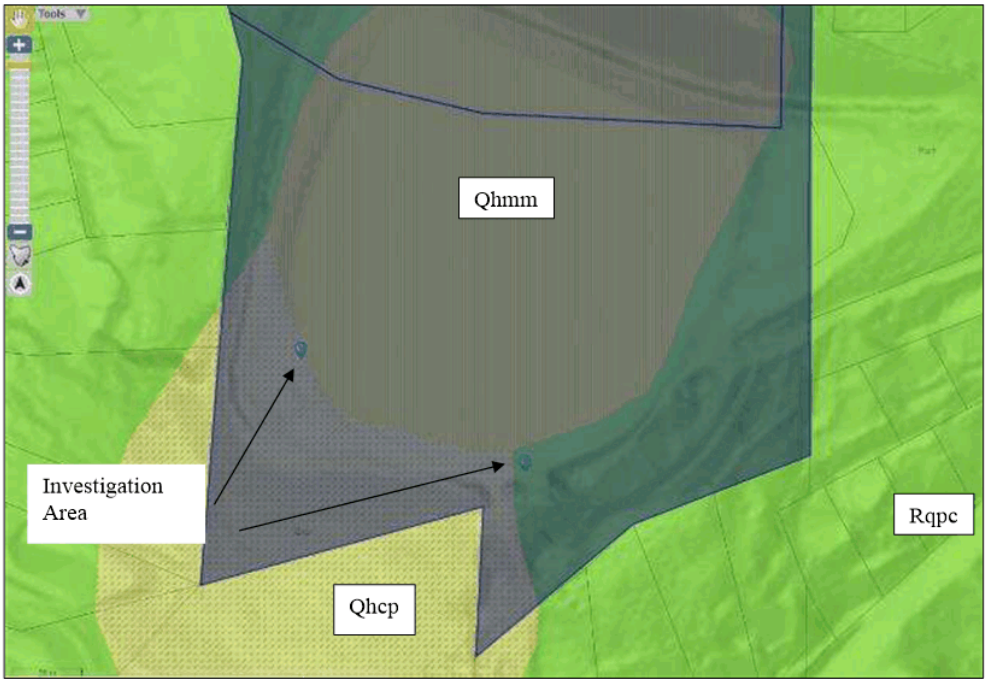


Figure 4 Mineral Resources Tasmania 1:25,000 Scale Mapping (Image source: TheList).

3.3 Lidar Hillshade Image

The Lidar Hillshade basemap is shown in Figure 5. This image shows a broad 3-dimensional representation of the terrain surface of the sports ground. The light poles are situated on the edge of the engineers sports ground surface.

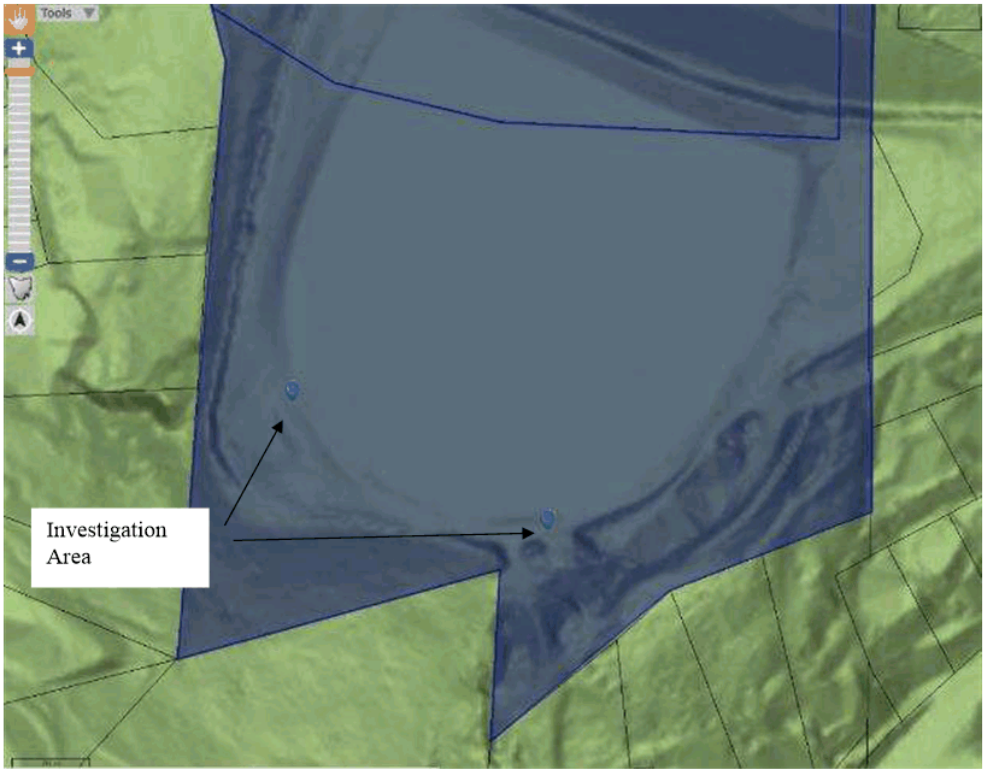


Figure 5 Hillshade Lidar Base map (Image source: TheList).

3.4 Historical Aerial Photography Interpretation

The 2018-19, 2002, 1990 1984, 1981, 1969, 1967, 1965, 1957 and 1946 historical aerial photographs were viewed as part of this ESA. The photographs are presented in Appendix 3. In summary the following observations can be made from the photographs:

- The investigation area was sparely covered vacant bushland in 1946 and 1957 with rill and gully erosion visible, it is possible that uncontrolled dumping could have occurred within gullies.
- The 1965 photo shows significant earthworks in line with refuse disposal and/or covering of landfill.
- The 1967 and 1969 photograph shows site remediation works for change of use at the site from a landfill to an oval and recreation area.
- In the 1984 photograph, the site resembles a recreational oval with a clubhouse structure visible to the east, and car parking to the north east. In subsequent photos soccer field markings are visible.

3.5 Previous Site Investigations

A planning report for Wellesley Park Lighting Upgrade was compiled by JMG Engineers and Planners in November 2014 is presented in Appendix 2. This report notes that four 12m high light poles are to be removed and replaced with 20m high light towers.

A Geotechnical Assessment was compiled by Rock Solid Geotechnics Pty Ltd in October 2014 for the four 20m high light towers.

Recent correspondence presented in Appendix 2 from 2024, notes a planning application will be made for two of the towers to be 28m high. Our ESA is focusing on the area of the two light towers (light towers #3 and #4) which are intended to be replaced with 28m light towers.

We also refer to Tamvakis (1994) report on old tip sites in Hobart, which notes the following;

The site was an old quarry used for sand mining

The site was already being used as an illegal dump site – c.1961

The tip was gazetted in March 1963 and was ready for use in September 1963

The actual period of disposal extended until 1967

When Hobart was hit by devastating bushfires in 1967, the tip also caught alight.

When the ground was being used for cricket, some people delighted in lighting the cracks in the ground which would then ignite.

Environmental and Geotechnical studies at the site noted in correspondence with Hobart City Council are outlined in Section 3.7.

3.6 Environmental Protection Authority Records

The Environmental Protection Authority (EPA) Regulated Premises and Underground Petroleum Storage Systems layers on The LIST were consulted and there were no regulated premises or UPSS within 200m of the site identified within 200m of the site as illustrated in Figure 6. There was one abandoned UPSS, see details below.

Abandoned UPSS: At the site: 40 Apsley Street South Hobart. Located 350m south and down gradient from the site located at 80m above sea level. This site has been ruled out as a potential contaminating source that may impact the site.

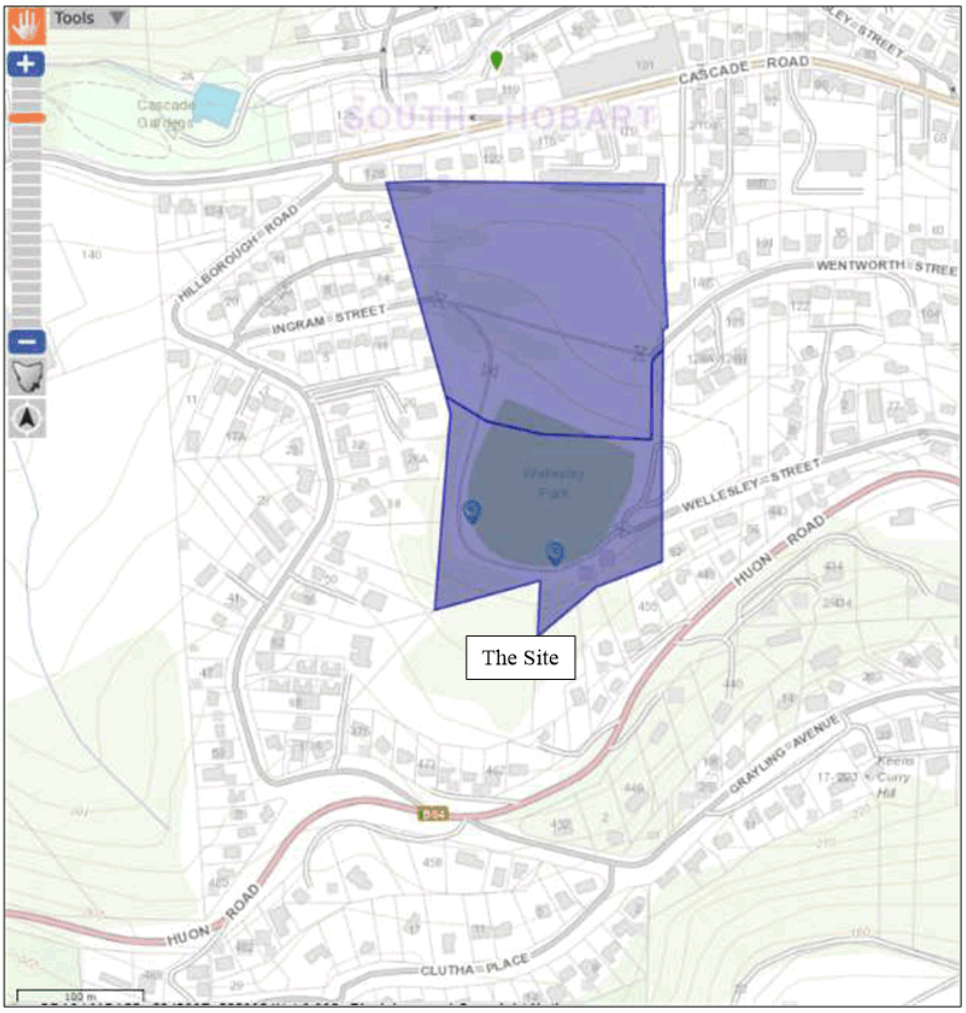


Figure 6 EPA regulated premises and registered UPSS (The LIST)

3.7 Hobart City Council

Relating to a previous investigation directly downgradient of the investigation area, Hobart City Council was emailed on the 26 July 2023 to enquire if they hold any records regarding the landfill site at Wellesley Park. Mr Choveaux confirmed that HCC hold several GES reports from past works in the vicinity. An additional search of the HCC's database also confirmed that the council holds the following reports and documents regarding the landfill at Wellesley Park:

- GHD, 2015: *Preliminary Geotechnical Assessment Environmental Investigation* – Wellesley Street Park, South Hobart. 13 February 2015. (F16-61802)
- EPA, 2013; Notification Letter – *Notification of methane gas detection* – Wellesley Street Park, South Hobart, EPA Tasmania, 14 May 2013. (F13-4659)
- GHD, 2013; *Landfill Gas Assessment Surface Methane Survey* – Wellesley Street Park, South Hobart. 27 February 2013. (F16-61809)
- GHD, 2013; *Landfill Gas Assessment Additional Surface Methane Survey* – Wellesley Street Park, South Hobart. 29 May 2013. (F16-61818)

- GHD, date unknown; *Gas Bore Installation and Sub Surface Landfill Gas Monitoring* – GHD Methane Report… Wellesley Street Park, South Hobart. (F16-61824)
- ERM Paul Fridell, date unknown; *Review of Monitor Comments & Recommendations* – Wellesley Street Park, South Hobart. ((F16-61830)

In summary, the reporting has confirmed that landfill gas (methane and carbon dioxide) is present and will continue to be generated at the main landfill site. See extract from the conclusions of the GHD report, and see Appendix 4 for figures provided by the HCC.

F16-61824 - Wellesley Park - South Hobart - Gas Bore installation & Sub Surface Landfill Gas Monitoring - GHD Methane Report Conclusion extract:

It has been determined that LFG is migrating laterally in the subsurface at locations adjacent to the perimeter at the Wellesley Park site. This has been shown by obtaining data on concentrations of methane and CO2 accumulating in perimeter bores VW1 to VW6 on both the eastern and western sides of the site and adjacent to potential onsite (clubrooms) and offsite receptors (residents on Hillsborough Street). The concentrations of methane measured in these bores exceed the adopted thresholds for further investigation and remediation (with the exception of VW6 which showed values below threshold during monitoring on 7 October).

Data arising from LFG bore depth profiling indicates LFG concentrations appear to recover most readily in bores generally at depths of 2 to 8 mbgl (between 131 and 137 m AHD depending on location). This may indicate the zone of greatest LFG migration in the subsurface at these locations.

LFG generation modelling showed that gas generation at the site peaked in 1968 and has steadily declined to current day in an asymptotic manner. Conservative modelling suggests that current rates of LFG generation and emissions at the site are 89 m3/hr and 80 m3/hr respectively. It is projected that LFG will decrease but continue to be present at the site in future with projected rates at 2025 of 52 m3/hr and 47 m3/hr respectively. This is considered low in comparison to generation at medium sized operating landfill sites (where 500 m3/hr to 1000 m3 /hr may be expected).

In summary:

- *LFG is likely to continue to be generated at the site and has been observed at between 2 to 8 mbgl in bores in natural material surrounding the landfill.*
- *The site geology of sand, sandstone and siltstone have primary (between matrix grains) and secondary (fractures) porosity enabling potential LFG migration.*
- *There is no apparent liner at the sides and base of the landfill to mitigate lateral movement of LFG.*
- *LFG has been observed at the site boundary immediately adjacent (~ 5m) to a neighbouring residence. Proximity of surrounding receptors (on-site and off-site <5m in the case of VW5).*

F16-61802 - Wellesley Park - South Hobart - Preliminary Geotechnical Assessment Environmental Investigation- GHD – 13022015 Preliminary Geotechnical & Environmental Investigation 2013. The report concluded the following:

Based on the laboratory data obtained during the investigation described within the following is evident:

- *All samples returned results below relevant adopted health and environmental assessment criteria with the exception of sample 3216614_07; and Sample 3216614_07 exceeded NEPM – HIL E for benzo(a)pyrene and sum of total PAHs.*

Figures from GHD (2013) Additional Surface Methane Survey, and GHD (2015) Preliminary Geotechnical Assessment Environmental Investigation are presented in Appendix 4.

3.8 Acid Sulfate soils

According to the Land Information Service Tasmania (The LIST) database, the nearest Low Probability, Potentially Acid Sulfate Soils (ASS) are 2.5km downgradient of the Site, located on the Hobart Rivulet and Sandy Bay Rivulet as illustrated in Figure 7. Due to the spatial separation of PASS the material at the site is not considered to be ASS.

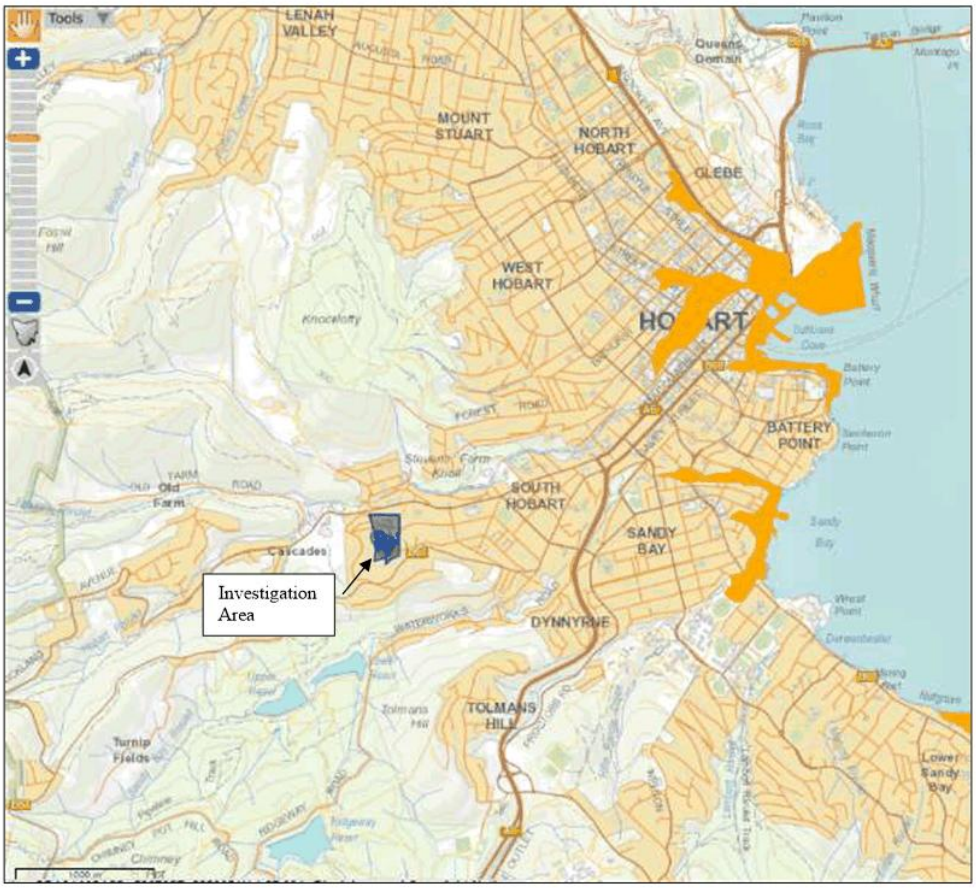


Figure 7 Coastal Acid Sulfate Soils mapping (Image source: TheLIST)

3.9 Site Topography, Drainage & Hydrogeology

The investigation area is modified and flat. On average the site elevation is 135m above sea level. The groundwater from the site is expected to follow the surface topography and drain towards the Hobart Rivulet 400m away.

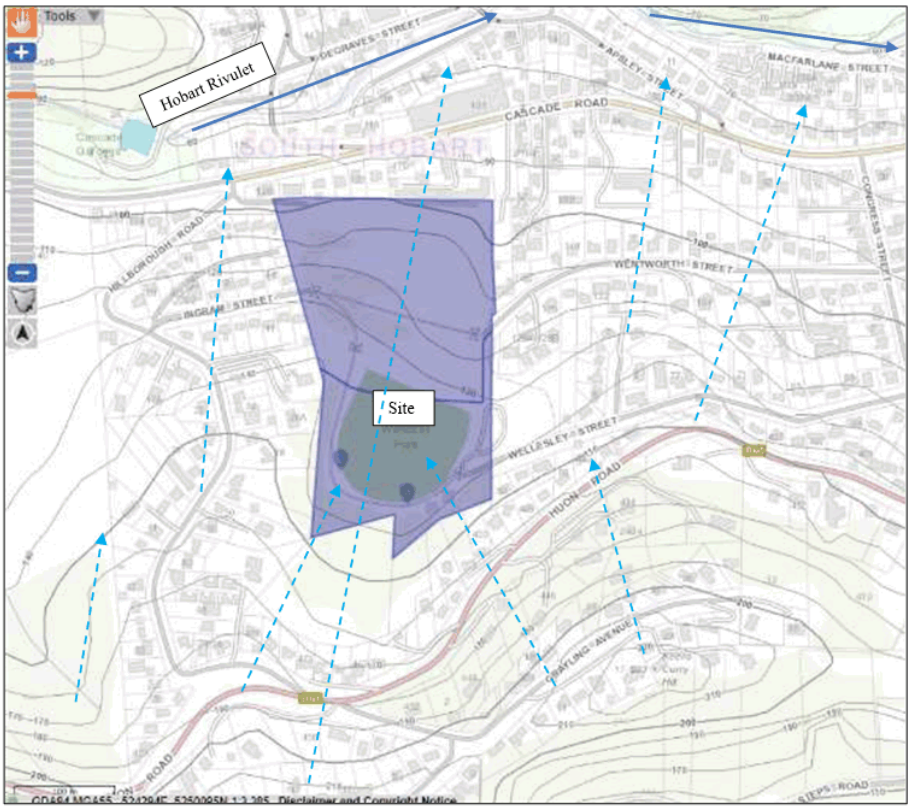


Figure 8 Contour Elevations and Inferred Surface and Groundwater Flow Direction

3.10 Groundwater

3.10.1 Potential Up-Gradient Contamination Sources

There are no potential upgradient sources for potential contamination at the site.

3.10.2 Downgradient Ecosystem Receptors

The closest downgradient ecosystem receptor is Hobart Rivulet which is 400m to the north.

3.11 Potential Contamination Issues

3.11.1 Areas of Potential Concern

The entire site is an area of potential concern as it houses historical landfill.

3.11.2 Contaminants of Potential Concern

Potential Contaminants Of Potential Concern (COPC) that have been considered include the following:

Petroleum Hydrocarbons: (including Total Petroleum/Recoverable Hydrocarbons (TPH/TRH); mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene (BTEXN); Polynuclear Aromatic Hydrocarbons (PAHs)) and Heavy Metals.

Given the former landuse as landfill, a wide variety of other COPC beyond the scope of this investigation may be present, as a result of this we selected one sample for analysis in line with Tasmanian EPA IB105

to include analysis of Herbicides/Pesticides, Phenols, Polychlorinated Biphenyls (PCBs), Cyanide and Fluoride, this sample was selected from material that was considered legacy landfill and closest to the surface to represent a likely excavation zone for light tower foundations. Additionally, we selected one sample for analysis for Per- and polyfluoroalkyl substances (PFAS), in case these persistent compounds were present in any legacy landfill material.

Other COPCs that are considered beyond the scope of this report that may be present at the site include landfill gasses such as methane.

4 FIELD INVESTIGATION PROCEDURES

4.1 Works Summary

Site works are summarised in Table 2. Photographs taken during drilling/coring and sampling are shown in Appendix 5. Site investigation works comprised of drilling with a Geoprobe direct push drill rig at two bore hole locations and collecting representative soil samples. A total of seven primary soil samples were selected for analysis. Excess material was placed back into the holes.

Table 2 Summary of Site Investigation Work Dates

Scope	Data	Lab Report	Details
Drilling and sample collection	9th January 2025	EM2500343	A total of two boreholes were drilled and a total of nine soil samples plus two QC samples were collected.

Figure 9 Borehole Plan

4.2 Soil Investigation

4.2.1 Borehole Drilling

A total of two boreholes were drilled for assessing site geology and sampling potential contamination impact. Soil sampling was conducted per the National Environmental Protection [Assessment of Site Contamination] Measure (NEPM ASC 2013) and AS4482 sampling guidelines. Table 3 presents a summary of the soil assessment methodology adopted at the site.

Table 3 Summary of Soil Sampling Methods

Activity	Details / Comments
Sampling Methods	Geoprobe direct push drilling.
Soil Logging	Logging the soil was conducted in accordance with the unified soil classification system (USCS) as detailed in AS1726 (1993).
Decontamination of Sampling Equipment	Quantum Clean Laboratory Detergent (R213) was used to decontaminate reusable sampling equipment between each borehole sampling location. Fresh liners were used in the Geoprobe direct push sampling system between each location.
Soil Screening	In accordance with AS4482.2, individual soil samples were collected at 0.5 intervals below ground surface (bgs) and/or change in geology. Soil screening was conducted with PhotoIonisation Detector (PID), of headspace in zip-lock bags containing soil samples, a few low-level detections of VOCs are noted at Light Tower #3 as outlined in Section 6.1.3.
Laboratory Soil Sample Collection	In accordance with AS4482.2. All samples were collected using disposable nitrile gloves. Samples were collected for laboratory analysis where possible at the following intervals 0.1-0.2, 0.4-0.5, 0.8-0.9, 1.2-1.3, 1.8-1.9, 2.4-2.5, 3.4-3.5 below ground surface.
Sample preservation	Samples were placed into laboratory provided collection jars for analysis. Soil jars were placed in a pre-chilled eski with ice bricks.
Sample holding times	Sample holding times were within acceptable range (based on NEPM ASC B3-2013) from collection to extraction for the primary analysis. Samples arrived at the laboratory at 8.9°C. Ideally, they would have arrived at 6 °C or below.

4.2.2 Soil Analysis

Chain of Custody (COC) and Sample Receipt Notification (SRN) documentation is provided in Appendix 6. Table 4 presents a summary of the laboratory analyses undertaken. The samples and QC samples were submitted to Analytical Laboratory Services (ALS), Springvale, Melbourne for analysis. A total of seven samples were selected for analysis and two were put on hold.

Table 4 Overview of Soil Analysis and Quality Control

Analytes	Primary Samples	Duplicate[a]	Rinse Blank[c]
TPH/BTEXN/PAH	5	1	1
Suite 15 Metals	5	1	1
TAS EPA IB105 (no TBT)	1	-	-
PFAS	1	-	-

Sampling Quality Control Standards (AS4482):
a – Duplicate one (1) in twenty (20) primary samples
b – Singe trip blank per eski where hydrocarbons are anticipated
c- Single rinse sample per piece of equipment per day

Given metals were analysed, there was requirement to assess the following soil physical properties to determine soil threshold investigation levels: Soil grain class (sand/silt or clay); % Clay content; Cation exchange capacity (CEC); and Soil pH. The soil physical properties were based on knowledge of similar soil types encountered around the Greater Hobart area.

5 QUALITY CONTROL

All field and laboratory Quality Assurance and Quality Control (QA/QC); Quality Control Report (QC) and QA/QC Compliance Assessment to assist with Quality Review (QCI) details and outputs are presented in Appendix 7.

5.1 Field

It is standard to expect up to 10% error in field duplication and up to 10% laboratory error. Therefore, in theory up to 20% error can be assumed on duplicate analysis. Some variation may exist in soil and groundwater because even though all efforts are made to split samples homogeneously, fragments of materials may bias samples in certain elements.

Relative Percentage Differences (RPDs) for the duplicate and triplicate samples where applicable are calculated using the method outlined below.

The acceptance criteria used for the RPDs depend on the levels of contaminants detected and the laboratory's Method Detection Limits. The closer the levels detected are to the MDL the greater the acceptable RPD. RPDs are calculated as follows:

- RPD <50% for low level results (<20 * MDL)
- RPD <30% for medium level results (20-100 * MDL)
- RPD <15% for high level results (>100 * MDL)
- No limit applies at <2 * MDL (Method Detection Limit)

Field QA/QC procedures and compliance are summarised in Table 5

Table 5 Soil Field QA/QC procedures and Compliance

QA/QC Requirement	Compliance	Comments
Appropriate sampling strategy used and representative samples collected	Yes	Sampling program was undertaken in accordance with AS4482.1-2005
Appropriate and well documented sample collection, handling, logging and transportation procedures.	Yes	Appropriate and well documented
Decontamination	Yes	Appropriate decontamination such as cleaning tools before sampling and between sample locations was undertaken
Chain-of-custody documentation completed	Yes	COC were completed in accordance with NEPM ASC Schedule B2, Section 5.4.5 and transported under strict COC procedures. The signed COC documents are included in this report, which includes the condition report on arrival of samples to the Laboratory, cross checking of sample identification and paperwork and preservation method.
Required number of splits: Duplicate & inter-lab splits: 1 per 20 primary samples	Yes/no	1 duplicate sample was collected and tested, for 7 primary samples as per AS4482.1-2005. No interlaboratory split sample was collected.
QA/QC samples reported RPD's within indicated MDL guidelines.	No	For Pole 4 0.1 and Duplicate pairs, 91% of analytes complied.
Required numbers of rinse blank samples collected with no laboratory detections?	Yes	One rinse blank was collected as per AS4482.1-2005. There were no detections of contaminants in the rinsate sample.
Trip blanks collected with no laboratory detections?	NA	According to AS4482.2-1999, soil trip blanks are required where volatile hydrocarbons are discernible. A trip black was not deemed necessary.
Field blanks collected with no laboratory detections?	NA	According to Australian Standards, there is no requirement to collect field blanks, unless there is concern with cross contamination risks.
Samples delivered to the laboratory within sample holding times and with correct preservative	Yes	All primary samples were sent to the laboratory within holding times and correct preservative. Samples did arrive at the laboratory at 8.9 degrees Celsius (°C), ideally, they should arrive 6 °C or below.

5.2 Laboratory

Soil laboratory QA/QC procedures and compliance are summarised in Table 6.

Table 6 Soil Laboratory QA/QC Procedures and Compliance

QA/QC Requirement	Compliance	Comments
All analyses NATA accredited	Yes	ALS Laboratories is NATA Accredited. Appropriate analytical methods used, in accordance with Schedule B(3) of the NEPM ASC 2013. Acceptable laboratory limits of reporting (LORs) adopted.
Method Blanks: zero to <Practical Quantitation Limit (PQL)	Yes	There were no method blank value outliers in the QC1 report.
Laboratory Control Samples: 70% to 130% recovery for soil.	Yes	There were no laboratory control outliers in the QC1 report.
Matrix spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics	Yes/No	*Fluoride* matrix spike recovery of 56% of an anonymous sample was less that than the lower data quality objective of 70.0%. *Hexavalent Chromium* matrix spike recovery of 53.4% of an anonymous sample which was less that than the lower data quality objective of 58.0%. 10:2 Fluorotelomer sulfonic acid matrix spike recovery of 51.2% of an anonymous sample was less that than the lower data quality objective of 70.0%.
Duplicate Samples: 0% to <20% RPD.	Yes/No	PFAS Sums in an anonymous sample was 42.4% which exceeded the LOR upper base limit of 20%.
Surrogates: 70% to 130% recovery	Yes	There were no surrogate recovery outliers in the QCI report.
Analysis holding time outliers	Yes	No hold-time outliers exist in the QCI report.
Quality Control Sample Frequency Outliers	No	Soil: matrix spikes for B(a)p and other PAHs for IB105 (0.00), PAH/phenols (4.76), Pesticides (0.00) PCBs (0.00) did not meet NEPM ASC 2013 B3 or ALS QC Standard of 5.00. Rinsate water sample – laboratory duplicates for PAH/phenols (0.00%) and TRH – semivolatile (0.00%) did not meet NEPM ASC 2013 B3 or ALS QC Standard of 10.00. The Rinsate sample Matrix spikes for PAH/Phenols (0.00%) and TRH semivolatile fraction (0.00%), did not meet NEPM ASC 2013 B3 or ALS QC Standard of 5.00

6 FIELD INVESTIGATION FINDINGS

6.1 Soil Bores

6.1.1 Geological Interpretation

The geology of the site is consistent with the geological mapping of the area of man-made deposits, noting that disturbed soil containing some rubbish fragments was present at depths of 0.8-2.8m below ground surface at Pole 3 location. The material encountered for each borehole is presented in Table 7. Most of the material encountered during the drilling was a sandy-silty CLAY with blue-grey material in Pole 4 location indicating material is regularly wet which is in line with the site use of an irrigated sports ground.

Table 7 Borelogs Outlining Material Encountered at the Site

BH	From	To	Description	USCS
Pole 3	0	0.1	FILL GRAVELS compacted, fine rocks, moist, dense	GP
Pole 3	0.1	0.3	Sandy CLAY, black, low plastic, moinst firm, mod structure	CL
Pole 3	0.3	0.8	Silty CLAY, light grey-bright yellow, medium-high plastic, M, F, weak structure	CH
Pole 3	0.8	2.8	Sandy CLAY, grey-bright yellow, low plastic, disturbed, with rubbish, very moist	CL
Pole 3	2.8	3.7	Clayey SILT pale brown, light blue gleyed, wet, weak structure, siltstone fragments at depth	ML
Pole 4	0	0.4	Sandy CLAY black, brown, grey, m-h plastic, disturbed in appearance moist, firm, weak structure	CH
Pole 4	0.4	0.6	Sandy CLAY, grey, brown, greenish grey, l-m plastic, disturbed appearance, very moist, firm, weak structure	CL
Pole 4	0.6	1.3	GRAVELS with sand and silt, blue/green, possibly gleyed, hard, moist	GC

6.1.2 Grain & Depth Class Interpretation

Grain size classifications are applied to all soils at the site to determine threshold screening level concentrations for hydrocarbons (and chromium) to assess soil ecological and human health risks.

Grain class threshold values are determined based on either the:

- sample grain size (in the case of ecological screening levels or chromium limits); or
- average grain class overlying the sample point (when assessing petroleum vapour screening levels) relative to the proposed finished floor level.

Table 8 provides a summary of the grain class averages for material overlying the sample.

Table 8 Summary of Grain Class Based on USCS Classification

Sample	Footing Excavation Depth^ - Red Fill Thickness^ - Green	Sample PVI Depth (m) Relative to Slab/Cut Depth	Soil Grain Size Class Averaging Above Soil Sample																	Crawl Space Thickness (m)	Attenuation			Petroleum Vapour Intrusion HSL Grain Class*	SAMPLE USCS
			GW	GP	GM	GC	SW	SP	SM	SC	ML	CL	OL	MH	CH	OH	CI	Rock (R)	Existing Pavement (P)		Proposed CONCRETE (CH)	Crawl Space	Biodegradation		
Pole 3 0.9	1.5	0.8		0.1								0.2			0.5					NA		1.0	1.0	CLAY	CL
Pole 3 1.1	1.5	1.0		0.1								0.4			0.5					NA		1.0	1.0	CLAY	CL
Pole 3 1.3	1.5	1.2		0.1								0.6			0.5					NA		1.0	1.0	CLAY	CL
Pole 3 1.9	1.5	1.8		0.1								1.2			0.5					NA		1.0	1.0	CLAY	CL
Pole 4 0.1	1.5	0.1													0.1					NA		1.0	1.0	CLAY	CH
Pole 4 0.5	1.5	0.4													0.4					NA		1.0	1.0	CLAY	CL
Pole 4 1.0	1.5	0.9				0.3						0.2			0.4					NA		1.0	1.0	CLAY	GC
Duplicate	1.5	0.1													0.1					NA		1.0	1.0	CLAY	CH

Footnotes:
* Grain class is modified based on proposed building construction: concrete is interpreted to have similar vapour intrusion properties to clay and is therefore designated as CLAY within the grain size averaging assessment; backfill is inferred to comprise of gravel (GW)
< Sample has been collected from above the proposed excavation (base of slab or proposed ground level) and is not relevant in PVI risk assessment
^ Excavation depths are approximate and may vary due to change in services depths or overall building/footing construction design

6.1.3 Soil Contamination Observations

The material encountered was a sandy-silty CLAY mixed with man-made landfill deposits. Historical newspapers were observed in the Pole 3 borehole profile. No odour or staining was observed.

A Photo-Ionisation Detector (PID) was used to detect Volatile Organic Compounds (VOCs) in the headspace of soil samples placed in zip-lock bags. The PID detected low levels of VOCs in borehole 1 (Light Tower #3) of 2.3ppm at 0.9m, and negligible levels of VOCs at both Borehole 2 (Light Tower #4), and at other depths of Borehole 1.

7 SOIL ECOLOGICAL IMPACT ASSESSMENT

7.1 Protected Environmental Values

The requirement for protecting soil from contaminated activities in Tasmania is managed under the Environmental Management and Pollution Control Act 1994 (EMPCA) which states in Part 5A:

(2) An area of land is a contaminated site if –

(a) there is in, on or under that area of land a pollutant in a concentration that –

(i) is above the background concentration; and

(ii) is causing or is likely to be causing serious or material environmental harm or environmental nuisance, or is likely to cause serious or material environmental harm or environmental nuisance in the future if not appropriately managed;

Potential soil impact at the site is assessed through application of the following environmental investigation guidelines.

7.2 NEPM ASC (2013) Guidelines

The following ecological investigation guidelines are to be addressed in order to assess acceptable levels of risk to terrestrial ecosystems:

- NEPM ASC 2013: Ecological Investigation Levels (EILs) – have been developed for selected metal and organic substances. EIL's depend on specific soil and physicochemical properties and land use scenarios and generally apply to the top two (2) metres of the soil profile (NEPM ASC 2013);
- NEPM ASC 2013: Ecological Screening Levels (ESLs) – have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon fractions. ESL's broadly apply to coarse- and fine-grained soils and various land use scenarios within the top two (2) metres of the soil profile.

Soil analytical results are compared against ESLs and EILs limits presented in Table 9.

Table 9 Summary of Soil Contaminates Considered as part of this investigation, based on NEPM ASC 2013

Investigation Levels (IL)	Analytes Investigated						
	Hydrocarbons				Metals		DDT
	BTEX	TRH (F1 to F4)	Benzo(a) pyrene (PAH)	Naphthalene (PAH)	Zn, Cu, Cr(III), Ni & As	Lead	
ESL's	Analysed	Analysed	Analysed				
EIL's				Analysed	Analysed	Analysed	Analysed (1 sample)

7.3 Guidelines

7.3.1 Ecological Screening Levels

The following compounds were compared against NEPM ASC 2013, ESLs:

- BTEXN;
- F1 to F4 TRH; and
- Benzo(a)pyrene (PAH)
- PFOS, PFOA

Selection of ESL threshold investigation limits are set out in the NEPM ASC 2013 guidelines and require classification of the soil according to:

- Land use sensitivity:
    - Areas of ecological significance
    - Urban residential and public open space; and
    - Commercial and industrial.

- Dominant particle size passing through a 2 mm sieve into:
    - Coarse – sand sizes and greater; and
    - Fine – clay and silt sizes.

Adopted NEPM ASC 2013 guidelines for soil and land use classifications are presented below.

7.3.2 Ecological Investigation Levels

The following compounds were compared against EILs:

- Lead;
- Nickel;
- Chromium;
- Zinc;
- Copper;
- Arsenic;
- DDT and
- Naphthalene.

There was a requirement to classify the soil according to physicochemical properties given that the above listed compounds. Adopted physicochemical parameters are presented in the results tables.

Selection of EIL threshold investigation limits are set out in the NEPM ASC 2013 guidelines and require classification of the soil per specific soil and physicochemical properties which are presented in the results tables. The adopted land use scenarios presented in Table 10.

Table 10 Adopted Land Use Scenario for the Soil Bores

Land Use Scenario	Applicable Soil Bores
Areas of Ecological Significance	
Urban Residential & **Public Open Space**	*All soil bores*
Commercial & Industrial	*All soil bores (workers during site redevelopment)*

Based on a preliminary assessment of site soil conditions, the following physicochemical properties are applied to assess guideline EILs:

- Clay content consistent with field observations
- A soil pH and cation exchange capacity (CEC) consistent with Table 11.

Table 11 Cation Exchange and Clay content, Adopted For the Site

Soil Physicochemical Properties			
USCS	Clay %	CEC	pH
R	100	10	4.5
GW	0	10	4.5
GP	0	10	4.5
GM	10	15	4.5
GC	30	20	4.5
SW	0	10	4.5
SP	0	10	4.5
SM	10	15	4.5
SC	20	20	4.5
ML	30	20	4.5
CL	100	35	4.5
OL	50	35	4.5
MH	30	35	4.5
CH	100	45	4.5
OH	100	60	4.5
PT	100	80	4.5
P	0	0	4.5
CM	100	35	4.5
CI	100	35	4.5
Rock	0	10	4.5

7.4 Findings

7.4.1 Ecological Screening Levels

Laboratory analytical results are presented in Appendix 8. Table 12 compares soil analytical results against relevant NEPM ASC (2013) ESL's. Concentrations which exceeded laboratory limit of reporting (LOR) are highlighted in bold, ESL exceedances would be highlighted with a coloured cell, and samples within the proposed excavation zone are marked with an X. Hydrocarbons were detected in one of the six samples tested, and there were no guideline exceedances for ESL for urban / residential land use.

Table 12 Summary of Soil Analytical Results Compared with ESL's for urban / residential land use.

NEPM Ecological Screening Levels for Soil				BTEX				PAH	TRH				PFASs	
Bold - Indicates LOR Exceedances X - Indicates Sample has been Excavated				Benzene	Toluene	Ethylbenzene	Xylenes	Benzo(a)pyrene	F1 (C6 - C10)	F2 (>C10 - C16)	F3 (>C16 - C34)	F4 (>C34 - C40)	PFOS	PFOA
Colour Shading - Indicates ESL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x														
Sample ID	Sample Date	Soil Texture Class (fine /coarse)	Land Use	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 0.5	LOR 10	LOR 50	LOR 100	LOR 100	LOR 0.0002	LOR 0.0002
Pole 3 0.9 X	9/1/25	F	URBAN	<0.2	<0.5	<0.5	<0.5	**0.1**	<10	**50**	**800**	**220**	----	----
Pole 3 1.1 X	9/1/25	F	URBAN	----	----	----	----	----	----	----	----	----	<0.0002	<0.0002
Pole 3 1.3 X	9/1/25	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	----	----
Pole 3 1.9	9/1/25	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	----	----
Pole 4 0.1 X	9/1/25	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	----	----
Pole 4 0.5 X	9/1/25	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	----	----
Pole 4 1.0 X	9/1/25	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	----	----
Duplicate X	9/1/25	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	----	----

7.4.2 Ecological Investigation Levels

Laboratory analytical results are presented in Appendix 8. Table 13 compares soil analytical results against relevant EIL's. Concentrations which exceeded laboratory LOR are reported in the table, there is one EIL exceedance which is highlighted with a coloured cell, and samples within the proposed excavation zone are marked with an X.

There was one heavy metal exceedance above the EILs guideline limits. Zinc in the 'Duplicate' sample was detected at 757mg/kg. The primary sample was 'Pole 4 0.1', zinc was only 59mg/kg is this sample. This highlights the heterogeneous nature of the material sampled.

Table 13 Soil Analytical Results Compared Against Ecological Investigation Levels for urban / residential land use.

NEPM Ecological Investigation Levels for Soil						Copper (CEC)	Copper (pH)	Nickel	Zinc	Chromium III	Lead	Arsenic	Naphthalene
Bold - Indicates LOR Exceedances X - Indicates Sample Within Inferred Excavation													
Colour Shading - Indicates EIL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x													
Sample ID	Sample Date	EIL Land Use Sensitivity Class	Soil CEC (cmolc/kg)	Soil pH	Soil Texture Class (fine / coarse)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Pole 3 0.9 X	9/1/25	URBAN	35	4.5 (3)	F	11	11	14	38	14	15	<5	<1
Pole 3 1.1 X	9/1/25	URBAN	35	4.5 (3)	F	----	----	----	----	----	----	----	----
Pole 3 1.3 X	9/1/25	URBAN	35	4.5 (3)	F	9	9	5	12	10	8	<5	<1
Pole 3 1.9	9/1/25	URBAN	35	4.5 (3)	F	5	5	10	29	9	10	<5	<1
Pole 4 0.1 X	9/1/25	URBAN	45	4.5 (3)	F	22	22	9	59	13	22	<5	<1
Pole 4 0.5 X	9/1/25	URBAN	35	4.5 (3)	F	12	12	4	16	5	6	<5	<1
Pole 4 1.0 X	9/1/25	URBAN	20	4.5 (3)	C	51	51	18	25	22	<5	<5	<1
Duplicate X	9/1/25	URBAN	45	4.5 (3)	F	29	29	39	757**	48	8	<5	<1

pH Designation:
(1) Using 0.01M CaCl2 extract. Rayment, G.E. and Lyons, D.J. (2011). "Soil Chemical Methods – Australasia". 495+20 pp. CSIRO Publishing, Melbourne.
(2) pHF (1:5). Adjusted by subtracting 0.75 with +/- 0.25 error to calibrate to the CaCl2 method (per comm. ALS Brisbane Acid Sulphate Soils Laboartory). Methods in accordance with Ahern, C.R., Stone Y., and Blunden B. (1998b). 'Acid Sulfate Soils Assessment Guidelines'. Acid Sulfate Soils Management Advisory Committee, Wollongbar, NSW, Australia.
(3) Classified in accordance with parent material typical soil pH as per the Tasmanian soils database

8 SOIL HUMAN HEALTH DIRECT CONTACT ASSESSMENT

8.1 Guidelines

Guidelines presented herein are based on potential exposure of human receptors to soil impact which may include:

- Trench workers repairing or building services (typically to 1 m bgs). This classification is not dependent on the land use class, and
- Onsite inhabitants which may be exposed to potential shallow soil impact in non-paved areas of the site.

8.1.1 Land Use Classification

The NEPM ASC 2013 guidelines have been referenced to ensure that the correct land use and density category has been adopted for the site and the surrounding properties (where applicable). As per NEPM ASC 2013 guidelines, the adopted land use class is dependent on the building density and the opportunity for soil access by site occupants (exposure to potentially impacted soil). Aspects needing to be considered include:

- Whether the site is of sensitive land use such as a childcare centre, preschool, primary school or aged care facility in which case land use Class A is applicable;
- The percentage of paved area to determine direct contact exposure risk and therefore classification as low or high density; and
- Classification based on residential, recreational or commercial/industrial setting.

8.1.2 Adopted Land Use Classification

The adopted land use class is presented in Table 14. Land use class is based on the opportunity for soil access as per NEPM ASC 2013 guidelines. Soil access is anticipated to include workers involved with the light pole replacements, recreational users using the grounds and future recreational users and future trenchworks on site.

Table 14 Summary of Land Use Setting and Density for Determining Exposure Risk

Soil Bores	Construction Phase	Location	Land Use	Pathway	Land Use Class
All soil	During	Site	Construction worker and trench workers	ALL	D and trench worker specific
		Site	Recreational land users	ALL	C
	Post	Site	Future trench workers	ALL	D and trench worker specific
		Site	Recreational land users	ALL	C

DC – Dermal Contact - Trench Worker Guidelines (CRC CARE 2013)
DI – Dust Inhalation - HIL Guidelines (NEPM ASC 2013)
SI – Soil Ingestion - HIL Guidelines (NEPM ASC 2013)
ALL – All of above

8.1.3 Health Investigation & Screening Levels

The main exposure pathways and methods for assessing heath risk from contaminated soils are presented in Table 15.

Table 15 Summary of Exposure Pathways and Preliminary (Tier 1) Methods for Assessing Human Exposure Risk

Exposure Scenario	Contaminant Type	Tier 1 Assessment Method	Reference
Vapour Inhalation – Indoor (PVI)	Petroleum Hydrocarbons	HSL's (addressed in PVI sections)	NEPM ASC 2013
Vapour Inhalation – Trench (PVI)			CRC CARE (Friebel & Nadebaum, 2011)
Dermal Contact		HSL's	
Dust Inhalation	Metals PAH's	Health Investigation Levels (HIL's)	NEPM ASC 2013
Soil Ingestion			

PVI – Petroleum Vapour Intrusion

8.2 Findings

8.2.1 Dermal Contact - Petroleum Hydrocarbons

Laboratory analytical results are presented in Appendix 8. Table 16 presents soil hydrocarbon analytical results compared against CRC CARE (Friebel & Nadebaum, 2011) HSL guidelines for assessing dermal contact risk. Concentrations which exceeded laboratory LOR are highlighted in bold, HSL exceedances would be highlighted with a coloured cell indicating the highest HSL land used class which is exceeded, and samples within the potential excavation zone are marked with an X.

There was one sample that had detections of hydrocarbons from the 8 samples tested. There were no guideline exceedances for dermal contact and no dermal contact risk identified.

Table 16 Soil Analytical Results Compared Against CRC CARE (Friebel & Nadebaum, 2011) Guidelines for Dermal Contact

CRC CARE Health Screening Level Dermal Contact Hazard from Soil Hydrocarbons'		EP080: BTEXN					EP080/071: TRH			
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		0.2	0.5	0.5	0.5	1	10	50	100	100
HSL C Recreational		120	18000	5300	15000	1900	5100	3800	5300	7400
HSL D Commercial/Industrial		430	99000	27000	81000	11000	26000	20000	27000	38000
Intrusive Maintenance Worker		1100	120000	85000	130000	29000	82000	62000	85000	120000
Date	Sample									
9/01/2025	Pole 3 0.9 X	<0.2	<0.5	<0.5	<0.5	<1	<10	**50**	**800**	**220**
9/01/2025	Pole 3 1.1 X	----	----	----	----	----	----	----	----	----
9/01/2025	Pole 3 1.3 X	<0.2	<0.5		<0.5	<1	<10	<50	<100	<100
9/01/2025	Pole 3 1.9	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
9/01/2025	Pole 4 0.1 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
9/01/2025	Pole 4 0.5 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
9/01/2025	Pole 4 1.0 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
9/01/2025	Duplicate X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100

8.2.2 Dust Inhalation & Soil Ingestion

Laboratory analytical results are presented in Appendix 8. Soil analytical results are compared against combined dust inhalation and soil ingestion risk is assessed through the application of NEPM ASC 2013 Health Investigation Levels (HILs) for exposure to soil contaminants are presented in Table 17.

Concentrations which exceeded laboratory LOR are highlight in bold (except for the metals), and HIL exceedances would be highlighted with a coloured cell indicating the highest HIL land used class which is exceeded and samples within the potential excavation zone are marked with an X.

There were no guideline, exceedances and no dust inhalation and soil ingestion risk identified for either recreational or commercial site users.

Table 17 Soil Analytical Results Compared Against NEPM ASC 2013 Health Investigation Levels Guidelines

| Bold - Indicates LOR Exceedance in Non Metallic Compounds | | EA055: Moisture Content | | | | | | | | | | | | | | | Total Recoverable Mercury by FIMS | EP040 | EP066 | EP068A: Organochlorine Pesticides (OC) | | | | | | | | | | | | | | |

9 TRENCH WORKER PVI ASSESSMENT – HSL's

9.1 Classification

The following Health Screening Assessment is based on hydrocarbon vapour intrusion risk to subsurface excavation workers within excavations. This is assessed through analysis of vapours from soil and soil vapours. Groundwater is generally not used to assess risk as threshold limits for all depth and grain classes are non-limiting. Land use classes are not applicable when assessing vapour intrusion into trenches.

Soil and soil vapour HSL's for assessing hydrocarbon risk to maintenance workers are based on CRC CARE Technical Report 10 guidelines (Friebel & Nadebaum 2011) and the following variables:

- Dominant grain size class of material at the soil sample depth or based on the dominant grain class of the backfill material based on US Agriculture Soil Classification System (SCS) and partitioning into either sand, silt or clay; and
- Classifying soil according to depth ranges: 0 to 2 m; 2 to 4 m; 4 to 8 m; and greater than 8 m;

9.2 Findings

Laboratory analytical results are presented in Appendix 8. Summary of Soil Analytical Results Compared against HSL's for Assessing PVI Risk to Trench Workers are presented in Table 18. Concentrations that exceeded laboratory LOR are highlighted in bold, and if there were any HSL exceedances they would be highlighted with a coloured cell. There were no exceedances of the CRC CARE HSL guidelines for Assessing PVI Risk to Trench Workers and no risk identified.

Table 18 Summary of Soil Analytical Results Compared against HSL's for Assessing PVI Risk to Trench Workers

CRC CARE Health Screening Level Assessment for PHC Inhalation Risk To Trench Workers From Soil Sample Analysis				EP080: BTEXN					EP080/071: TRH	
Bold - Indicates LOR Exceedances										
Dark Grey Shading - Indicates HSL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x				Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction
Sample ID	Sample Date	Depth Class	Grain Class	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 1	LOR 10	LOR 50
Pole 3 0.9	9/01/2025	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	**50**
Pole 3 1.1	9/01/2025	0 to 2m	CLAY	----	----	----	----	----	----	----
Pole 3 1.3	9/01/2025	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
Pole 3 1.9	9/01/2025	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
Pole 4 0.1	9/01/2025	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
Pole 4 0.5	9/01/2025	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
Pole 4 1.0	9/01/2025	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
Duplicate	9/01/2025	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50

10 SOIL DISPOSAL ASSESSSMENT

10.1 Guidelines

Soil which is excavated from the site for landfill disposal is to be assessed against Information Bulletin 105 (IB105) for Classification and Management of Contaminated Soil for Disposal. The EPA uses four categories to classify contaminated soil as per Table 19:

- (Level 1) Fill Material;
- (Level 2) Low Level Contaminated Soil;
- (Level 3) Contaminated Soil; and
- (Level 4) Contaminated Soil for Remediation.

Fixed numerical values are presented for soil concentrations and leachable fraction concentrations.

Table 19 Summary of IB105 Classification Guidelines

	Classification (with reference to Table 2)	Controlled Waste[1]	Comments
Fill Material[2] (Level 1)	Soil that exhibits levels of contaminants below the limits defined under *Fill Material* in Table 2.	Unlikely	Soil classified as *Fill Material* can still be a 'pollutant' under the *Environmental Management and Pollution Control Act 1994* and needs to be responsibly managed.
Low Level Contaminated Soil (Level 2)	Soil that exhibits levels of contaminants above the limits defined under *Fill Material* but below the limits defined under *Low Level Contaminated Soil* in Table 2.	Likely	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil (Level 3)	Soil that exhibits levels of contaminants above the limits defined under *Low Level Contaminated Soil* but below the limits defined under *Contaminated Soil* in Table 2.	Yes	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil for Remediation (Level 4)	Soil that exhibits levels of contaminants above the limits defined under *Contaminated Soil* in Table 2 (regardless of the maximum total concentrations) is generally ***not*** considered acceptable for off-site disposal without prior treatment.	Yes	Soil that contains contaminants that do not have criteria for leachable concentrations (*e.g.* petroleum hydrocarbons), and the levels of contaminants exceed the maximum total concentrations listed in *Contaminated Soil*, are generally classified as *Contaminated Soil for Remediation*.

[1] Controlled Waste is defined in the *Environmental Management and Pollution Control Act 1994*.
[2] Criteria for *Fill Material* are the limits set by the Director for the purposes of R.9(2)(a)(ii) in the *Regulations*.

10.2 Findings

The soil samples have been compared against IB105 guidelines for potential future soil disposal, see Table 20 for maximum total concentration.

For solid waste classification material ranged from Level 1 Material; clean fill to Level 2 Material; low level contaminated soil. There were two samples that returned a result above a Level 1 Material (clean fill) classification; 'Pole 3 0.9' for benzo(a)pyrene concentration and 'Duplicate' for zinc concentration, both samples were classified as Level 2 Material.

Table 20 Soil Analytical Results Compared Against IB105 Investigation Limits for maximum total solids in soil for Disposal.

Information Bulletin 105 Classification and Management of Contaminated Soil For Disposal		Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Hexavalent Chromium	Copper	Cobalt	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc	Aldrin + Dieldrin	DDT + DDD + DDE	Benzo(a)pyrene	Phenol	C5 - C9 Fraction	C10 - C36 Fraction (sum)	Sum of polycyclic aromatic hydrocarbons	Total Polychlorinated biphenyls	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total Cyanide	Fluoride
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		50	1	2	5	5	0.5	2	5	5	5	0.1	2	2	5	2	5	5	0.05	0.05	0.5	0.5	10	50	0.5	0.1	0.2	0.5	0.5	0.5	1	40
Investigation Level Selected																																
IB105 Level 1		<20	<300	<2	<3	<50	<1	<100	<100	<300	<500	<1	<10	<60	<10	<10	<50	<200	<2	<2	<0.08	<25	<65	<1000	<20	<2	<1	<1	<3	<14	<32	<300
IB105 Level 2		20	300	2	3	50	1	100	100	300	500	1	10	60	10	10	50	200	2	2	0.08	25	65	1000	20	2	1	1	3	14	32	300
IB105 Level 3		200	3000	40	40	500	200	2000	200	1200	5000	30	1000	600	50	180	500	14000	20	200	2	500	650	5000	40	20	5	100	100	180	1000	3000
IB105 Level 4		750	30000	400	400	5000	2000	7500	1000	3000	25000	110	4000	3000	200	720	900	50000	50	1000	20	2000	1000	10000	200	50	50	1000	1080	1800	2500	10000
9/01/2025	Pole 3 0.9 X	<5	70	1	<1	14	<0.5	11	19	15	159	<0.1	<2	14	<5	<2	<5	38	<0.05	<0.05	0.1	<0.5	<10	920	<0.5	<0.1	<0.2	<0.5	<0.5	<0.5	<1	80
9/01/2025	Pole 3 1.1 X	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
9/01/2025	Pole 3 1.3 X	<5	50	<1	<1	10	----	9	4	8	126	<0.1	----	5	<5	----	----	12	----	----	<0.5	----	<10	<50	<0.5	----	<0.2	<0.5	<0.5	<0.5	----	----
9/01/2025	Pole 3 1.9	<5	110	<1	<1	9	----	5	14	10	51	<0.1	----	10	<5	----	----	29	----	----	<0.5	----	<10	<50	<0.5	----	<0.2	<0.5	<0.5	<0.5	----	----
9/01/2025	Pole 4 0.1 X	<5	60	<1	<1	13	----	22	7	22	191	<0.1	----	9	<5	----	----	59	----	----	<0.5	----	<10	<50	<0.5	----	<0.2	<0.5	<0.5	<0.5	----	----
9/01/2025	Pole 4 0.5 X	<5	60	<1	<1	5	----	12	4	6	76	<0.1	----	4	<5	----	----	16	----	----	<0.5	----	<10	<50	<0.5	----	<0.2	<0.5	<0.5	<0.5	----	----
9/01/2025	Pole 4 1.0 X	<5	40	<1	<1	22	----	51	12	<5	279	<0.1	----	18	<5	----	----	25	----	----	<0.5	----	<10	<50	<0.5	----	<0.2	<0.5	<0.5	<0.5	----	----
9/01/2025	Duplicate X	<5	80	<1	<1	48	----	29	11	8	291	<0.1	----	39	<5	----	----	757	----	----	<0.5	----	<10	<50	<0.5	----	<0.2	<0.5	<0.5	<0.5	----	----

11 CONCEPTUAL SITE MODEL

11.1 Overview

The investigation area is located at the upgradient edge of a historic landfill site at Wellesley Park.

Table 21 illustrates the Conceptual Site Model (CSM) for the site with potential risks identified during this investigation that may be associated with site contamination. Potential contamination pathways have been considered. It should be noted that this CSM has been developed and is based on the current investigation soil results.

The risks at the site, include direct contact with landfill material as well as secondary contamination from impacted soil and groundwater as a result from leaching from waste in the former landfill.

A landfill gas assessment is beyond the scope of this report.

11.2 Potential Ecological Receptors

The closest ecological receptor is the Hobart Rivulet 400m to the north.

There is a registered water bore approximately 500m to the west, upgradient of Hobart Rivulet this has been excluded as a potential ecological receptor.

11.3 Potential Human Receptors

Potential human receptors considered during this investigation include onsite construction during construction and future trench workers, current and future recreational users.

11.4 Potential Transport Mechanisms and Exposure Pathways

11.4.1 Ecological Receptors

There was one EIL's guideline exceedance which indicates if excavated material is transported to waterways, it may have an adverse impact on the environment. It is possible if material is not managed carefully during site redevelopment, then it may migrate to waterways particularly during rainfall events due to sediment management and vehicle movement on and off site.

11.4.2 Recreational Users

There were no HILs exceedances and therefore no risk to current or future recreational users have been identified.

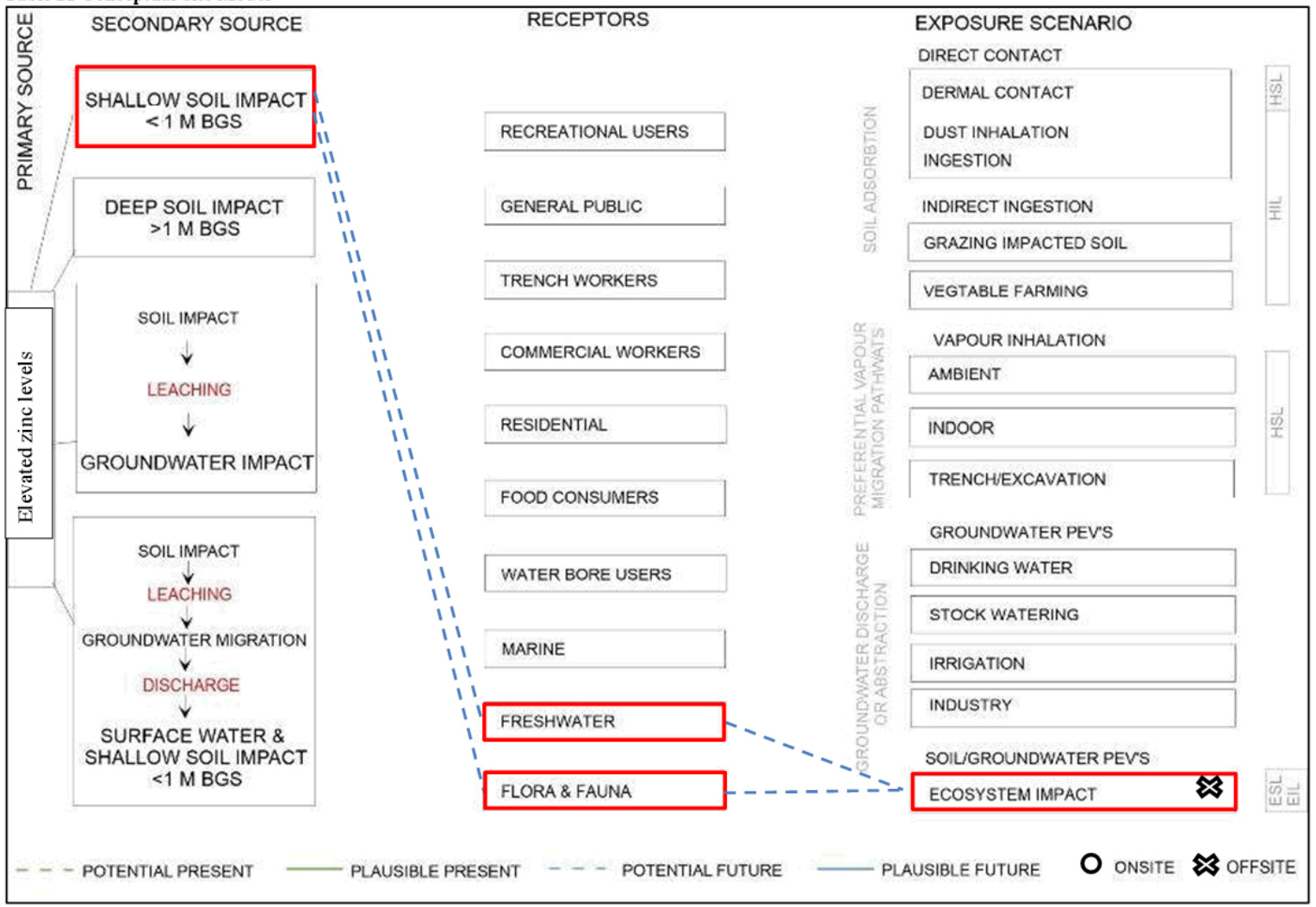
11.4.3 Trench Workers

No risk to trench workers was identified in accordance with trench worker specified guidelines. However, given the historic landfill at the site it is recommended that minimal contact with the soil occurs during construction and standard hand hygiene protocols are followed.

11.4.4 Groundwater Impact

There is the potential for groundwater to be impacted by leaching from the landfill. Groundwater was not encountered and hence was not assessed during this investigation. Impacted groundwater may adversely impact human health or the environment.

Table 21 Conceptual Site Model



12 CONCLUSIONS & RECOMMENDIATIONS

12.1 Desktop Assessment

The following information was gathered during the desktop investigation:

- There is a proposal to replace two light towers at the Wellesley Park soccer grounds at 136 Wentworth Street, South Hobart, Tasmania. The site is zoned *Recreation* under the *Hobart Council Interim Planning Scheme of 2015*.
- The geology of the investigation area is mapped as a geological boundary with Quaternary man-made deposits (Qhmm), bordering with Triassic sediments (Rqpc) at Light Tower #3, and bordering with Undifferentiated Quaternary sediments of Colluvium (Qhcp) at Light Tower #4. The site is situated approximately 135m above sea level and considerable distance from sea level or from an inland water body which makes it unlikely that acid sulfate soil exist at the site.
- The Environment Protection Authority Tasmania lists the site as a historic landfill site that is owned by Hobart City Council. The Hobart City Council considers that the site may be a potentially contaminated site due to the proximity of the former waste disposal area.
- Historical gas monitoring reports by GHD, held by the Hobart City Council confirm that landfill gas (methane and carbon dioxide) is present, and it will continue to be generated at the main landfill site. Another report by GHD confirmed some soil contamination on the main landfill site, including benzo(a)pyrene and the total sum of PAHs which exceed HIL guidelines.
- Historical Aerial photographs since 1946 confirmed that the site was sparsely covered vacant bushland until the early 1960s when the site was used as a landfill. The 1969 photograph shows site remediation works for change of use at the site from a landfill to an oval and recreation area.
- The former waste disposal area is the only contamination source that has been identified. Down gradient the closest ecological receptor is the Hobart Rivulet, which is 400 metres away.
- Contaminants of potential concern at the site include the following: Total Petroleum/Recoverable Hydrocarbons; Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene; Polynuclear Aromatic Hydrocarbons; Heavy Metals; and Per- and polyfluoroalkyl substances. Landfill gasses such as methane may be present but were not tested during this investigation. Groundwater was not encountered during this investigation.

12.2 Adopted Guideline Settings

The following investigation limits were adopted for the site:

- Ecosystem receptor
  - Urban Residential & Public Open Spaces land use ESL and EILs; Hobart Rivulet which is 400m down gradient.
- Human Receptors
  - HIL C/ HIL D for soil direct contact risk to recreational users / construction workers.
  - HIL C/ HIL D for soil ingestion and dust inhalation risk to recreational users / construction workers soil direct contact risk.
  - Trench workers.

12.3 Soil Assessment Conclusions

From the soil assessment, it is concluded that:

- Rubbish from historic landfill is present below a clay capping at approximately 0.8-2.8m below ground surface at Light Tower #3 area. It is expected that the soil will be highly variable in nature due to historical landfill, and unidentified areas of contamination may be present.
- Zinc exceeded ecological guideline limits in one sample, and a risk to ecological receptors is present if excavated soil is to come into contact with any ecological receptors.
- There were no human health guideline exceedances for dermal contact, indoor hydrocarbon vapour risk or trench worker specific risk. The site is not a risk to human health receptors given the observed results and the future intended use of the land.
- Excavated soil management: two soil samples are considered Level 2 Material (low level contaminated material) due to Zinc and Benzo(a)pyrene in line with ILs of EPA Tasmania IB105 for solid waste classification.

12.4 Recommendations

- All material excavated should be treated as potentially contaminated. Given the past landuse as a historic landfill area, and the uncovering of rubbish fragments in excavations, there is opportunity for soil contamination not already identified in this report to be present. All personnel should maintain good personal hygiene protocols during construction. If soil is excavated that appears contaminated by unusual staining or odour, then an Environmental Consultant must be called to the site to investigate the material.
- Future soil disposal: We recommend handling and disposal of excavated soil in line with EPA Tasmania IB105 for Level 2 Material. As the contamination status of the soil is highly variable, the client may choose to stockpile material based on appearance and location for further sampling and testing in accordance with the EPA Tasmania's IB105, to delineate areas of Level 1 Material.
- Risk to Ecological Receptors: Given a risk to ecological receptors is present if any soil or sediment was to migrate off-site, a Soil and Water Management Plan (SWMP) is required to prevent the movement of soil and sediment off-site during the construction phase.
- Landfill Gas: An assessment of landfill gas is beyond the scope of this report, however the site has previously been identified as containing landfill gases such as methane and carbon dioxide. It will be a requirement that a Lower Explosive Limit (LEL) landfill gas monitor be used to alert site workers to any elevated levels of methane or carbon dioxide, and to alert any site workers of explosive risks due to landfill gas.
- Statement of suitability: Based upon the current investigations the site is suitable for the proposed development provided adequate contamination management controls (outlined above as Section 12.4) are implemented for all works.

Yours faithfully,

Sarah Joyce BSc (Hons)

Senior Environmental Scientist

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LIMITATIONS STATEMENT

This *Environmental Site Assessment* Report has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and The South Hobart Soccer Club ('the Client'). To the best of GES's knowledge, the information presented herein represents the Client's requirements at the time of printing of the Report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in findings differing from that described in this Report. In preparing this Report, GES has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations referenced herein. Except as otherwise stated in this Report, GES has not verified the accuracy or completeness of such data, surveys, analyses, designs, plans and other information.

The scope of this study does not allow for the review of every possible soil and groundwater contaminant over the whole area of the site. Samples collected from the investigation area are assumed to be representative of the areas from where they were collected and indicative of the contamination status of the site at that point in time. The conclusions described within this report are based on these samples, the results of their analysis and an assessment of their contamination status.

This report does not purport to provide legal advice. Readers of the report should engage professional legal practitioners for this purpose as required.

No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third party.

Appendix 1 GES Staff

Geo-Environmental Solutions (GES) is a specialist geotechnical and environmental consultancy providing advice on all aspects of soils, geology, hydrology, and soil and groundwater contamination across a diverse range of industries.

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- Field Technician
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- Soil & Environmental Scientist
- 10 years' experience in hydrocarbon and heavy metal contamination assessment and reporting of soils and groundwater.

Appendix 2 Proposed Development plans and correspondence

City of HOBART

GENERAL MANAGER CONSENT

Reference
GMC-HOB-2024-0059

Address
136 WENTWORTH ST SOUTH HOBART TAS 7004

Titles
66346/1, 201675/1, 198497/1, 94118/1, 82059/3, 131798/1

Applicant

Name	Email	Phone	Address	Involvement
Murray Roberts	murray@leservices.com.au	0438529298	51 Morrisby Road, Old Beach, Tasmania, Australia, 7017	Applicant

Council Reference

Council Proposed Use or Development Description
Lighting Upgrade

Consent Information

Information
I advise that pursuant to Section 52 of the Land Use Planning and Approvals Act 1993, I grant my consent on behalf of the Council as the owner/administrator of the above land for you to make application to the Council for a planning permit for the development described above and as per the attached documents. I granted consent pursuant to delegation, a copy of which is enclosed.

Please note that the granting of the consent is only for the making of the application and in no way should such consent be seen as prejudicing any decision the Council is required to make as the statutory planning authority.

This consent does not constitute an approval to undertake any works and does not authorise the owner, developer or their agents any right to enter or conduct works on any Council managed land whether subject to this consent or not.

If planning approval is granted by the planning authority, you will be required to seek approvals and permits from the Council as both landlord, land manager, or under other statutory powers (such as other legislation or Council ByLaws) that are not granted with the issue of a planning permit under a planning scheme. This includes the requirement for you to reapply for a permit to occupy a public space under the Council's Public Spaces By-Law if the proposal relates to such an area.

Accordingly, I encourage you to continue to engage with the Council about these potential requirements.

Signatory

Signed: Michael Stretton
Signature applied by: Karina Wills

Supporting Documents

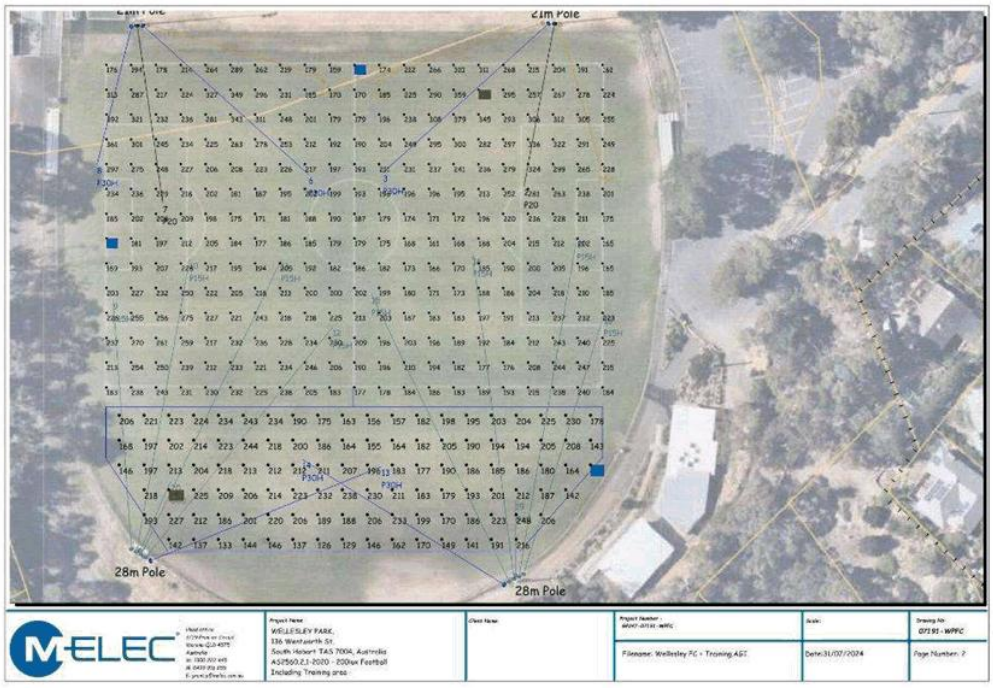
Version	Document Date	Document Type	Description	Prepared By
2	1 Nov 2024	Site Plan	Lighting Layout - site plan	Murray Roberts

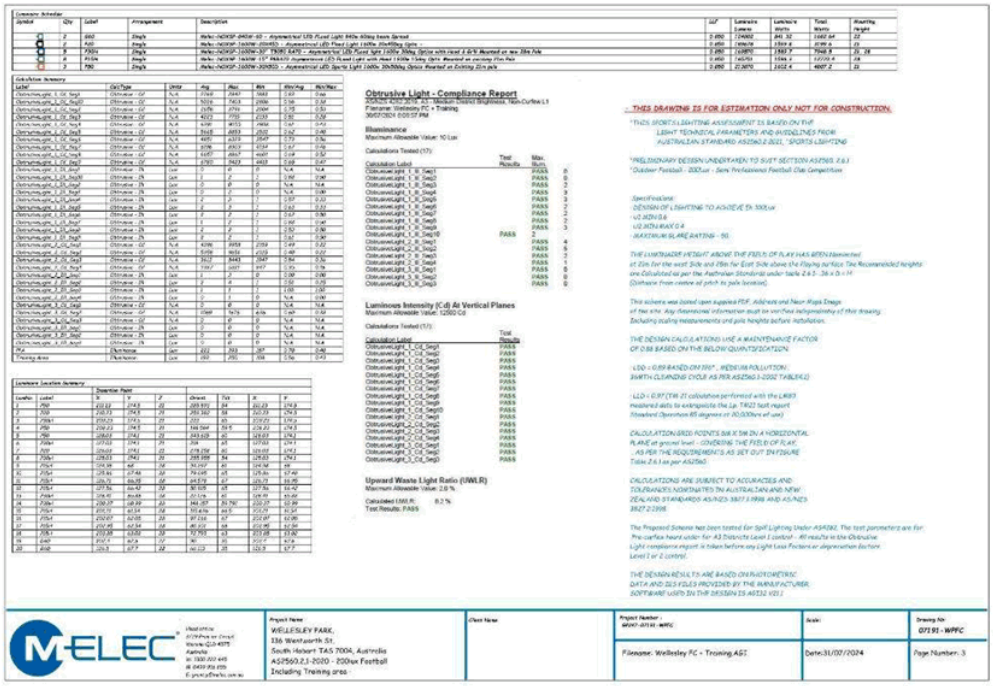
Submitted on **28/11/2024**

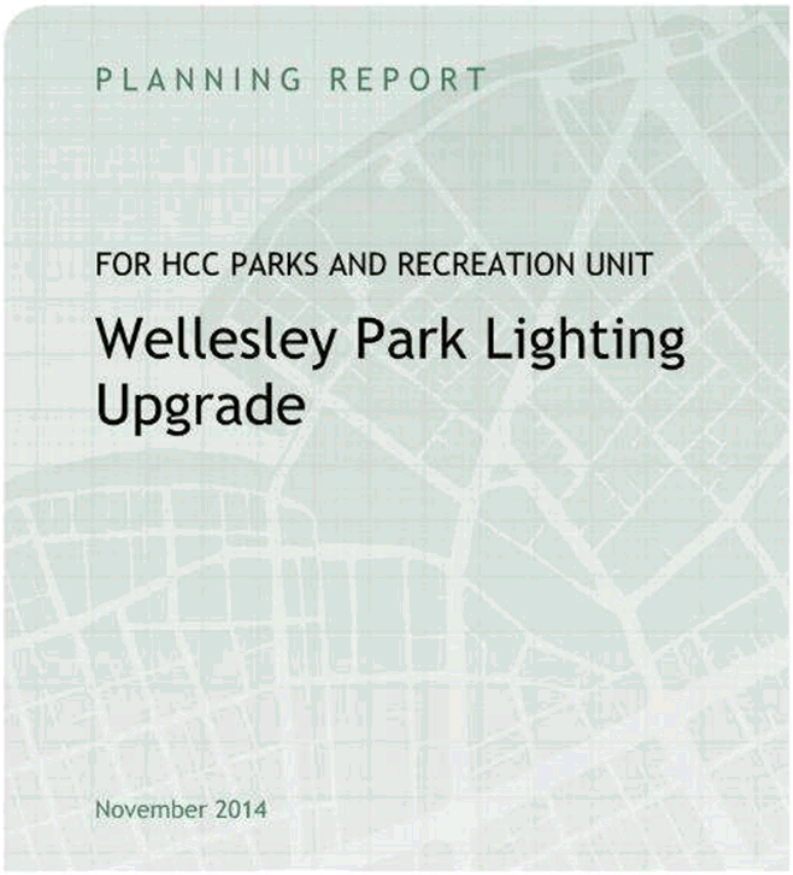
Form published: 05/07/2024 13:52

Page 1 of 1

21m Pole
21m Pole
28m Pole
28m Pole
M-ELEC
WELLESLEY PARK,
136 Wentworth St,
South Hobart TAS 7004, Australia
AS2560.2.1-2020 - 200lux Football
Including Training area
Filename: Wellesley FC + Training.AGI
Date:31/07/2024
07191 - WPFC


21m Pole
28m Pole
28m Pole
M-ELEC
WELLESLEY PARK,
136 Wentworth St,
South Hobart TAS 7004, Australia
AS2560.2.1-2020 - 200lux Football
Including Training area
Filename: Wellesley FC + Training.AGI
Date:31/07/2024
07191 - WPFC





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Appendix C - Photos and Photo Montages
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1. Introduction

The subject of this report is a proposed sports lighting upgrade at Wellesley Park - a Council owned recreational facility. The proponent - the Parks and Recreation Department of Hobart City Council - seeks to upgrade lighting provision to better meet the needs of site users.

JMG Engineers and Planners have been engaged to prepare the preliminary lighting design and development application on behalf of the Parks and Recreation Department.

This report outlines the development proposal, environmental impacts and addresses the applicable requirements of the City of Hobart Planning Scheme 1982.

2. Site, Location and Context

The subject site is land located at 136 Wentworth Street, South Hobart. The site comprises two titles, as listed in Table 1 and shown in Figure 1. The site has a total area of approximately 6.6ha and has frontage to Wellesley Street to the southeast, Wentworth Street to the east, Ingram Street to the west and Hillborough Road to the northwest.

The site is located within an established urban area and is bordered by residential development in all directions, with the exception of Council-owned titles to the southwest and east that form part of Wellesley Park.

The site is located within a small valley with the surrounding topography falling to the north towards the Hobart Rivulet.

Figure 1 - Site and surrounds

Table 1 - Properties within subject site

STREET ADDRESS	TITLE REFERENCE	PROPERTY ID	OWNER
136 Wentworth St	CT 131798/1	5598152	Hobart City Council
136 Wentworth St	CT 94118/1	5598152	Hobart City Council

Approximately 1.5ha of the site has been developed with a sports field. The existing sports lighting system is comprised of four 12m high wooden light poles with a total of eight lights around the southern and western edges of the Oval, plus some lights attached to the pavilion.

Title information is attached as Appendix A.

3. Proposed Use & Development

The proposal is for an upgrade to the site's sports lighting scheme to AS 2560.2.3-2007 standard.

A total of four new light towers will be erected, each supporting a headframe that includes one cross arm and two lights. Each structure will have a total height of 20m above ground level. The four existing light poles (each 12m height) will be removed.

The illumination provided by the existing lighting provides patchy illumination across the playing field (current LUX is unknown). The new lights are designed to provide 100 LUX illumination across the playing field, which is suitable for sports training purposes.

The sports field is used for soccer up to 10 months per year with oval renovations occurring when the oval is closed, which generally commences early October. The existing lights are used during the winter sports season as per the following typical usage pattern:

- Mondays - various casual bookings;
- Tuesday and Thursdays - 4:00pm-8:00pm;
- Wednesdays - 4:00pm - 6:00pm;
- Fridays - 4:00pm-6:30pm

The proposed lights would be used during the winter sports season as per the following typical usage pattern:

- Mondays - various casual bookings;
- Tuesdays and Thursdays - 4:00pm-9:00pm;
- Wednesdays - 4:00pm-6:30pm;
- Fridays - 4:00pm-7:00pm.

The site is occasionally be used for casual bookings on weekends, such as school holiday soccer programs. This will continue to occur following the lighting upgrade. Such bookings generally occur in the daytime, although there is the potential that the lights may be required on occasion (1-10 times per year).

It is understood that the use of lights is not currently subject to any restrictions with respect to operating hours.

Proposal plans are attached as Appendix B.

Photo montages are attached as Appendix C.

4. Policy Assessment

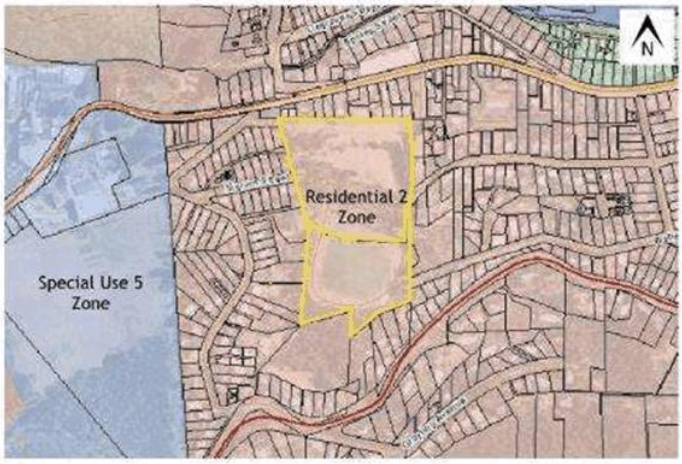
The applicable planning instrument under the *Land Use Planning and Approvals Act 1993* is the City of Hobart Planning Scheme 1982 (the 'Planning Scheme').

The site is currently zoned 'Residential 2' and is located within Precinct 26C. As shown in Figure 2, the surrounding land is also mostly zoned for residential use.

The proposed development generates the following discretions under the Planning Scheme:

- Clause A.7.1 - Use and development for 'Active Recreation';
- Clause C.2.2 - Height.

Table 2 - Zoning map



Clause 1.5.1 requires that no development occur without the consent of Council.

The proposed demolition of the existing light poles and construction of new structures are both 'development' as defined in clause 1.7.1.

Clause 1.6.1 does not provide any exemptions that would apply to either the demolition or construction works.

4.1 Principles of Development Control

Part 4 of the Planning Scheme specifies the Principles of Development Control, the following of which are relevant to the proposed development.

Demolition

***P.5** The demolition of any building shall not be permitted until a further or replacement development, which may include temporary landscaping of that land, has been approved unless such demolition is required by statutory order.*

The proposal involves removing four existing lighting poles, which are 'buildings' as defined in s.3 of the *Land Use Planning and Approvals Act 1993*. The application seeks however to replace the poles, hence is consistent with P.5.

Height

***P.11** Permitted height limits have been established for the various Precincts, having regard to the nature of preferred development for the Precinct in question. Within these limits the height of any building or structure may be further controlled having regard to the relevant Zone Objective, the desired future character of the relevant Precinct, and considerations of streetscape, townscape and amenity. A relaxation of these limits will only be considered where the relevant Zone Objective and desired future character of the Precinct are not compromised.*

As is discussed further in this report, the proposed structures will each exceed the permitted height standard, as do the existing lighting poles that will be removed. The proposed height variation requires consideration of the zoning, precinct, streetscape townscape and amenity.

The relevant Zone Objective and precinct Desired Future Character statement are considered further in this report and the proposal is consistent with each of the clauses.

With respect to streetscape and townscape considerations, the proposed development will have some visual impact by virtue of increasing the height of lighting poles on the site (refer to part 5.1 of this report). The visual impact is considered to be acceptable however given it is essentially replacing existing structures, is surrounded by dense vegetation that screens views to the site, and is located in a small valley in the surrounding topography (with dwellings located on higher land).

The proposed development is accordingly considered to be consistent with P.11.

4.2 Zone and Precinct

Part 5 of the Planning Scheme specifies Zone Objectives and Statements of Desired Future Character.

5.8 THE RESIDENTIAL 2 ZONE

(Use Schedule A - Zone Reference 7)

The Objective of the Residential 2 Zone is to sustain and enhance the character and amenity of areas of predominantly detached houses, with limited development of complementary dwelling-types and minimum intrusion or further development of non-residential uses not necessary to serve local residents.

The proposed development is an upgrade of existing recreational facilities - no new intrusion of non-residential uses is proposed and no existing residential uses will be displaced.

The degree to which the upgrade will affect the character and amenity of surrounding residential areas is a key consideration, particularly with respect to visual impacts, light spillage and any resultant change in site usage. Each of these issues is examined further in Part 5 of this report but in summary:

- The visual impacts of the new poles from offsite will be limited given that surrounding dwellings are typically not orientated towards the site and the site is ringed by existing vegetation;
- The proposed lighting has been designed in accordance with Australian Standard AS 4282 - Control of the Obtrusive Effects of Outdoor Light (current best practice);

- The development will not have any significant effect on the use of the site - it will continue to be used primarily for sporting activities.

The proposal is therefore expected to have minimal impact with respect to the character and amenity of the area and is thereby consistent with clause 5.8.

The desired future character statement for Precinct 26C is as follows:

> ***The South Hobart Precinct - No. 26C***
>
> *(For 26A and 26B see Sections 5.7 and 5.7.6)*
>
> ***5.8.5*** *The Precinct should continue its function as a residential area of predominantly detached dwellings. Two storeys should generally be the maximum, although on the higher slopes three storeys may also be appropriate. The siting and design of new development should preserve the important vista to the central area of the Derwent. The reserved residential area shall be reserved for residential subdivision pending the availability of services.*

The development will occur on an existing recreational site - no conversion of residential land for non-residential purposes is proposed.

Clause 5.8.5 specifies the need to retain vistas to the central area of the Derwent, which is east of the site. The topography of the site and surrounds, the existing height of vegetation within Wellesley Park and the width of the poles will all reduce the potential for loss of vistas of the Derwent Estuary (refer to part 5.1 of this report).

The proposal is considered to be consistent with clause 5.8.5.

4.3 Schedule A - Use

Clause A.1 of Schedule A provides use categories, including the following:

> ***Active Recreation***
>
> *includes a billiard saloon, bowling alley, dance hall, exhibition hall, funfair, golf course, skating rink, squash court, stadium, tennis court or any other similar sporting or recreation facility, but does not include an amusement machine centre, health studio or community centre.*

The site is currently used for outdoor sporting activities. The proposed lighting upgrade will support this land use and is expected to result in a minor change in the hours of usage, as described in part 3 of this report.

The application also seeks approval for works associated with the 'Active Recreation' land use.

Clause A.7.1 states:

> ***A.7.1*** *Subject to the provisions of the Planning Scheme, the Council may use its discretion to refuse or permit the development and use of land unconditionally or subject to conditions:*
>
> *a) for a use which is neither permitted nor prohibited pursuant to Table A.1, including any use in a Use Group indicated by the sign 'd' opposite the relevant Zone reference; or*
>
> *b) for a use considered not to be listed within a Use Group pursuant to Section A.3.1; or*
>
> *c) for any use of land not within a Zone depicted in Table A.1.*

The proposal seeks approval for use and development of land for 'Active Recreation', which is discretionary in the Residential 2 Zone (Precinct 26C).

4.4 Schedule C - Height

Schedule C specifies height controls. The proposed lighting poles are 'structures' for the purpose of Schedule C, consistent with the definitions provided in clause C.1.1.

Clause C.2.2 states:

> *C.2.2 Having regard to the Planning Scheme overall, in particular Principle 11, Council has a discretion to refuse or permit a proposed development that would result in a new structure which exceeds the following height:*
>
> *(i) for structures other than buildings which are not in a building or on a building - 6 metres; provided that in that part of Precinct 34B located on the northern side of Cascade Road, the maximum height of any new structure shall not exceed that of the existing silos.*
> ...

The proposed structures will have a height of 20m (8m greater than the existing poles to be removed) hence require a variation from the 6m permitted standard.

As discussed previously, the development is an upgrade to existing facilities to bring the lighting scheme up to current standards. The proposal is considered to be acceptable with respect to Principle 11 and the relevant zoning and precinct statements, as discussed previously in this report.

A variation to the permitted height standard is therefore considered acceptable under clause C.2.2.

5. Impact Assessment

5.1 Visual Impact

At present the site accommodates four freestanding lighting poles, each of which is 12m high. The field is surrounded by existing eucalypt-dominated forest. The proposed development will remove the four poles and replace them with four 20m high poles. The sports field is located approximately on the 130m contour level hence the top of the lighting poles will be at 150m ASL (an increase from 142m ASL).

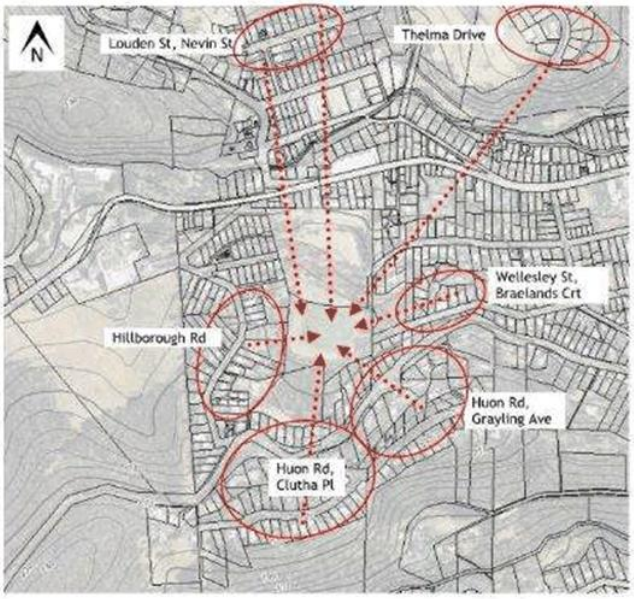
The photos and photo montages enclosed as Appendix C model the likely visual appearance of the new poles during daylight hours and at night when in use. The vantage point used for the images is on the eastern edge of the field at the main entrance.

The topography of the surrounding area and existing vegetation means that the sports field sits within a small gully and is relatively discreet within the surrounding landscape. With the exception of the end of Wellesley Street, the site is generally not visible from the surrounding road network.

Key vistas from nearby residential areas are to the Derwent Estuary and to Mt Wellington.

Figure 2 shows the site position in relation to vantage points that are described in this section.

Figure 2 - Site position and key views of site



VIEWS FROM NORTH

Immediately north from the sporting field is the balance of Wellesley Park, which drops considerably from the level of the field. At the bottom of the valley is Cascade Road. Views from Cascade Road or adjoining dwellings are expected to be very limited due to the topography of the land and the relative location of the poles.

Further north at Louden Street, Nevin Street and Thelma Drive dwellings are located in more elevated positions, generally between the 90m and 150m contour levels. From these positions, the proposed lighting poles will be visible from distances between 600-800m and will be 8m higher than the existing structures.

VIEWS FROM EAST

To the east of the site are existing dwellings at No's 77-79 Wellesley Street and No's 1-9 Braelands Court on north/northeastern facing land built on topography ranging from 130m to 140m ASL. These dwellings are located in the approximate range of 100m-250m from the sports field.

To the southeast are existing dwellings at No's431-459 Huon Road and 2-27 Grayling Avenue are on northwestern facing land and built on topography ranging between 135m-210m ASL (floor levels of dwellings will be at higher elevations). These dwellings are located in the approximate range of 60m-300m from the sports field.

The established onsite vegetation south of the field is located upslope from the playing surface between the proposed structures and the dwellings.

From dwellings to the east the increased height of 8m is likely to mean that the headframes and part of the pole structures will be visible from dwellings to differing degrees (the apparent size of the structures will reduce as a result of distance). Views from

dwellings to the southeast with floor areas above 150m FFL will have views over the pole structures.

VIEWS FROM SOUTH

To the south of the site are dwellings at No's 465-479 Huon Road and No's 1-38 Clutha Place on northern facing land and built on topography ranging between 165-220m ASL. These dwellings are located in the approximate range of 130m-400m from the sports field.

The established onsite vegetation south of the field is located upslope from the playing surface between the proposed structures and the dwellings.

From dwellings to the south the increased height of 8m is likely to mean that the head frames and part of the pole structures will be visible from dwellings to differing degrees (the apparent size of the structures will reduce as a result of distance). Given the elevation of natural ground level under dwellings to the south, these dwellings are likely to have floor areas above 150m FFL and therefore would have views over the pole structures.

VIEWS FROM WEST

To the west of the site are existing dwellings at 23-76 Hillborough Road, built on topography between 140m-190m ASL. These dwellings are located in the approximate range of 60m-270m from the sports field.

The established onsite vegetation south of the field is located upslope from the playing surface between the proposed structures and the dwellings.

From dwellings to the west the increased height of 8m is likely to mean that the head frames and part of the pole structures will be visible from dwellings. The greatest impact would be on dwellings directly adjoining the site on the eastern side of Hillborough Road. Views from dwellings to the west with floor areas above 150m FFL will have views over the pole structures.

SUMMARY

The new structures will be visible from a number of residential vantage points in the surrounding area, from distances ranging from approximately 60m-800m.

The significance of this impact when viewed from the north is considered to be relatively minor as a result of distance and the improved control of stray light.

Dwellings to the south are also at high elevations relative to the proposed pole heights, and are likely to look over the structures. The relatively slim width of the structures and head frames, improved control of stray light and the existing dense vegetation will also reduce the visual impact from the south.

When viewed from the east and west, the structures will be more prominent for closer dwellings with floor areas up under 150m ASL. The visual prominence of the structures will be reduced from vantage points further away and at higher elevations, which will tend to have views over the site. The relatively slim width of the structures and head frames, improved control of stray light and existing vegetation around the site will reduce the degree of potential impact when viewed from these areas surrounding areas.

From all vantage points, the limited hours of use will also reduce the nighttime visual impact.

5.2 *Light Spillage*

The proposed lights are designed to provide 100 LUX illumination across the playing surface, which is suitable for training purposes. Stray light will be well controlled due to the optical design creating a forward symmetrical angle.

The relevant Australian Standard - AS 4282 'Control of the Obtrusive Effects of Outdoor Lighting' - provides a basis to assess whether light spillage associated with the development is acceptable.

The 'recommended maximum values of light technical parameters for the Control of Obtrusive Light' are noted in Table 2.1 of AS 4282. The applicable limits are as follows:

- Curfewed hours (11pm - 6am) - the maximum value for residential areas with dark surrounds is 1 LUX at the fence line;
- Pre-curfew hours - the maximum value for residential areas with dark surrounds is 10 LUX at the plane of habitable room windows.

The proposed lighting will be used in pre-curfew hours.

The light spill diagrams enclosed as Appendix D predict the LUX levels that would be detectable at ground level and at 1.5m above ground level when the lights are in use. The diagrams do not factor in further mitigating features such as vegetation and topography. The diagrams indicate that even assuming the topography were flat with no vegetation, the 10 LUX light contour would still be contained within the site.

During curfewed hours the lights will be switched off, hence there will be no light spillage during these hours.

The proposal will be well within the maximum level of light spillage recommended in AS 4282, which indicates minimal impact on residential amenity.

5.3 Noise

Some construction noise can be expected temporarily during the demolition and construction works.

The lighting upgrade will not have any significant impact on the intensity or timing of site usage, hence will not have any significant resultant impact in terms of noise generated by sporting activities.

5.4 Access, Traffic and Transport

The lighting upgrade will not have any significant impact on the intensity or timing of site usage, hence will not have any significant resultant impact in terms of traffic generated by sporting activities.

5.5 Water Quality

Some soil disturbance can be expected temporarily during construction. Post-construction, the development will not have any significant impacts on stormwater quality.

5.6 Natural Hazards

The proposed development is not considered to exacerbate the risk of any existing natural hazards or be particularly prone to such hazards.

5.7 Heritage

A review of heritages listings in Schedule F of the Planning Scheme found that the site is not directly adjacent to any listed properties on surrounding streets (Huon Road, Wellesley Street, Wentworth Street, Hillborough Road, Ingram Street and Cascade Road). The site is also not directly adjacent to any 'Heritage Areas' identified under the Planning Scheme.

The site is not listed under the Tasmanian Heritage Register.

Given the proposed works will occur on an existing recreational site on previously disturbed land, it is considered highly unlikely that the works would impact items of Aboriginal heritage significance.

5.8 Flora and Fauna

The development will not require the disturbance of any significant standing vegetation. All new lighting poles and underground cabling will be located on previously disturbed land.

5.9 Safety, Security and Crime Prevention

No changes to the existing security arrangements are proposed.

5.10 Social and Economic Impacts

The lighting upgrade will improve the quality of public facilities available for the broader community by bringing the lighting up to current best practice standards.

The works will provide employment for electrical and construction contractors.

6. Conclusion

The proposed development is an upgrade to sports lighting at an existing Council owned sporting facility.

The site is currently zoned 'Residential 2' and is located within Precinct 26C. Surrounding land is also mostly zoned for residential use.

The proposed development generates the following discretions under the Planning Scheme:

- Clause A.7.1 - Use and development for 'Active Recreation';
- Clause C.2.2 - Height.

The key considerations with respect to each of the above discretions relate to the potential impact on residential amenity with respect to visual impact, light spillage and any potential changes to site usage (noise, traffic).

As has been discussed in this report, the potential visual impacts associated with the development are minimal, largely due to topography, existing vegetation and the location of surrounding residential land in relation to the site. Light spill will be well within the maximum levels established by AS 4282 'Control of the Obtrusive Effects of Outdoor Lighting'. No significant resultant change to site usage is proposed, hence noise and traffic generation will not be significantly affected.

The proposed development considered to be acceptable with respect to the applicable requirements of the City of Hobart Planning Scheme 1982.

APPENDIX A

Title Information

Wellesley Oval • November 2014

the List

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
131798	1
EDITION	DATE OF ISSUE
1	22-Apr-1999

SEARCH DATE : 17-Jun-2014
SEARCH TIME : 02.39 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 131798
Derivation : Part of 299 Acres Gtd to Robert Lathrop Murray
Derived from 961/97

SCHEDULE 1

A151092 TRANSFER to HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BURDENING EASEMENT: a right of carriageway for Henry Thomas Francis Dillon and Victor Cedrick Reeves over the "ROADWAY 9.14 WIDE MARKED C.D.E.F." on Plan No. 131798
BURDENING EASEMENT: a right of carriageway for Thomas Williams and Frank Augustus Briant over the "ROADWAY 9.14 WIDE (excepting thereout that part of the Roadway marked C. D.E.F.)" on Plan No. 131798
BURDENING EASEMENT: a right of carriageway for George Cousins over the "ROADWAY 9.14 WIDE MARKED A.B." on Plan No. 131798
A50534 FENCING CONDITION in Transfer

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

Page 1 of 1

Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

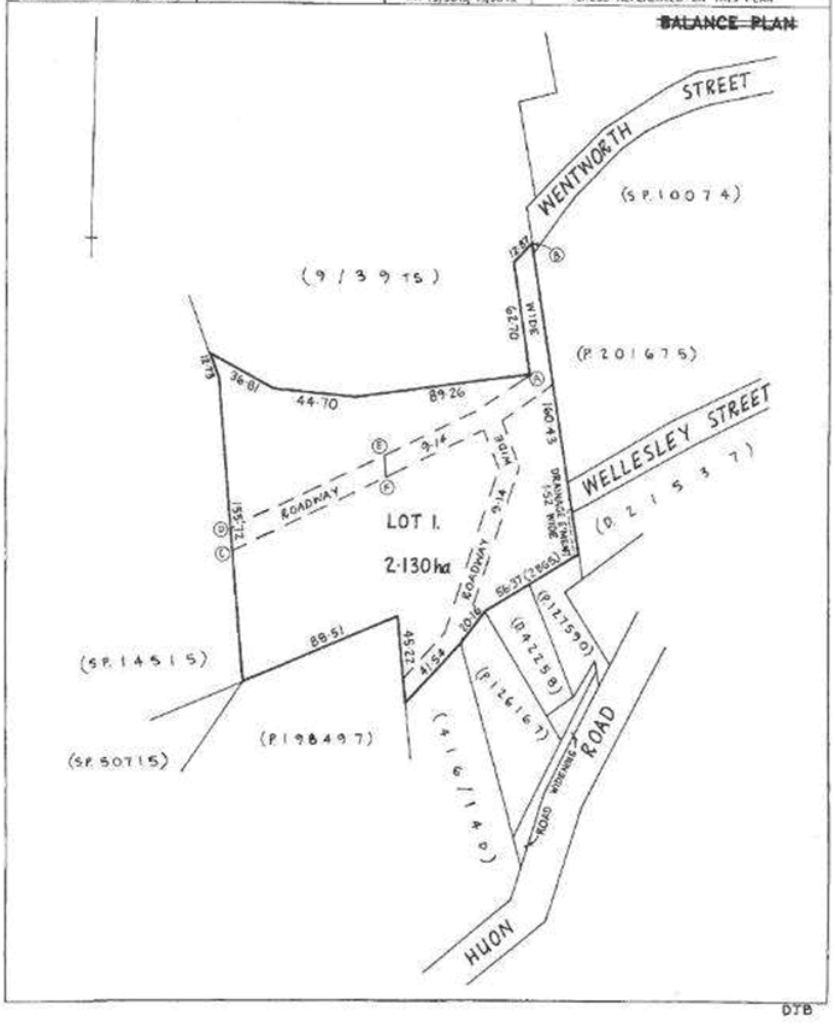
the LIST

FOLIO PLAN
RECORDER OF TITLES
Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

OWNER FOLIO REFERENCE CT. 961-97 GRANTEE	PLAN OF TITLE LOCATION CITY OF HOBART FIRST SURVEY PLAN No. 8/42 TS COMPILED BY L.D.R.B. SCALE 1:1500 LENGTHS IN METRES	REGISTERED NUMBER P131798 APPROVED 16 APR 1999 Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 114 (5225)	LAST UPI No	LAST PLAN 12/34 TS, No. 13/38 TS, 15/38 TS

ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN



Search Date: 17 Jun 2014 Search Time: 02:40 PM Volume Number: 131798 Revision Number: 01 Page 1 of 1

Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

the List

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
94118	1
EDITION	DATE OF ISSUE
1	13-Jul-1995

SEARCH DATE : 24-Jul-2014
SEARCH TIME : 11.16 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 94118 (formerly being 9-39TS)
Derivation : Part of 299 Acres Gtd. to R.L. Murray.
Prior CT 3065/65

SCHEDULE 1

A60496 HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BENEFITING EASEMENT: a right of carriageway over the lands marked Roadway on Diagram No. 94118

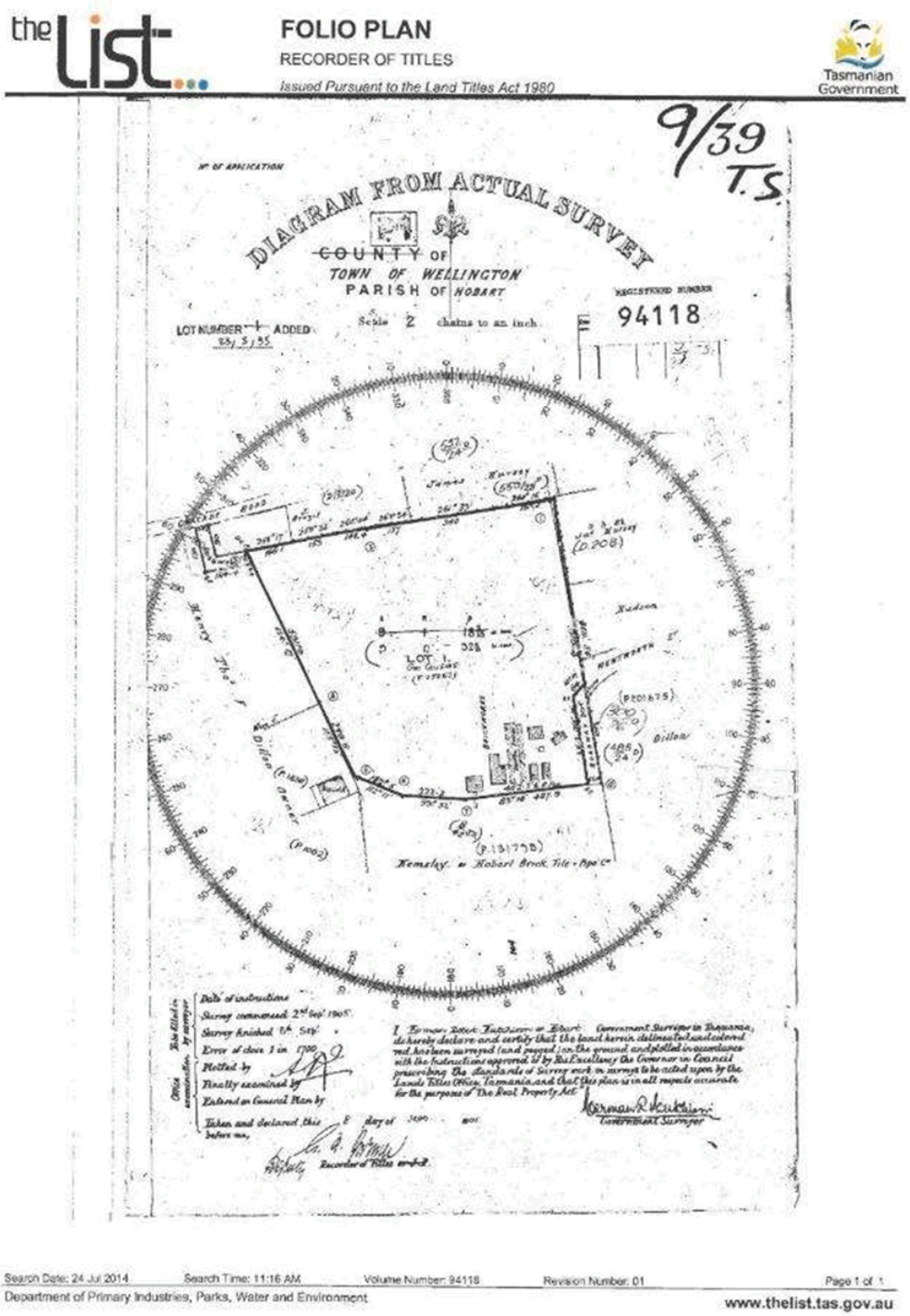
UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

Department of Primary Industries, Parks, Water and Environment

Page 1 of 1

www.thelist.tas.gov.au

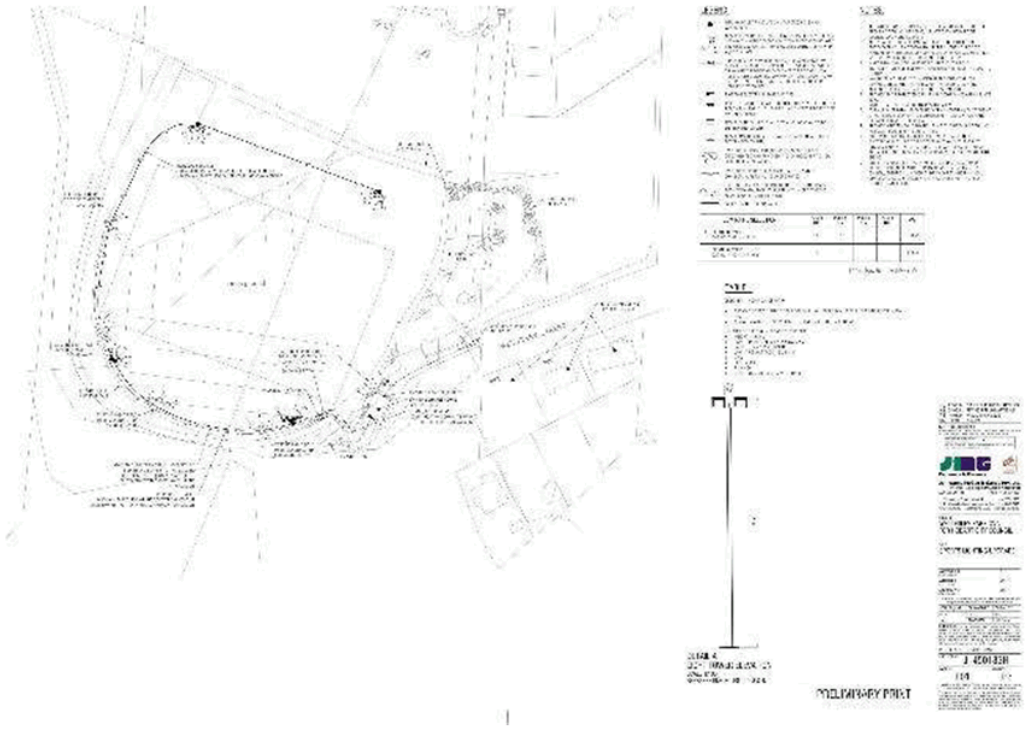


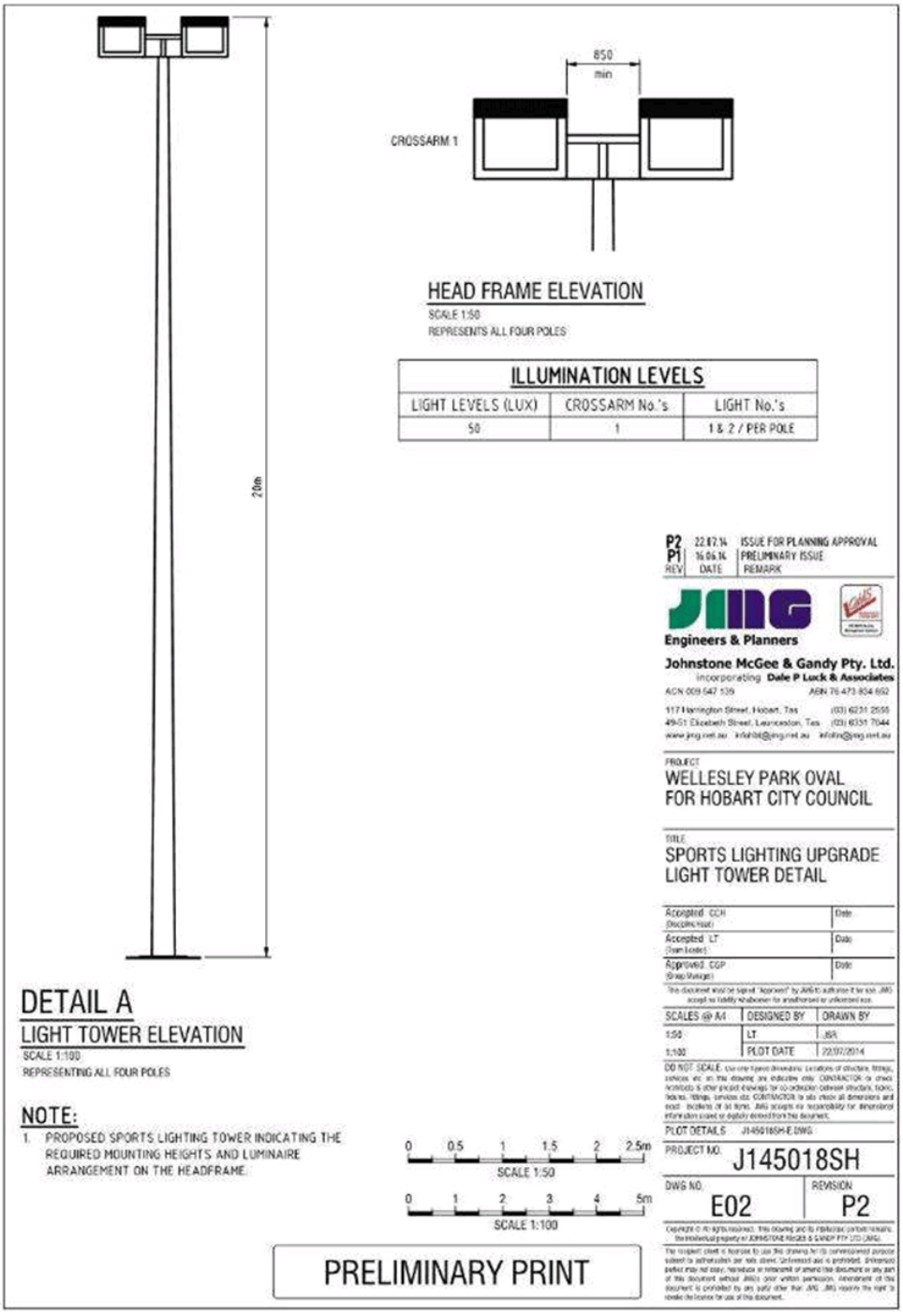
Search Date: 24 Jul 2014 Search Time: 11:16 AM Volume Number: 94118 Revision Number: 01 Page 1 of 1
Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

APPENDIX B

Proposal Plans

Wellesley Oval • November 2014


PRELIMINARY PLAN



HEAD FRAME ELEVATION
SCALE 1:50
REPRESENTS ALL FOUR POLES

ILLUMINATION LEVELS		
LIGHT LEVELS (LUX)	CROSSARM No.'s	LIGHT No.'s
50	1	1 & 2 / PER POLE

DETAIL A
LIGHT TOWER ELEVATION
SCALE 1:100
REPRESENTING ALL FOUR POLES

NOTE:
1. PROPOSED SPORTS LIGHTING TOWER INDICATING THE REQUIRED MOUNTING HEIGHTS AND LUMINAIRE ARRANGEMENT ON THE HEADFRAME.

0 0.5 1 1.5 2 2.5m
SCALE 1:50

0 1 2 3 4 5m
SCALE 1:100

PRELIMINARY PRINT

REV	DATE	REMARK
P2	22.07.14	ISSUE FOR PLANNING APPROVAL
P1	16.06.14	PRELIMINARY ISSUE

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incorporating Dale P Luck & Associates
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49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
www.jmg.net.au infohbt@jmg.net.au infoltn@jmg.net.au

PROJECT
WELLESLEY PARK OVAL
FOR HOBART CITY COUNCIL

TITLE
SPORTS LIGHTING UPGRADE
LIGHT TOWER DETAIL

Accepted CCH (Designer)	Date
Accepted LT (Team Leader)	Date
Approved CGP (Snr Manager)	Date

SCALES @ A4	DESIGNED BY	DRAWN BY
1:50	LT	JSR
1:100	PLOT DATE	22/07/2014

DO NOT SCALE. Use only figured dimensions. Locations of structure, fittings, services etc. on this drawing are indicative only. CONTRACTOR to check horizontal & other project drawings for co-ordination between structure, fabric, fixtures, fittings, services etc. CONTRACTOR to also check all dimensions and report incidents of all items. JMG accepts no responsibility for dimensional information scaled or digitally derived from this document.

PLOT DETAILS J145018SH-E.DWG
PROJECT NO. J145018SH
DWG NO. E02
REVISION P2

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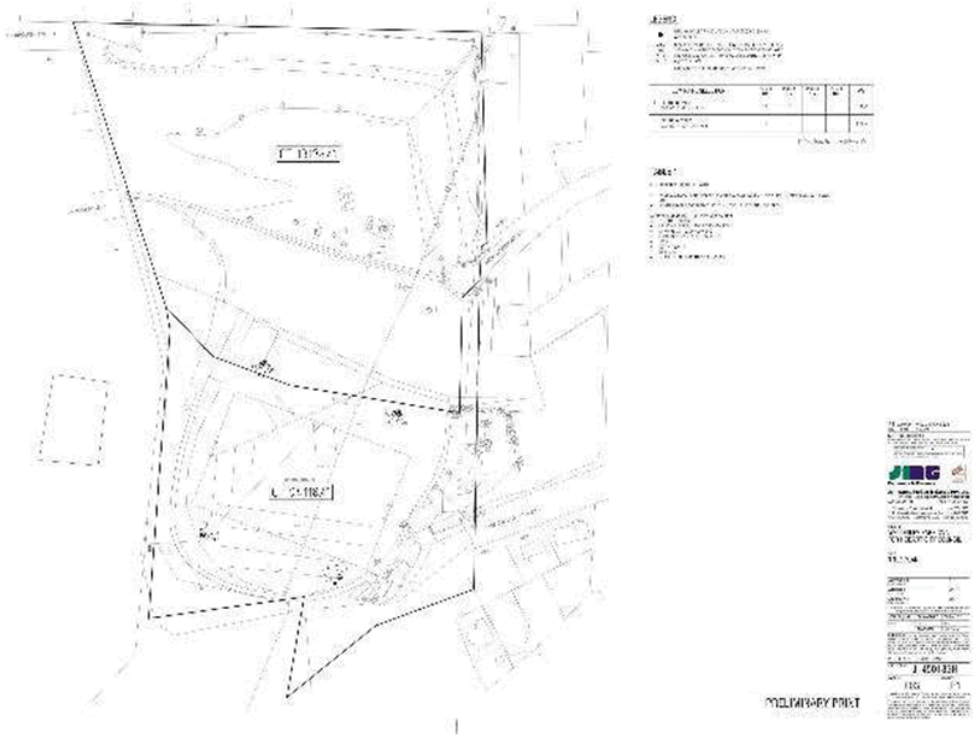


APPENDIX C

Photos and Photo Montages

Wellesley Oval • November 2014

APPENDIX D

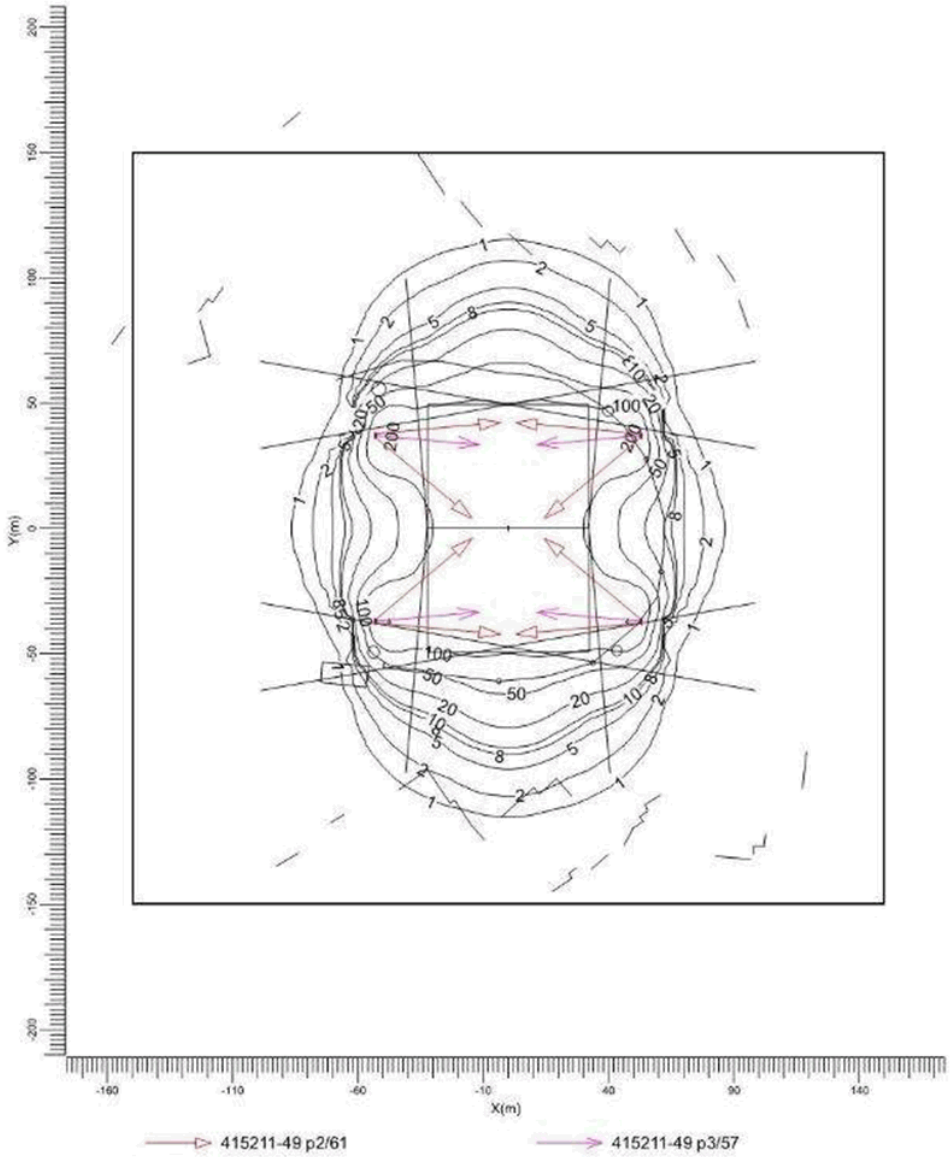
Light Spill Diagrams

Wellesley Oval • November 2014

Wellesley Park Soccer
1413302-01B Competition lighting Gerard Professional Solutions
Date: 15-08-2014

3.4 Surrounds Eh: Iso Contour

Grid : Surrounds at Z = -0.00 m
Calculation : Surface Illuminance (lux)



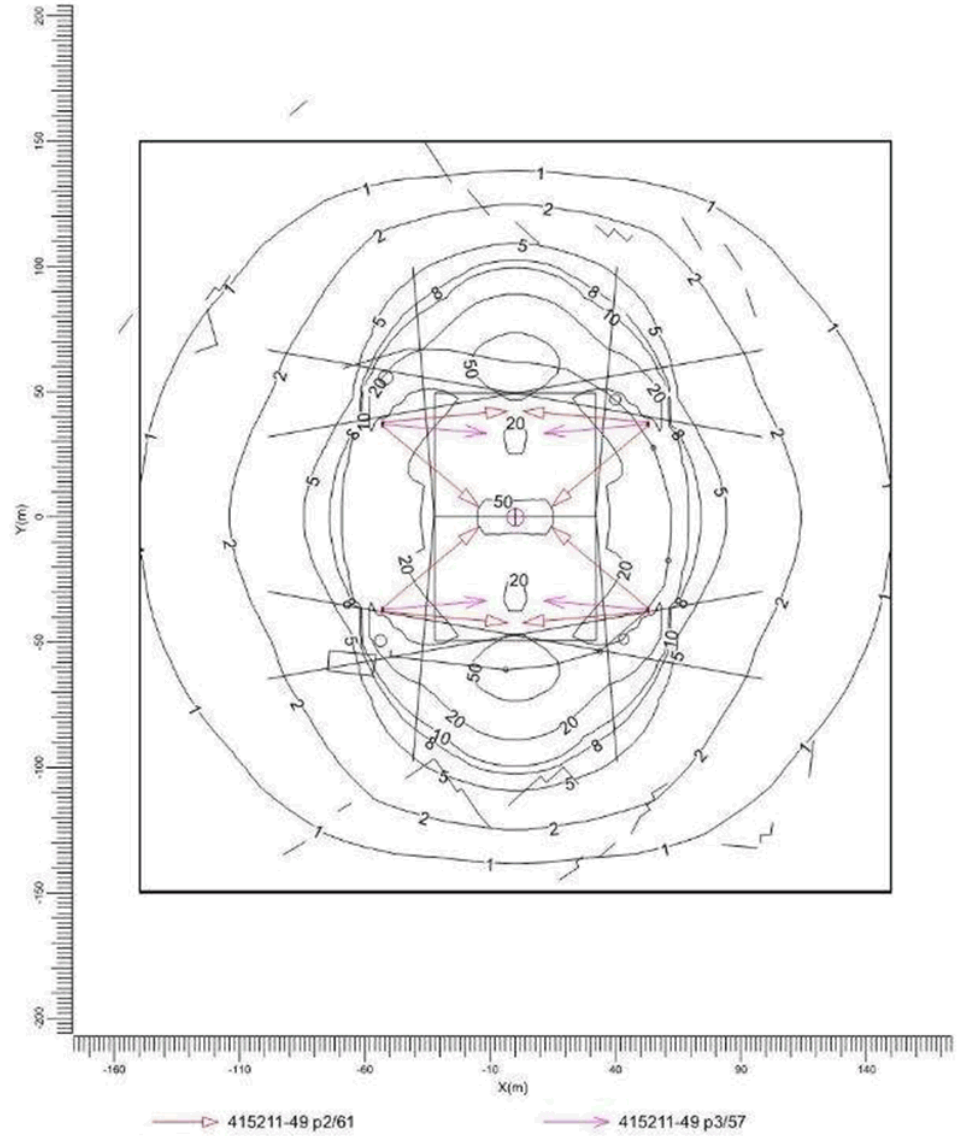
Average	Min/Ave	Min/Max	Project maintenance factor	Scale
18.6	0.00	0.00	0.80	1:2000

Philips Lighting B.V. - CalcuLuX Area 7.7.1.0 1413302-01B Wellesley Park.car Page: 8/11

Wellesley Park Soccer
1413302-01B
Competition lighting
Gerard Professional Solutions
Date: 15-08-2014

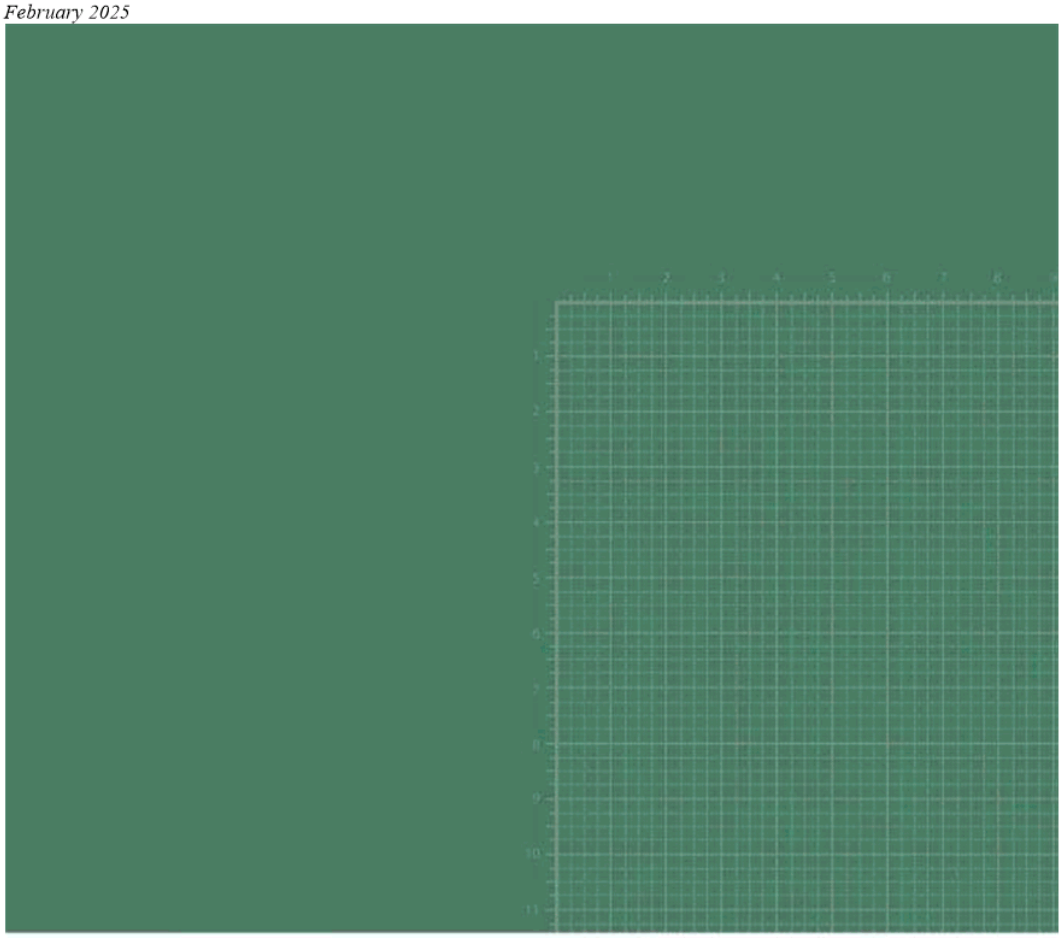
3.5 Surrounds Ev: Iso Contour

Grid : Surrounds at Z = -0.00 m
Calculation : Illuminance towards Centre (lux)
Height above grid : 1.50 m



Average	Min/Ave	Min/Max	Project maintenance factor	Scale
7.85	0.05	0.01	0.80	1:2000

Philips Lighting B.V. - CalcuLuX Area 7.7.1.0 1413302-01B Wellesley Park.car Page: 9/11



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ROCK SOLID GEOTECHNICS PTY LTD

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October 20, 2014

Mr Robert Child
JMG Engineers & Planners
rchild@jmg.net.au

RE: Geotechnical Assessment
Wellesley Park Oval

SUMMARY

The site proposed for four light towers at Wellesley Park is underlain by deep man made fill and possible Triassic sediments.

Profiles of the Auger Test Holes are included in the report.

INVESTIGATION

Mr Robert Child (Senior Engineer JMG Engineers & Planners) instigated this geotechnical investigation to provide subsurface information for four sites proposed for the construction of 20m high light towers.

The Tasmanian Geological Survey 1:25000 Digital Map - "Hobart" indicates that the site is underlain by man made fill within Triassic sediments.

A field survey was completed on Thursday 16 October, 2014, including the excavation of test holes at each of the sites (SAMPLA 25 Mechanical Auger with 100mm diameter solid flight augers). The test holes positions are marked on the accompanying plan. Services location was completed by 'Archer's Underground Service Location' prior to commencement of drilling.

The oval has been constructed on an old tip site. The ground is undulating in profile, indicating continued settlement of the oval surface.

Light Tower #1 – Hole A

0.00 – 0.25m	clayey SAND: fine to medium grained, dark brown, to 20% clay, roots and rootlets – TOPSOIL FILL
0.25 – 0.80m	gravelly & sandy CLAY: medium plasticity, black / very dark greyish brown, 25% fine to medium grained sand, 20% fine to medium sub-angular dolerite gravel – FILL
0.80 – 1.30m	gravelly & sandy CLAY: medium plasticity, grey / olive brown, 20-25% fine to coarse grained sand, to 20% fine to coarse rounded to angular dolerite and siltstone gravel, moist – BEARING CAPACITY 140kPa – FILL
1.30 – 2.75m	gravelly & sandy CLAY: medium to high plasticity, green / greyish green, 20% fine to coarse grained sand, 25% fine to coarse rounded to angular dolerite and siltstone gravel, trace wood brick and plastic, moist – BEARING CAPACITY 150kPa – FILL Diesel smell – contaminated material? Sample Taken at 1.65m depth.
2.75m+	Abrupt Mechanical Auger refusal in FILL – possible boulders

A second hole (Hole B) was completed adjacent to Hole A. A similar profile was exposed with auger refusal at 2.60m depth.

2.5m

Light Tower #2

0.00 – 0.45m	clayey SAND: fine to medium grained, dark brownish grey, to 20% clay, roots and rootlets – TOPSOIL FILL
0.45 – 0.95m	gravelly & sandy CLAY: medium plasticity, black / very dark brown, 25% fine to medium grained sand, 20% fine to medium sub-angular dolerite gravel – FILL
0.95 – 5.25m	gravelly & sandy CLAY: medium to high plasticity, brown / green / olive brown, 20-30% fine to coarse grained sand, to 30% fine to coarse rounded to angular dolerite and siltstone gravel, trace wood brick and plastic, moist – BEARING CAPACITY 140kPa average with band of 100kPa clay between 2.60 and 3.30m – FILL Diesel smell – contaminated material? Sample Taken at 2.30m depth
5.25m+	Abrupt Mechanical Auger refusal in FILL – possible boulders

2.5

Light Tower #3

0.00 - 0.25m	clayey SAND: fine to medium grained, dark brownish grey, to 20% clay, roots and rootlets - TOPSOIL FILL
0.25 - 1.10m	gravelly & sandy CLAY: medium plasticity, brown / yellowish brown, 20% fine to coarse grained sand, 20% fine to medium angular sandstone gravel - BEARING CAPACITY 160kPa
1.10 - 3.15m	sandy CLAY: medium plasticity, greenish grey, 30-35% fine to medium grained sand, (thin bands of wet, brown, medium plasticity sandy CLAY with BEARING CAPACITY 100kPa), moist - BEARING CAPACITY 130kPa average Sample Taken at 1.70m depth
3.15m+	Abrupt Mechanical Auger refusal on probable sandstone bedrock

2.4

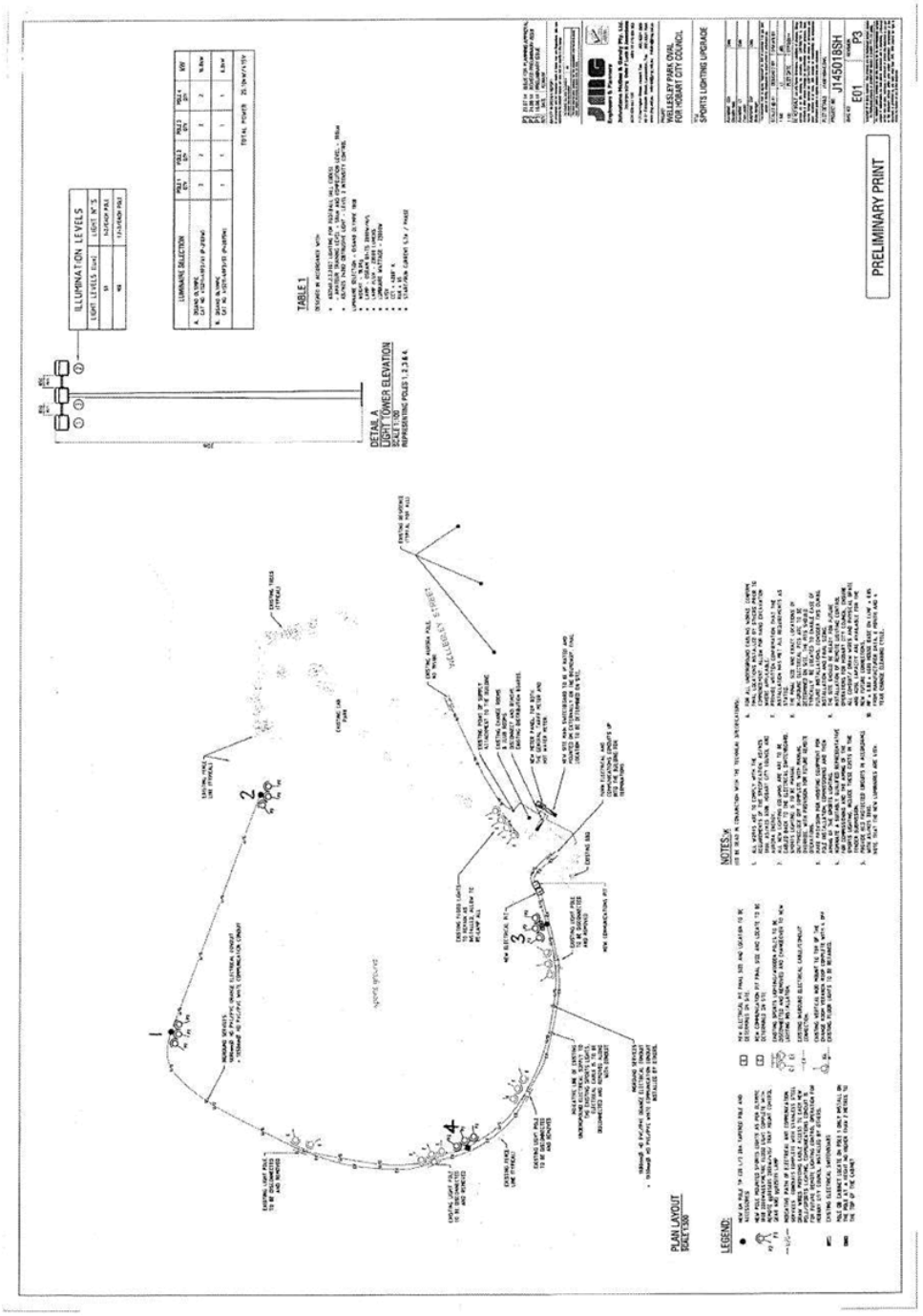
Light Tower #4 - Hole A

0.00 - 0.20m	clayey SAND: fine to medium grained, dark brownish grey, to 20% clay, roots and rootlets - TOPSOIL FILL
0.20 - 0.70m	sandy CLAY / clayey SAND: medium plasticity clay, fine to medium grained sand, dark brown, trace fine to medium angular sandstone gravel, moist - BEARING CAPACITY 150kPa
0.70 - 1.35m	sandy CLAY: medium plasticity, dark brown, 30% fine to coarse grained sand, moist - BEARING CAPACITY 140kPa
1.35m+	Abrupt Mechanical Auger refusal on probable sandstone bedrock

A second hole (Hole B) was completed adjacent to Hole A. A similar profile was exposed with auger refusal at 1.55m depth.

The information in this report is based on samples taken from specific sites. It is recommended to notify the author should it be revealed that the sub-surface conditions differ from those presented in this report, so additional assessment and advice may be provided.

Peter Hofto BSc (Hons)
Engineering Geologist


PRELIMINARY PRINT
SPORTS LIGHTING UPGRADE
WELLESLEY PARK OVAL
HOBART CITY COUNCIL
J145018SH
E01
P3
ILLUMINATION LEVELS
LUMINAIRE SELECTION
TABLE 1
DETAIL A
LIGHT TOWER ELEVATION
SCALE 1:100
PLAN LAYOUT
SCALE 1:500
LEGEND:
NOTES:
WELLESLEY STREET

Appendix 3 Historical Aerial Photographs

Aerial Photo 2018-2019 Season (The LIST)

23 Nov 2002 – Source NRE

16 March 1990 – Source NRE

18 Feb 1984 – Source NRE

24 Jan 1969 – Source NRE

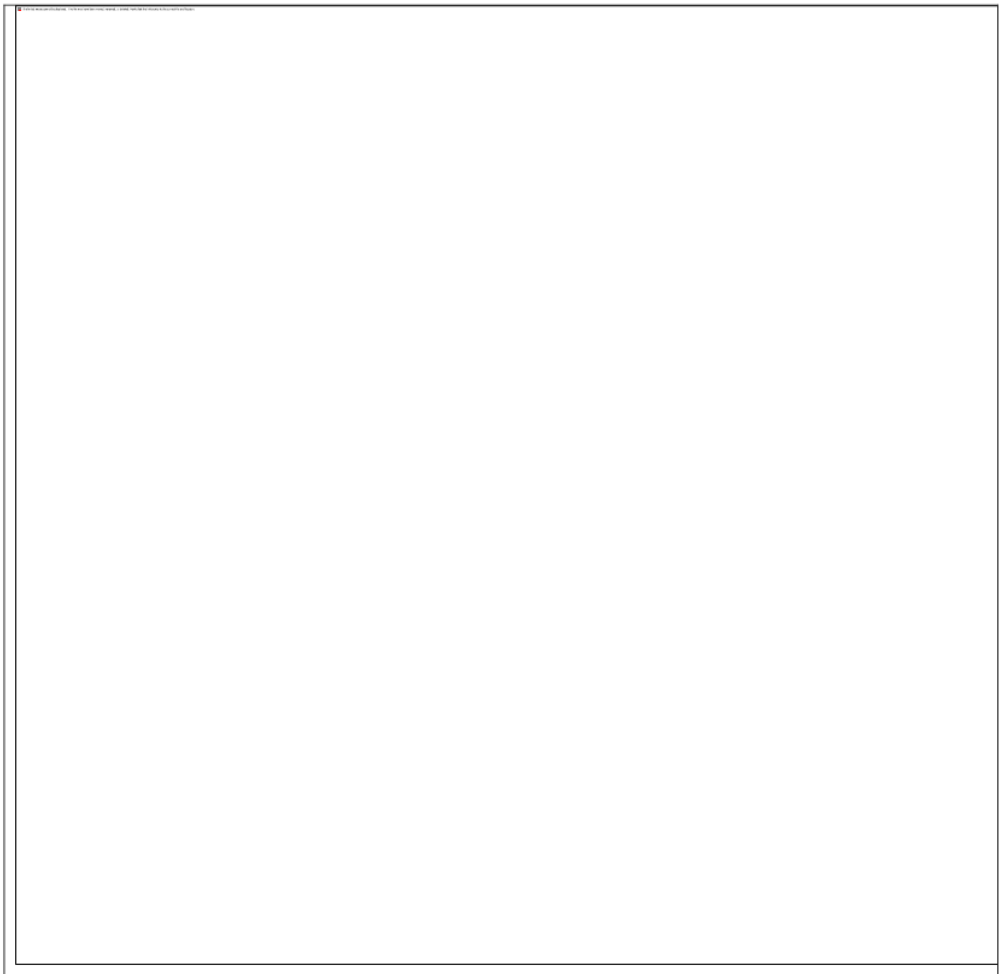
14 March 1967 – Source NRE

2 Jan 1965 – Source NRE

12 February 1957 – Source NRE

1946 – Source NRE

Appendix 4 Figures Provided by HCC



F16-61818 - Wellesley Park - South Hobart - Landfill Gas Assessment Additional Surface Methane Survey – GHD May 2013

Environmental Site Assessment: Wellesley Park 136 Wentworth Street, South Hobart, Tasmania.
February 2025

F16-61802 - Wellesley Park - South Hobart - Preliminary Geotechnical Assessment Environmental Investigation-GHD - 13022015

F16-61802 - Wellesley Park - South Hobart - Preliminary Geotechnical Assessment Environmental Investigation-GHD - 13022015

Appendix 5 Site Photographs

Photo 1. Proposed location for Pole 3. Existing pole to be decommissioned.

Photo 2. Sampling Pole 3.

Photo 3. Sampling equipment next to Pole 4, Pole 3 centre background.

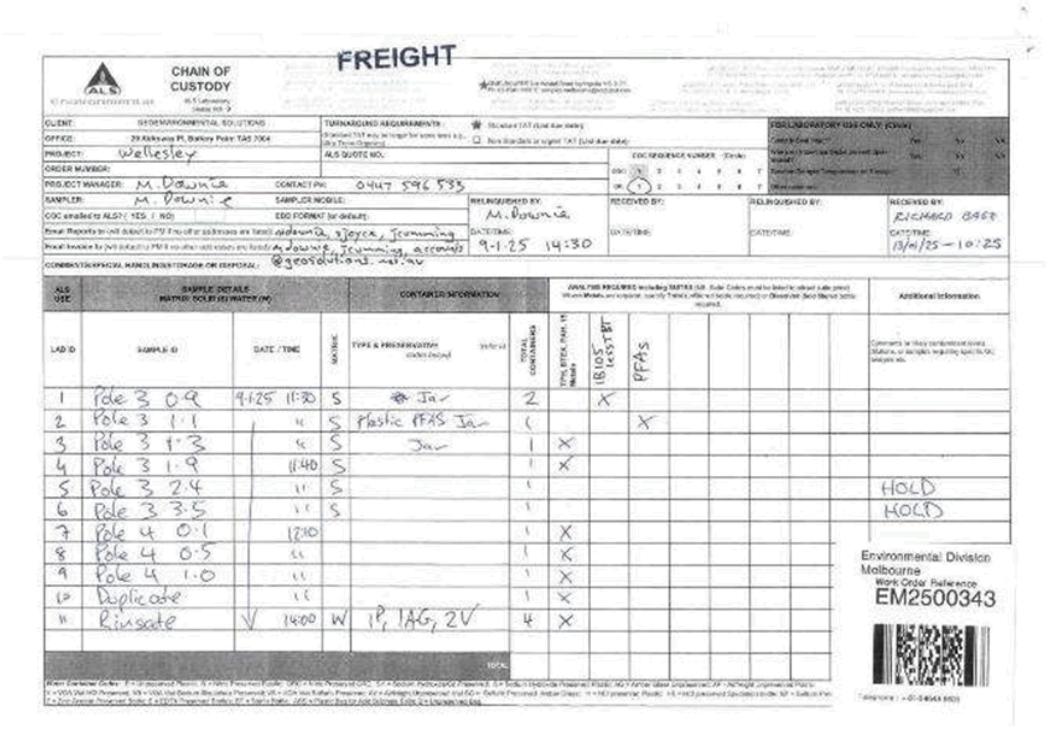
Photo 4. Proposed location for Pole 4. Existing pole to be decommissioned.

Photo 5. Borehole Profile of Pole 3.

Photo 6. Borehole Profile of Pole 4.

Photo 7. Close up of newspaper in Borehole Profile of Pole 3.

Appendix 6 Chain of Custody and Sample Receipt Notification



FREIGHT

CHAIN OF CUSTODY

| | | |

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2500343**		
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: MARK DOWNIE	Contact	: Katie Davis
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: mdownie@geosolutions.net.au	E-mail	: katie.davis@alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: Wellesley	Page	: 1 of 3
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: MARK DOWNIE		

Dates

Date Samples Received	: 13-Jan-2025 10:25	Issue Date	: 14-Jan-2025
Client Requested Due Date	: 20-Jan-2025	Scheduled Reporting Date	: **20-Jan-2025**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 8.9°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 11 / 9

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Melbourne, NATA accreditation no. 825, site no. 13778.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

right solutions. right partner.

Issue Date	: 14-Jan-2025
Page	: 2 of 3
Work Order	: EM2500343 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	^Ole Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (oxfag) ppFAS - Full Suite (30 analytes)	SOIL - P-20*1 7:43 EPA 105 (no TBT)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH-BTEXN-PAH-(S/M)
EM2500343-001	09-Jan-2025 11:30	Pole 3 0.9		✓		✓		
EM2500343-002	09-Jan-2025 11:30	Pole 3 1.1		✓	✓			
EM2500343-003	09-Jan-2025 11:30	Pole 3 1.3		✓			✓	✓
EM2500343-004	09-Jan-2025 11:40	Pole 3 1.9		✓			✓	✓
EM2500343-005	09-Jan-2025 11:40	Pole 3 2.4	✓					
EM2500343-006	09-Jan-2025 11:40	Pole 3 3.5	✓					
EM2500343-007	09-Jan-2025 12:10	Pole 4 0.1		✓			✓	✓
EM2500343-008	09-Jan-2025 12:10	Pole 4 0.5		✓			✓	✓
EM2500343-009	09-Jan-2025 12:10	Pole 4 1.0		✓			✓	✓
EM2500343-010	09-Jan-2025 12:10	Duplicate		✓			✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-03 15 Metals (NEPM Suite)
EM2500343-011	09-Jan-2025 14:00	Rinsate	✓

Issue Date	: 14-Jan-2025
Page	: 3 of 3
Work Order	: EM2500343 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-07: TRH-HBTEX-NPAH
EM2500343-011	09-Jan-2025 14:00	Rinsate	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

All Invoices		
- A4 - AU Tax Invoice (INV)	Email	accounts@geosolutions.net.au
JOHN PAUL CUMMING		
- *AU Certificate of Analysis - NATA (COA)	Email	jcumming@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jcumming@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jcumming@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jcumming@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	jcumming@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	jcumming@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	jcumming@geosolutions.net.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	jcumming@geosolutions.net.au
MARK DOWNIE		
- *AU Certificate of Analysis - NATA (COA)	Email	mdownie@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mdownie@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mdownie@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mdownie@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	mdownie@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	mdownie@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	mdownie@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	mdownie@geosolutions.net.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	mdownie@geosolutions.net.au
Sarah Joyce		
- *AU Certificate of Analysis - NATA (COA)	Email	sjoyce@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sjoyce@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sjoyce@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sjoyce@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	sjoyce@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	sjoyce@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	sjoyce@geosolutions.net.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	sjoyce@geosolutions.net.au

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2311886**		
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Katie Davis
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: jcumming@geosolutions.net.au	E-mail	: katie.davis@alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: Cascade	Page	: 1 of 3
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: MARK DOWNIE		

Dates

Date Samples Received	: 30-Jun-2023 11:15	Issue Date	: 04-Jul-2023
Client Requested Due Date	: 11-Jul-2023	Scheduled Reporting Date	: **11-Jul-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 4.8°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 17 / 17

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- 1 Voc Vial has broken.
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

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Issue Date	: 04-Jul-2023
Page	: 2 of 3
Work Order	: EM2311886 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - P-20* TA3 EPA 195 (no TBT)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)
EM2311886-001	28-Jun-2023 00:00	TP01 0.50	✓		✓	✓
EM2311886-002	28-Jun-2023 00:00	TP01 1.50	✓	✓		
EM2311886-003	28-Jun-2023 00:00	TP01 3.00	✓	✓		
EM2311886-004	28-Jun-2023 00:00	TP02 0.50	✓		✓	✓
EM2311886-005	28-Jun-2023 00:00	TP02 1.50	✓	✓		
EM2311886-006	28-Jun-2023 00:00	TP02 3.00	✓		✓	✓
EM2311886-007	28-Jun-2023 00:00	TP03 0.50	✓		✓	✓
EM2311886-008	28-Jun-2023 00:00	TP03 1.50	✓	✓		
EM2311886-009	28-Jun-2023 00:00	TP03 3.00	✓	✓		
EM2311886-010	28-Jun-2023 00:00	TP04 0.50	✓		✓	✓
EM2311886-011	28-Jun-2023 00:00	TP04 1.50	✓	✓		
EM2311886-012	28-Jun-2023 00:00	TP04 3.00	✓		✓	✓
EM2311886-013	28-Jun-2023 00:00	TP05 0.50	✓		✓	✓
EM2311886-014	28-Jun-2023 00:00	TP05 1.50	✓	✓		
EM2311886-015	28-Jun-2023 00:00	TP05 3.00	✓	✓		
EM2311886-016	28-Jun-2023 00:00	DUPLICATE	✓		✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-03T 15 Metals (Total) (NEPM)	WATER - W-07 TRH/BTEXN/PAH
EM2311886-017	28-Jun-2023 16:00	RINSATE	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Issue Date	: 04-Jul-2023
Page	: 3 of 3
Work Order	: EM2311886 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Requested Deliverables

All Invoices		
- A4 - AU Tax Invoice (INV)	Email	accounts@geosolutions.net.au
JOHN PAUL CUMMING		
- *AU Certificate of Analysis - NATA (COA)	Email	jcumming@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jcumming@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jcumming@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jcumming@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	jcumming@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	jcumming@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	jcumming@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	jcumming@geosolutions.net.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	jcumming@geosolutions.net.au
MARK DOWNIE		
- *AU Certificate of Analysis - NATA (COA)	Email	mdownie@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mdownie@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mdownie@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mdownie@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	mdownie@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	mdownie@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	mdownie@geosolutions.net.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	mdownie@geosolutions.net.au

Environmental Site Assessment: Wellesley Park 136 Wentworth Street, South Hobart, Tasmania. February 2025

Rebatch

Client / Client code: GEOENVSOL
Project: CASCADE
Project Manger: MARK DOWNIE
Date /time sample rec: 30/06/2023 11:15
Date/time instructions rec: Wed 12/07/2023 12:06 PM
Due date: Wednesday, 19 July 2023
Due date surcharge: STANDARD
Client aware of any holding time issues

CS Contact: Katie Davis
Additional Information:
***Please include this PM plus all report recipients in the original workorder

Environmental Division Melbourne
Work Order Reference
EM2312652

MS: 5367 - 5368
BM 13/7

New Lab ID	Client ID	Sampling Date / Time	Previous Work Order Reference	Previous ALS ID	Tray Number(s)	Container	Number of Containers	Analysis: EA001: pH (CaCl2)				Leach: TCLP - COPPER	Leach: TCLP - PAH incl BaP	Leach: TCLP - BaP		Shortest Holding time expiry
1	TP01 3.0	28/06/2023 0:00	EM2311886	6	MS:4811-12	SOIL	1	X				X				12-Jul-23
2	TP03 0.5	28/06/2023 0:00	EM2311886	7	MS:4811-12	SOIL	1						X			12-Jul-23
3	TP03 1.5	28/06/2023 0:00	EM2311886	8	MS:4811-12	SOIL	1							X		12-Jul-23
4	TP04 1.5	28/06/2023 0:00	EM2311886	11	MS:4811-12	SOIL	1							X		12-Jul-23
5	TP05 1.5	28/06/2023 0:00	EM2311886	14	MS:4811-12	SOIL	1							X		12-Jul-23
						TOTAL	5	#REF!								

Bharathi Narayanan

From: Mark Downie <mdownie@geosolutions.net.au>
Sent: Wednesday, 12 July 2023 2:06 PM
To: Katie Davis
Cc: Peter Ravlic; Sarah Joyce; JP Cumming
Subject: RE: [EXTERNAL] - FW: RESULTS & EDD for ALS Workorder : EM2311886 | Your Reference: Cascade

Yep. Two different things:
Leachable copper at usual leach pH (I assume leach is pH5 in line with Tas B1053).
And also a soil pH test (CaCl method).

From: Katie Davis <katie.davis@ALSGlobal.com>
Sent: Wednesday, July 12, 2023 1:21 PM
To: Mark Downie <mdownie@geosolutions.net.au>
Cc: Peter Ravlic <peter.ravlic@alsglobal.com>; Sarah Joyce <sjoyce@geosolutions.net.au>; JP Cumming <jcumming@geosolutions.net.au>
Subject: RE: [EXTERNAL] - FW: RESULTS & EDD for ALS Workorder : EM2311886 | Your Reference: Cascade

Hey Mark

Just double checking for sample TP01 3.0 when it requests pH CaCl, do you need the pH reported (as well as leachable copper)?

pH (CaCl)	EA001	Rayment & Lyons 2011 4B1	0.1 pH Units

Sometimes clients specify what pH they need it leached at so just making sure I've understood what you need.

Thanks,
Katie Davis
Client Services Coordinator - Environmental
Melbourne, Australia

D: +61 3 8549 9644
T: +61 3 8549 9600
katie.davis@alsglobal.com
2-4 Westall Rd, SPRINGVALE VIC 3171
alsglobal.com

In 2023 ALS Springvale updated our telephony services, temporarily you may notice the number we call you on isn't consistent with details above. Our existing numbers are routed through temporary numbers during this transition but remain active. Please continue to contact us via the usual numbers above. We don't recommend saving the temporary numbers as they'll be deleted once the transition is complete.

From: Mark Downie <mdownie@geosolutions.net.au>
Sent: Wednesday, 12 July 2023 12:06 PM
To: Katie Davis <katie.davis@ALSGlobal.com>
Cc: Peter Ravlic <peter.ravlic@alsglobal.com>; Sarah Joyce <sjoyce@geosolutions.net.au>; JP Cumming <jcumming@geosolutions.net.au>
Subject: [EXTERNAL] - FW: RESULTS & EDD for ALS Workorder : EM2311886 | Your Reference: Cascade

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Kahlo,
Can we please get a rebatch for leachable fractions as follows.

TP01 3.0 – Copper (and pH CaCl if possible)
TP03 0.5 – Benzo(a)pyrene and Sum of PAH
TP03 1.5 – Benzo(a)pyrene
TP04 1.5 – Benzo(e)pyrene
TP05 1.5 - Benzo(a)pyrene

Regards,
Mark

From: angel.no-reply@alsglobal.com <angel.no-reply@alsglobal.com>
Sent: Monday, July 10, 2023 7:07 PM
To: Mark Downie <mdownie@geosolutions.net.au>
Subject: RESULTS & EDD for ALS Workorder : EM2311886 | Your Reference: Cascade

Deliverables for ALS Workorder EM2311886

Project: Cascade

Dear MARK DOWNIE,

Please find enclosed the following deliverables for **EM2311886**:

- EM2311886_0_COA.pdf
- EM2311886_0_ENMRG.CSV
- EM2311886_0_QC.pdf
- EM2311886_0_QCI.pdf
- Cascade ESDAT EM2311886_0.Chemistry2e.CSV
- Cascade ESDAT EM2311886_0.Header.XML
- Cascade ESDAT EM2311886_0.Sample2e.CSV
- EM2311886_0_COA_GL_EPA_WASTE.pdf
- EM2311886_COC.pdf
- EM2311886_COC_1.pdf

Report Recipients

- MARK DOWNIE

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2312652**		
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Katie Davis
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: jcumming@geosolutions.net.au	E-mail	: katie.davis@alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: Cascade	Page	: 1 of 2
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 30-Jun-2023 11:15	Issue Date	: 13-Jul-2023
Client Requested Due Date	: 19-Jul-2023	Scheduled Reporting Date	: **19-Jul-2023**

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ---	Temperature	: ---
Receipt Detail	:	No. of samples received / analysed	: 5 / 5

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM2311886.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

right solutions. right partner.

Issue Date	: 13-Jul-2023
Page	: 2 of 2
Work Order	: EM2312652 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA001 pH (CaCl)	SOIL - EG005C Leachable Metals by ICPAES	SOIL - EN33a-G TCLP Leachate - Glass Leaching Vessel	SOIL - EN33a-P TCLP Leachate - Plastic Leaching Vessel	SOIL - EP075 SIM PAH only SIM - PAH only
EM2312652-001	28-Jun-2023 00:00	TP01 3.0	✓	✓		✓	
EM2312652-002	28-Jun-2023 00:00	TP03 0.5			✓		✓
EM2312652-003	28-Jun-2023 00:00	TP03 1.5			✓		✓
EM2312652-004	28-Jun-2023 00:00	TP04 1.5			✓		✓
EM2312652-005	28-Jun-2023 00:00	TP05 1.5			✓		✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EA001: pH in soil using a 0.01M CaCl2 extract							
TP01 3.0	Soil Glass Jar - Unpreserved	05-Jul-2023	05-Jul-2023	30-Jun-2023	✓	12-Jul-2023	✗

Requested Deliverables

All Invoices		
- A4 - AU Tax Invoice (INV)	Email	accounts@geosolutions.net.au
JOHN PAUL CUMMING		
- *AU Certificate of Analysis - NATA (COA)	Email	jcumming@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jcumming@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jcumming@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jcumming@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	jcumming@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	jcumming@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	jcumming@geosolutions.net.au
MARK DOWNIE		
- *AU Certificate of Analysis - NATA (COA)	Email	mdownie@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mdownie@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mdownie@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mdownie@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	mdownie@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	mdownie@geosolutions.net.au

Appendix 7 Quality Assurance and Quality Control

| Duplicate Comparrison | Sample | Moisture Content (oven @ 105° | Arsenic | Barium | Beryllium | Cadmium | Chromium Total | Cobalt | Copper | Lead | Manganese | Nickel | Vanadium | Zinc | Mercury | Naphthalene | Acenaphthylene | Acenaphthene | Fluorene | Phenanthrene | Anthracene | Fluoranthene | Pyrene | Benzo[a]anthracene | Chrysene | Benzo[b+j]fluoranthene | Benzo[k]fluoranthene | Benzo[a]pyrene | Indeno[1,2,3-cd]pyrene | Dibenz[a,h]anthracene | Benzo[g,h,i]perylene | Sum of polycyclic aromatic hydr | Benzo[a]pyrene TEQ (WHO) | Benzene | Toluene | Ethylbenzene | meta- & para-Xylene | ortho-Xylene | Sum of Xylenes | Sum of BTEX | Total Xylenes | Naphthalene | C6 - C9 Fraction | C10 - C14 Fraction | C15 - C28 Fraction | C29 - C36 Fraction | C10 - C36 Fraction (sum) | C6 - C10 Fraction | C6 - C10 Fraction minus BTEX (F1) | C10 - C16 Fraction | C16 - C34 Fraction | C34 - C40 Fraction | C10 - C40 Fraction (sum) | C10 - C16 Fraction minus Naphthalene (F2) | Naphthalene | Acenaphthylene | Acenaphthene | Fluorene | Phenanthrene | Anthracene | Fluoranthene | Pyrene | Benzo[a]anthracene | Chrysene | Benzo[b+j]fluoranthene | Benzo[k]fluoranthene | Benzo[a]pyrene | Indeno[1,2,3-cd]pyrene | Dibenz[a,h]anthracene | Benzo[g,h,i]perylene | Sum of polycyclic aromatic hydrocarbons | Benzo[a]pyrene TEQ (zero) |
|---|---|---

QUALITY CONTROL REPORT

Work Order	: EM2500343	Page	: 1 of 22
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: MARK DOWNIE	Contact	: Katie Davis
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +61 3 8549 9600
Project	: Wellesley	Date Samples Received	: 13-Jan-2025
Order number	: ---	Date Analysis Commenced	: 14-Jan-2025
C-O-C number	: ---	Issue Date	: 21-Jan-2025
Sampler	: MARK DOWNIE		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 9		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	Position	Accreditation Category
Jonick Nhieu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	ZIC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	ZIC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

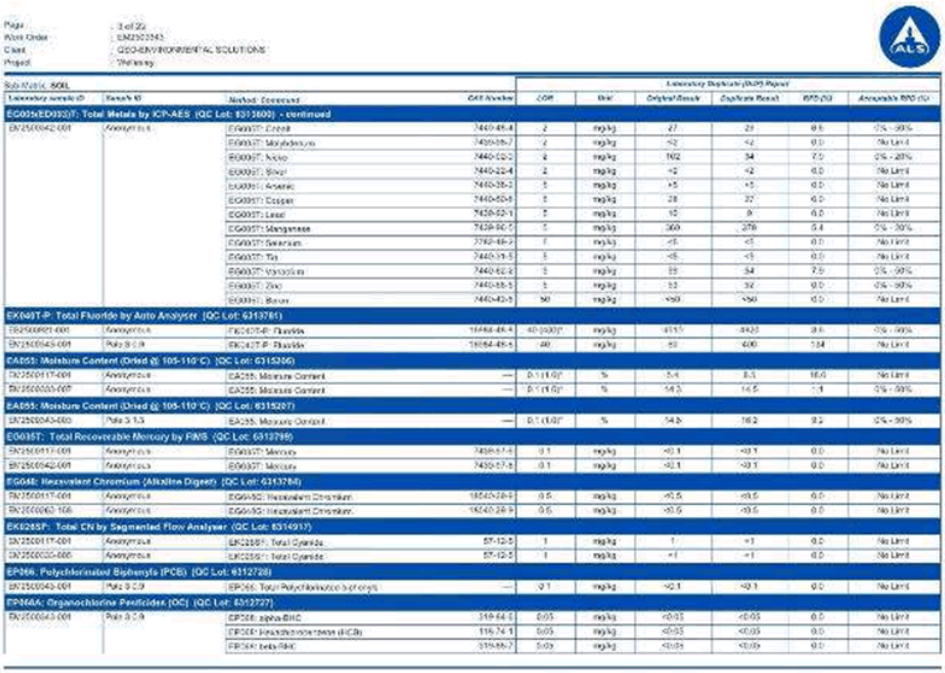
Key: Anonymous = Refers to samples which are not specified as part of this work order but formed part of the QC process for.
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting.
RPD = Relative Percentage Difference.
A = Indicates failed QC.
* = The final LOR has been raised due to dilution or other sample specific factor; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to 2 randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-ENVIRO.en are dependent on the magnitude of results in comparison to the level of reporting. Result < 10 times LOR No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

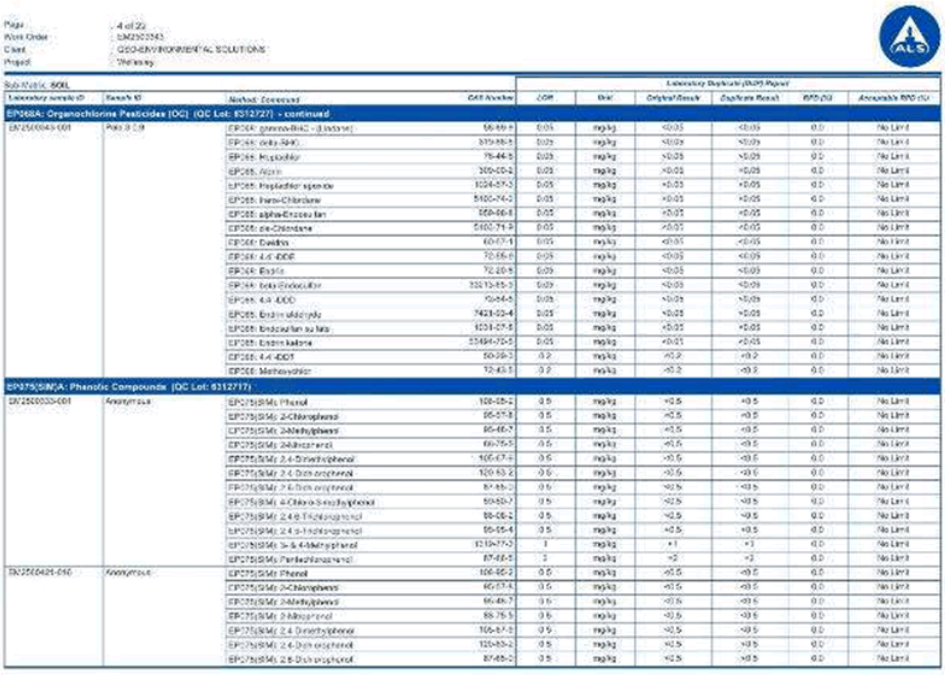
Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6913809)									
EM2500317-004	Anonymous	EG005T: Lead	7439-92-1	5	mg/kg	68	74	21.7	0% - 50%
		EG005T: Manganese	7439-96-5	5	mg/kg	290	297	18.4	0% - 20%
EM2500317-004	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	40	32	27.1	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	15	27.6	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	12	7	50.5	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	32	23	41.8	0% - 50%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	21	14	39.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	16	<5	104	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	59	55	73.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	47	31	41.2	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM2500043-004	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	2	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	290	290	0.0	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	76	67	11.9	0% - 20%



Page : 3 of 22
Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6313800) - continued									
EM2500042-001	Anonymous	EG005T: Cobalt	7440-48-4	2	mg/kg	27	29	8.6	0% - 50%
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	102	94	7.5	0% - 20%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	27	4.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	9	6.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	369	378	5.4	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	55	54	7.5	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	53	52	0.0	0% - 50%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EK040T-P: Total Fluoride by Auto Analyser (QC Lot: 6313781)									
EB2500021-001	Anonymous	EK040T-P: Fluoride	16984-48-8	40 (1000)*	mg/kg	4115	4420	8.6	0% - 50%
EM2500043-001	Pole 3 0.9	EK040T-P: Fluoride	16984-48-8	40	mg/kg	60	600	164	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6315206)									
EM2500017-001	Anonymous	EA055: Moisture Content	---	0.1 (1.0)*	%	5.4	5.5	18.0	No Limit
EM2500020-001	Anonymous	EA055: Moisture Content	---	0.1 (1.0)*	%	14.3	14.5	1.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6315207)									
EM2500043-001	Pole 3 1.3	EA055: Moisture Content	---	0.1 (1.0)*	%	14.5	16.2	9.2	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6312798)									
EM2500017-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM2500042-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 6313784)									
EM2500017-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM2500063-108	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EK028SF: Total CN by Segmented Flow Analyser (QC Lot: 6314917)									
EM2500017-001	Anonymous	EK028SF: Total Cyanide	57-12-5	1	mg/kg	1	<1	0.0	No Limit
EM2500020-005	Anonymous	EK028SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 6312728)									
EM2500043-001	Pole 3 0.9	EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6312727)									
EM2500043-001	Pole 3 0.9	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



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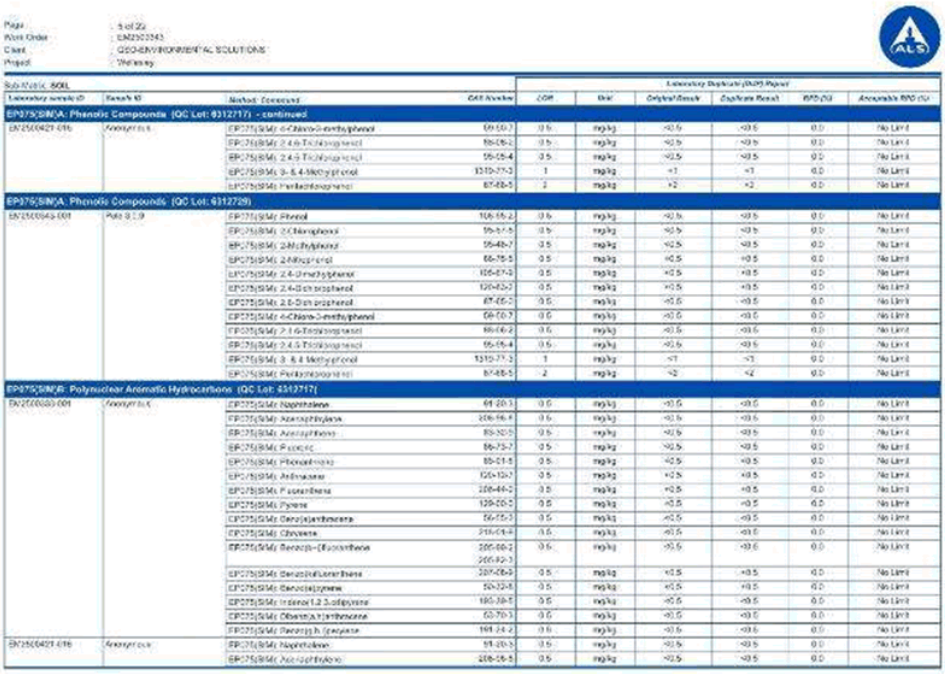
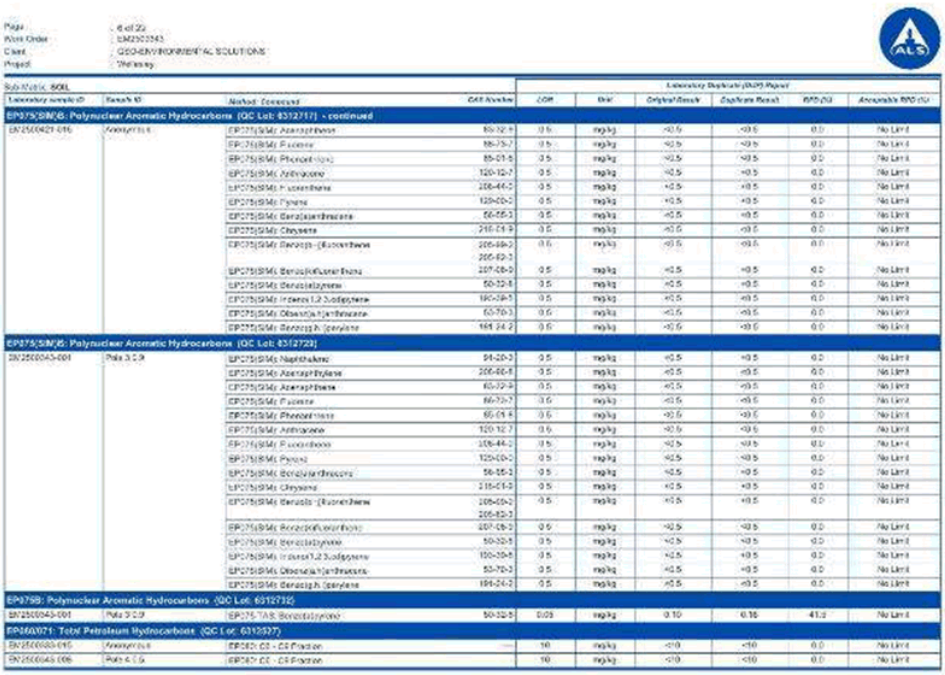
Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

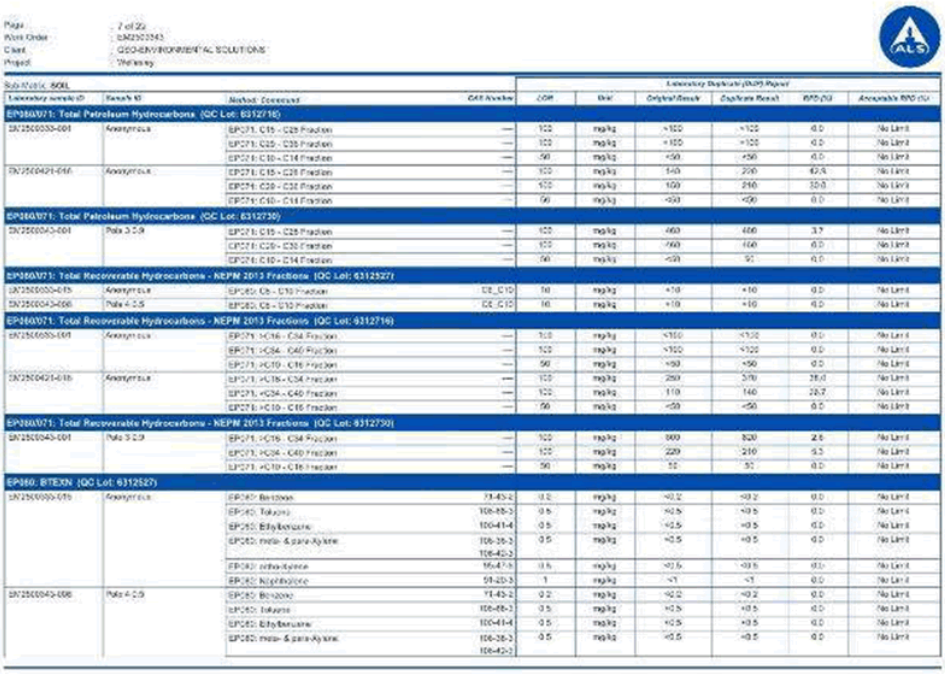
Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6312727) - continued									
EM2500043-001	Pole 3 0.9	EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 6312717)									
EM2500033-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3-Methylphenol	108-39-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	15831-10-4	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EM2500424-010	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3-Methylphenol	108-39-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



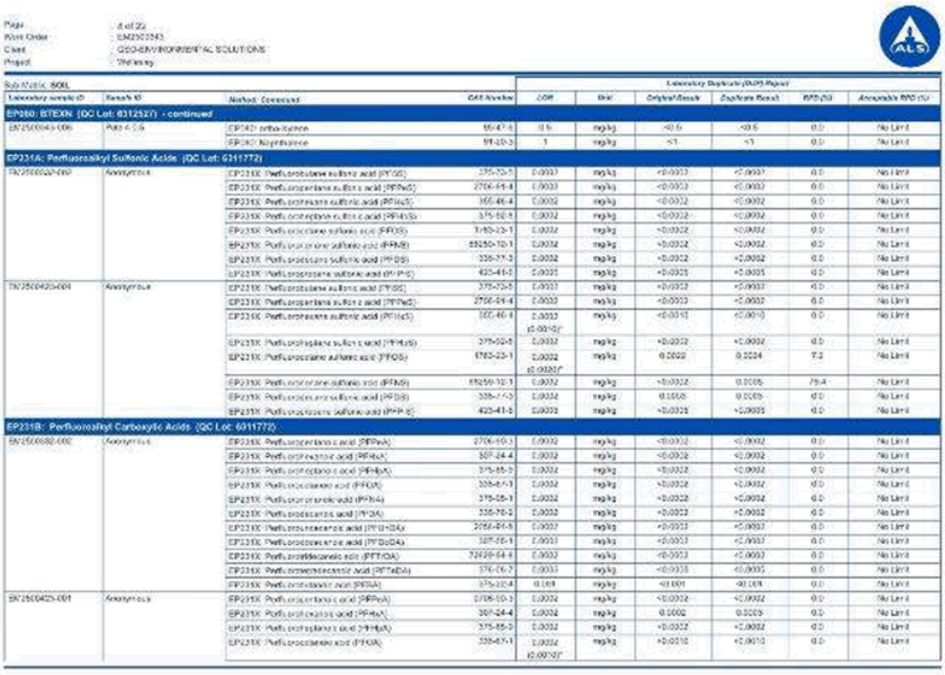
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 6312717) - continued									
EN2500421-016	Anonymous	EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3-, 5-, 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 6312729)									
EN2500043-001	Pole 3 C.9	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3-, 5-, 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6312717)									
EN2500043-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz[a]anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[b+j]fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[k]fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[a]pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EN2500421-016	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



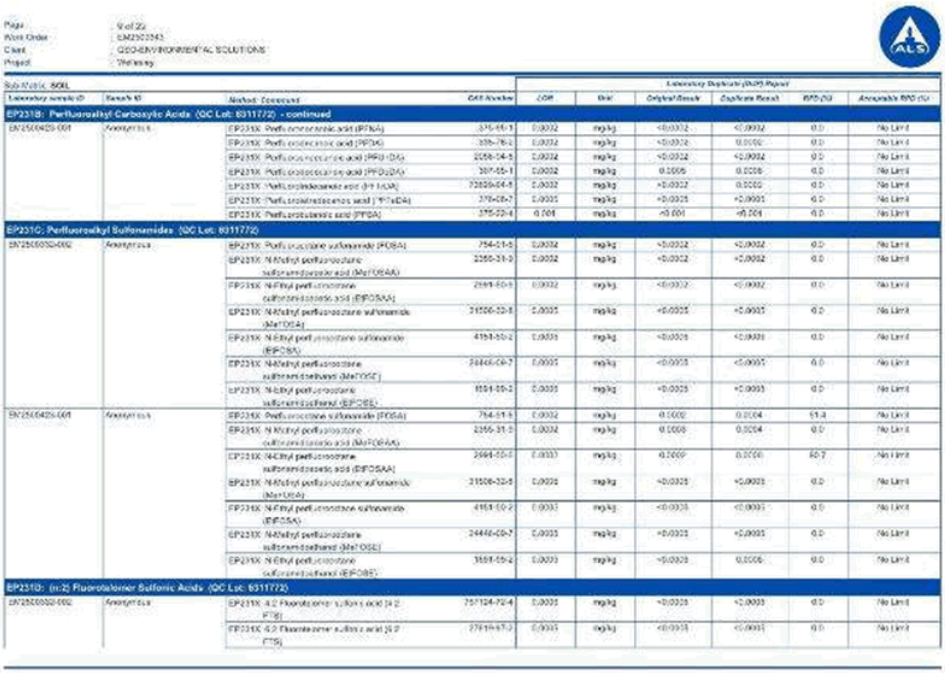
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6312717) - continued									
EN2500421-016	Anonymous	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz[a]anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[b+j]fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[k]fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[a]pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6312729)									
EN2500043-001	Pole 3 C.9	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz[a]anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[b+j]fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[k]fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[a]pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6312732)									
EN2500043-001	Pole 3 C.9	EP075-TAR: Benzo[a]pyrene	50-32-8	0.05	mg/kg	0.10	0.16	41.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6312927)									
EN2500043-016	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EN2500043-006	Pole 4 C.9	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit



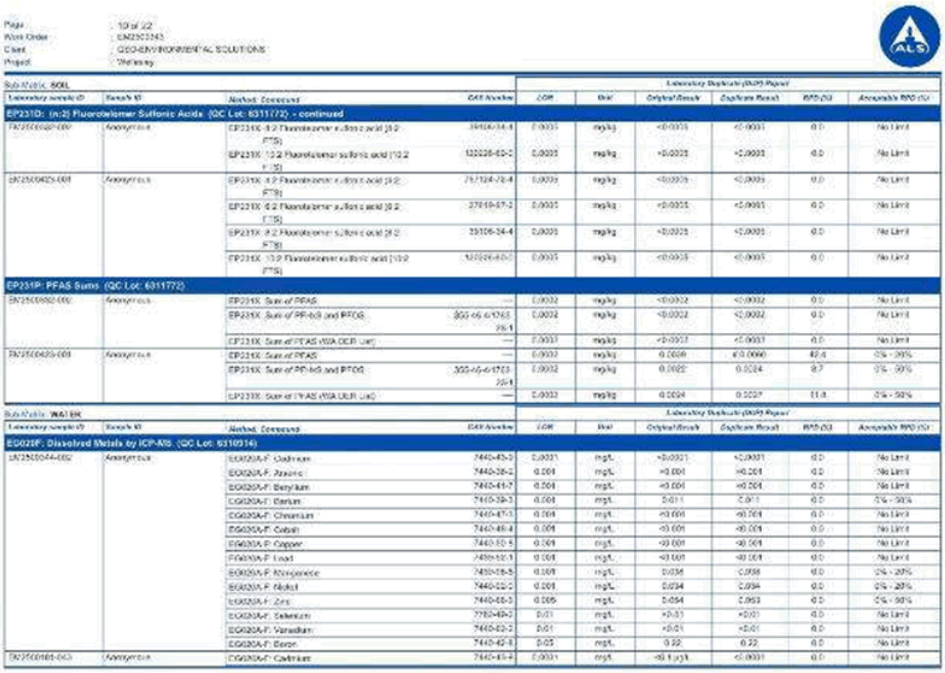
Laboratory sample ID	Result ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6312716)									
EM2500353-001	Anonymous	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EM2500421-006	Anonymous	EP071: C15 - C28 Fraction	---	100	mg/kg	140	200	62.5	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	100	210	30.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6312730)									
EM2500043-004	Pole 3 0.9	EP071: C15 - C28 Fraction	---	100	mg/kg	460	480	3.7	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	160	160	0.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	90	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6312727)									
EM2500050-015	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EM2500043-006	Pole 4 0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6312716)									
EM2500050-001	Anonymous	EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EM2500421-016	Anonymous	EP071: >C16 - C34 Fraction	---	100	mg/kg	250	370	38.0	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	110	140	26.7	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6312730)									
EM2500043-001	Pole 3 0.9	EP071: >C16 - C34 Fraction	---	100	mg/kg	800	820	2.5	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	220	210	5.3	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	50	50	0.0	No Limit
EP080: BTEXN (QC Lot: 6312727)									
EM2500050-015	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EM2500043-006	Pole 4 0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



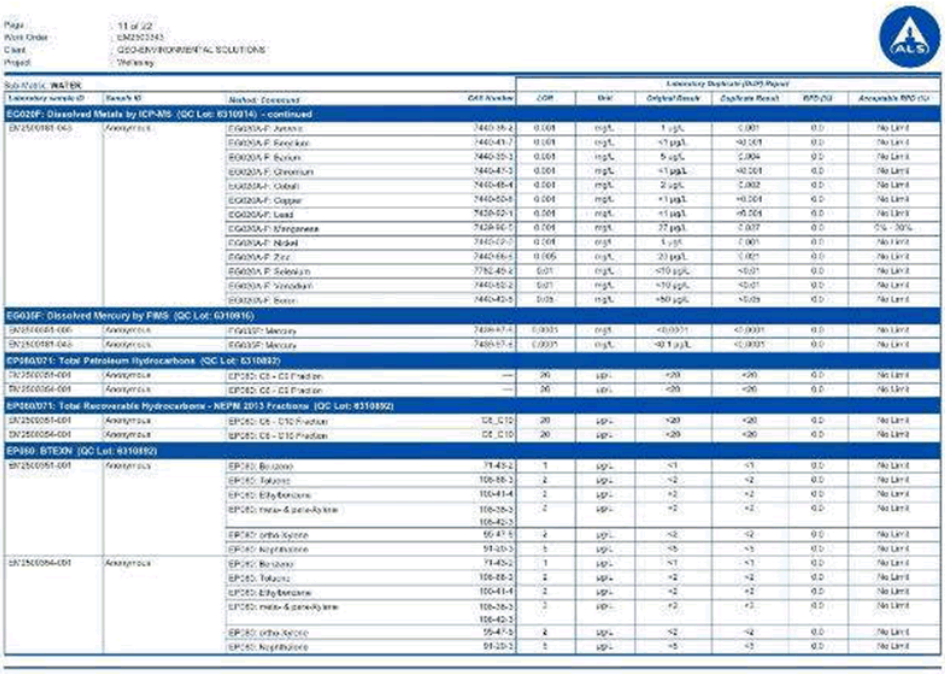
Laboratory sample ID	Result ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 6312727) - continued									
EM2500043-006	Pole 4 0.5	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6311772)									
EM2500050-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecane sulfonic acid (PFDoS)	79780-39-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EM2500420-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002 ±0.00010*	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002 ±0.00010*	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002 ±0.00010*	mg/kg	0.0002	0.0024	7.2	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0005	79.4	No Limit
		EP231X: Perfluorododecane sulfonic acid (PFDoS)	79780-39-5	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6311772)									
EM2500050-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EM2500420-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0002	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002 ±0.00010*	mg/kg	<0.0010	<0.0010	0.0	No Limit



Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6311772) - continued									
EM2500429-001	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0005	0.0006	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6311772)									
EM2500502-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EM2500429-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0002	0.0004	65.8	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	0.0008	0.0004	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	0.0009	0.0004	60.7	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.0006	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6311772)									
EM2500502-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid [4:2 FTS]	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid [6:2 FTS]	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit



Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6311772) - continued									
		EP231X: 8:2 Fluorotelomer sulfonic acid [8:2 FTS]	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid [10:2 FTS]	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EM2500429-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid [4:2 FTS]	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid [6:2 FTS]	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid [8:2 FTS]	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid [10:2 FTS]	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 6311772)									
EM2500502-002	Anonymous	EP231X: Sum of PFAS	---	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS mass (WA DER List)	---	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EM2500429-001	Anonymous	EP231X: Sum of PFAS	---	0.0002	mg/kg	0.0009	0.0008	12.4	0% - 30%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0002	0.0004	0.7	0% - 50%
		EP231X: Sum of PFAS mass (WA DER List)	---	0.0002	mg/kg	0.0004	0.0007	51.8	0% - 50%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6310916)									
EM2500044-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.011	0.011	0.0	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.038	0.038	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.034	0.034	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.054	0.053	0.0	0% - 50%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.22	0.22	0.0	No Limit
EM2500165-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit



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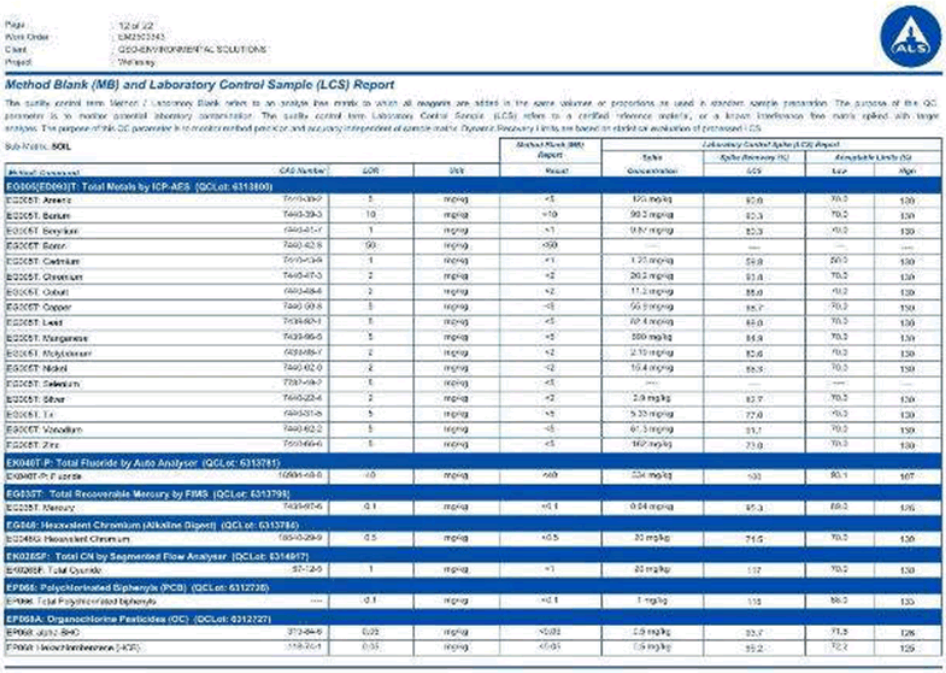
Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6310914) - continued									
EM2500161-003	Anonymous	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	1 µg/L	0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Boron	7440-35-3	0.001	mg/L	5 µg/L	0.004	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	2 µg/L	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	27 µg/L	0.027	0.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	1 µg/L	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	23 µg/L	0.021	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<10 µg/L	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<10 µg/L	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<50 µg/L	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 6310916)									
EM2500085-006	Anonymous	EG035F: Mercury	7439-97-6	0.0005	mg/L	<0.0005	<0.0005	0.0	No Limit
EM2500161-003	Anonymous	EG035F: Mercury	7439-97-6	0.0005	mg/L	<0.1 µg/L	<0.0005	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6310892)									
EM2500051-001	Anonymous	EP080: C6 - C9 Fraction	---	20	µg/L	<20	<20	0.0	No Limit
EM2500064-001	Anonymous	EP080: C6 - C9 Fraction	---	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6310892)									
EM2500051-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EM2500064-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 6310892)									
EM2500051-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EM2500064-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit



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Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volume or proportion as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method performance and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Sample (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6313800)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	100 mg/kg	92.6	70.0	130
EG005T: Barium	7440-39-3	10	mg/kg	<10	100 mg/kg	93.3	70.0	130
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	0.01 mg/kg	92.9	70.0	130
EG005T: Boron	7440-42-8	50	mg/kg	<50	---	---	---	---
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.25 mg/kg	94.8	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.0 mg/kg	91.8	70.0	130
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	11.3 mg/kg	88.0	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	50.0 mg/kg	88.7	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	88.0	70.0	130
EG005T: Manganese	7439-96-5	5	mg/kg	<5	500 mg/kg	84.9	70.0	130
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	2.10 mg/kg	82.6	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	10.4 mg/kg	86.5	70.0	130
EG005T: Selenium	7782-49-2	5	mg/kg	<5	---	---	---	---
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.0 mg/kg	82.7	70.0	130
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.23 mg/kg	77.0	70.0	130
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	97.3 mg/kg	91.7	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	102 mg/kg	73.0	70.0	130
EK040T-P: Total Fluoride by Auto Analyser (QCLot: 6313781)								
EK040T-P: Fluoride	16984-48-8	10	mg/kg	<10	224 mg/kg	100	80.1	107
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6313798)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	95.3	69.0	126
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 6313784)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	20 mg/kg	74.5	70.0	130
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 6314617)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	20 mg/kg	102	70.0	130
EP068: Polychlorinated Biphenyls (PCB) (QCLot: 6312726)								
EP068: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	1 mg/kg	118	68.0	135
EP068A: Organochlorine Pesticides (OC) (QCLot: 6312727)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	2.5 mg/kg	93.7	71.8	126
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	2.5 mg/kg	99.2	72.2	125

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Work Order : EM2303343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS	Acceptable Limits (%): Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 6312727) - continued								
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	113	70.0	124
EP068: gamma-BHC (Lindane)	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	108	80.1	124
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	69.2	129
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	66.6	122
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	69.8	123
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	101	67.2	124
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.0	126
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	70.2	126
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	72.1	124
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	68.0	122
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	68.1	124
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	65.8	129
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	67.9	124
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	72.3	127
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	66.1	131
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	67.4	131
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	93.7	56.4	139
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	66.8	126
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	97.9	56.5	152
EP075(SIM)A: Phenolic Compounds (QCLot: 6312717)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	90.8	61.2	121
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	85.7	65.3	129
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	92.3	64.8	125
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	88.1	70.7	129
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	90.2	69.5	129
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	89.2	68.5	127
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	92.6	74.2	125
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	89.9	70.8	121
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	97.8	73.5	121
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	95.3	67.8	119
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	93.7	64.5	126
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	6 mg/kg	74.6	50.0	116
EP075(SIM)A: Phenolic Compounds (QCLot: 6312729)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	85.2	57.2	121

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Work Order : EM2303343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS	Acceptable Limits (%): Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 6312729) - continued								
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	80.8	65.2	129
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	82.5	64.8	125
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	81.8	70.7	129
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	85.6	69.5	129
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	82.7	68.5	127
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	80.6	74.2	125
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	85.9	70.8	121
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	91.8	73.5	121
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	77.5	67.8	119
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	104	64.5	126
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	6 mg/kg	43.4	50.0	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6312717)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	93.7	66.7	129
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	83.8	68.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	84.6	63.6	129
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	92.7	67.3	129
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	94.8	76.4	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	85.3	68.7	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	94.3	78.3	124
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	92.8	73.3	126
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	91.8	76.9	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	87.6	69.9	130
EP075(SIM): Benzo[b+j]fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	87.4	70.2	121
EP075(SIM): Benzo[k]fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	89.9	80.4	139
EP075(SIM): Benzo[a]pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	89.8	70.2	123
EP075(SIM): Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	89.1	67.9	122
EP075(SIM): Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	88.5	69.8	123
EP075(SIM): Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	91.9	69.8	127
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6312729)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	86.1	66.7	129
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	84.6	68.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	87.8	63.6	129
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	93.8	67.3	129

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Work Order : EM2303343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Laboratory Control Spike (LCS) Report: Spike Recovery (%) LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6312729) - continued								
b/M/o(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	85.8	79.4	120
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	101	81.2	124
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	85.7	78.3	124
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	101	79.8	126
b/M/a(SIM): Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	82.7	76.8	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	105	80.2	130
EP075(SIM): Benzo(b)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	3 mg/kg	83.4	70.0	121
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	110	80.4	130
b/M/a(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	105	79.2	123
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	83.4	67.3	122
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	84.4	65.4	123
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	83.7	65.5	127
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 6312732)								
b/M/o-LMS: Benzo(a)pyrene	50-32-8	0.05	mg/kg	<0.05	2 mg/kg	88.4	77.5	134
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6312527)								
b/M/o: C6 - C9 Fraction	---	10	mg/kg	<10	30 mg/kg	90.7	58.5	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6312716)								
b/M/7: C10 - C14 Fraction	---	50	mg/kg	<50	750 mg/kg	102	75.0	126
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	2730 mg/kg	104	82.0	125
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	1410 mg/kg	101	80.4	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6312730)								
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	750 mg/kg	104	75.0	126
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	2730 mg/kg	105	82.0	125
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	1410 mg/kg	103	82.4	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6312527)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	95.7	58.5	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6312716)								
EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	1050 mg/kg	102	77.0	130
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	3640 mg/kg	100	84.5	129
EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	370 mg/kg	84.8	73.3	137
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6312730)								
EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	1050 mg/kg	104	77.0	130
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	3640 mg/kg	102	84.5	129

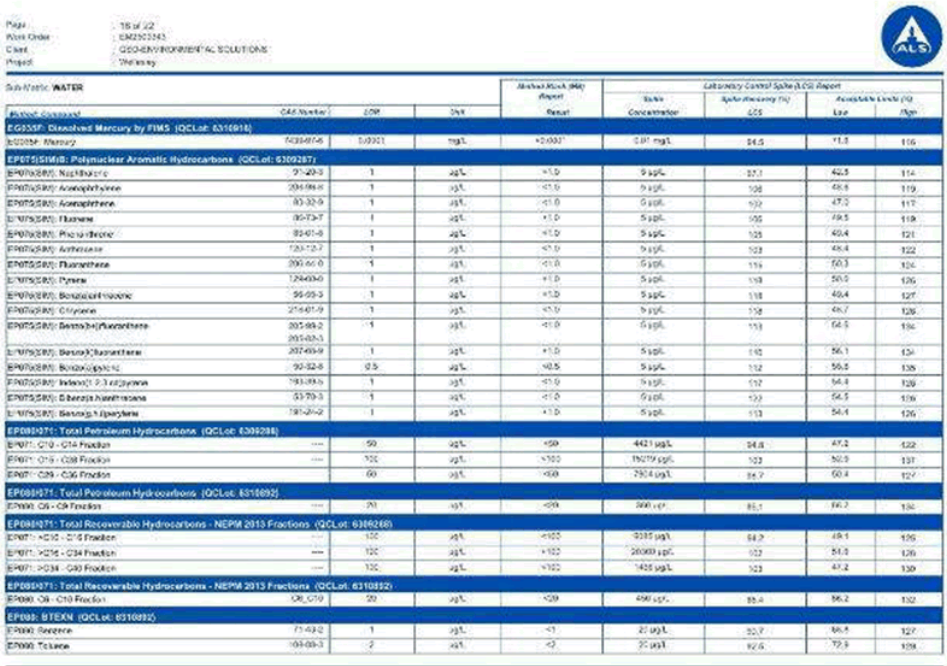
Page : 16 of 22
Work Order : EM2303343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: SOIL

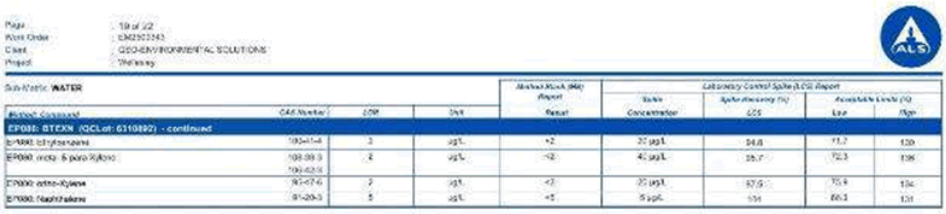
Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Laboratory Control Spike (LCS) Report: Spike Recovery (%) LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6312730) - continued								
b/M/7: >C34 - C40 Fraction	---	100	mg/kg	<100	370 mg/kg	85.2	73.3	137
EP080: BTEXN (QCLot: 6312527)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	94.4	84.5	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	89.6	80.5	129
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	100	85.8	124
b/M/0: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	95.8	84.3	124
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	95.8	86.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	95.8	61.8	123
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6311772)								
EP231A: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	0.00135 mg/kg	86.0	70.0	130
EP231A: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	90.3	72.0	128
EP231A: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00116 mg/kg	89.6	73.2	125
EP231A: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	82.4	67.3	130
EP231A: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	82.8	70.3	132
EP231A: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	85.3	69.0	130
EP231A: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.8	69.0	126
EP231A: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	72.8	59.9	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6311772)								
EP231B: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	85.5	71.0	135
EP231B: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.7	69.2	132
EP231B: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.8	70.0	132
EP231B: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.5	71.0	131
EP231B: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	69.0	133
EP231B: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.4	72.3	129
EP231B: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.6	69.0	133
EP231B: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.6	64.0	136
EP231B: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	60.3	135
EP231B: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.8	66.3	139
EP231B: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	80.8	68.2	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6311772)								
EP231C: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	67.0	137
EP231C: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	84.2	70.0	130
EP231C: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	83.7	70.0	130

Method: Compound	CAS Number	LOR	Unit	Result	Concentration	%REC	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6311772) - continued								
N-Methylperfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	82.6	70.0	130
N-Ethylperfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	80.7	70.0	130
N-Methylperfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	63.0	144
N-Ethylperfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00129 mg/kg	78.8	61.2	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6311772)								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	85.7	62.0	146
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	83.9	66.0	140
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	84.6	65.0	137
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	79.2	70.0	130
EP231P: PFAS Sums (QCLot: 6311772)								
Sum of PFAS	---	0.0002	mg/kg	<0.0002	---	---	---	---
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	---	---	---	---
Sum of PFAS (WA DER List)	---	0.0002	mg/kg	<0.0002	---	---	---	---

Method: Compound	CAS Number	LOR	Unit	Result	Concentration	%REC	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6310914)								
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.1	68.0	111
Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	87.3	85.0	112
Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	97.6	80.0	115
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.3	85.5	111
Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.6	80.2	109
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	89.4	84.3	110
Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.7	80.1	107
Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.9	84.5	108
Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.9	86.4	110
Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.8	84.3	110
Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	104	82.3	115
Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	91.1	80.7	110
Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.6	86.3	112
Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	93.7	85.4	115



Method: Compound	CAS Number	LOR	Unit	Result	Concentration	%REC	Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 6310916)								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.5	71.8	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6309287)								
Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	97.1	42.5	114
Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	108	68.6	119
Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	102	47.0	117
Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	105	49.5	119
Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	105	49.4	121
Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	103	48.4	122
Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	119	50.3	124
Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	118	50.0	126
Benzo[a]anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	118	49.4	127
Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	112	48.7	126
Benzo[b+j]fluoranthene	205-99-2/205-82-3	1	µg/L	<1.0	5 µg/L	113	54.5	136
Benzo[k]fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	110	56.1	134
Benzo[a]pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	112	56.5	135
Indeno[1,2,3-cd]pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	112	54.4	139
Dibenz[a,h]anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	123	56.5	136
Benzo[g,h,i]perylene	191-24-2	1	µg/L	<1.0	5 µg/L	113	54.4	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6309288)								
C10 - C14 Fraction	---	50	µg/L	<50	4421 µg/L	94.8	47.2	122
C15 - C28 Fraction	---	100	µg/L	<100	19219 µg/L	103	50.9	131
C29 - C36 Fraction	---	50	µg/L	<50	7904 µg/L	86.7	50.4	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6310892)								
C6 - C9 Fraction	---	20	µg/L	<20	800 µg/L	85.1	66.2	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6309288)								
>C10 - C16 Fraction	---	100	µg/L	<100	9385 µg/L	94.2	48.1	126
>C16 - C34 Fraction	---	100	µg/L	<100	28083 µg/L	103	54.0	126
>C34 - C40 Fraction	---	100	µg/L	<100	1405 µg/L	123	47.2	139
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6310892)								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	4561 µg/L	85.4	66.2	132
EP080: BTEXN (QCLot: 6310892)								
Benzene	71-43-2	1	µg/L	<1	20 µg/L	80.7	66.5	127
Toluene	108-88-3	2	µg/L	<2	20 µg/L	92.6	72.9	129



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Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS Recovery (%)	Acceptable Limits (%): Low	High
EP080: BTEXN (QCLot: 6310892) - continued								
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	84.8	73.7	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	85.7	72.3	126
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	87.5	70.4	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	101	66.3	131

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an interlaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Wider recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Acceptable Limits (%): Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6315808)							
EM2503117-002	Anonymous	EG035T: Arsenic	7440-38-2	50 mg/kg	85.9	78.0	124
		EG035T: Cadmium	7440-43-9	50 mg/kg	91.7	79.7	119
		EG035T: Chromium	7440-47-3	50 mg/kg	91.8	79.0	121
		EG035T: Copper	7440-50-8	200 mg/kg	88.7	80.0	120
		EG035T: Lead	7439-92-1	250 mg/kg	95.8	80.0	120
		EG035T: Nickel	7440-02-0	50 mg/kg	92.4	78.0	120
		EG035T: Zinc	7440-66-6	200 mg/kg	91.5	80.0	120
EK040T-P: Total Fluoride by Auto Analyser (QCLot: 6313781)							
EM2503117-001	Anonymous	EK040-P: Fluoride	16984-48-8	400 mg/kg	# 56.2	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6313799)							
EM2503117-003	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	104	70.0	130
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 6313784)							
EM2503117-002	Anonymous	EG048S: Hexavalent Chromium	18540-29-9	20 mg/kg	3.50.4	68.0	116
EM2503117-002	Anonymous	EG048S: Hexavalent Chromium	18540-29-9	20 mg/kg	93.8	68.0	116
EK028SF: Total CN by Segmented Flow Analyser (QCLot: 6314317)							
EM2503117-003	Anonymous	EK028SF: Total Cyanide	57-12-5	20 mg/kg	96.8	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 6312717)							
EM2503333-015	Anonymous	EP075(SIM): Phenol	108-95-2	3 mg/kg	84.9	77.1	119
		EP075(SIM): 2-Chlorophenol	95-57-8	3 mg/kg	86.5	76.0	123
		EP075(SIM): 2-Nitrophenol	88-75-5	3 mg/kg	87.4	63.8	136
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	85.8	61.5	120
		EP075(SIM): Pentachlorophenol	87-86-5	3 mg/kg	103	15.3	139

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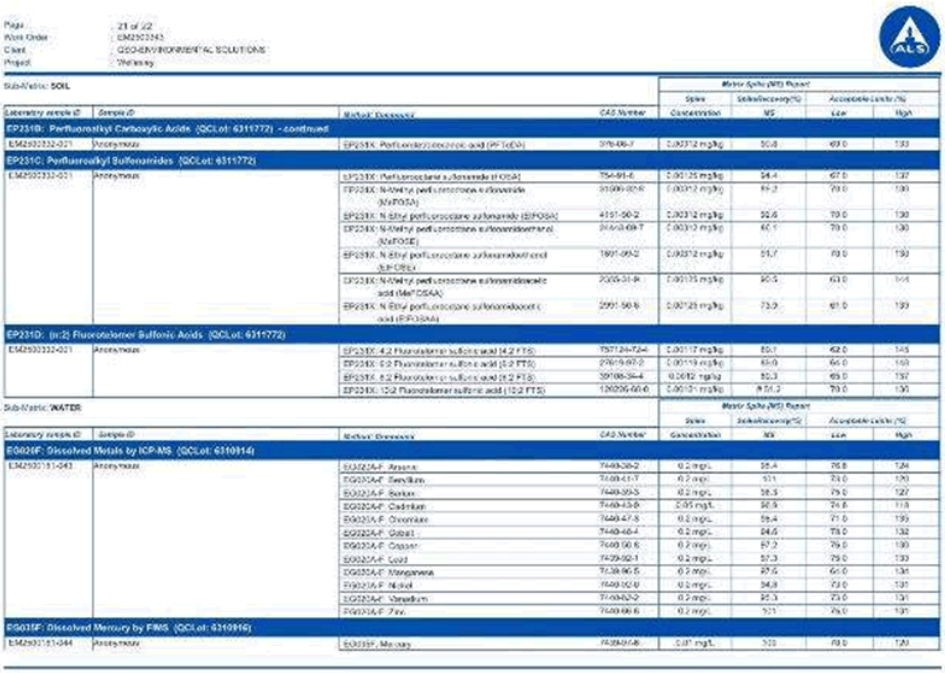
Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Acceptable Limits (%): Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6312717)							
EM2503333-015	Anonymous	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	90.7	77.2	116
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	84.8	65.5	136
EP068A/071: Total Petroleum Hydrocarbons (QCLot: 6312527)							
EM2503333-015	Anonymous	EP068A: C6 - C9 Fraction	---	28 mg/kg	94.9	69.4	124
EP068A/071: Total Petroleum Hydrocarbons (QCLot: 6312716)							
EM2503333-015	Anonymous	EP071: C10 - C14 Fraction	---	490 mg/kg	103	71.2	125
		EP071: C15 - C28 Fraction	---	3730 mg/kg	103	75.8	127
		EP071: C29 - C36 Fraction	---	1410 mg/kg	100.0	78.0	120
EP068A/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6312527)							
EM2503333-021	Anonymous	EP068: C6 - C10 Fraction	C6_C10	23 mg/kg	85.7	69.8	120
EP068A/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6312716)							
EM2503333-015	Anonymous	EP071: >C10 - C16 Fraction	---	1080 mg/kg	101	72.2	129
		EP071: >C16 - C34 Fraction	---	3640 mg/kg	99.4	79.5	113
		EP071: >C34 - C40 Fraction	---	270 mg/kg	96.0	66.6	138
EP080: BTEXN (QCLot: 6312527)							
EM2503333-021	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	93.0	50.4	127
		EP080: Toluene	108-88-3	2 mg/kg	94.1	67.1	131
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6311772)							
EM2503332-001	Anonymous	EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.00125 mg/kg	88.0	70.0	130
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	82.7	77.0	124
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	74.0	75.0	121
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00116 mg/kg	78.0	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	82.2	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	77.0	68.0	136
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.00125 mg/kg	86.2	69.0	125
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	75.1	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6311772)							
EM2503332-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00025 mg/kg	88.6	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	86.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	84.3	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	84.2	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	77.9	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	85.0	72.0	134
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	91.7	69.0	150
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	85.5	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	80.0	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	110	66.0	133



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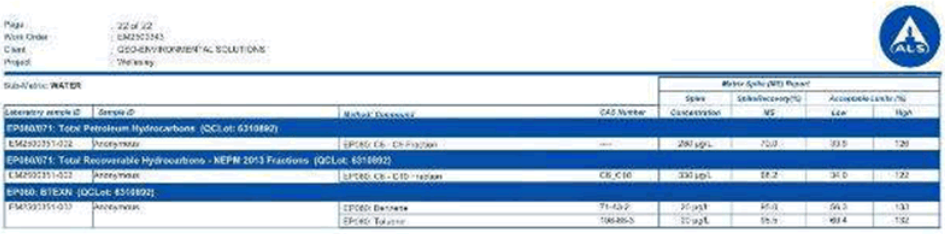
Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Acceptable Limits (%): Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6311772) - continued							
EM2503332-021	Anonymous	EP231X: Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	113507-82-7	0.00312 mg/kg	90.8	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6311772)							
EM2503332-021	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	94.4	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	91.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	92.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	91.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	90.5	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	73.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6311772)							
EM2503332-021	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	89.1	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	89.0	66.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	90.3	69.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00131 mg/kg	87.0	70.0	130

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Acceptable Limits (%): Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6310914)							
EM2503151-043	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	95.4	76.8	124
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	93.1	74.0	126
		EG020A-F: Boron	7440-35-3	0.2 mg/L	96.3	79.0	127
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	96.9	74.8	118
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	95.4	77.0	139
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	94.6	78.0	132
		EG020A-F: Copper	7440-50-8	0.2 mg/L	97.2	79.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	97.3	79.0	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	97.6	66.0	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	94.8	73.0	131
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	95.3	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	92.1	76.0	131
EG035F: Dissolved Mercury by FIMS (QCLot: 6310916)							
EM2503151-044	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	103	69.0	129



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Work Order : EM2503343
Client : GEOENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Acceptable Limits (%): Low	High
EP060/071: Total Petroleum Hydrocarbons (QCLot: 6310892)							
EM2503151-022	Anonymous	EP060: C6 - C9 Fraction	---	280 µg/L	70.0	69.0	129
EP060/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6310892)							
EM2503151-022	Anonymous	EP060: C6 - C10 Fraction	C6_C10	330 µg/L	68.2	34.0	122
EP060: BTEXN (QCLot: 6310892)							
EM2503151-033	Anonymous	EP060: Benzene	71-43-2	30 µg/L	95.0	66.3	133
		EP060: Toluene	108-88-3	30 µg/L	99.9	69.4	132

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2500343	Page	: 1 of 11
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: MARK DOWNIE	Telephone	: +61-3 8549 9600
Project	: Wellesley	Date Samples Received	: 13-Jan-2025
Site	: ----	Issue Date	: 21-Jan-2025
Sampler	: MARK DOWNIE	No. of samples received	: 11
Order number	: ----	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- NO Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.

Outliers : Quality Control Samples

Duplicate, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP071P: PFAS Sum	EM2500423-001	Anonymous	Sum of PFAS	---	42.4 %	0% - 20%	RPD exceeds LOR based limits
Matrix Spike (MS) Recoveries							
EG048T-P: Total Fluoride by Auto Analyser	EM2500112-001	Anonymous	Fluoride	16984-48-8	86.0 %	70.3-130%	Recovery less than lower data quality objective
EG048: Hexavalent Chromium [Alkaline Digest]	EM2500112-002	Anonymous	Hexavalent Chromium	18540-29-9	93.4 %	98.2-114%	Recovery less than lower data quality objective
EP071D: 10:2 Fluorotelomer Sulfonic Acid	EM2500333-001	Anonymous	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	51.9 %	70.3-130%	Recovery less than lower data quality objective

Outliers : Frequency of Quality Control Samples

Matrix: SOIL

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS)						
Semivolatile Organic and other PAHs - Waste Classification (AS 4482.1 compliant)	EP075 (14h)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	21	4.76	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP068	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Matrix: WATER

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (GCMS - SIM)	EP075(SIM)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (GCMS - SIM)	EP075(SIM)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarises extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and produce subsequent dilutions and reruns. A listing of breaches (if any) is provided hereto.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes required. Assessment compares the leach date with the shortest analyte holding time for the associated soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: × = Holding time breach ; ✓ = Within holding time

Page	: 3 of 11
Work Order	: ES2500343
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: Wellesley

Matrix: SOIL

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
Pole 3 1.1		09-Jan-2025	---	---	---	16-Jan-2025	23-Jan-2025	✓
Soil Glass Jar - Unpreserved (EA055)								
Pole 3 0.9	Pole 3 1.3,	09-Jan-2025	---	---	---	16-Jan-2025	23-Jan-2025	✓
Pole 3 1.9	Pole 4 0.1,							
Pole 4 0.5	Pole 4 1.0,							
Duplicate								
EG005(D)/EG020(T): Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
Pole 3 0.9	Pole 3 1.3,	09-Jan-2025	17-Jan-2025	06-Jul-2025	✓	17-Jan-2025	06-Jul-2025	✓
Pole 3 1.9	Pole 4 0.1,							
Pole 4 0.5	Pole 4 1.0,							
Duplicate								
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG005T)								
Pole 3 0.9	Pole 3 1.3,	09-Jan-2025	17-Jan-2025	06-Feb-2025	✓	23-Jan-2025	06-Feb-2025	✓
Pole 3 1.9	Pole 4 0.1,							
Pole 4 0.5	Pole 4 1.0,							
Duplicate								
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG005F)								
Pole 3 0.9		09-Jan-2025	17-Jan-2025	06-Feb-2025	✓	17-Jan-2025	24-Jan-2025	✓
EK025SP: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK040SP)								
Pole 3 0.9		09-Jan-2025	17-Jan-2025	20-Jan-2025	✓	23-Jan-2025	31-Jan-2025	✓
EK057-P: Total Fluoride by Auto-Analyser								
Soil Glass Jar - Unpreserved (EK040T-P)								
Pole 3 0.9		09-Jan-2025	17-Jan-2025	06-Feb-2025	✓	23-Jan-2025	06-Feb-2025	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
Pole 3 0.9		09-Jan-2025	16-Jan-2025	20-Jan-2025	✓	17-Jan-2025	25-Feb-2025	✓
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
Pole 3 0.9		09-Jan-2025	16-Jan-2025	20-Jan-2025	✓	17-Jan-2025	25-Feb-2025	✓
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM))								
Pole 3 0.9		09-Jan-2025	16-Jan-2025	23-Jan-2025	✓	23-Jan-2025	25-Feb-2025	✓

Page	: 4 of 11
Work Order	: ES2500343
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: Wellesley

Matrix: SOIL

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polycyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
Pole 3 0.9		09-Jan-2025	16-Jan-2025	23-Jan-2025	✓	23-Jan-2025	25-Feb-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM))								
Pole 3 1.3	Pole 3 1.9,	09-Jan-2025	17-Jan-2025	23-Jan-2025	✓	17-Jan-2025	26-Feb-2025	✓
Pole 4 0.1	Pole 4 0.5,							
Pole 4 1.0	Dup/Lysi							
EP075D: Polycyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-TAB)								
Pole 3 0.9		09-Jan-2025	16-Jan-2025	23-Jan-2025	✓	17-Jan-2025	25-Feb-2025	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)								
Pole 3 0.9	Pole 3 1.3,	09-Jan-2025	16-Jan-2025	23-Jan-2025	✓	17-Jan-2025	23-Jan-2025	✓
Pole 3 1.9	Pole 4 0.1,							
Pole 4 0.5	Pole 4 1.0,							
Duplicate								
Soil Glass Jar - Unpreserved (EP071)								
Pole 3 1.3	Pole 3 1.9,	09-Jan-2025	17-Jan-2025	23-Jan-2025	✓	17-Jan-2025	26-Feb-2025	✓
Pole 4 0.1	Pole 4 0.5,							
Pole 4 1.0	Dup/Lysi							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)								
Pole 3 0.9	Pole 3 1.3,	09-Jan-2025	16-Jan-2025	23-Jan-2025	✓	17-Jan-2025	23-Jan-2025	✓
Pole 3 1.9	Pole 4 0.1,							
Pole 4 0.5	Pole 4 1.0,							
Duplicate								
Soil Glass Jar - Unpreserved (EP071)								
Pole 3 1.3	Pole 3 1.9,	09-Jan-2025	17-Jan-2025	23-Jan-2025	✓	17-Jan-2025	26-Feb-2025	✓
Pole 4 0.1	Pole 4 0.5,							
Pole 4 1.0	Dup/Lysi							
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
Pole 3 0.9	Pole 3 1.3,	09-Jan-2025	16-Jan-2025	23-Jan-2025	✓	17-Jan-2025	23-Jan-2025	✓
Pole 3 1.9	Pole 4 0.1,							
Pole 4 0.5	Pole 4 1.0,							
Duplicate								
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231P)								
Pole 3 1.1		09-Jan-2025	15-Jan-2025	06-Jul-2025	✓	15-Jan-2025	24-Feb-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231P)								
Pole 3 1.1		09-Jan-2025	15-Jan-2025	06-Jul-2025	✓	15-Jan-2025	24-Feb-2025	✓

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Work Order : ES2500343
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Matrix: SOIL

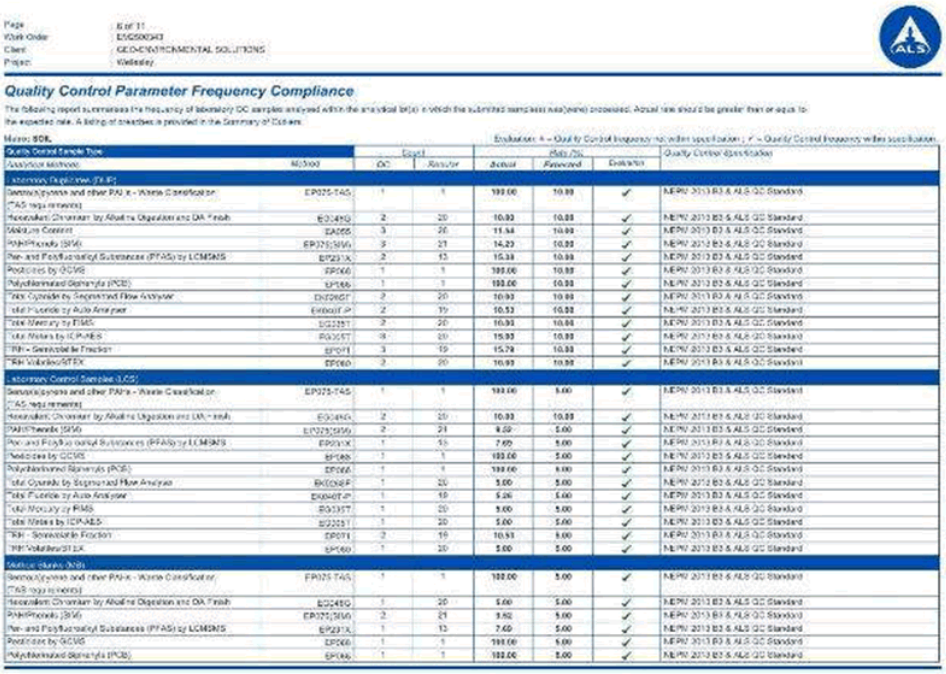
Evaluation: × = Holding time breach ; ✓ = Within holding time

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
Pair 3 1.1	09-Jan-2025	15-Jan-2025	09-Jan-2025	✓	15-Jan-2025	24-Feb-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
Pair 3 1.1	09-Jan-2025	15-Jan-2025	09-Jan-2025	✓	15-Jan-2025	24-Feb-2025	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
Pair 3 1.1	09-Jan-2025	15-Jan-2025	09-Jan-2025	✓	15-Jan-2025	24-Feb-2025	✓

Matrix: WATER

Evaluation: × = Holding time breach ; ✓ = Within holding time

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F)							
Rinsate	09-Jan-2025	---	---	---	15-Jan-2025	06-Jul-2025	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
Rinsate	09-Jan-2025	---	---	---	15-Jan-2025	06-Feb-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
Rinsate	09-Jan-2025	14-Jan-2025	16-Jan-2025	✓	17-Jan-2025	25-Feb-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	09-Jan-2025	14-Jan-2025	16-Jan-2025	✓	17-Jan-2025	25-Feb-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	09-Jan-2025	15-Jan-2025	23-Jan-2025	✓	15-Jan-2025	23-Jan-2025	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	09-Jan-2025	14-Jan-2025	16-Jan-2025	✓	17-Jan-2025	25-Feb-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	09-Jan-2025	15-Jan-2025	23-Jan-2025	✓	15-Jan-2025	23-Jan-2025	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	09-Jan-2025	15-Jan-2025	23-Jan-2025	✓	15-Jan-2025	23-Jan-2025	✓



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Work Order : ES2500343
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

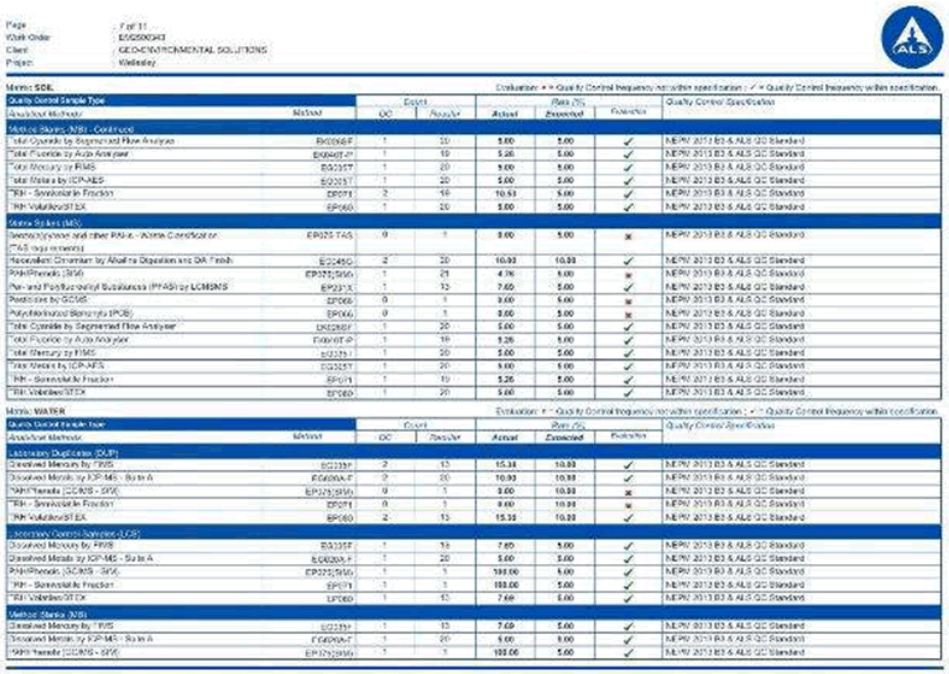
Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical batch(s) in which the submitted samples was/were processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: SOIL

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Semivolatiles and other PAHs - Waste Classification (PAH requirements)	EP075-TAS	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	ED045G	2	20	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	3	20	15.34	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	21	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	15	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP068	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EN282T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride by Auto Analyser	EK040F	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	20	15.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	19	15.79	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Semivolatiles and other PAHs - Waste Classification (PAH requirements)	EP075-TAS	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP068	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EN282T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride by Auto Analyser	EK040F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	19	10.53	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Semivolatiles and other PAHs - Waste Classification (PAH requirements)	EP075-TAS	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	ED045G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP068	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



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Work Order : ES2500343
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Matrix: SOIL — Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Method	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Total Cyanide by Segmented Flow Analyser	EK055SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride by Auto Analyser	EK040T-P	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	19	10.53	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Benzo(a)pyrene and other PAHs - Water Combicator (TAS regulations)	EP075 TAS	0	1	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EC245C	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	21	4.76	5.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	1	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP068	0	1	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK055SF	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride by Auto Analyser	EK040T-P	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: WATER — Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Method	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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Matrix: WATER — Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Method	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established international recognised procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EM031T	SOIL	In house: Referenced to APHA 3120, USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EM035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-Injection (BrCl2) (Cold Vapour generation) AAS). FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Prep	EC005(ox)	SOIL	In house: Referenced to USEPA SW846, Method 3060. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using diphenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Total Cyanide by Segmented Flow Analyser	EK055SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511 / ISO 14403. Cyanide exchides of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream at a pH of 3.5, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.5 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM Schedule B(3).
Total Fluoride by Auto Analyser	EK061F-P	SOIL	In-house: Total fluoride is determined by an auto analyser ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
Polychlorinated Biphenyls (PCB)	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GC/MS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015. Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).

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Analytical Methods	Method	Matrix	Method Descriptions
Benzo(a)pyrene and other PAHs - Waste Classification (EAS requirements)	EP075-TAS	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS/MS. Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125, USEPA SW846 - 6020, ALS QWI-ENVI0020. Samples are 0.45um filtered prior to analysis. The ICPMS technique utilises a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-Injection (BrCl2)(Cold Vapour generation) AAS). Samples are 0.45um filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015. The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3).
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270. Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260. Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GC/MS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3).
Preparation Methods	**Method**	**Matrix**	**Method Descriptions**
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by rotation/end tumbling with NaOH.
Alkaline digestion for Hexavalent Chromium	EK005PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion. 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).

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Preparation Methods	Method	Matrix	Method Description
Methanol Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na_2SO_4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-SCr	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, NaOSO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuEChERS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510. 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3). ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Appendix 8 Certificate of Analysis

CERTIFICATE OF ANALYSIS

Work Order	: EM2500343	Page	: 1 of 18
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: MARK DOWNIE	Contact	: Katie Davis
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +61-3-8549 9600
Project	: Wellesley	Date Samples Received	: 13-Jan-2025 10:25
Order number	: ---	Date Analysis Commenced	: 14-Jan-2025
C-O-C number	: ---	Issue Date	: 21-Jan-2025 14:28
Sampler	: MARK DOWNIE		
Site	: ---		
Quote number	: ENV22		
No. of samples received	: 11		
No. of samples analysed	: 9		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorised signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Jonas Nhou	Non Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	ZIC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	ZIC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where no solids determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits, the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
* = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- DG248S: EM2501147-#2. Poor recovery for Hexavalent Chromium due to matrix interferences. Confirmed by re-extraction and re-analysis.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+k) Benzo(b)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1,2,3-cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for TEQ Zero are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAH multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01) Benzo(b+j+k) Benzo(b)fluoranthene (0.1), Benzo(a)pyrene (1.0) Indeno(1,2,3-cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for TEQ Zero are treated as zero, for TEQ 1/2LOR are treated as half the reported LOR, and for TEQ LOR are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP088: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP079(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP031R: Poor matrix spike recovery for analyte. EM2500332-001 due to sample matrix interference.
- EP066T.P: EM2500147-001. Poor matrix spike recovery for Total Fluoride due to matrix effects.
- EP059*: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTeDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compounds. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LOD/LOQ. PFOS is quantified using a certified, mixed-isomer standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.0	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:40	06-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		EM2500343-001	EM2500343-002	EM2500343-003	EM2500343-004	EM2500343-007
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	---	0.1	%		---	13.0	---	---	---
Moisture Content	---	1.0	%		20.8	---	14.8	17.9	25.2
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	---	<5	<5	<5
Barium	7440-39-3	10	mg/kg		70	---	50	110	60
Beryllium	7440-41-7	1	mg/kg		1	---	<1	<1	<1
Boron	7440-42-8	50	mg/kg		---	---	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	---	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		14	---	10	8	10
Cobalt	7440-48-4	2	mg/kg		10	---	4	14	7
Copper	7440-50-8	5	mg/kg		11	---	5	5	22
Lead	7439-92-1	5	mg/kg		10	---	8	10	22
Manganese	7439-96-5	5	mg/kg		156	---	126	51	191
Molybdenum	7439-98-7	2	mg/kg		<2	---	---	---	---
Nickel	7440-02-0	2	mg/kg		14	---	5	10	9
Selenium	7782-49-2	5	mg/kg		<5	---	<5	<5	<5
Silver	7440-22-4	2	mg/kg		<2	---	---	---	---
Tin	7440-31-5	5	mg/kg		<5	---	---	---	---
Vanadium	7440-62-2	5	mg/kg		---	---	22	12	45
Zinc	7440-66-6	5	mg/kg		38	---	12	29	55
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	---	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	---	---	---	---
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	1	mg/kg		<1	---	---	---	---
EK040T-P: Total Fluoride by Auto Analyser									

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.0	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:40	06-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		EM2500343-001	EM2500343-002	EM2500343-003	EM2500343-004	EM2500343-007
					Result	Result	Result	Result	Result
EK040T-P: Total Fluoride by Auto Analyser - Continued									
Fluoride	16984-48-8	40	mg/kg		80	---	---	---	---
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	---	0.1	mg/kg		<0.1	---	---	---	---
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	---	---	---	---
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	---	---	---	---
beta-BHC	319-85-7	0.05	mg/kg		<0.05	---	---	---	---
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	---	---	---	---
delta-BHC	319-86-8	0.05	mg/kg		<0.05	---	---	---	---
Heptachlor	76-44-8	0.05	mg/kg		<0.05	---	---	---	---
Aldrin	309-00-2	0.05	mg/kg		<0.05	---	---	---	---
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	---	---	---	---
^ Total Chlordane (sum)	---	0.05	mg/kg		<0.05	---	---	---	---
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	---	---	---	---
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	---	---	---	---
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	---	---	---	---
Dieldrin	60-57-1	0.05	mg/kg		<0.05	---	---	---	---
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	---	---	---	---
Endrin	72-20-8	0.05	mg/kg		<0.05	---	---	---	---
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	---	---	---	---
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	---	---	---	---
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	---	---	---	---
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	---	---	---	---
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	---	---	---	---
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	---	---	---	---
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	---	---	---	---
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	---	---	---	---

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Work Order : EM2500343
Client : GEC-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.0	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:40	06-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		EM2500343-001	EM2500343-002	EM2500343-003	EM2500343-004	EM2500343-007
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	---	---	---	---
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	---	---	---	---
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	---	---	---	---
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	---	---	---	---
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	---	---	---	---
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	---	---	---	---
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	---	---	---	---
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	---	---	---	---
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	---	---	---	---
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	---	---	---	---
Pentachlorophenol	87-86-5	2	mg/kg		<2	---	---	---	---
^ Sum of Phenols	---	0.5	mg/kg		<0.5	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.0	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:40	06-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		EM2500343-001	EM2500343-002	EM2500343-003	EM2500343-004	EM2500343-007
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Benzo[b+j]fluoranthene	205-99-2/205-82-3	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	---	0.5	mg/kg		0.6	---	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	---	0.5	mg/kg		1.2	---	1.2	1.2	1.2
EP075B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.05	mg/kg		0.10	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	---	<10	<10	<10
C10 - C14 Fraction	---	50	mg/kg		<50	---	<50	<50	<50
C15 - C28 Fraction	---	100	mg/kg		460	---	<100	<100	<100
C29 - C36 Fraction	---	100	mg/kg		460	---	<100	<100	<100
^ C10 - C36 Fraction (sum)	---	50	mg/kg		920	---	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	---	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	---	<10	<10	<10
>C10 - C16 Fraction	---	50	mg/kg		53	---	<50	<50	<50
>C16 - C34 Fraction	---	100	mg/kg		800	---	<100	<100	<100
>C34 - C40 Fraction	---	100	mg/kg		220	---	<100	<100	<100
^ >C10 - C40 Fraction (sum)	---	50	mg/kg		1073	---	<50	<50	<50

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Client : GEO-ENVIRONMENTAL SOLUTIONS
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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.9	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:40	09-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		ES2503343-001	ES2503343-002	ES2503343-003	ES2503343-004	ES2503343-007
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		50	---	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	---	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3, 106-42-3	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Sum of BTEX	----	0.2	mg/kg		<0.2	---	<0.2	<0.2	<0.2
Total Xylenes	----	0.5	mg/kg		<0.5	---	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	---	<1	<1	<1
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg		---	<0.0005	---	---	---
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg		---	<0.0002	---	---	---
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		---	<0.001	---	---	---
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		---	<0.0002	---	---	---

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.9	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:40	09-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		ES2503343-001	ES2503343-002	ES2503343-003	ES2503343-004	ES2503343-007
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		---	<0.0002	---	---	---
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		---	<0.0005	---	---	---
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		---	<0.0002	---	---	---
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	31506-32-8	0.0005	mg/kg		---	<0.0005	---	---	---
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	4151-50-2	0.0005	mg/kg		---	<0.0005	---	---	---
N-Methyl perfluorooctane sulfonamidoethanol (NMeFOSE)	24448-09-7	0.0005	mg/kg		---	<0.0005	---	---	---
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	1691-99-2	0.0005	mg/kg		---	<0.0005	---	---	---
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9	0.0002	mg/kg		---	<0.0002	---	---	---
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6	0.0002	mg/kg		---	<0.0002	---	---	---
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		---	<0.0005	---	---	---
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		---	<0.0005	---	---	---

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.0	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:40	06-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		EM2503343-001	EM2503343-002	EM2503343-003	EM2503343-004	EM2503343-007
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-94-9	0.0005	mg/kg		---	<0.0005	---	---	---
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		---	<0.0005	---	---	---
EP231P: PFAS Sums									
Sum of PFAS		0.0002	mg/kg		---	<0.0002	---	---	---
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		---	<0.0002	---	---	---
Sum of PFAS (WA DER List)	---	0.0002	mg/kg		---	<0.0002	---	---	---
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		95.4	---	---	---	---
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		109	---	---	---	---
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		67.4	---	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		93.0	---	86.2	80.7	83.4
2-Chlorophenol-D4	93951-73-6	0.5	%		100	---	90.8	86.9	91.1
2,4,6-Tribromophenol	118-79-6	0.5	%		86.8	---	81.3	75.2	78.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		91.6	---	87.4	80.8	84.4
Anthracene-d10	1719-06-8	0.5	%		95.3	---	90.0	85.8	82.5
4-Terphenyl-d14	1718-51-0	0.5	%		94.8	---	93.1	85.3	87.4
EP075T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.025	%		82.5	---	---	---	---
Anthracene-d10	1719-06-8	0.025	%		85.2	---	---	---	---
4-Terphenyl-d14	1718-51-0	0.025	%		87.4	---	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		95.9	---	105	105	97.6

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 3 0.0	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date / time	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:30	06-Jan-2025 11:40	06-Jan-2025 12:10
Compound	CAS Number	LOR	Unit		EM2503343-001	EM2503343-002	EM2503343-003	EM2503343-004	EM2503343-007
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		102	---	105	111	104
4-Bromofluorobenzene	460-00-4	0.2	%		103	---	111	110	104
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.0002	%		---	91.3	---	---	---
13C8-PFOA	---	0.0002	%		---	102	---	---	---

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 4 0.5	Pole 4 1.0	Duplicate	---	---
				Sampling date / time	06-Jan-2025 12:10	06-Jan-2025 12:10	06-Jan-2025 12:10	---	---
Compound	CAS Number	LOR	Unit		EM2500343-008	EM2500343-009	EM2500343-010	---	---
					Result	Result	Result	---	---
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	---	1.0	%		13.8	8.4	30.8	---	---
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	---	---
Barium	7440-39-3	10	mg/kg		88	40	93	---	---
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	---	---
Boron	7440-42-8	50	mg/kg		<50	<50	<50	---	---
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	---	---
Chromium	7440-47-3	2	mg/kg		5	22	48	---	---
Cobalt	7440-48-4	2	mg/kg		4	12	11	---	---
Copper	7440-50-8	5	mg/kg		12	51	23	---	---
Lead	7439-92-1	5	mg/kg		6	<5	8	---	---
Manganese	7439-96-5	5	mg/kg		78	273	251	---	---
Nickel	7440-02-0	2	mg/kg		4	18	39	---	---
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	---	---
Vanadium	7440-62-2	5	mg/kg		21	40	48	---	---
Zinc	7440-66-6	5	mg/kg		16	25	797	---	---
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	---	---

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 4 0.5	Pole 4 1.0	Duplicate	---	---
				Sampling date / time	06-Jan-2025 12:10	06-Jan-2025 12:10	06-Jan-2025 12:10	---	---
Compound	CAS Number	LOR	Unit		EM2500343-008	EM2500343-009	EM2500343-010	---	---
					Result	Result	Result	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz[a]anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Benzo[b+j]fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Benzo[k]fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Benzo[a]pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
^ Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
^ Benzo(a)pyrene TEQ (half LOR)	---	0.5	mg/kg		0.6	0.6	0.6	---	---
^ Benzo(a)pyrene TEQ (LOR)	---	0.5	mg/kg		1.2	1.2	1.2	---	---
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	<10	<10	---	---
C10 - C14 Fraction	---	50	mg/kg		<50	<50	<50	---	---
C15 - C28 Fraction	---	100	mg/kg		<100	<100	<100	---	---
C29 - C36 Fraction	---	100	mg/kg		<100	<100	<100	---	---
^ C10 - C36 Fraction (sum)	---	50	mg/kg		<50	<50	<50	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	---	---
>C10 - C16 Fraction	---	50	mg/kg		<50	<50	<50	---	---
>C16 - C34 Fraction	---	100	mg/kg		<100	<100	<100	---	---
>C34 - C40 Fraction	---	100	mg/kg		<100	<100	<100	---	---
^ >C10 - C40 Fraction (sum)	---	50	mg/kg		<50	<50	<50	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg		<50	<50	<50	---	---

Page : 13 of 14
Work Order : ES2503343
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Pole 4 0.5	Pole 4 1.0	Duplicate	---	---
				Sampling date / time	06-Jan-2025 12:10	06-Jan-2025 12:10	06-Jan-2025 12:10	---	---
Compound	CAS Number	LOR	Unit		ES2503343-008	ES2503343-009	ES2503343-010	-------	-------
					Result	Result	Result	---	---
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	---	---
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
meta- & para-Xylene	108-38-3, 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Sum of BTEX	---	0.2	mg/kg		<0.2	<0.2	<0.2	---	---
Total Xylenes	---	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	---	---
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		79.2	81.8	82.3	---	---
2-Chlorophenol-D4	93951-73-6	0.5	%		86.9	88.5	90.8	---	---
2,4,6-Tribromophenol	118-79-6	0.5	%		73.2	74.4	77.8	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		80.8	81.2	82.3	---	---
Anthracene-d10	1719-06-8	0.5	%		91.8	93.6	99.2	---	---
4-Terphenyl-d14	1718-51-0	0.5	%		83.6	83.4	86.8	---	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		95.8	97.9	94.8	---	---
Toluene-D8	2037-26-5	0.2	%		106	103	100	---	---
4-Bromofluorobenzene	460-00-4	0.2	%		107	103	101	---	---

Page : 14 of 14
Work Order : ES2503343
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	---	---	---	---
				Sampling date / time	06-Jan-2025 14:00	---	---	---	---
Compound	CAS Number	LOR	Unit		ES2503343-011	-------	-------	-------	-------
					Result	---	---	---	---
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	---	---	---	---
Boron	7440-42-8	0.05	mg/L		<0.05	---	---	---	---
Barium	7440-39-3	0.001	mg/L		<0.001	---	---	---	---
Beryllium	7440-41-7	0.001	mg/L		<0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	---	---	---	---
Cobalt	7440-48-4	0.001	mg/L		<0.001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L		<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L		<0.001	---	---	---	---
Manganese	7439-96-5	0.001	mg/L		<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L		<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L		<0.001	---	---	---	---
Selenium	7782-49-2	0.01	mg/L		<0.01	---	---	---	---
Vanadium	7440-62-2	0.01	mg/L		<0.01	---	---	---	---
Zinc	7440-66-6	0.005	mg/L		<0.005	---	---	---	---
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	---	---	---	---
EP075(SIM)S: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	---	---	---	---
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	---	---	---	---
Acenaphthene	83-32-9	1.0	µg/L		<1.0	---	---	---	---
Fluorene	86-73-7	1.0	µg/L		<1.0	---	---	---	---
Phenanthrene	85-01-8	1.0	µg/L		<1.0	---	---	---	---
Anthracene	120-12-7	1.0	µg/L		<1.0	---	---	---	---
Fluoranthene	206-44-0	1.0	µg/L		<1.0	---	---	---	---
Pyrene	129-00-0	1.0	µg/L		<1.0	---	---	---	---
Benz[a]anthracene	56-55-3	1.0	µg/L		<1.0	---	---	---	---
Chrysene	218-01-9	1.0	µg/L		<1.0	---	---	---	---

Page : 10 of 14
Work Order : EM2503343
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	---	---	---	---
				Sampling date / time	09-Jan-2025 14:00	---	---	---	---
Compound	CAS Number	LOR	Unit	EM2503343-011	---	---	---	---	---
				Result	---	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo[b+j]fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	---	---	---	---	
Benzo[k]fluoranthene	207-08-9	1.0	µg/L	<1.0	---	---	---	---	
Benzo[a]pyrene	50-32-8	0.5	µg/L	<0.5	---	---	---	---	
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	µg/L	<1.0	---	---	---	---	
Dibenz[a,h]anthracene	53-70-3	1.0	µg/L	<1.0	---	---	---	---	
Benzo[g,h,i]perylene	191-24-2	1.0	µg/L	<1.0	---	---	---	---	
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	µg/L	<0.5	---	---	---	---	
^ Benzo[a]pyrene TEQ (zero)	---	0.5	µg/L	<0.5	---	---	---	---	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	20	µg/L	<20	---	---	---	---	
C10 - C14 Fraction	---	50	µg/L	<50	---	---	---	---	
C15 - C28 Fraction	---	100	µg/L	<100	---	---	---	---	
C29 - C36 Fraction	---	50	µg/L	<50	---	---	---	---	
^ C10 - C36 Fraction (sum)	---	50	µg/L	<50	---	---	---	---	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	---	---	---	---	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	---	---	---	---	
>C10 - C16 Fraction	---	100	µg/L	<100	---	---	---	---	
>C16 - C34 Fraction	---	100	µg/L	<100	---	---	---	---	
>C34 - C40 Fraction	---	100	µg/L	<100	---	---	---	---	
^ >C10 - C40 Fraction (sum)	---	100	µg/L	<100	---	---	---	---	
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	100	µg/L	<100	---	---	---	---	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	---	---	---	---	
Toluene	108-88-3	2	µg/L	<2	---	---	---	---	
Ethylbenzene	100-41-4	2	µg/L	<2	---	---	---	---	

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Work Order : EM2503343
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	---	---	---	---
				Sampling date / time	09-Jan-2025 14:00	---	---	---	---
Compound	CAS Number	LOR	Unit	EM2503343-011	---	---	---	---	---
				Result	---	---	---	---	---
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	---	---	---	---	
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---	
^ Total Xylenes	---	2	µg/L	<2	---	---	---	---	
^ Sum of BTEX	---	1	µg/L	<1	---	---	---	---	
Naphthalene	91-20-3	5	µg/L	<5	---	---	---	---	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%	54.6	---	---	---	---	
2-Chlorophenol-D4	93951-73-6	1.0	%	78.3	---	---	---	---	
2,4,6-Tribromophenol	118-79-6	1.0	%	112	---	---	---	---	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%	92.8	---	---	---	---	
Anthracene-d10	1719-06-8	1.0	%	90.7	---	---	---	---	
4-Terphenyl-d14	1718-51-0	1.0	%	98.8	---	---	---	---	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	114	---	---	---	---	
Toluene-D8	2037-26-5	2	%	95.0	---	---	---	---	
4-Bromofluorobenzene	460-00-4	2	%	101	---	---	---	---	

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Work Order : EM2500343
Client : GEC-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	56	140
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	62	128
EP068T: Organophosphorus Pesticide Surrogate			
DEP	78-44-4	40	139
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	64	125
2-Chlorophenol-D4	93951-73-6	65	123
2,4,6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	129
4-Terphenyl-d14	1718-51-0	62	133
EP075T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	65	126
Anthracene-d10	1719-06-8	66	125
4-Terphenyl-d14	1718-51-0	62	133
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	91	125
Toluene-D8	2037-26-5	90	125
4-Bromofluorobenzene	460-00-4	96	124
EP231S: PFAS Surrogate			
13C4-PFOS	---	61	136
13C8-PFOA	---	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	97
2-Chlorophenol-D4	93951-73-6	30	114
2,4,6-Tribromophenol	118-79-6	26	132
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	35	107
Anthracene-d10	1719-06-8	44	122
4-Terphenyl-d14	1718-51-0	48	124
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125

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Work Order : EM2500343
Client : GEC-ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			
4-Bromofluorobenzene	460-00-4	71	120

Automated Guideline Comparison Report

EPA Tasmania Information Bulletin No. 105 - Table 2: Soil Hazard Categorisation

Work Order	: EM2500343	Page	: 1 of 14
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: MARK DONNIE		
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: mdonnie@geoenvsolutions.net.au	E-mail	: celia.davis@alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: Wellesley	Date Received	: 13-Jan-2025 10:25
Order number	: ---	Date Analysed	: 14-Jan-2025
C-O-C number	: ---	Date Issued	: 21-Jan-2025 14:26
No. of samples received	: 11		
No. of samples analysed	: 9	Quote number	: EN222

General Comments

This guideline comparison report **only** provides comparison of reported result against limit thresholds for the "Fill Material", 'Low Level Contaminated Soil', and 'Contaminated Soil' categories in Table 2 of EPA Tasmania Information Bulletin No. 105.
This guideline comparison report is **NOT** a compliance report. Classification of soils requires consideration of a number of other factors including preliminary site investigation, sampling density and statistical calculations and measurement uncertainty.
This guideline comparison report only provides comparison data for parameters, specifically listed within Table2 of the EPA Tasmania Information Bulletin No. 105, that are analysed by ALS.
Only results in the 'Analytical Results' section have been compared to the guideline.

Additional information pertinent to this report will be found in the following separate attachments: Certificate of Analysis, Quality Control Report, QA/QC Compliance Assessment to Assist with Quality Review and Sample Receipt Notification.

Summary of Thresholds Reached or Exceeded

TAS EPA Bulletin No. 105 (2012)
Table 2: Maximum Total Concentration; Fill Material - Level 1

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Limit	Result
Pole 3 0.5	EM2500343-001	Benzo[a]pyrene	EP075 TAS	0.05	< 0.00 mg/kg	**0.10 mg/kg**
Pole 3 1.5	EM2500343-003	Benzo[a]pyrene	EP075(SIM)	0.5	< 0.00 mg/kg	<0.5 mg/kg
Pole 3 1.9	EM2500343-004	Benzo[a]pyrene	EP075(SIM)	0.5	< 0.00 mg/kg	<0.5 mg/kg
Pole 4 0.1	EM2500343-007	Benzo[a]pyrene	EP075(SIM)	0.5	< 0.00 mg/kg	<0.5 mg/kg
Pole 4 0.5	EM2500343-008	Benzo[a]pyrene	EP075(SIM)	0.5	< 0.00 mg/kg	<0.5 mg/kg
Pole 4 1.0	EM2500343-009	Benzo[a]pyrene	EP075(SIM)	0.5	< 0.00 mg/kg	<0.5 mg/kg
Duplicate	EM2500343-010	Zinc	EG015T	5	< 200 mg/kg	**797 mg/kg**
Duplicate	EM2500343-010	Benzo[a]pyrene	EP075(SIM)	0.5	< 0.00 mg/kg	<0.5 mg/kg

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Work Order : EM2503013
Client : GLG ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Analytical Results

Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Contaminated Soil: Table 2: Maximum Total Concentration; Contaminated Soil - Level 3

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	Pole 3 0.9 09-Jan-2025 11:30	Pole 3 1.1 09-Jan-2025 11:30	Pole 3 1.3 09-Jan-2025 11:30	Pole 3 1.9 09-Jan-2025 11:40	Pole 4 0.1 09-Jan-2025 12:10
EG005(ED093)T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	---	750	<5	---	<5	<5	<5
Barium	EG005T	10	mg/kg	---	30000	70	---	50	110	80
Beryllium	EG005T	1	mg/kg	---	400	1	---	<1	<1	<1
Cadmium	EG005T	1	mg/kg	---	400	<1	---	<1	<1	<1
Chromium	EG005T	2	mg/kg	---	9000	18	---	10	8	15
Cobalt	EG005T	2	mg/kg	---	1000	19	---	4	14	7
Copper	EG005T	5	mg/kg	---	7500	11	---	5	5	22
Lead	EG005T	5	mg/kg	---	3000	15	---	6	10	22
Manganese	EG005T	5	mg/kg	---	25000	156	---	126	95	191
Molybdenum	EG005T	2	mg/kg	---	4000	<2	---	---	---	---
Nickel	EG005T	2	mg/kg	---	3000	14	---	5	10	9
Selenium	EG005T	5	mg/kg	---	200	<5	---	<5	<5	<5
Silver	EG005T	2	mg/kg	---	720	<2	---	---	---	---
Tin	EG005T	5	mg/kg	---	300	<5	---	---	---	---
Zinc	EG005T	5	mg/kg	---	50000	38	---	12	29	68
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	---	150	<0.1	---	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048S	0.5	mg/kg	---	2000	<0.5	---	---	---	---
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	---	2500	<1	---	---	---	---
EK040T-P: Total Fluoride by Aqua Analyser										
Fluoride	EK040T-P	40	mg/kg	---	10000	80	---	---	---	---
EP068: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated Biphenyls	EP068	0.1	mg/kg	---	50	<0.1	---	---	---	---
EP068A: Organochlorine Pesticides (OC)										
Sum of Aldrin + Dieldrin	EP068	0.05	mg/kg	---	50	<0.05	---	---	---	---
Sum of DDD + DDE + DDT	EP068	0.05	mg/kg	---	1000	<0.05	---	---	---	---
EP075(SIM)A: Phenolic Compounds										
Sum of Phenols	EP075(SIM)	0.5	mg/kg	---	2000	<0.5	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										

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Work Order : EM2503013
Client : GLG ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Contaminated Soil: Table 2: Maximum Total Concentration; Contaminated Soil - Level 3

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	Pole 3 0.9 09-Jan-2025 11:30	Pole 3 1.1 09-Jan-2025 11:30	Pole 3 1.3 09-Jan-2025 11:30	Pole 3 1.9 09-Jan-2025 11:40	Pole 4 0.1 09-Jan-2025 12:10
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	---	22	---	---	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	---	200	<0.5	---	<0.5	<0.5	<0.5
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP076 TAS	0.05	mg/kg	---	22	0.13	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	---	1000	<10	---	<10	<10	<10
C10 - C36 Fraction (sum)	EP071	50	mg/kg	---	10000	100	---	<50	<50	<50
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	---	50	<0.2	---	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	---	1000	<0.5	---	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	---	1000	<0.5	---	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	---	1000	<0.5	---	<0.5	<0.5	<0.5

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Work Order : EM2503713
Client : GLG ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Fill Material: Table 2: Maximum Total Concentration: Fill Material - Level 1

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	Pole 3 0.9 20-Jan-2025 11:30	Pole 3 1.1 20-Jan-2025 11:30	Pole 3 1.3 20-Jan-2025 11:30	Pole 3 1.9 20-Jan-2025 11:40	Pole 4 0.1 20-Jan-2025 12:10
EG005(ED093)T: Total Metals by ICP-AES										
Arsenic	EG005T	5	mg/kg	---	20	<5	---	<5	<5	<5
Barium	EG005T	10	mg/kg	---	200	70	---	50	110	60
Beryllium	EG005T	1	mg/kg	---	2	1	---	<1	<1	<1
Cadmium	EG005T	1	mg/kg	---	3	<1	---	<1	<1	<1
Chromium	EG005T	2	mg/kg	---	50	14	---	10	8	12
Cobalt	EG005T	2	mg/kg	---	100	19	---	6	14	7
Copper	EG005T	5	mg/kg	---	100	11	---	5	5	22
Lead	EG005T	5	mg/kg	---	300	15	---	6	10	22
Manganese	EG005T	5	mg/kg	---	500	159	---	126	51	191
Molybdenum	EG005T	2	mg/kg	---	10	<2	---	---	---	---
Nickel	EG005T	2	mg/kg	---	60	14	---	5	10	9
Selenium	EG005T	5	mg/kg	---	10	<5	---	<5	<5	<5
Silver	EG005T	2	mg/kg	---	10	<2	---	---	---	---
Tin	EG005T	5	mg/kg	---	50	<5	---	---	---	---
Zinc	EG005T	5	mg/kg	---	200	38	---	13	29	59
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	---	1	<0.1	---	<0.1	<0.1	<0.1
EG068: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG068A	0.5	mg/kg	---	1	<0.5	---	---	---	---
EK028SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK028SF	1	mg/kg	---	34	<1	---	---	---	---
EK040T-P: Total Fluoride by Auto Analyser										
Fluoride	EK040T	40	mg/kg	---	200	90	---	---	---	---
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated Biphenyls	EP066	0.1	mg/kg	---	2	<0.1	---	---	---	---
EP068A: Organochlorine Pesticides (OC)										
Sum of Aldrin + Dieldrin	EP068	0.05	mg/kg	---	2	<0.05	---	---	---	---
Sum of DDD + DDE + DDT	EP068	0.05	mg/kg	---	2	<0.05	---	---	---	---
EP075(SIM)A: Phenolic Compounds										
Sum of Phenols	EP075(SIM)	0.5	mg/kg	---	25	<0.5	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	---	0.06	---	---	<0.5	<0.5	<0.5

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Client : GLG ENVIRONMENTAL SOLUTIONS
Project : Wellesley

Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Fill Material: Table 2: Maximum Total Concentration: Fill Material - Level 1

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	Pole 3 0.9 20-Jan-2025 11:30	Pole 3 1.1 20-Jan-2025 11:30	Pole 3 1.3 20-Jan-2025 11:30	Pole 3 1.9 20-Jan-2025 11:40	Pole 4 0.1 20-Jan-2025 12:10
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued										
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	---	20	<0.5	---	<0.5	<0.5	<0.5
EP075B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075-TAS	0.01	mg/kg	---	0.06	0.19	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	---	65	<10	---	<10	<10	<10
C10 - C36 Fraction (sum)	EP071	50	mg/kg	---	1000	920	---	<50	<50	<92
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	---	1	<0.2	---	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	---	1	<0.5	---	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	---	5	<0.5	---	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	---	14	<0.5	---	<0.5	<0.5	<0.5

Environmental Site Assessment: Wellesley Park 136 Wentworth Street, South Hobart, Tasmania.
February 2025

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Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Low Level Contaminated Soil: Table 2: Maximum Total Concentration: Low Level Contaminated Soil - Level 2

Sub-Matrix: SOIL				Sample ID			Pole 3 0.9	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date/time	Guideline	Guideline	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:40	09-Jan-2025 12:10
Compound	Method	LOR	Unit		Lower Limit	Upper Limit					
EG005(ED093)T: Total Metals by ICP-AES											
Arsenic	EG005T	5	mg/kg	---	200	<5	---	<5	<5	<5	
Barium	EG005T	10	mg/kg	---	3000	70	---	50	110	60	
Beryllium	EG005T	1	mg/kg	---	40	1	---	<1	<1	<1	
Cadmium	EG005T	1	mg/kg	---	40	<1	---	<1	<1	<1	
Chromium	EG005T	2	mg/kg	---	500	14	---	10	8	12	
Cobalt	EG005T	2	mg/kg	---	200	19	---	6	14	7	
Copper	EG005T	5	mg/kg	---	3000	31	---	9	5	22	
Lead	EG005T	5	mg/kg	---	1200	15	---	6	10	22	
Manganese	EG005T	5	mg/kg	---	9000	159	---	126	51	191	
Molybdenum	EG005T	2	mg/kg	---	1000	<2	---	---	---	---	
Nickel	EG005T	2	mg/kg	---	600	14	---	5	10	9	
Selenium	EG005T	5	mg/kg	---	50	<5	---	<5	<5	<5	
Silver	EG005T	2	mg/kg	---	180	<2	---	---	---	---	
Tin	EG005T	5	mg/kg	---	500	<5	---	---	---	---	
Zinc	EG005T	5	mg/kg	---	14000	38	---	13	29	59	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	---	30	<0.1	---	<0.1	<0.1	<0.1	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048S	0.5	mg/kg	---	200	<0.5	---	---	---	---	
EK028SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK028SF	1	mg/kg	---	5000	<1	---	---	---	---	
EK040T-P: Total Fluoride by Auto Analyser											
Fluoride	EK040T	40	mg/kg	---	3000	90	---	---	---	---	
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated Biphenyls	EP066	0.1	mg/kg	---	20	<0.1	---	---	---	---	
EP068A: Organochlorine Pesticides (OC)											
Sum of Aldrin + Dieldrin	EP068	0.05	mg/kg	---	45	<0.05	---	---	---	---	
Sum of DDD + DDE + DDT	EP068	0.05	mg/kg	---	200	<0.05	---	---	---	---	
EP075(SIM)A: Phenolic Compounds											
Sum of Phenols	EP075(SIM)	0.5	mg/kg	---	500	<0.5	---	---	---	---	
EP075(SIM)S: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	---	2	---	---	<0.5	<0.5	<0.5	

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Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Low Level Contaminated Soil: Table 2: Maximum Total Concentration: Low Level Contaminated Soil - Level 2

Sub-Matrix: SOIL				Sample ID			Pole 3 0.9	Pole 3 1.1	Pole 3 1.3	Pole 3 1.9	Pole 4 0.1
				Sampling date/time	Guideline	Guideline	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:30	09-Jan-2025 11:40	09-Jan-2025 12:10
Compound	Method	LOR	Unit		Lower Limit	Upper Limit					
EP075(SIM)S: Polynuclear Aromatic Hydrocarbons - Continued											
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	---	40	<0.5	---	<0.5	<0.5	<0.5	
EP075B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075-TAS	0.01	mg/kg	---	2	0.19	---	---	---	---	
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	---	650	<10	---	<10	<10	<10	
C10 - C36 Fraction (sum)	EP071	50	mg/kg	---	5000	920	---	<50	<50	<92	
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	---	5	<0.2	---	<0.2	<0.2	<0.2	
Toluene	EP080	0.5	mg/kg	---	180	<0.5	---	<0.5	<0.5	<0.5	
Ethylbenzene	EP080	0.5	mg/kg	---	180	<0.5	---	<0.5	<0.5	<0.5	
Total Xylenes	EP080	0.5	mg/kg	---	180	<0.5	---	<0.5	<0.5	<0.5	

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Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Contaminated Soil: Table 2: Maximum Total Concentration: Contaminated Soil - Level 3

Sub-Matrix: SOIL				Sample ID			Pole 4 0.5	Pole 4 1.0	Duplicate		
				Sampling date/time	Guideline	Guideline	09-Jan-2025 12:10	09-Jan-2025 12:10	09-Jan-2025 12:10	---	---
Compound	Method	EQR	Unit		Lower Limit	Upper Limit					
EG005(ED005)T: Total Metals by ICP-AES											
Molybdenum	EG005T	2	mg/kg	---	---	---	---	---	---	---	---
Silver	EG005T	1	mg/kg	---	---	---	---	---	---	---	---
Tin	EG005T	5	mg/kg	---	---	---	---	---	---	---	---
Arsenic	EG005T	5	mg/kg	---	750	<5	<5	<5	---	---	
Barium	EG005T	10	mg/kg	---	10000	60	40	80	---	---	
Beryllium	EG005T	1	mg/kg	---	400	<1	<1	<1	---	---	
Cadmium	EG005T	1	mg/kg	---	400	<1	<1	<1	---	---	
Chromium	EG005T	2	mg/kg	---	5000	6	22	48	---	---	
Cobalt	EG005T	2	mg/kg	---	1000	4	12	11	---	---	
Copper	EG005T	5	mg/kg	---	5000	12	51	29	---	---	
Lead	EG005T	5	mg/kg	---	3000	8	<5	8	---	---	
Manganese	EG005T	5	mg/kg	---	25000	74	279	294	---	---	
Nickel	EG005T	2	mg/kg	---	3000	4	16	33	---	---	
Selenium	EG005T	5	mg/kg	---	200	<5	<5	<5	---	---	
Zinc	EG005T	5	mg/kg	---	50000	19	26	157	---	---	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	---	110	<0.1	<0.1	<0.1	---	---	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	---	---	---	---	---	---	---	
EK055F: Total CN by Segmented Flow Analyser											
Total Cyanide	EK055F	1	mg/kg	---	---	---	---	---	---	---	
EK040T-P: Total Fluoride by Auto Analyser											
Fluoride	EK040T-P	40	mg/kg	---	---	---	---	---	---	---	
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated Biphenyls	EP066	0.1	mg/kg	---	---	---	---	---	---	---	
EP068A: Organochlorine Pesticides (OC)											
Sum of Aldrin + Dieldrin	EP068	0.05	mg/kg			---	---	---	---	---	
Sum of DDD + DDE + DDT	EP068	0.05	mg/kg	---	---	---	---	---	---	---	
EP075(SIM)A: Phenolic Compounds											
Sum of Phenols	EP075(SIM)	0.5	mg/kg	---	---	---	---	---	---	---	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	---	22	<0.5	<0.5	<0.5	---	---	
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	---	200	<0.5	<0.5	<0.5	---	---	
EP075B: Polynuclear Aromatic Hydrocarbons											

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Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Contaminated Soil: Table 2: Maximum Total Concentration: Contaminated Soil - Level 3

Sub-Matrix: SOIL				Sample ID			Pole 4 0.5	Pole 4 1.0	Duplicate		
				Sampling date/time	Guideline	Guideline	09-Jan-2025 12:10	09-Jan-2025 12:10	09-Jan-2025 12:10	---	---
Compound	Method	EQR	Unit		Lower Limit	Upper Limit					
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-TAS	0.05	mg/kg	---	---	---	---	---	---	---	
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	---	9000	<10	<10	<10	---	---	
C10 - C36 Fraction (sum)	EP071	50	mg/kg	---	10000	<50	<50	<50	---	---	
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	---	50	<0.2	<0.2	<0.2	---	---	
Toluene	EP080	0.5	mg/kg	---	1000	<0.5	<0.5	<0.5	---	---	
Ethylbenzene	EP080	0.5	mg/kg	---	1000	<0.5	<0.5	<0.5	---	---	
Total Xylenes	EP080	0.5	mg/kg	---	1800	<0.5	<0.5	<0.5	---	---	

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Project : Wellesley

Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Fill Material: Table 2: Maximum Total Concentration: Fill Material - Level 1

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	Pole 4 0.5 (Sample ID / Sampling date/time: 09-Jan-2025 12:10)	Pole 4 1.0 (Sample ID / Sampling date/time: 09-Jan-2025 12:10)	Duplicate (Sample ID / Sampling date/time: 09-Jan-2025 12:10)	---	---
EG005(ED005)T: Total Metals by ICP-AES										
Molybdenum	EG006T	2	mg/kg	---	---	---	---	---	---	---
Silver	EG006T	1	mg/kg	---	---	---	---	---	---	---
Tin	EG006T	5	mg/kg	---	---	---	---	---	---	---
Arsenic	EG006T	5	mg/kg	---	20	<5	<5	<5	---	---
Barium	EG006T	10	mg/kg	---	300	60	40	80	---	---
Beryllium	EG006T	1	mg/kg	---	2	<1	<1	<1	---	---
Cadmium	EG006T	1	mg/kg	---	3	<1	<1	<1	---	---
Chromium	EG006T	2	mg/kg	---	50	6	22	48	---	---
Cobalt	EG006T	2	mg/kg	---	100	4	12	11	---	---
Copper	EG006T	5	mg/kg	---	100	12	51	29	---	---
Lead	EG006T	5	mg/kg	---	300	8	<5	8	---	---
Manganese	EG006T	5	mg/kg	---	500	74	279	294	---	---
Nickel	EG006T	2	mg/kg	---	60	4	16	33	---	---
Selenium	EG006T	5	mg/kg	---	10	<5	<5	<5	---	---
Zinc	EG006T	5	mg/kg	---	200	19	25	157	---	---
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	---	1	<0.1	<0.1	<0.1	---	---
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	---	---	---	---	---	---	---
EK055F: Total CN by Segmented Flow Analyser										
Total Cyanide	EK055T	1	mg/kg	---	---	---	---	---	---	---
EK040T-P: Total Fluoride by Auto Analyser										
Fluoride	EK040T-P	40	mg/kg	---	---	---	---	---	---	---
EP068: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated Biphenyls	EP068	0.1	mg/kg	---	---	---	---	---	---	---
EP068A: Organochlorine Pesticides (OC)										
Sum of Aldrin + Dieldrin	EP068	0.05	mg/kg			---	---	---	---	---
Sum of DDD + DDE + DDT	EP068	0.05	mg/kg	---	---	---	---	---	---	---
EP075(SIM)A: Phenolic Compounds										
Sum of Phenol	EP075(SIM)	0.5	mg/kg	---	---	---	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	---	0.08	<0.5	<0.5	<0.5	---	---
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	---	20	<0.5	<0.5	<0.5	---	---
EP075B: Polynuclear Aromatic Hydrocarbons										

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Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Fill Material: Table 2: Maximum Total Concentration: Fill Material - Level 1

Sub-Matrix: SOIL

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	Pole 4 0.5 (Sample ID / Sampling date/time: 09-Jan-2025 12:10)	Pole 4 1.0 (Sample ID / Sampling date/time: 09-Jan-2025 12:10)	Duplicate (Sample ID / Sampling date/time: 09-Jan-2025 12:10)	---	---
EP075B: Polynuclear Aromatic Hydrocarbons - Continued										
Benzo(a)pyrene	EP075-TAS	0.05	mg/kg	---	---	---	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	---	65	<10	<10	<10	---	---
C10 - C36 Fraction (sum)	EP071	50	mg/kg	---	1000	<50	<50	<50	---	---
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	---	1	<0.2	<0.2	<0.2	---	---
Toluene	EP080	0.5	mg/kg	---	1	<0.5	<0.5	<0.5	---	---
Ethylbenzene	EP080	0.5	mg/kg	---	15	<0.5	<0.5	<0.5	---	---
Total Xylenes	EP080	0.5	mg/kg	---	14	<0.5	<0.5	<0.5	---	---

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Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Low Level Contaminated Soil: Table 2: Maximum Total Concentration: Low Level Contaminated Soil - Level 2

Sub-Matrix: SOIL				Sample ID			Pole 4 0.5	Pole 4 1.0	Duplicate		
				Sampling date/time	Guideline	Guideline	09-Jan-2025 12:10	09-Jan-2025 12:10	09-Jan-2025 12:10	---	---
Compound	Method	EQR	Unit		Lower Limit	Upper Limit					
EG005(ED005)T: Total Metals by ICP-AES											
Molybdenum	EG005T	2	mg/kg	---	---	---	---	---	---	---	---
Silver	EG005T	1	mg/kg	---	---	---	---	---	---	---	---
Tin	EG005T	5	mg/kg	---	---	---	---	---	---	---	---
Arsenic	EG005T	5	mg/kg	---	200	<5	<5	<5	---	---	
Barium	EG005T	10	mg/kg	---	9000	60	40	80	---	---	
Beryllium	EG005T	1	mg/kg	---	40	<1	<1	<1	---	---	
Cadmium	EG005T	1	mg/kg	---	40	<1	<1	<1	---	---	
Chromium	EG005T	2	mg/kg	---	500	6	22	48	---	---	
Cobalt	EG005T	2	mg/kg	---	200	4	12	11	---	---	
Copper	EG005T	5	mg/kg	---	2000	12	51	29	---	---	
Lead	EG005T	5	mg/kg	---	1200	8	<5	8	---	---	
Manganese	EG005T	5	mg/kg	---	9000	74	279	294	---	---	
Nickel	EG005T	2	mg/kg	---	600	4	18	33	---	---	
Selenium	EG005T	5	mg/kg	---	50	<5	<5	<5	---	---	
Zinc	EG005T	5	mg/kg	---	14000	18	26	157	---	---	
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg	---	50	<0.1	<0.1	<0.1	---	---	
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg	---	---	---	---	---	---	---	
EK055F: Total CN by Segmented Flow Analyser											
Total Cyanide	EK055T	1	mg/kg	---	---	---	---	---	---	---	
EK040T-P: Total Fluoride by Auto Analyser											
Fluoride	EK040T-P	40	mg/kg	---	---	---	---	---	---	---	
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated Biphenyls	EP066	0.1	mg/kg	---	---	---	---	---	---	---	
EP068A: Organochlorine Pesticides (OC)											
Sum of Aldrin + Dieldrin	EP068	0.05	mg/kg			---	---	---	---	---	
Sum of DDD + DDE + DDT	EP068	0.05	mg/kg	---	---	---	---	---	---	---	
EP075(SIM)A: Phenolic Compounds											
Sum of Phenols	EP075(SIM)	0.5	mg/kg	---	---	---	---	---	---	---	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	---	2	<0.5	<0.5	<0.5	---	---	
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	---	40	<0.5	<0.5	<0.5	---	---	
EP075B: Polynuclear Aromatic Hydrocarbons											

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Classification and Management of Contaminated Soil for Disposal
Table 2 Maximum total conc. - Low Level Contaminated Soil: Table 2: Maximum Total Concentration: Low Level Contaminated Soil - Level 2

Sub-Matrix: SOIL				Sample ID			Pole 4 0.5	Pole 4 1.0	Duplicate		
				Sampling date/time	Guideline	Guideline	09-Jan-2025 12:10	09-Jan-2025 12:10	09-Jan-2025 12:10	---	---
Compound	Method	EQR	Unit		Lower Limit	Upper Limit					
EP075B: Polynuclear Aromatic Hydrocarbons - Continued											
Benzo(a)pyrene	EP075-TAS	0.05	mg/kg	---	---	---	---	---	---	---	
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	---	650	<10	<10	<10	---	---	
C10 - C36 Fraction (sum)	EP071	50	mg/kg	---	9000	<50	<50	<50	---	---	
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	---	5	<0.2	<0.2	<0.2	---	---	
Toluene	EP080	0.5	mg/kg		100	<0.5	<0.5	<0.5	---	---	
Ethylbenzene	EP080	0.5	mg/kg	---	100	<0.5	<0.5	<0.5	---	---	
Total Xylenes	EP080	0.5	mg/kg		180	<0.5	<0.5	<0.5	---	---	

City of HOBART

GMC-HOB-2025-0043

3 October 2025

MEMORANDUM: CHIEF EXECUTIVE OFFICER

REQUEST TO GRANT LAND OWNER CONSENT TO LODGE A PLANNING APPLICATION

Site Address:	**136 Wentworth Street, South Hobart (Wellesley Park Oval)**
Description of Proposal:	**Upgrade of sports field lighting**
Applicant Name:	**Murray Roberts (Lifestyle Electrical Services)**
Planning Ref:	**PLN-HOB-2025-0483**

The development proposal is for the upgrade of sports field lighting at Wellesley Park Oval to 245lux (ave), including replacing fittings on 4 x existing 20m light poles and install 2 x new 20m light poles with new LED fittings.

The Open Space Planner, Jordan Cargill, recommends that the proposal is acceptable without conditions.

The Program Leader Sport and Recreation Facilities and Operations, Shannon Avery, has no objections to the proposal and has been working closely with the applicant to ensure the best outcomes.

The Advisor Legal and Property, Andrew Topfer, notes that the upgraded and new lights will become Council assets once they are installed. The proposed transfer should be documented before they are actually installed but as they require planning approval he has no issues with the landowner consent being granted.

It is recommended the Chief Executive Officer grant consent for the lodgement of the development application.

RECOMMENDATION

That pursuant to Section 52 of the Land Use Planning and Approvals Act 1993, the General Manager grant consent on behalf of the Hobart City Council as the owner/administrator of the above land to allow the applicant to make application to the City for a planning permit for the development described above and as per the attached documents.

Alison Surtees
SENIOR EXECUTIVE SUPPORT OFFICER

Signed: 3 October 2025

DECISION

That consent be provided to allow the making of an application to the City for a planning permit.

Michael Stretton
CHIEF EXECUTIVE OFFICER

Approved / Not Approved Date: 3/10/25

Attachments/Plans: Proposal

decrolux
illuminating spaces, inspiring growth
2213: Wellesley Park, South Hobart
Job Reference DQ3016
Prepared for Wellesley Park
Address Wellesley Park Oval, South Hobart TAS
Prepared by Andrew Grace
Submitted on 1st Sept 2025
decrolux.com.au

Our proposal
We are pleased to provide a Lighting Solution for the **Wellesley Park, South Hobart Football Club**, located in Tasmania.
All the best,
Andrew Grace

Type	Code/Description	Product	Qty
	[LC7690] INVICTUS 1500W Floodlight, Black, External Driver, 5000K, Medium Flood Asymmetric **Colour Temperature** 5000K · **Ingress Protection** IP66 · **Dimming** DALI **Warranty** 10 Year Replacement* · **Lumen Output** 210,000lm · **Finish** Black **Operating Temperature (Ta)** -40°C - +50°C · **Dimensions** 1175mm (L) x 396mm (W) x 95mm (D) · **Impact Rating** IK09		16
	The Installation for the 1500W Invictus HV fittings requires 4 core + earth, 1.5mm2. Supplied by contractor, in this case Lifestyle Electrical. Drivers remote mounted. Current lead time is 4-5 weeks from order confirmation for INVICTUS.		
	[CAS1200HD-101] Straight Cross Arm 1200mm, Heavy Duty, 101mm Spigot to suit 89mm OD **Finish** Hot Dip Galvanised · **Spigot Size** 60mm/ 76mm/ 89mm/ 101mm Suits 2 floodlights, overslung. Existing Poles. Spigot Mount TBC.		4
	[CAS2500HD-101] Straight Cross Arm 2500mm, Heavy Duty, 101mm Spigot to suit 89mm OD **Finish** Hot Dip Galvanised Suits 4 floodlights, overslung		2
	[HMC200-89] Horizon High Mast Column 20m, 89mm Spigot, Heavy Duty, Hot Dip Galv **Finish** Galv. · **Spigot Size** 88.9mm (Dia) x 200mm (L) · **Dimensions** 110-500mm (Dia) x 20,000mm (H) **Pole Weight** 838kg · **Door Opening** 610 x 190 Access Door · **Base Plate Dimensions** 450mm (Outside Dia)		2

Type	Code/Description	Product	Qty
	[M33X620X8] M33 Bolts x 8, and Hold-down Template (620mm Dia) **Dimensions** 640mm Pitch Circle Diameter		2
	[8M20-720-3200] Reo Cage 20mm 8-Bar 720mm(Dia) x 3200mm(D) **Hole Diameter (mm)** 900mm **Cage Bars** 8-N24 **PCD (mm)** 720 PCD Cage subject to Soil Test & Engineering. To be manufactured locally.		2
	[EGF] Engineering Fee Allowing for 2 locations.		2
	[CBF] Cage/Ragbolt Freight - Early/ Separate Delivery, One Drop		1
	[PLF] Pole Freight - One Drop, offloading by others - Standard Tray Truck		1

Type	Code/Description	Product	Qty
	Sales Proposal based off Design V6, and new Product Drawings.		
	Lead-time for Poles/Cages/Crossarms, allow approx. 12 weeks from date of order.		

INVICTUS 1500W
Sports Floodlight

Project: 2213: Wellesley Park, South Hobart
Type:

The INVICTUS 1500W Floodlight is a striking, low-profile design and advanced in-built thermal management. Made in Australia. The latest generation floodlight is a highly reliable fitting that requires very low maintenance. Producing a vivid white light that renders colours as they are meant to be seen, this revolutionary fitting has helped redefine high-output illumination as we know it.

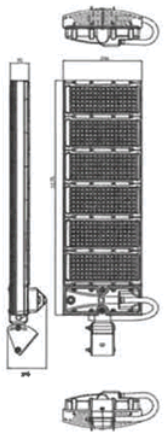
Using a versatile 240V-415V remote driver, it has an inbuilt thermostat, which will dim the light to 25% if the lights are overheating. *When installed correctly, these lights are guaranteed with a 10-year warranty.

Sail Area @ 40 degrees = 0.320.

IP66

VARIATION

LC7690	INVICTUS 1500W Floodlight , Black , Medium Flood Asymmetric , DALI , 5000K , 210,000lm



SPECIFICATIONS

Material Specifications

Material	Aluminium Body
Dimensions	1175mm (L) x 396mm (W) x 95mm (D)
Windage	Sail Area @ 40° = 0.320
Ingress Protection	IP66
Impact Rating	IK09
Weight	26kg exc. drivers (remote mounted)
Warranty	10 Year Replacement*

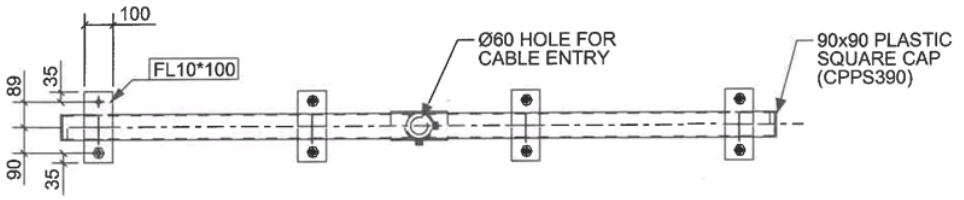
Electrical Specifications

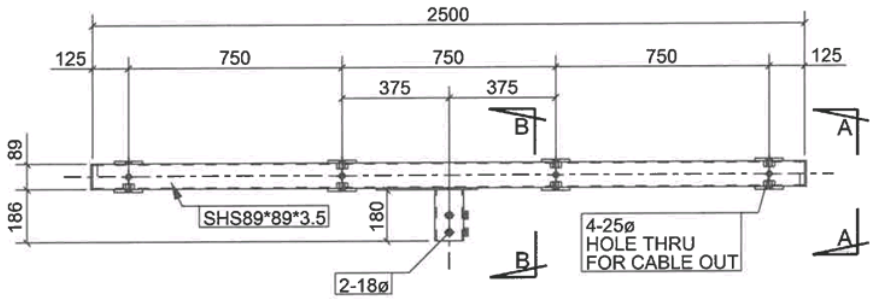
Input Voltage	200 - 415VAC, 50/60 Hz
Operating Temperature (Ta)	-40°C - +50°C

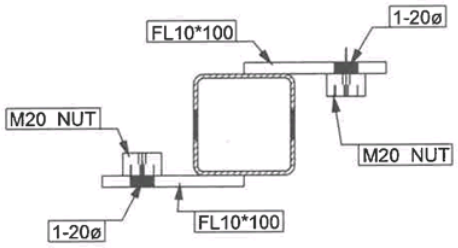
Optic Specifications

Light Source	Osram 3030 LED
Optics	Medium Flood Asymmetric/ 120° Symmetrical
Efficacy	150lm/W
CRI	> 70Ra
Calculated L70 (Hours)	> 100,000 Hrs

WEIGHT : 36.1 kg
FINISH : Hot-Dipped Galvanized







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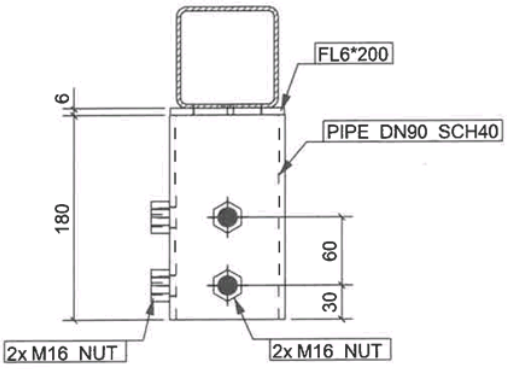
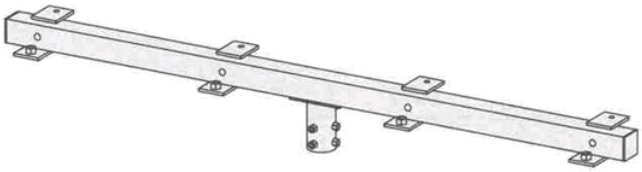
SCALE 1:5

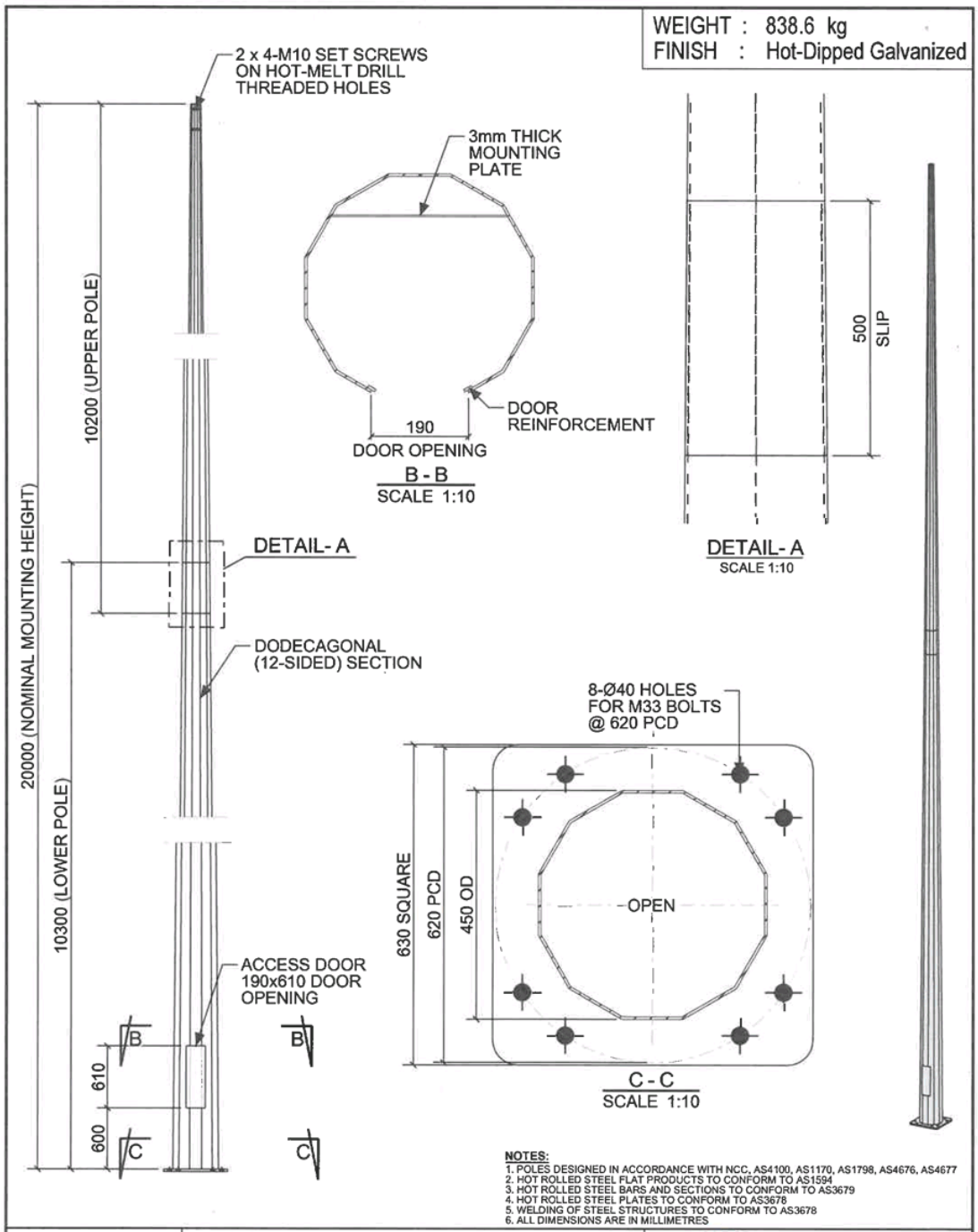


B - B
SCALE 1:5



NOTES:
1. POLES DESIGNED IN ACCORDANCE WITH NCC, AS4100, AS1170, AS1798, AS4676, AS4677
2. HOT ROLLED STEEL FLAT PRODUCTS TO CONFORM TO AS1594
3. HOT ROLLED STEEL BARS AND SECTIONS TO CONFORM TO AS3679
4. HOT ROLLED STEEL PLATES TO CONFORM TO AS3678
5. WELDING OF STEEL STRUCTURES TO CONFORM TO AS3678
6. ALL STEEL ITEMS TO BE FULLY HOT DIP GALVANISED AFTER FABRICATION TO SD4680
7. ALL DIMENSIONS ARE IN MILLIMETRES

PROJECT REF	DESCRIPTION			HORIZON POLES
LAST UPDATED 12-06-2024	Straight Cross Arm 2500mm, Heavy Duty, 101mm Spigot to suit 89mm OD			
DRAWN BY / CHECKED BY AC / JG				HORIZON POLES DETAILS
PAGE 1	PRODUCT CODE CAS2500HD-101	DWG NO.	SCALE 1:20	*DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE*


WEIGHT : 838.6 kg
FINISH : Hot-Dipped Galvanized
2 x 4-M10 SET SCREWS ON HOT-MELT DRILL THREADED HOLES
3mm THICK MOUNTING PLATE
DOOR REINFORCEMENT
190
DOOR OPENING
B - B
SCALE 1:10
500 SLIP
DETAIL- A
SCALE 1:10
20000 (NOMINAL MOUNTING HEIGHT)
10200 (UPPER POLE)
10300 (LOWER POLE)
DETAIL- A
DODECAGONAL (12-SIDED) SECTION
8-Ø40 HOLES FOR M33 BOLTS @ 620 PCD
630 SQUARE
620 PCD
450 OD
OPEN
C - C
SCALE 1:10
ACCESS DOOR 190x610 DOOR OPENING
610
600
B
C
NOTES:
1. POLES DESIGNED IN ACCORDANCE WITH NCC, AS4100, AS1170, AS1798, AS4676, AS4677
2. HOT ROLLED STEEL FLAT PRODUCTS TO CONFORM TO AS1594
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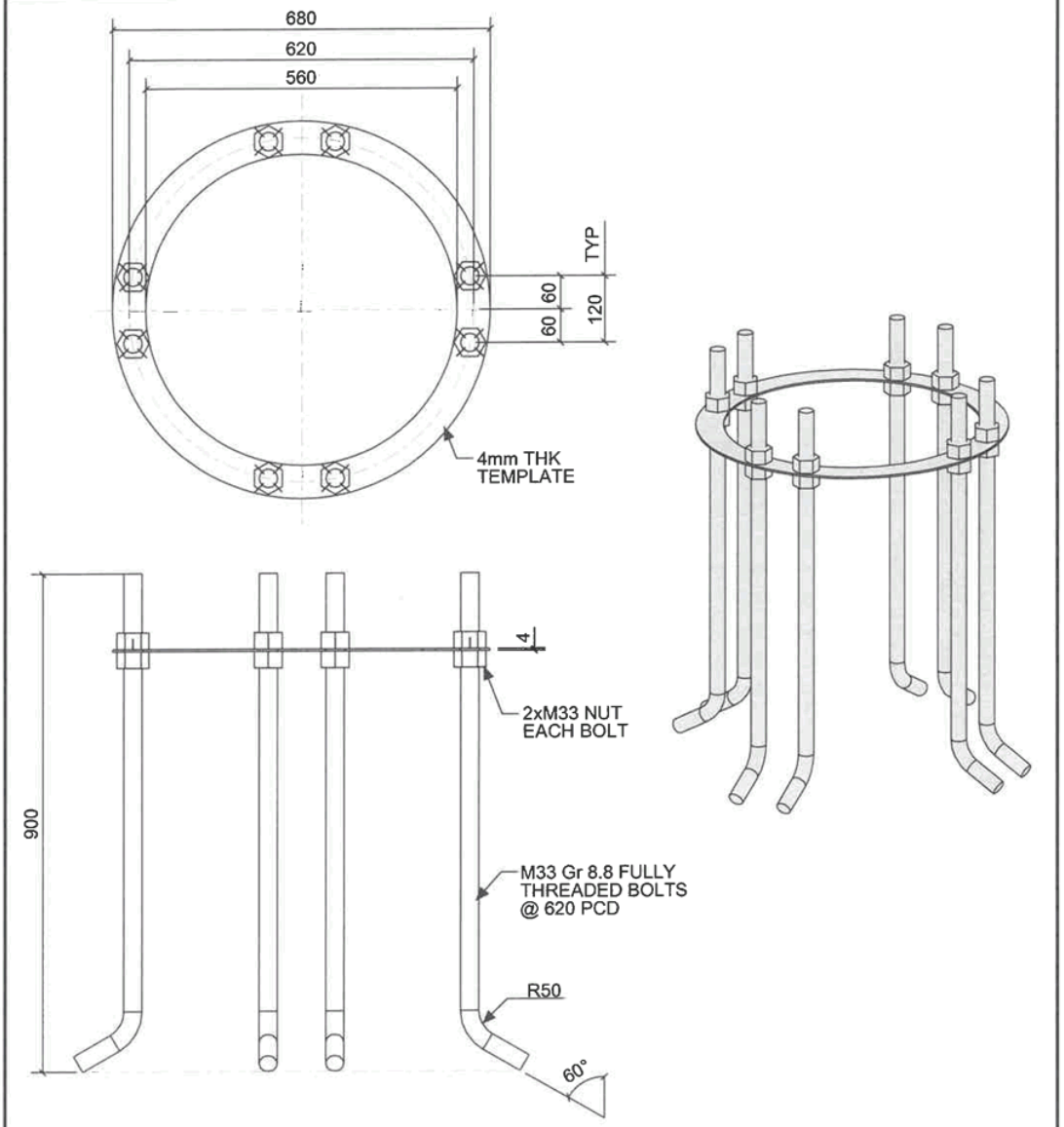
5. WELDING OF STEEL STRUCTURES TO CONFORM TO AS3678
6. ALL DIMENSIONS ARE IN MILLIMETRES
PROJECT REF
DESCRIPTION
Horizon High Mast Column 20m,
89mm Spigot, Heavy Duty, Hot Dip Galv
LAST UPDATED
21-08-2025
HORIZON POLES
DRAWN BY / CHECKED BY
AC / JG
APPROVED BY CLIENT:
SIGNED:
DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE
PAGE
1
PRODUCT CODE
HMC200-89
DWG NO.
SCALE
1:10
REVISION

BILL OF MATERIALS		
ITEM	DESCRIPTION	QTY
M33X620X8	M33 Grade 8.8 Threaded Bolts 900mm(L)	8
BTM3308620	4mm Thick Bolt Template @ 680mm Dia	1



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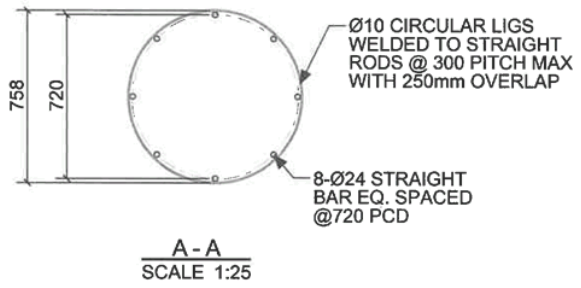
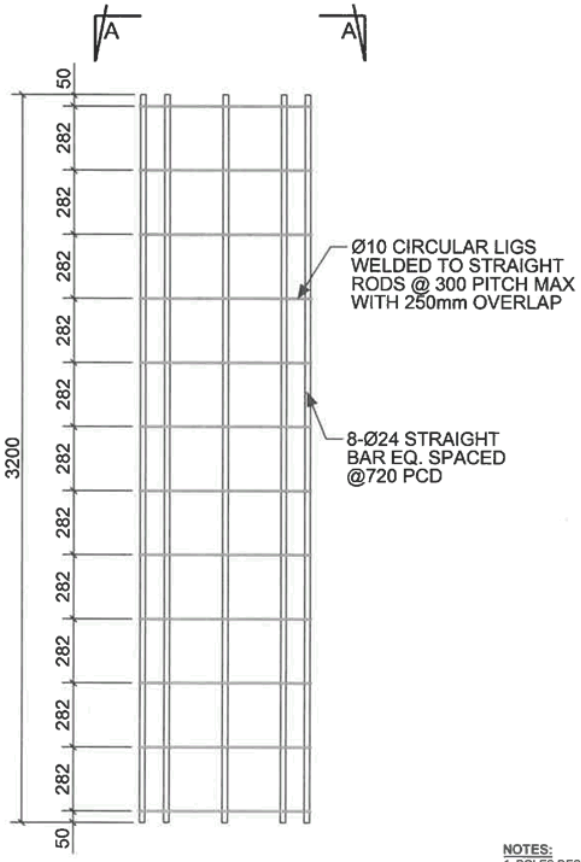
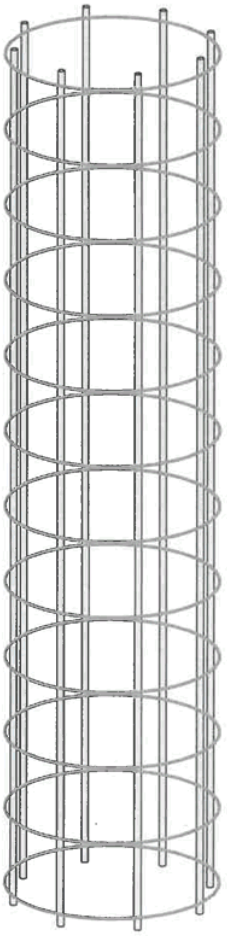
PROJECT REF	DESCRIPTION: M33 Bolts x 8 (900mm L), and Hold-down Template (680mm Dia)			HORIZON POLES
LAST UPDATED: 21-08-2025				
DRAWN BY / CHECKED BY: AC / JG	APPROVED BY CLIENT:	SIGNED:		DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE
PAGE: 1	PRODUCT CODE: M33X620X8	DWG NO.	SCALE: 1:1	REVISION



A - A
SCALE 1:25





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PROJECT REF	DESCRIPTION				HORIZON POLES
LAST UPDATED: 21-08-2025	Reo Cage 24mm 8-Bar 720mm(Dia) x 3200mm(D)				
DRAWN BY / CHECKED BY: AC / JG	APPROVED BY CLIENT:		SIGNED:		DRAWING TO BE APPROVED AND SIGNED OFF FOR PRODUCTION TO COMMENCE
PAGE: 1	PRODUCT CODE: 8M20-720-3200	DWG NO.	SCALE: 1:20	REVISION	

Tekla structures

decrolux
Lighting Council
AUSTRALIA
Contact
11a East Goderich St, Deloraine, TAS 7304
1300 827 284
sales@decrolux.com
www.decrolux.com.au

Luminaire Schedule			
Symbol	Qty	Label	LLF
	16	Invictus II 1500 O1	0.890

Calculation Summary							
Project: Calculations							
Label	Units	Avg	Max	Min	Min/Avg	Min/Max	UG
CalcPts_Football	Lux	245.37	386	153	0.62	0.40	1.25
CalcPts_Training	Lux	182.46	255	113	0.62	0.44	1.38

Calculation Summary		
Project: Glare		
Label	CalcType	Max
GR_1	Glare Rating	36
GR_1	Glare Rating	25
GR_1	Glare Rating	38
GR_1	Glare Rating	42
GR_1	Glare Rating	49
GR_1	Glare Rating	45
GR_1	Glare Rating	36
GR_1	Glare Rating	23
GR_1	Glare Rating	37
GR_1	Glare Rating	41
GR_1	Glare Rating	49
GR_1	Glare Rating	48
GR_1	Glare Rating	46
GR_1	Glare Rating	42
GR_1	Glare Rating	47
GR_1	Glare Rating	46
GR_1	Glare Rating	44
GR_1	Glare Rating	42
GR_1	Glare Rating	44

Luminaire Location Summary		
LumNo	Label	Tilt
1	Invictus II 1500 O1	40
2	Invictus II 1500 O1	40
3	Invictus II 1500 O1	41
4	Invictus II 1500 O1	41
7	Invictus II 1500 O1	46
8	Invictus II 1500 O1	44
9	Invictus II 1500 O1	47
10	Invictus II 1500 O1	47
17	Invictus II 1500 O1	48
18	Invictus II 1500 O1	48
19	Invictus II 1500 O1	48
20	Invictus II 1500 O1	48
21	Invictus II 1500 O1	47
22	Invictus II 1500 O1	46
23	Invictus II 1500 O1	46
24	Invictus II 1500 O1	46

Obtrusive Light - Compliance Report
AS/NZS 4282:2023, A3 - Medium District Brightness, Non-Curfew L1
Filename: Wellesley Park V6
31-07-2025 11:59:47

Illuminance
Maximum Allowable Value: 10 Lux

Calculations Tested (20):

Calculation Label	Test Results	Max. Illum.
ObtrusiveLight_2_Ill_Seg1	PASS	2
ObtrusiveLight_2_Ill_Seg2	PASS	2
ObtrusiveLight_2_Ill_Seg3	PASS	1
ObtrusiveLight_3_Ill_Seg1	PASS	4
ObtrusiveLight_3_Ill_Seg10	PASS	0
ObtrusiveLight_3_Ill_Seg2	PASS	3
ObtrusiveLight_3_Ill_Seg3	PASS	3
ObtrusiveLight_3_Ill_Seg4	PASS	2
ObtrusiveLight_3_Ill_Seg5	PASS	2
ObtrusiveLight_3_Ill_Seg6	PASS	1
ObtrusiveLight_3_Ill_Seg7	PASS	2
ObtrusiveLight_3_Ill_Seg8	PASS	1
ObtrusiveLight_3_Ill_Seg9	PASS	1
ObtrusiveLight_4_Ill_Seg1	PASS	0
ObtrusiveLight_4_Ill_Seg2	PASS	1
ObtrusiveLight_4_Ill_Seg3	PASS	0
ObtrusiveLight_4_Ill_Seg4	PASS	1
ObtrusiveLight_4_Ill_Seg5	PASS	1
ObtrusiveLight_4_Ill_Seg6	PASS	3
ObtrusiveLight_4_Ill_Seg7	PASS	2

Luminous Intensity (Cd) At Vertical Planes
Maximum Allowable Value: 12500 Cd

Calculations Tested (20):

Calculation Label	Test Results
ObtrusiveLight_2_Cd_Seg1	PASS
ObtrusiveLight_2_Cd_Seg2	PASS
ObtrusiveLight_2_Cd_Seg3	PASS
ObtrusiveLight_3_Cd_Seg1	PASS
ObtrusiveLight_3_Cd_Seg10	PASS
ObtrusiveLight_3_Cd_Seg2	PASS
ObtrusiveLight_3_Cd_Seg3	PASS
ObtrusiveLight_3_Cd_Seg4	PASS
ObtrusiveLight_3_Cd_Seg5	PASS
ObtrusiveLight_3_Cd_Seg6	PASS
ObtrusiveLight_3_Cd_Seg7	PASS
ObtrusiveLight_3_Cd_Seg8	PASS
ObtrusiveLight_3_Cd_Seg9	PASS
ObtrusiveLight_4_Cd_Seg1	PASS
ObtrusiveLight_4_Cd_Seg2	PASS
ObtrusiveLight_4_Cd_Seg3	PASS
ObtrusiveLight_4_Cd_Seg4	PASS
ObtrusiveLight_4_Cd_Seg5	PASS
ObtrusiveLight_4_Cd_Seg6	PASS
ObtrusiveLight_4_Cd_Seg7	PASS

Upward Waste Light Ratio (UWLR)
Maximum Allowable Value: 2.0 %

Calculated UWLR: 1.4 %
Test Results: PASS

REVISION	REV
V6	S.B.
Poles are 20MH	

Disclaimer: If no CAD drawings or site measurements are included with the design brief, all calculations are based on a scaled aerial image. Whilst we try ensure accuracy of scales, using a scaled aerial image inevitably leads to some inaccuracies. The presented calculations are a close estimate of anticipated lighting levels. Before installation, all calculations should be verified with precise site measurements, ideally using a surveyed CAD drawing that includes relevant field markings and surrounding residential boundaries.

PROJECT NAME
Wellesley Park V6.AGI

Lighting system performance meets the minimum lighting criteria of AS 2560.2 2021 Sports Lighting - Football 200 Lux

Design is compliant with AS 4282:2023 Obtrusive Light. A3 L1. Obtrusive Lighting is calculated at 1.0MF

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Date:31-07-2025 | Page 1 of 4

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Deloraine TAS 7304

ABN 74 642 067 221

Terra Preta W
Wellesley Park
Recently viewed
Hillborough Rd
REVISION
REV
V6
S.B.
Poles are 20MH
Disclaimer: If no CAD drawings or site measurements are included with the design brief, all calculations are based on a scaled aerial image. Whilst we try ensure accuracy of scales, using a scaled aerial image inevitably leads to some inaccuracies. The presented calculations are a close estimate of anticipated lighting levels. Before installation, all calculations should be verified with precise site measurements, ideally using a surveyed CAD drawing that includes relevant field markings and surrounding residential boundaries.
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Date:31-07-2025
Page 2 of 4
Decrolux
11a East Goderich St
Deloraine TAS 7304
ABN 74 642 067 221

REVISION	REV
V6	S.B.
Poles are 20MH	

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Date:31-07-2025 Page 3 of 4

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11a East Goderich St
Deloraine TAS 7304
ABN 74 642 067 221

Calculation Summary

Label	CalcType	Units	Max
CalcPts_Football	Illuminance	Lux	386
CalcPts_OB	Illuminance	Lux	387
CalcPts_Training	Illuminance	Lux	255
GR_1	Glare Rating	N.A.	36
GR_1	Glare Rating	N.A.	25
GR_1	Glare Rating	N.A.	38
GR_1	Glare Rating	N.A.	42
GR_1	Glare Rating	N.A.	49
GR_1	Glare Rating	N.A.	45
GR_1	Glare Rating	N.A.	36
GR_1	Glare Rating	N.A.	23
GR_1	Glare Rating	N.A.	37
GR_1	Glare Rating	N.A.	41
GR_1	Glare Rating	N.A.	49
GR_1	Glare Rating	N.A.	48
GR_1	Glare Rating	N.A.	46
GR_1	Glare Rating	N.A.	42
GR_1	Glare Rating	N.A.	47
GR_1	Glare Rating	N.A.	46
GR_1	Glare Rating	N.A.	44
GR_1	Glare Rating	N.A.	42
GR_1	Glare Rating	N.A.	44
ObtrusiveLight_2_Cd_Seg1	Obtrusive - Cd	N.A.	9551
ObtrusiveLight_2_Cd_Seg2	Obtrusive - Cd	N.A.	9206
ObtrusiveLight_2_Cd_Seg3	Obtrusive - Cd	N.A.	6828
ObtrusiveLight_2_Ill_Seg1	Obtrusive - Ill	Lux	2
ObtrusiveLight_2_Ill_Seg2	Obtrusive - Ill	Lux	1
ObtrusiveLight_2_Ill_Seg3	Obtrusive - Ill	Lux	1
ObtrusiveLight_3_Cd_Seg1	Obtrusive - Cd	N.A.	8500
ObtrusiveLight_3_Cd_Seg10	Obtrusive - Cd	N.A.	5972
ObtrusiveLight_3_Cd_Seg2	Obtrusive - Cd	N.A.	8322
ObtrusiveLight_3_Cd_Seg3	Obtrusive - Cd	N.A.	7634
ObtrusiveLight_3_Cd_Seg4	Obtrusive - Cd	N.A.	7690
ObtrusiveLight_3_Cd_Seg5	Obtrusive - Cd	N.A.	8160
ObtrusiveLight_3_Cd_Seg6	Obtrusive - Cd	N.A.	7731
ObtrusiveLight_3_Cd_Seg7	Obtrusive - Cd	N.A.	6597
ObtrusiveLight_3_Cd_Seg8	Obtrusive - Cd	N.A.	6519
ObtrusiveLight_3_Cd_Seg9	Obtrusive - Cd	N.A.	6639
ObtrusiveLight_3_Ill_Seg1	Obtrusive - Ill	Lux	4
ObtrusiveLight_3_Ill_Seg10	Obtrusive - Ill	Lux	0
ObtrusiveLight_3_Ill_Seg2	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg3	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg4	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg5	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg6	Obtrusive - Ill	Lux	1
ObtrusiveLight_3_Ill_Seg7	Obtrusive - Ill	Lux	2
ObtrusiveLight_3_Ill_Seg8	Obtrusive - Ill	Lux	1
ObtrusiveLight_3_Ill_Seg9	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Cd_Seg1	Obtrusive - Cd	N.A.	5143
ObtrusiveLight_4_Cd_Seg2	Obtrusive - Cd	N.A.	5916
ObtrusiveLight_4_Cd_Seg3	Obtrusive - Cd	N.A.	6066
ObtrusiveLight_4_Cd_Seg4	Obtrusive - Cd	N.A.	6738
ObtrusiveLight_4_Cd_Seg5	Obtrusive - Cd	N.A.	8748
ObtrusiveLight_4_Cd_Seg6	Obtrusive - Cd	N.A.	9168
ObtrusiveLight_4_Cd_Seg7	Obtrusive - Cd	N.A.	8381
ObtrusiveLight_4_Ill_Seg1	Obtrusive - Ill	Lux	0
ObtrusiveLight_4_Ill_Seg2	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Ill_Seg3	Obtrusive - Ill	Lux	0
ObtrusiveLight_4_Ill_Seg4	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Ill_Seg5	Obtrusive - Ill	Lux	1
ObtrusiveLight_4_Ill_Seg6	Obtrusive - Ill	Lux	3
ObtrusiveLight_4_Ill_Seg7	Obtrusive - Ill	Lux	2

UWLR Area Summary

Label	Total Watts	UWLR
UWLR	24316.8	0.014

Notes and Assumptions:

1) This Lighting Design is issued subject to the information / brief / drawings provided by the client and normal accuracies and tolerances of photometry and software as described within AS 3827.
2) Design complies with LTPs of:
   a. AS 2560.2 100 lux for Football / Rugby Amateur Level Club Competition
   b. AS 2560.2 100 lux for Football / Rugby Semi-professional Level Match Practice
   c. AS 2560.2 100 lux for Football / Rugby Professional Level Ball & Physical Training
   d. AS 4282 Zone A3 Non-Curfew L1 limits for obtrusive lighting
3) Refer luminaire location summary table on Page 1 for mounting height & tilt information
4) This Amended Design achieves same level of Compliance as Approved Design 07191-WPFC dated 31/07/2024 i.e. both designs are compliant to the maximim allowable LTPs of AS 4282 Zone A3 Non-Curfew L1 limits for Obtrusive Lighting

REVISION	REV
V6	S.B.
Poles are 20MH	

Disclaimer: If no CAD drawings or site measurements are included with the design brief, all calculations are based on a scaled aerial image. Whilst we try ensure accuracy of scales, using a scaled aerial image inevitably leads to some inaccuracies. The presented calculations are a close estimate of anticipated lighting levels. Before installation, all calculations should be verified with precise site measurements, ideally using a surveyed CAD drawing that includes relevant field markings and surrounding residential boundaries.

PROJECT NAME

Wellesley Park V6.AGI

Lighting system performance meets the minimum lighting criteria of AS 2560.2 2021 Sports Lighting - Football 200 Lux

Design is compliant with AS 4282:2023 Obtrusive Light. A3 L1. Obtrusive Lighting is calculated at 1.0MF

decrolux

Date:31-07-2025 | Page 4 of 4

Decrolux
11a East Goderich St
Deloraine TAS 7304
ABN 74 642 067 221

RESULT OF SEARCH

ASSISTANT RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
131798	1
EDITION	DATE OF ISSUE
2	23-Feb-2017

SEARCH DATE : 18-Sep-2025
SEARCH TIME : 04.41 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 131798
Derivation : Part of 299 Acres Gtd to Robert Lathrop Murray
Derived from 961/97

SCHEDULE 1

A151092 TRANSFER to HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
A50534 FENCING CONDITION in Transfer

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

ASSISTANT RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

OWNER

FOLIO REFERENCE CT. 961-97

GRANTEE

PLAN OF TITLE

LOCATION CITY OF HOBART

FIRST SURVEY PLAN No. 8/42 TS

COMPILED BY L.D.R.B.

SCALE 1: 1500 LENGTHS IN METRES

REGISTERED NUMBER P131798

APPROVED 16 APR 1999

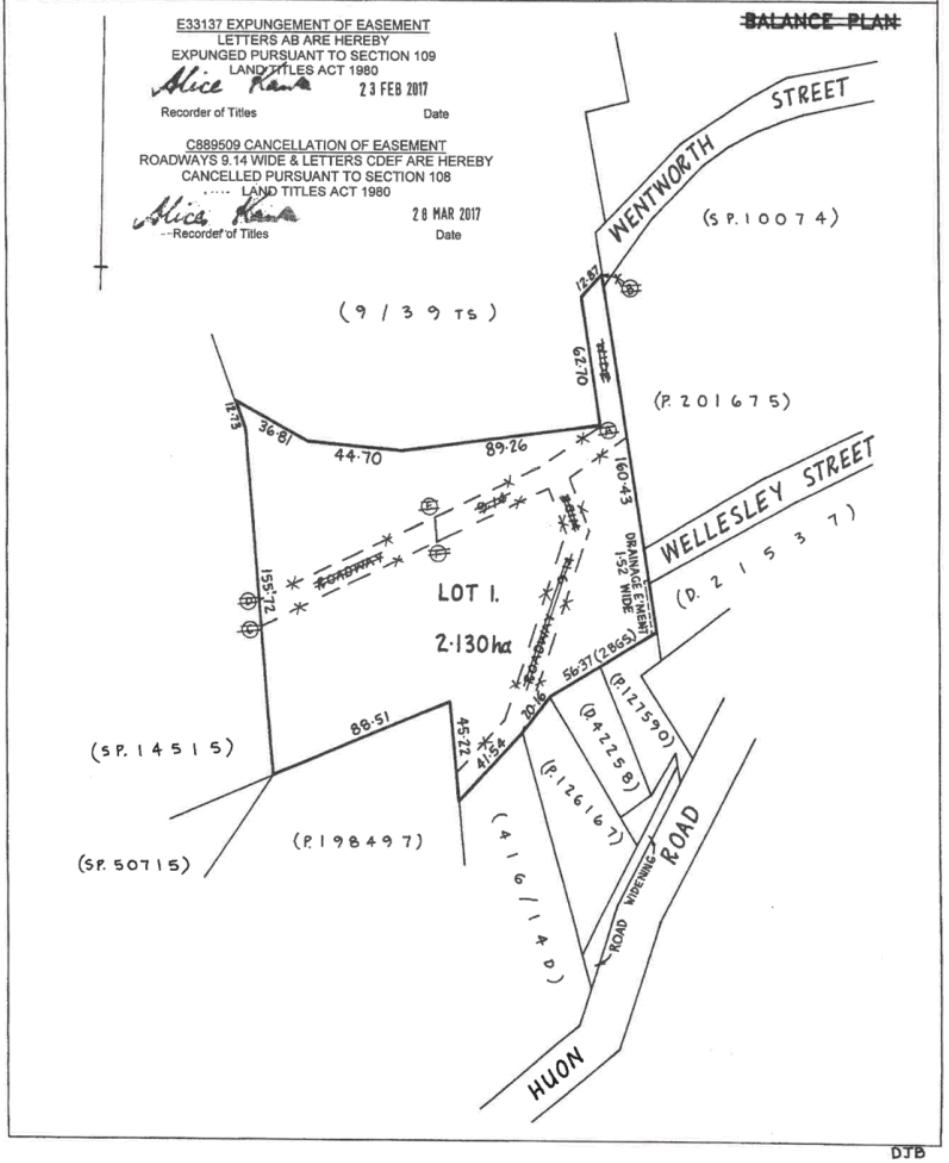
Recorder of Titles

MAPSHEET MUNICIPAL CODE No. 114 (5225) | LAST UPI No / | LAST PLAN 12/34 TS, No. 13/58 TS, 15/58 TS. | ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

~~BALANCE PLAN~~

E33137 EXPUNGEMENT OF EASEMENT
LETTERS AB ARE HEREBY
EXPUNGED PURSUANT TO SECTION 109
LAND TITLES ACT 1980
Alice Rona 23 FEB 2017
Recorder of Titles Date

C889509 CANCELLATION OF EASEMENT
ROADWAYS 9.14 WIDE & LETTERS CDEF ARE HEREBY
CANCELLED PURSUANT TO SECTION 108
LAND TITLES ACT 1980
Alice Rona 28 MAR 2017
Recorder of Titles Date



DJB

ENVIRONMENTAL DEVELOPMENT PLANNER ASSESSMENT (2025-3850)

136 Wentworth Road (PLN-HOB-2025-0483)

Summary:

Code	Applicable	Exempt	Permitted	Discretionary
C4.0 Electricity Infrastructure	No			
C7.0 Natural Assets	No			
C9.0 Attenuation	No			
C10.0 Coastal Erosion Hazard	No			
C11.0 Coastal Inundation Hazard	No			
C13.0 Bushfire Prone Areas	No			
C15.0 Landslip Hazard	No			

Detailed Assessment:

Approval is sought to upgrade the lighting at 'Wellesley Park', 136 Wentworth Street, South Hobart. Specifically, new luminaires on proposed on four existing 20m poles and two new 20m light poles/luminaires are proposed.

No EDP codes apply to this application.

Sports and Recreation and Discretionary uses, excluding Emergency Services or Visitor Accommodation

The land is within the Recreation Zone. Clause 28.3.1 includes a standard for floodlighting of sport and recreation facilities. Acceptable solution 28.3.1 A2 states the following:

Flood lighting of Sports and Recreation facilities within 50m of a General Residential Zone, Inner Residential Zone or Low Density Residential Zone, must not operate between 11.00pm and 7.00am.

The proposed lights would be located a minimum of approximately 23m from land zoned General Residential.

The application included a statement that the lights would not be operated between 11pm and 7am. The proposal therefore complies with the relevant acceptable solution.

A condition prohibiting operation of the lights between the hours of 11pm and 7am is recommended for any permit granted.

It should be noted that a report was submitted with the application indicating that the proposed new lighting would comply with the relevant light technical parameters in *AS4282:2023 Control of the obtrusive effects of outdoor lighting*.

Representations

Eleven representations were received objecting to the proposal, including matters related to the amenity impacts of light spill.

Issue Raised	Response
The application addresses only operating hours (Acceptable Solution A2) but fails to demonstrate compliance with Performance Criteria P2, which requires that floodlighting within 50m of a General Residential Zone must not cause unreasonable loss of amenity.	The application does not need to be assessed against, or comply with, performance criterion P2 as it complies with the relevant acceptable solution, A2. Compliance with a relevant standard is achieved by satisfying either the acceptable solution or the performance criterion.

The application provides no light spill assessment or modelling showing actual impact on residential properties. While technical calculations demonstrate the lighting meets standards on the field, there is no independent assessment of light spill, glare, or visual impact at residential property boundaries within the 50m zone referenced by Clause 28.3.1.	While not required under the planning scheme, a report was submitted with the application indicating that the proposed lighting would comply with the relevant light technical parameters of *AS4282:2023 Control of the obtrusive effects of outdoor lighting*.
Increased Light 'pollution' to surrounding residences is unacceptable.	Amenity impacts associated with light spill are addressed in the planning scheme by the standard 28.3.1 A2/P2. As the proposal complies with acceptable solution A2, the proposal is deemed acceptable under the scheme provisions.
I believe that the proposed lighting would be inappropriate for the location, which is residential and home to several nocturnal species.	With regard to light spill, impacts on residential amenity are deemed acceptable under the provisions of the scheme as the proposal complies with acceptable solution 28.3.1 A2. Impacts of the proposed lighting on wildlife is not a relevant consideration under the planning scheme (there are no relevant standards).
The applicant has not provided sufficient evidence that the proposed lighting will not negatively impact nearby residents. The burden of proof lies with the applicant, and this requirement has not been met. Light spill and glare from 20-metre towers with stadium-level illumination will intrude into homes, disrupting sleep for young children and adults. This is a significant health and wellbeing concern for families living nearby.	Amenity impacts associated with light spill are addressed in the planning scheme by the standard 28.3.1 A2/P2. As the proposal complies with acceptable solution A2, the proposal is deemed acceptable under the scheme provisions. However, advice is recommended for any permit granted recommending that the lights are designed, installed and maintained to limit light spill and glare as far as reasonably practicable.
Additionally, the impact of artificial lighting on local wildlife has not been addressed. Wellesley Park and its surrounding areas are home to many species of native fauna, including several that are listed as threatened. Increased light pollution will disrupt nocturnal species' feeding and breeding patterns, further threatening biodiversity. Extended illumination will compound ecological impacts, as many native species rely on darkness for survival. Prolonged artificial lighting will fragment habitats and alter natural behaviours, placing additional stress on already vulnerable wildlife populations.	The proposed lighting may have an impact upon fauna behaviour over and above that of the existing lighting. However, impacts of the proposed lighting on wildlife is not a relevant consideration under the planning scheme (there are no relevant standards). However, advice is recommended for any permit granted recommending that the lights are designed, installed and maintained to limit light spill and glare as far as reasonably practicable.
The ongoing issue of lights being left on when the ground is unused is both wasteful and disruptive. Council should make publicly available the contact details of the HCC manager with app access to switch lights off, so residents can report non-compliance directly.	Advice is recommended for any permit granted recommending that: • floodlights are turned off as soon as reasonable practicable upon the cessation of activities; and • Council consider nominating a specific person or email address for the public to report instances of non-compliance with the approved operating hours.

Improved shielding must be mandatory on all field lights. The new towers and replacement lights risk shining directly into neighbouring windows, causing unreasonable loss of amenity. Council should require greater shield and orientation adjustments to ensure reduced light spill at property boundaries.	As the proposal complies with the relevant acceptable solution, there is no head-of-power under the planning scheme to require this. However, advice is recommended for any permit granted recommending that the lights are designed, installed and maintained to limit light spill and glare as far as reasonably practicable.
While the planning scheme permits floodlighting until 11pm, the ground is typically vacated by 9pm. Council should restrict operating hours to 9:15pm in agreements with facility users, reflecting community expectations. Lights have occasionally remained on during curfew hours (11pm–6am). Council should impose penalties on clubs responsible for such breaches.	Something for Council to consider as owner/manager of the site.
Wind disturbance has caused misalignment of current lights, leading to excessive spill. Council should require maintenance every three months, with lights shut down if spill exceeds 10 lux at any neighbouring property. A compliance report should be published after each service confirming spill levels are within the standard.	This is something Council may wish to consider as owner/manager of the site. Compliance with AS 4282 could potentially be jeopardised by changes to the alignment of the luminaires. Advice is recommended for any permit granted recommending that the lights are designed, installed and maintained to limit light spill and glare as far as reasonably practicable.
Under the Tasmanian Planning Scheme – State Planning Provisions, development must avoid causing an unreasonable loss of amenity to adjoining properties (General Provisions). Lighting installations are expected to comply with AS/NZS 4282:2023 – Control of the Obtrusive Effects of Outdoor Lighting, which sets limits on light spill and glare.	According to the submitted documentation, the proposed lighting, if installed and maintained as per the proposed design, would comply with the relevant light technical parameters of AS 4282.
The standard curfew for outdoor lighting is 11:00 pm to 6:00 am, and Hobart's Local Provisions Schedule reinforces amenity protections and allows conditions to restrict operating hours and require shielding.	The proposed maximum operating hours of the lights (7am-11pm) fall outside the curfew period specified by AS 4282 (11pm-6am). In my opinion it would be invalid to apply conditions limiting operating hours or light emissions
Although Wellesley Park is zoned Recreation (E3 – Suburban Zone), its bushland context and ecological values warrant stricter controls consistent with E1 (Natural Zone) principles, including enhanced shielding and curfew compliance.	The site is within the Recreation Zone so only the Recreation Zone standards apply.
Shielding should be mandatory on all field lights to minimise glare and light spill, consistent with AS/NZS 4282:2023.	According to the submitted documentation, the proposed lighting, if installed and maintained as per the proposed design, would comply with the relevant light technical parameters of AS 4282.

Orientation of new the towers must avoid directing light towards residential windows to prevent unreasonable loss of amenity.	The applicable standards do not provide a head-of-power to require realignment of the light towers given they would comply with the relevant acceptable solution.
Wind disturbance currently misaligns lights, increasing spill. Conditions should require: • Quarterly maintenance checks. • Immediate shutdown if light spill exceeds 10 lux on any neighbouring property. • Compliance checks should use a calibrated lux meter at property boundaries. • Publication of compliance reports confirming spill remains below 10 lux.	The applicable standards do not provide a head-of-power to require this given the proposed lights comply with the relevant acceptable solution. Advice is recommended however, recommending regular inspection and maintenance to minimise light spill.
Lights have occasionally operated during curfew hours. Council should impose penalties on those responsible for breaches.	Council has the ability to issue penalties for breaches of planning permit conditions, if it is aware of and has sufficient evidence of such breaches.
Despite asserting compliance with Australian Standards, no evidence is provided to substantiate this claim. Without a light spill report or boundary illuminance modelling, Council cannot assess amenity impacts, and the application does not satisfy the performance criteria.	AS 4282 compliance documentation was submitted with the application, including boundary illuminance modelling. According to the documentation, all relevant light technical parameters called up by the standard would be met by the new lighting if installed and maintained as per the design.

Recommended Condition:

The floodlights must not be operated between the hours or 11pm and 7am.

Recommended Advice:

It is recommended that the lights are designed and installed to limit light spill and glare as far as reasonably practicable. The lights should also be regularly inspected and maintained to ensure they remain aligned as per the design, maximise efficiency and minmise light spill and glare.

It is recommended that the lights are turned off as soon as possible upon the cessation of activities.

It is recommended that a contact person or email address be provided to residents of the area for the reporting of instances of non-compliance with the approved operating hours.

Environmental Health Officer Referral Report

PLN-HOB-2025-0483 - 136 Wentworth St, South Hobart

Summary:

Code – C14.0 - Potentially Contaminated Lands	Applicable (check that the Code applies to the use or development C14.2	Exempt (check the exemptions C14.4	Permitted (the use or development is permitted if the relevant acceptable solutions are met)	Discretionary (identify the relevant acceptable solution which has not been met and which thus makes the application discretionary)
C14.2 - Potentially Contaminated Land	Applies	No exemptions	Permitted	N/A

1. A representation was received highlighting concerns about the former landfill contaminants (methane gas, zinc, benzo(a)pyrene). And associated excavation that could release the toxic gases and contaminated soil.

Historical gas monitoring reports by GHD, held by the Hobart City Council confirm that landfill gas (methane and carbon dioxide) is present, and it will continue to be generated at the main landfill site. Another report by GHD confirmed some soil contamination on the main landfill site, including benzo(a)pyrene and the total sum of PAHs which exceed Health Investigation Limits (HIL) guidelines.

The Environmental Site Assessment report (ESA) by Sarah Joyce and Mark Downie, of GES, dated February 2025 addressed these concerns and the permit will be conditioned to comply the recommendations in the ESA report. This representation is supported.

2. A representation was received about the lack of an environmental management plan (EMP). An EMP is not required because this development is not a level 2 activity in accordance with the *Environmental Management and Pollution*

Control Act 1994 and due to the small scale of the development. This representation is not supported.

3. A representation was received with regards to no remediation or risk management plan being provided. This has been addressed in the ESA and previous reports to Council for this site. The ESA has identified associated risks to human health and the environment. This representation is not supported.

Conditions:

1. All excavated material must be treated as potentially contaminated. All personnel must maintain good personal hygiene during construction.

2. If soil is excavated that appears contaminated by unusual staining or odour, then an Environmental Consultant must be called to the site to investigate the material before work can resume.

3. All excavated soil to be handled and disposed of as Level 2 material per IB 105 (EPA Tasmania), unless further testing changes the classification.

4. A Lower Explosive Limit landfill gas monitor must be used to alert site workers to any elevated levels of methane or carbon dioxide, and to alert any site workers of explosive risks due to landfill gas.

Reason: given the past use as a historic landfill, rubbish fragments may be uncovered and gases may be present that need to be monitored throughout development as contamination management controls.

David Bradford

Environmental Health Officer

2/12/2025

Tasmanian Government PlanBuild TASMANIA

INTERNAL REFERRAL

Status: Review

Reference
PLANNA-HOB-2025-3853

Application Reference
PLN-HOB-2025-0483

Address
136 WENTWORTH ST SOUTH HOBART TAS 7004

Titles
66346/1, 201675/1, 198497/1, 94118/1, 82059/3, 131798/1

Referred By

Referred By
VM

Reason for Referral

New application for Sportsground upgraded lighting at Wentworth Park (Wellesley St Oval).
Previous permit in PLN-HOB-2024-0600 was approved in April 2025 for demolition of 2 x 20m existing light poles to be replaced with 2 x 28m poles and upgraded LED lighting on the 2 new and 2 existing poles. As well, previous PLN-15-00107-01 approved Lighting upgrade.
The new plans show two additional light poles (I think at 20m height). These are in addition to the existing 4 poles. Pre-application discussions said they would use the existing poles and not change to 28m, but it is not clear in this PLN.
EHO: Contaminated site and potential light pollution concern. Sort of contamination report provided for new poles.
EDP: Please can you assess the lighting impact. It also should be Priority Veg (I think), but the GIS plans are currently wrong and its impact should be low as new poles should be in developed area anyway.
Parks: Development on Council land.
Please send any RFIs by 14 October.
Many thanks VM

Council Description

Council Proposed Use or Development Description
Alterations (Lighting Upgrade)

Referral Report Type

Referral Report
-

Referral Recommendation

Recommendation
Acceptable Subject to Conditions

Referral Officer Name
Jordan Cargill

Referral Officer Role
Open Space Planner

Date Completed
08/10/2025

Applicable Codes

Select Applicable Codes/Provisions
-

Overview

Overview

The current proposal for the lighting upgrade for the South Hobart Football Club, located at 136 Wentworth Street, South Hobart, has arisen due to a grant provided to the Club for improvement to Wellesley Park. A planning permit was issued for an alternative design in early 2025, however due to ground conditions the proposal was not practical and as such this new application has been submitted for an alternative design.

In about 2015, Council's Sports and Recreation team improved the lighting at the ground to meet the Australian Standard AS2560.2 Sports Lighting, with an average lux of 100 across the surface.

As with any metal halide light installation, the lighting has deteriorated over the years and when it was tested last year, it no longer met the standards in many areas.

From a ground management perspective, the project has significant benefits for Council's Sport and Recreation team as ground managers, including:
1. The improved standard of lighting will improve safety.
2. The improved lighting will increase the grounds longevity across the season, as training won't be concentrated in the 'bright areas'.
3. We should see power savings as the new fittings will be LED's.
4. We will see significantly reduced maintenance costs, as the LED's won't need to be changed over as regularly as the metal halides. This type involves a costly replacement fitting, as well as an electrician and travel tower hire.

On this basis, the proposal is considered acceptable, but to ensure appropriate operational and amenity outcomes, it is recommended that the following conditions are applied:
1. AS 2560.2 be met in all areas (inc. lux levels, glare rating and spill to nearby residences)
2. A curfew time for operation of the lights that allows them on until 9:00pm with allowance for the odd exception beyond that time should there be a special event. It is understood that the assessing planner will include a relevant condition in this regard.

Summary

Assessment Summary

Additional Documents

No Documents.

Conditions

#	Condition	Origin
1	Lighting operation must meet Australian Standard AS2560.2:2021, to Council's satisfaction, unless otherwise provided in writing.	

Detailed Assessment

Detailed Assessment

Form published: 18/06/2025 13:58

City of HOBART

INTERNAL REFERRAL

Reference
PLANNA-HOB-2025-3854

Application Reference
PLN-HOB-2025-0483

Address
136 WENTWORTH ST SOUTH HOBART TAS 7004

Titles
66346/1, 201675/1, 198497/1, 94118/1, 82059/3, 131798/1

Referral Report Type

Referral Report
Referral Report - Development Engineering

Referral Recommendation

Recommendation
Acceptable Without Conditions

Referral Officer Name
Thomas McManus

Referral Officer Role
Program Leader Stormwater and Waterways Services

Date Completed
16/10/2025

Applicable Codes

Select Applicable Codes/Provisions
E15.0 - Inundation Prone Areas Code

Overview

Overview
136 Wentworth Street - Revised Stormwater Planning Application - 16Oct2025

Original planning permit for the site (HOB-2024-0600) did not impose new conditions on the lot. At that time, the assessment was that the only relevant provision of the flood code was E15.7.4 of HIPS, related to the total impermeable area of non-habitable buildings. The application was assessed as suitable against the performance criteria.

Under the TPS, the lot is no longer shown as flood impacted. While the lot is very flood prone, it mainly takes the form of H1 flooding, which is not included in the planning maps. Council's stormwater officers can only draw in that information if they reasonably believe that the development is at risk due to that information.

As the prior assessment was that the works were unlikely to create flood risk, and the additional works do not substantially interact with the flooded areas, this application does not trigger that code.

Summary

Assessment Summary

Conditions

No entries.

Detailed Assessment

Detailed Assessment

Additional Documents

No Documents.

Submitted on **17/10/2025**

Form published: 18/06/2025 13:58

HAMPDEN ROAD PROJECT
DEVELOPMENT APPLICATION

ARCHITECTURAL		
DA01	COVER PAGE & DRAWING SCHEDULE	
DA02	SITE PLAN	1:500, 1:200
DA03	DEMOLITION PLAN - SITE PLAN	1:100
DA04	BASEMENT FLOOR PLAN	1:100
DA05	GROUND FLOOR PLAN	1:100
DA06	LEVEL 1 FLOOR PLAN	1:100
DA07	LEVEL 2 FLOOR PLAN	1:100
DA08	ROOF PLAN	1:100
DA09	SECTIONS A-B	1:100
DA10	SECTIONS C-D	1:100
DA11	BATTERY POINT : MORPHOLOGY STUDY	
DA12	STREET ELEVATIONS	1:200
DA13	ELEVATIONS 1:100	1:100
DA14	SHADOW DIAGRAMS 01 - JUNE 21	1:500
DA15	SHADOW DIAGRAMS 02 - SEPTEMBER 23	1:500
DA16	3D VIEWS	
DA17	ARTIST IMPRESSION 01 - HAMPDEN ROAD	
DA18	ARTIST IMPRESSION 02 - HAMPDEN ROAD	
DA19	ARTIST IMPRESSION 03 - KELLY STREET	
DA20	ARTIST IMPRESSION 04 - SOUTH STREET	
DA21	ARTIST IMPRESSION 05 - ARTHUR CIRCUS	
DA22	DEMOLITION PLAN - FLOOR PLAN	1:200
DA23	ELEVATIONS 1:100 (FENCING)	1:100

SITE INFORMATION		
Land Title Reference		46041/1-8 ,229123/1, 90423/1
Wind Classification	TBC	Site Classificaiton to AS 4055-2006
Soil Classification	TBC	Site Classificaiton to AS 2870-2011
Climate Zone	7	(www.abcb.gov.au map)
BAL Level	N/A	No areas of bushfire prone vegetation > 1ha within 100m of the building
Total Area	Site:	2,925 m²
Roof Area		1,106.66 m²
Site Coverage		59 %

ARCHITECTSMAY

Hampden Road Development

Hampden Road Development
St Hampden Road BATTERY POINT

for

MRRC pty Ltd

DRAWING

DRAWING NAME: COVER PAGE & DRAWING SCHEDULE

DRAWING NO: 22019_DA01

REVISION
SCALE
DATE
DRAWN
CHECKED

ACCREDITED DESIGNER
ACCREDITED NUMBER
PLOT DATE
CAD REF

STATUS

DEVELOPMENT APPLICATION

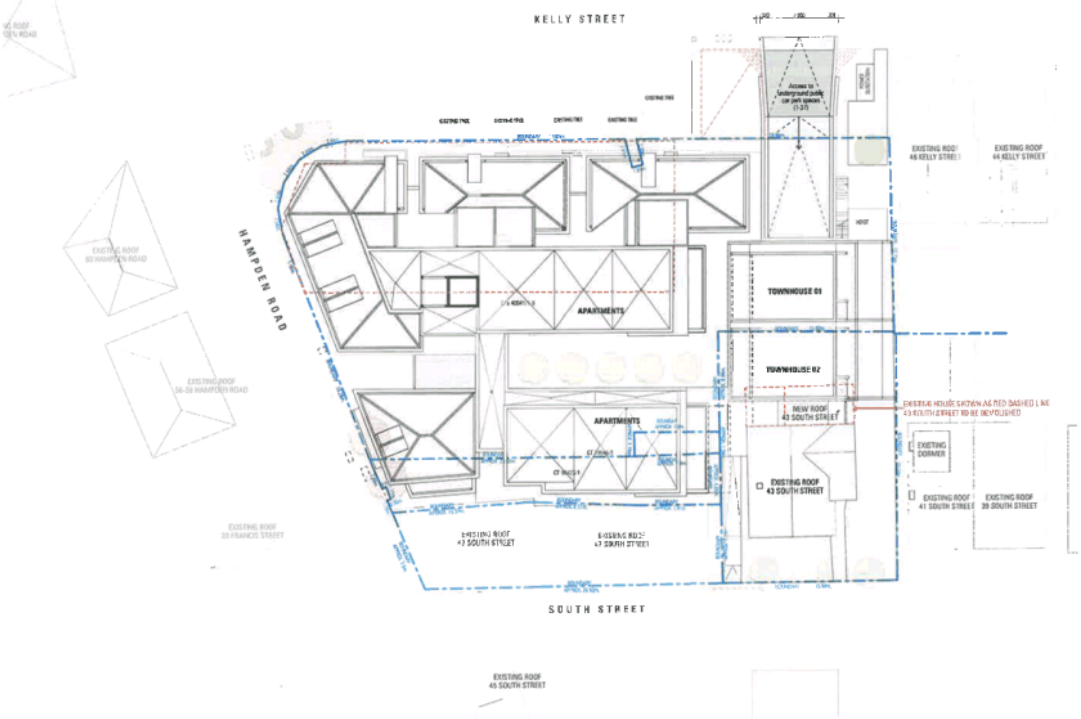
REVISIONS

REV	DESCRIPTION	DATE
02	DA RFI	

FIGURE GROUND - EXISTING
1:500

DRAWING LEGEND

PROJECT SUMMARY



SITE PLAN
Scale 1:200

Site Coverage (Inner Residential Zone - CT 229127/1)	
Total Site Area (m²)	354
Roof Coverage (m²)	182.26
Site Coverage	51.4%

Dwelling Density	
Total Site Area (m²)	2025
Number of Dwellings (Townhouse 01, Townhouse 02)	2
Site Area per dwelling (m²)	1012.5

ARCHITECTSMAY

Hampden Road Development

DRAWING

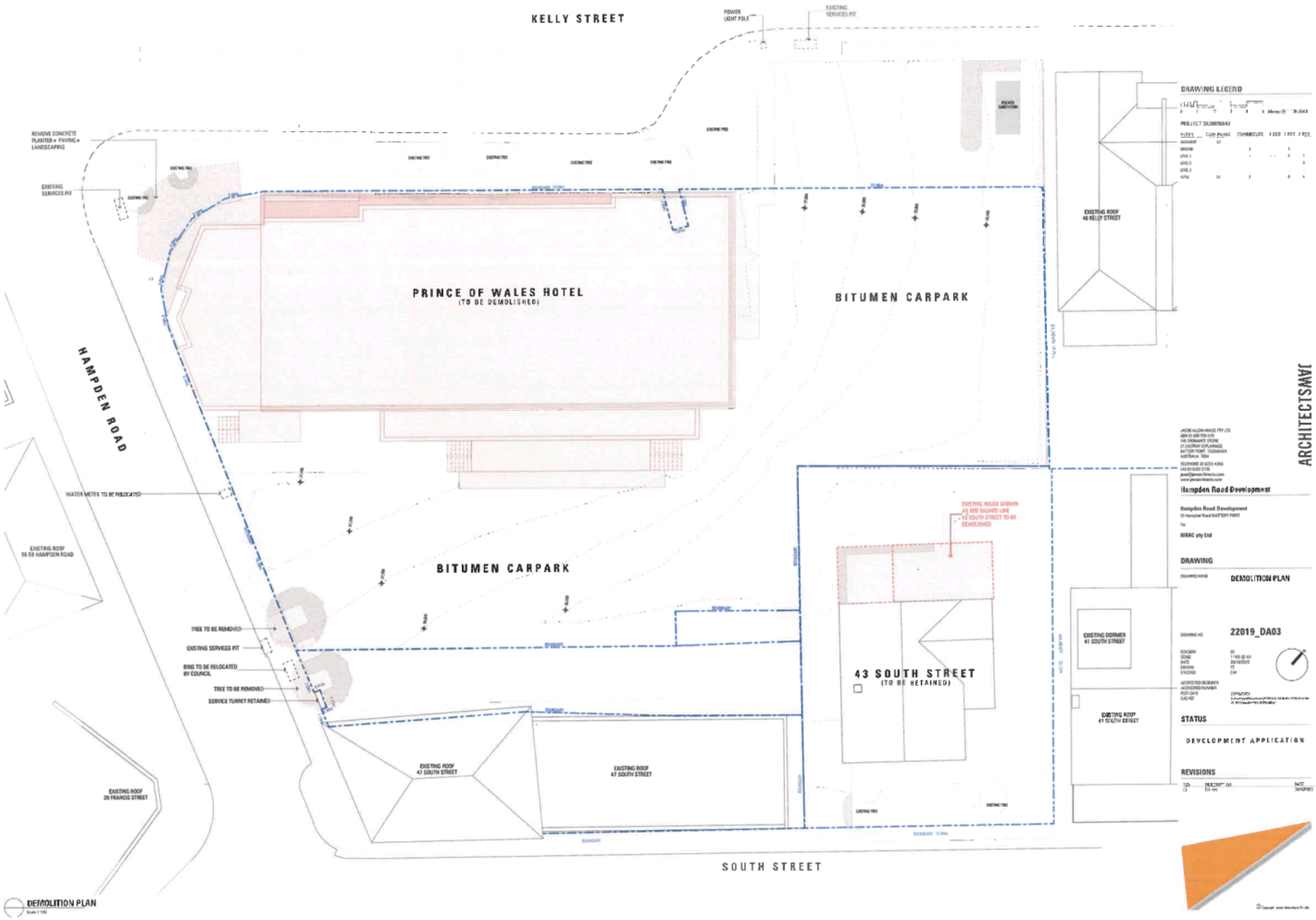
SITE PLAN

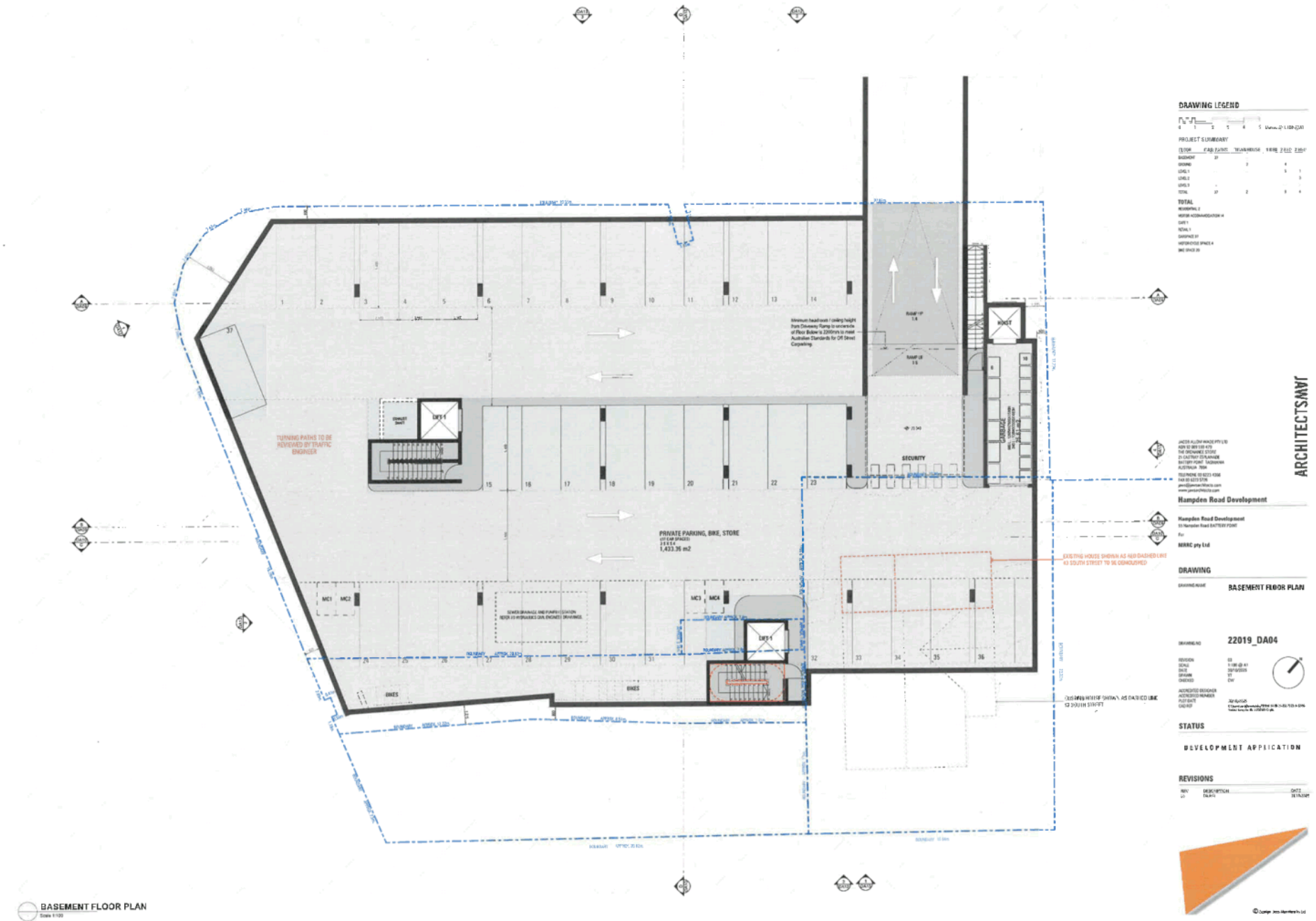
22019_DA02

STATUS

DEVELOPMENT APPLICATION

REVISIONS

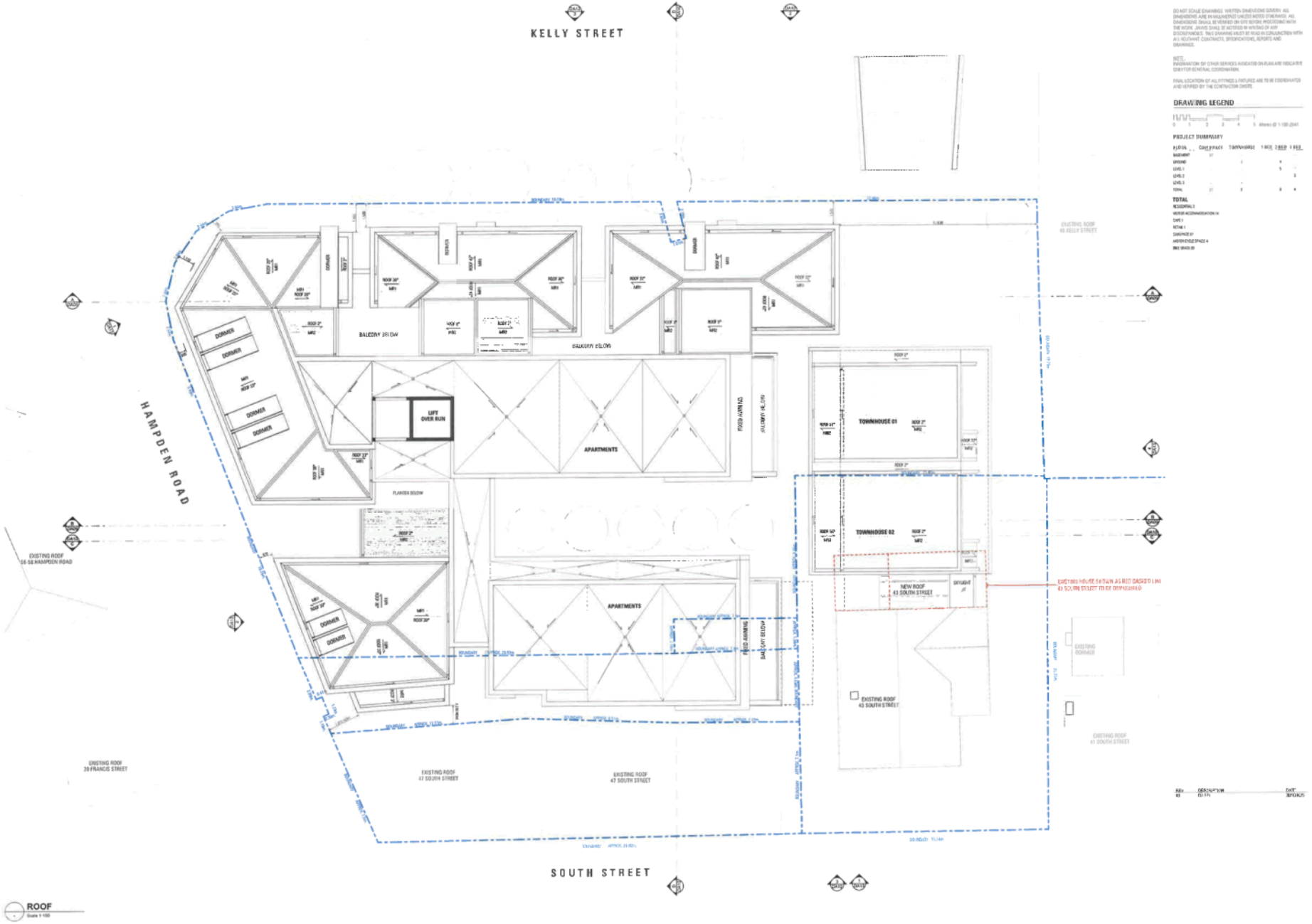

KELLY STREET
POWER LIGHT POLE
EXISTING SERVICES PIT
REMOVE CONCRETE PLANTER + PAVING + LANDSCAPING
EXISTING SERVICES PIT
PRINCE OF WALES HOTEL
(TO BE DEMOLISHED)
BITUMEN CARPARK
HAMPDEN ROAD
WATER METER TO BE RELOCATED
EXISTING ROOF 56-58 HAMPDEN ROAD
BITUMEN CARPARK
TREE TO BE REMOVED
EXISTING SERVICES PIT
BINS TO BE RELOCATED BY COUNCIL
TREE TO BE REMOVED
SERVICE TURRET RETAINED
EXISTING ROOF 47 SOUTH STREET
EXISTING ROOF 47 SOUTH STREET
EXISTING ROOF 20 FRANCIS STREET
EXISTING HOUSE SHOWN AS RED DASHED LINE TO BE DEMOLISHED
43 SOUTH STREET
(TO BE RETAINED)
EXISTING ROOF 40 KELLY STREET
EXISTING DORMER 41 SOUTH STREET
EXISTING ROOF 41 SOUTH STREET
SOUTH STREET
DEMOLITION PLAN
DRAWING LEGEND
PROJECT SUMMARY
ARCHITECTSMAY
Hampden Road Development
DRAWING
DEMOLITION PLAN
22019_DA03
STATUS
DEVELOPMENT APPLICATION
REVISIONS


DRAWING LEGEND
PROJECT SUMMARY
TOTAL
TURNING PATHS TO BE REVIEWED BY TRAFFIC ENGINEER
SECURITY
PRIVATE PARKING, BIKE, STORE
1,433.36 m2
BIKES
BIKES
EXISTING HOUSE SHOWN AS HED DASHED LINE 43 SOUTH STREET TO BE DEMOLISHED
EXISTING HOUSE SHOWN AS DASHED LINE 43 SOUTH STREET
ARCHITECTSMAY
Hampden Road Development
Hampden Road Development
MRRC pty Ltd
DRAWING
BASEMENT FLOOR PLAN
22019_DA04
STATUS
DEVELOPMENT APPLICATION
REVISIONS
BASEMENT FLOOR PLAN

KELLY STREET
HAMPDEN ROAD
SOUTH STREET
CAFE
125.06 m2
RETAIL
74.34 m2
UNIT 1
90.00 m2
UNIT 2
98.92 m2
UNIT 3
92.88 m2
UNIT 4
130.65 m2
TOWNHOUSE 1
77.19 m2
TOWNHOUSE 2
65.34 m2
LOBBY GF1
55.40 m2
COURTYARD
40.47 m2
EXISTING BUILDING
43 SOUTH STREET
94.55m²
EXISTING ROOF
46 KELLY STREET
EXISTING ROOF
41 SOUTH STREET
EXISTING ROOF
47 SOUTH STREET
EXISTING ROOF
20 FRANCIS STREET
EXISTING ROOF
56-58 HAMPDEN ROAD
EXISTING FENCE
EXISTING DORMER
41 SOUTH STREET
EXISTING WALL
TREE TO BE REMOVED
TREE TO BE REMOVED
SERVICE TURRET RETAINED
LANDSCAPE PLANTING TO FUTURE DETAIL
TREE TO BE PRESERVED
FENCE TO BE RETAINED
TREE TO BE PRESERVED
DRAWING LEGEND
PROJECT SUMMARY
ARCHITECTSMAV
Hampden Road Development
DRAWING
GROUND FLOOR PLAN
22019_DA05
STATUS
DEVELOPMENT APPLICATION
REVISIONS
GROUND FLOOR PLAN

LEVEL 1 FLOOR PLAN

LEVEL 2 FLOOR PLAN


KELLY STREET
HAMPDEN ROAD
SOUTH STREET
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TOWNHOUSE 02
NEW ROOF
43 SOUTH STREET
EXISTING ROOF
43 SOUTH STREET
EXISTING ROOF
16-18 HAMPDEN ROAD
EXISTING ROOF
20 FRANCIS STREET
EXISTING ROOF
47 SOUTH STREET
EXISTING ROOF
41 KELLY STREET
EXISTING DORMER
DORMER
BALCONY BELOW
PLANTER BELOW
FIXED AWNING
SKYLIGHT
ROOF

1 SECTION A
2 SECTION B
HAMPDEN ROAD
BASEMENT CAR PARK
DRAWING LEGEND
PROJECT SUMMARY
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Hampden Road Development
DRAWING
SECTIONS A-B
22019_DA09
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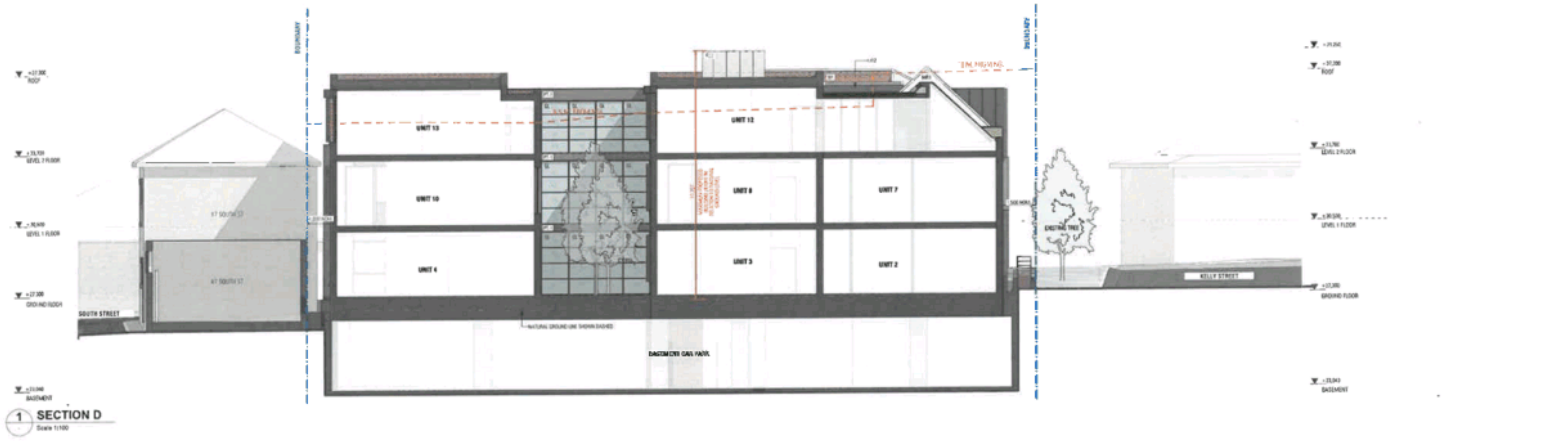
REVISIONS



1 SECTION D

2 SECTION C

DRAWING LEGEND

PROJECT SUMMARY

KEYNOTES

ARCHITECTSMAV

Hampden Road Development

Hampden Road Development
61 Hampden Road BATTERY POINT

for

MRRC pty Ltd

DRAWING

DRAWING NAME SECTIONS C-D

DRAWING NO 22019_DA10

STATUS

DEVELOPMENT APPLICATION

REVISIONS

BATTERY POINT MORPHOLOGY STUDY

Chimneys_ break the metall roof ridge lines

Dormers_ set within roof plane & cutting through gutter lines

Corbelling & Expressed Lintels- heights | decorative

Bases & Quoins_ detailing

Shopfronts_ detailing

Parapets and Gables _ Mixed among the pitched roofs

The built form of Battery Point has been carefully analysed to identify the patterns of development and the formal characteristics that give this precinct its distinct personality. This analysis has informed the massing, materiality and detailing of the proposed development.

ARCHITECTSMAY

Rampden Road Development

Rampden Road Development

MSRC pty Ltd

DRAWING

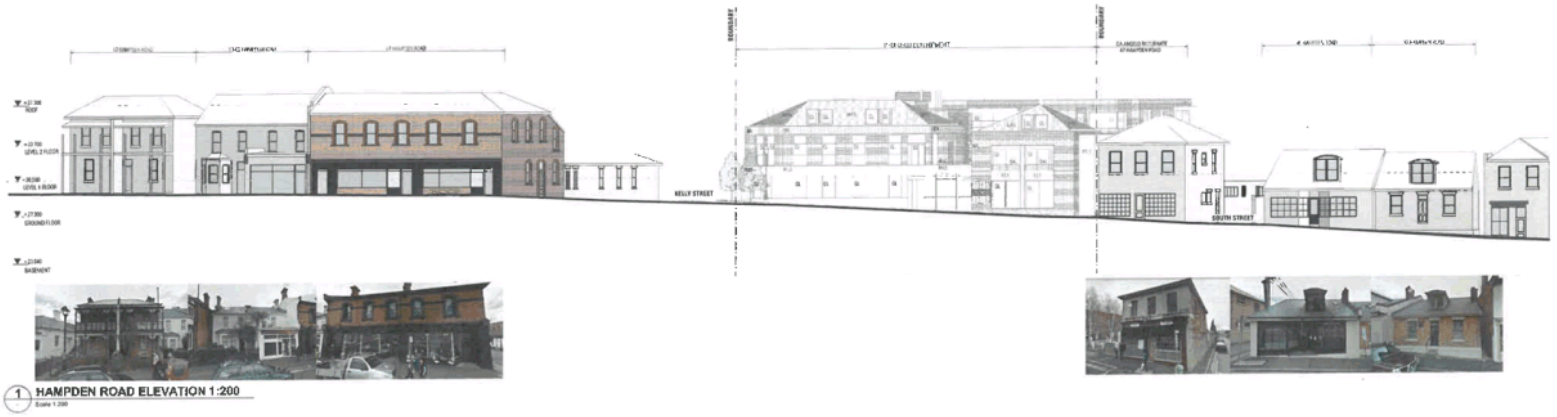
BATTERY POINT :
MORPHOLOGY STUDY

22019_DA11

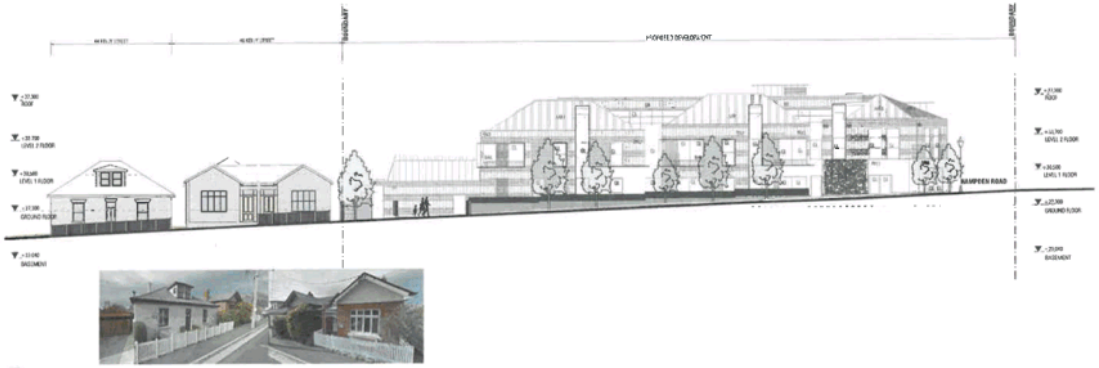
STATUS

DEVELOPMENT APPLICATION

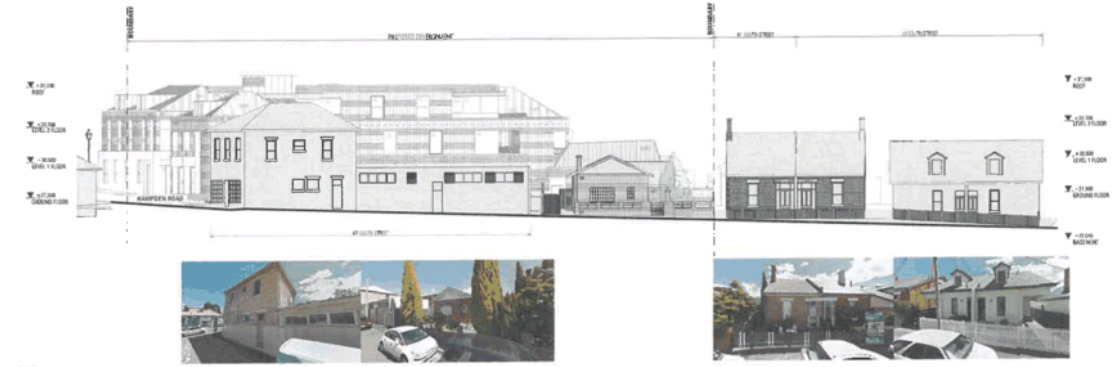
REVISIONS



1 HAMPDEN ROAD ELEVATION 1:200



2 KELLY STREET ELEVATION 1:200



3 SOUTH STREET ELEVATION 1:200

DRAWING LEGEND

PROJECT SUMMARY

KEYNOTES

ARCHITECTSMW

Hampden Road Development

Hampden Road Development
55 Hampden Road BATTERY POINT

For
MIRAC pty Ltd

DRAWING
STREET ELEVATIONS

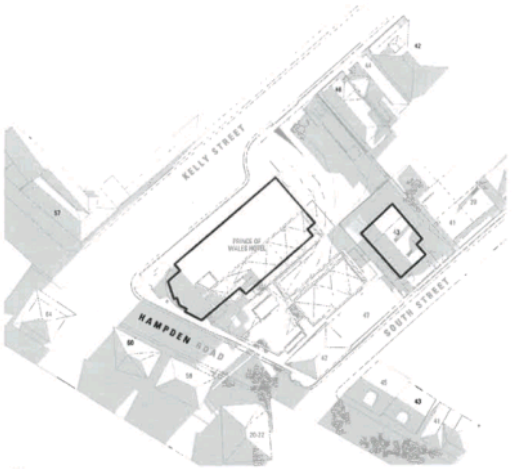
22019_DA12

STATUS
DEVELOPMENT APPLICATION

REVISIONS

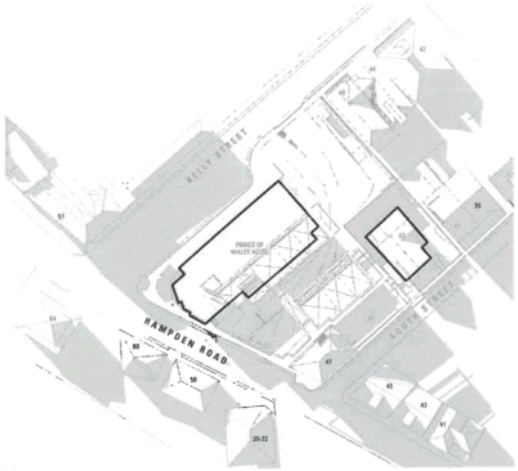
1 SOUTH STREET ELEVATION 1:100
2 HAMPDEN ROAD ELEVATION 1:100
3 KELLY STREET ELEVATION 1:100
4 NORTH-EAST ELEVATION 1:100
DRAWING LEGEND
KEYNOTES
ARCHITECTSMW
Hampden Road Development
DRAWING
ELEVATIONS 1:100
22019_DA13
STATUS
DEVELOPMENT APPLICATION
REVISIONS

EXISTING - JUNE 21



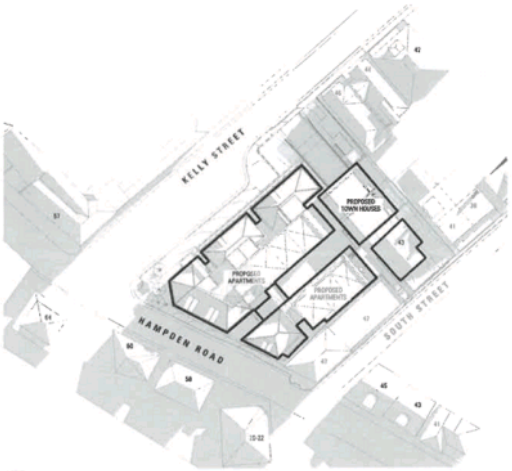
01 JUN 21 - 9AM

02 JUN 21 - 12PM



03 JUN 21 - 3PM

PROPOSED - JUNE 21



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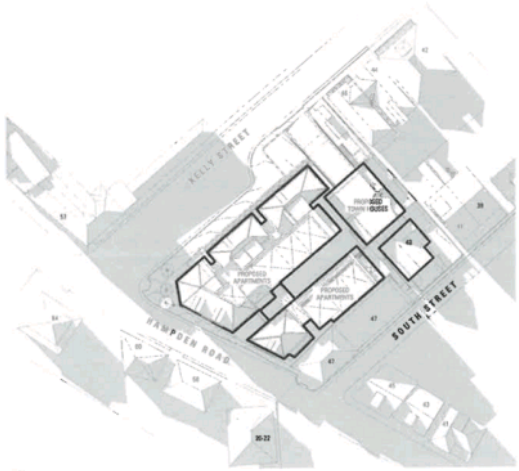


03 JUN 21 - 3PM

DRAWING LEGEND

PROJECT SUMMARY

ARCHITECTSMAJ

Hampden Road Development

Hampden Road Development
55 Hampden Road BATTERY POINT

For

MRRC pty Ltd

DRAWING

SHADOW DIAGRAMS 01 - JUNE 21

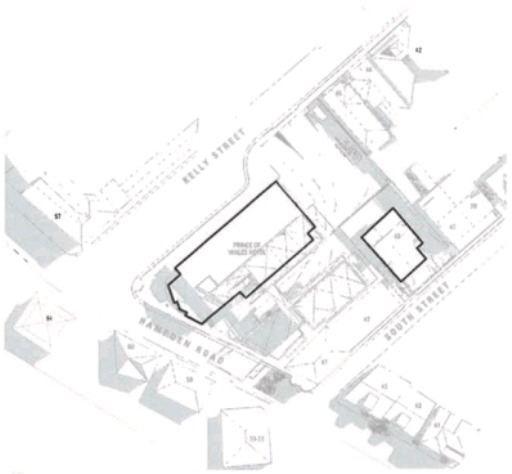
22019_DA14

STATUS

DEVELOPMENT APPLICATION

REVISIONS

EXISTING - SEPTEMBER 23



04 SEP 23 - 9AM

05 SEP 23 -12PM

06 SEP 23 -3PM

PROPOSED - SEPTEMBER 23

04 SEP 23 - 9AM

05 SEP 23 -12PM

06 SEP 23 -3PM

DRAWING LEGEND

PROJECT SUMMARY

ARCHITECTSMAJ

Hampden Road Development

Hampden Road Development
65 Hampden Road BATTERY POINT

For

MMAC pty Ltd

DRAWING

SHADOW DIAGRAMS 02 - SEPTEMBER 23

22019_DA15

STATUS

DEVELOPMENT APPLICATION

REVISIONS

DRAWING LEGEND

PROJECT SUMMARY

ARCHITECTSMAJ

Hampden Road Development

Hampden Road Development

MRRC pty Ltd

DRAWING

3D VIEWS

22019_DA16

STATUS

DEVELOPMENT APPLICATION

REVISIONS

HAMPDEN ROAD
SITE PHOTO

HAMPDEN ROAD ARTIST IMPRESSION 01
MONTAGE PHOTO

ARCHITECTSMAY

Hampden Road Development

Hampden Road Development

MRRC pty Ltd

DRAWING

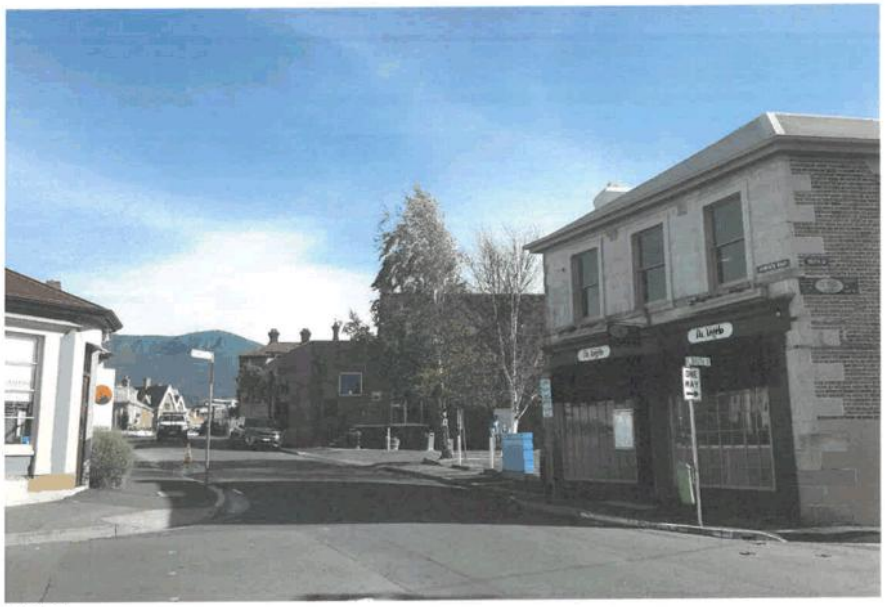
ARTIST IMPRESSION 01 - HAMPDEN ROAD

22019_DA17

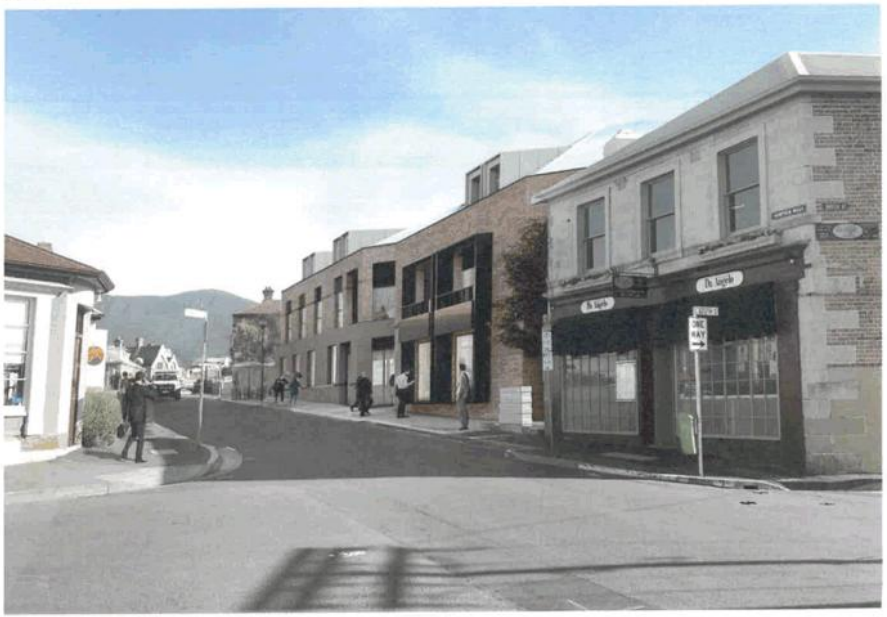
STATUS

DEVELOPMENT APPLICATION

REVISIONS



HAMPDEN ROAD
SITE PHOTO



HAMPDEN ROAD ARTIST IMPRESSION 02
MONTAGE PHOTO

ARCHITECTSMAY

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ABN 62 005 974 478
THE ORDNANCE STORE
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BATTERY POINT TASMANIA
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TELEPHONE 03 6223 4355
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www.jmayarchitects.com

Hampden Road Development

Hampden Road Development
59 Hampden Road BATTERY POINT

For

MRBC pty Ltd

DRAWING

ARTIST IMPRESSION 02 - HAMPDEN ROAD

DRAWING NO 22019_DA18

REVISION 03
SCALE AS SHOWN @ A3
DATE 16/10/2025
DRAWN BT
CHECKED CM

ACCREDITED DESIGNER
ACCREDITED No.CC8128
PLOT DATE 30/10/2025
CAD REF [illegible]

STATUS

DEVELOPMENT APPLICATION

REVISIONS

REV.	DESCRIPTION	DATE
03	CHANGE	30/10/2025

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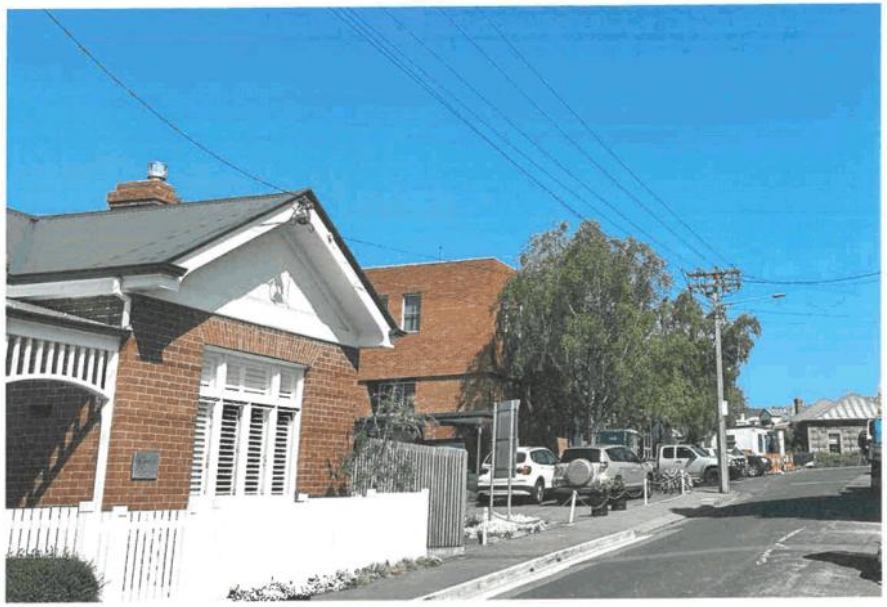

KELLY STREET
SITE PHOTO

KELLY STREET ARTIST IMPRESSION 01
MONTAGE PHOTO

ARCHITECTSMAY

Hampden Road Development

Hampden Road Development
93 Hampden Road BATTERY POINT

For

MRRC pty Ltd

DRAWING

ARTIST IMPRESSION 03 - KELLY STREET

22019_DA19

STATUS

DEVELOPMENT APPLICATION

REVISIONS

SOUTH STREET ARTIST IMPRESSION 01
SITE PHOTO

SOUTH STREET ARTIST IMPRESSION 01
MONTAGE PHOTO

JACOB ALLEN HADE PTY LTD
ACN 614 668 555 ATA
THE GROWHOUSE STORE
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BATTERY POINT TASMANIA
AUSTRALIA 7004

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ARCHITECTSMAJ

Hampden Road Development

Hampden Road Development
66 Hampden Road BATTERY POINT

for

MRRC pty Ltd

DRAWING

ARTIST IMPRESSION 04 - SOUTH STREET

DRAWING NO 22019_DA20

REVISION 03
SCALE AS SHOWN @ A3
DATE 30/10/2025
DRAWN VT
CHECKED CH

ACCREDITED DESIGNER
ACCREDITED NUMBER
PLOT DATE 29/10/2025
CAD KEY

STATUS

DEVELOPMENT APPLICATION

REVISIONS

REV	DESCRIPTION	DATE
01	DA 001	29/10/2025

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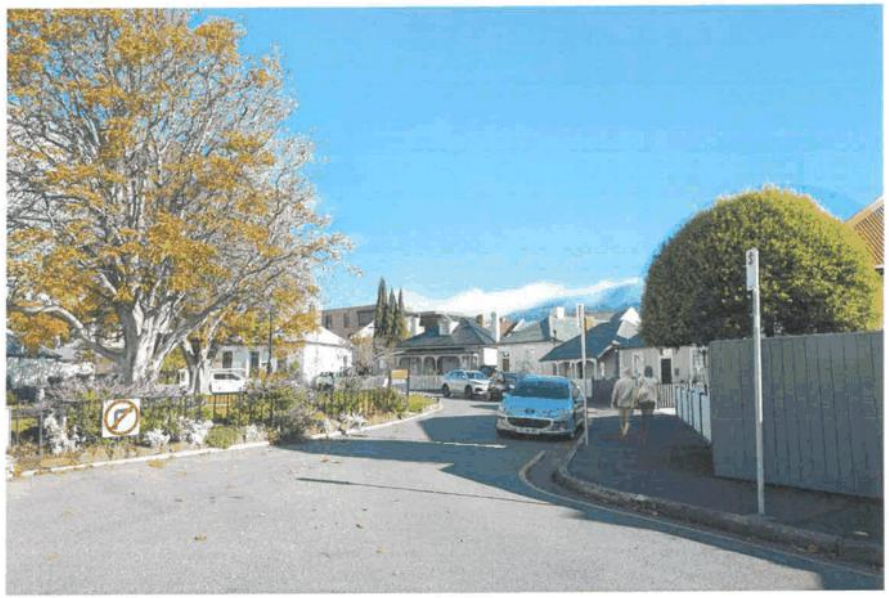
ARTHUR CIRCUS
SITE PHOTO



ARTHUR CIRCUS ARTIST IMPRESSION 01
MONTAGE PHOTO

ARCHITECTSMAY

Hampden Road Development

Hampden Road Development

for

MRAC pty Ltd

DRAWING

ARTIST IMPRESSION 05 - ARTHUR CIRCUS

22019_DA21

STATUS

DEVELOPMENT APPLICATION

REVISIONS

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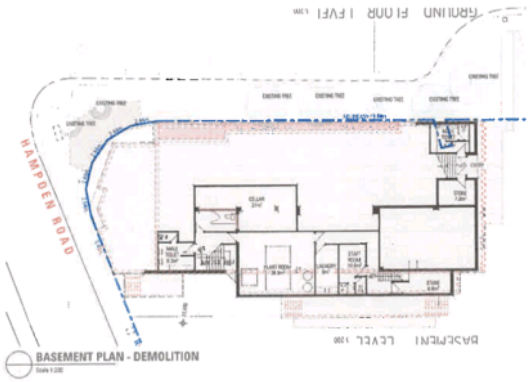
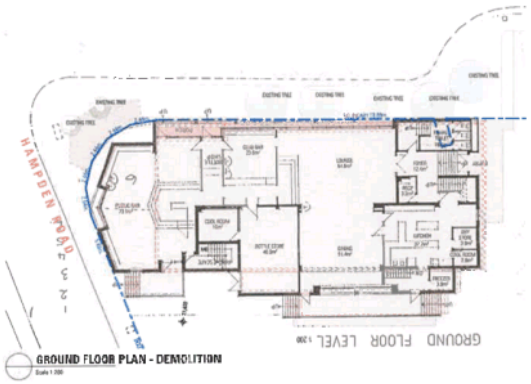


BASEMENT PLAN - DEMOLITION

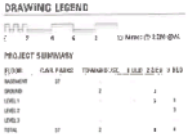


GROUND FLOOR PLAN - DEMOLITION

FIRST FLOOR PLAN - DEMOLITION

Level (Existing Use / To Be Demolished)	Basement	Ground	Level 1	Level 2
Office (m^2)	10.6	3.3	-	-
Storage & Amenities (m^2)	118.9	115.8	15.7	-
Retail Shop (m^2)	-	-	-	-
Cafe / Restaurant (m^2)	-	212.7	-	-
Suite / Bedrooms	-	-	10 Units +2 Licensees residence	-
Tenency (Specify Likely Use)	-	-	-	-

Level (Proposed)	Basement	Ground	Level 1	Level 2
Office (m^2)	-	-	-	-
Storage & Amenities (m^2)	25.61	15.4	-	-
Retail Shop (m^2)	-	74.34	-	-
Cafe / Restaurant (m^2)	-	125.06	-	-
Suite / Bedrooms	-	3 Units + 2 Townhouses + Existing building at 43 South Street	6 Units	3 Units
Tenency (Specify Likely Use)	-	-	-	-



JAMES ARCHITECTS

Hampden Road Development

Hampden Road Development

MMAC pty Ltd

DRAWING

DEMOLITION PLAN - FLOOR PLAN

22019_DA22

STATUS

DEVELOPMENT APPLICATION

REVISIONS

DRAWING LEGEND

PROJECT SUMMARY

KEYNOTES

ARCHITECTS JAWS

Hampden Road Development

Hampden Road Development
55 Hampden Road BATTERY POINT

For

MRRC pty Ltd

DRAWING

ELEVATIONS 1:100 (FENCING)

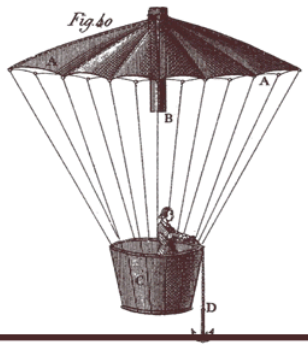
22019_DA23

STATUS

DEVELOPMENT APPLICATION

REVISIONS

GANDY AND ROBERTS
159 DAVEY ST
HOBART TASMANIA
AUSTRALIA 7000
CONSULTING ENGINEERS



Concept Services Report

Planning Scheme Compliance & Existing Infrastructure Assessment

55 Hampden Road, Battery Point, Hobart

for Jaws Architects

20/08/2025

Version control

Revision	Description	Issue date	Issued by
A	JAWS Architects	15/12/2022	Jeremy Knight
B	JAWS Architects	23/08/2023	Jeremy Knight
C	JAWS Architects	29/08/2024	Jeremy Knight
D	ERA Planning & Environment	05/02/2025	Jeremy Knight
E	ERA Planning & Environment	19/02/2025	Jeremy Knight
F	ERA Planning & Environment	20/08/2025	Jeremy Knight

PROJECT NUMBER **19.0288**
REPORT AUTHOR **Jeremy Knight**
CHECKED BY **Dale Hayers**

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2.2 Site Water Connections 6
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1 Context

Gandy and Roberts Consulting Engineers have been engaged by Jaws Architects to provide concept servicing documentation for the proposed Apartment and Commercial Development at 55 Hampden Road, Battery Point in Hobart. This report has been prepared for the Development Application submission process and aims to discuss the methodology in which the sites sewer, water and stormwater infrastructure will be delivered to existing TasWater and the City of Hobart Council (CoH) owned infrastructure. Refer figure 1.

Figure 1: Site Locality

The development will consist of adhering property titles into one site. The Titles to be adhered are 40041/1 to 40041/9, 229127/1 and 90423/1.

2 Existing Site Services

2.1 Site Sewer Connections

The site is currently serviced by TasWater sewerage infrastructure, with a DN150 vitrified clay gravity sewer gravity reticulation main running in Hampden Road, South Street and Kelly Street. The proposed site has three (3) sewer connections on Kelly Street, one (1) sewer connections South Street and two (2) sewer connections on Hampden Road; all connections are TasWater infrastructure. Refer to *Figure 2* for more information and *Table 1* for the existing site sewer ET's.

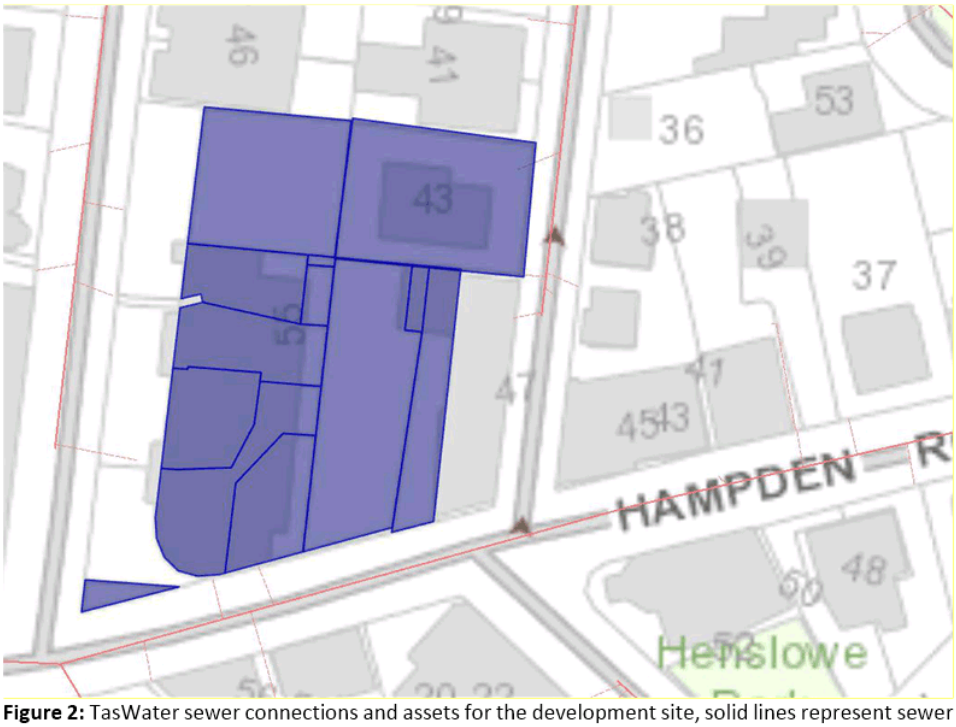

Figure 2: TasWater sewer connections and assets for the development site, solid lines represent sewer gravity reticulation mains and dashed lines represent sewer connections.

Table 1: Existing Sewage Equivalent Tenements

Property	Taswater ET code	Rate	Equivalent Tenements
55 Hampden Rd			
Basement (plantroom & staff room)	EF02	185sqm	8.88
Ground Floor	EF02	501sqm	24.05
First Floor	AS03 & RM02	10/AS03 & 1/RM02	5.25
43 South St	RE01	House	1
Total ET			39.18 ET's

2.2 Site Water Connections

The site is currently bordered by a DN100 DICL reticulation main in South Street, a DN150 CICL reticulation main in Hampden Road and a DN100 DICL reticulation main in Kelly Street. There is a 20 mm Water Customer Connection Point within the site, and five points within the bordering public street areas. *Figure 3* shows more detail and *Table 2* for the existing site water ET's.

Figure 3: TasWater water connections and assets for the development site, solid lines represent water reticulation mains and square points represent Water Customer Connection Points.

Table 2: Existing water Equivalent Tenements

Property	Taswater ET code	Rate	Equivalent Tenements
55 Hampden Rd			
Basement (plantroom & staff room)	EF02	185sqm	5.55
Ground Floor	EF02	501sqm	15.03
First Floor	AS03 & RM02	10/AS03 & 1/RM02	3.6
43 South St	RE01	House	1
Total ET			25.18 ET's

2.3 Site Stormwater Connections

The City of Hobart Council asset record details a DN300 RCP stormwater pipe along Hampden Road, and two (2) stormwater pits outside the site's Hampden Road border. There is no CoH documentation of stormwater management structures in the areas of Kelly abutting the site. No. 43 South Street has an existing stormwater kerb adaptor connection. The Prince of Wales have multiple stormwater kerb adaptors to Hampden Road. See *Figure 4* for more information and *Table 3* for the existing site runoff flows.

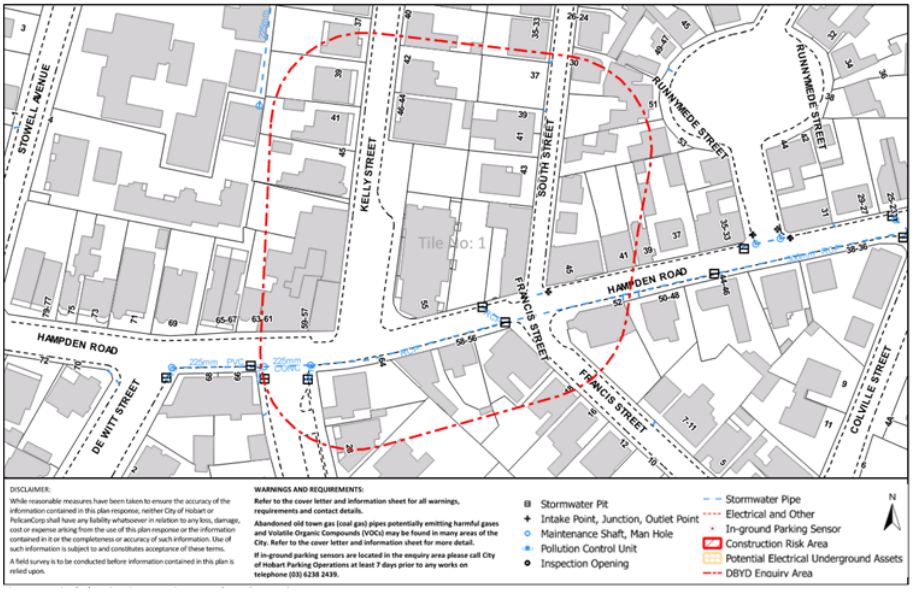

Figure 4: COH stormwater infrastructure around the site.

Table 3: Existing Development Stormwater Flows (Q_{20}/5% AEP Rainfall Event)

Design Flows	Area (m²)	Runoff Flow L/s
Impervious Drives (Q_{20})	945	21.6
Landscape Zones (Q_{20})	232	1.9
Roof (Q_{20})	647	18.5
TOTAL	1824	42.0

3 Proposed Site Connections

3.1 Site Sewer Connections

Sewer flows have been calculated using both AS3500.2:2021 as well as the TasWater Supplement to the WSA 02-2014-3.1 the WSAA Gravity Sewerage Code of Australia.

Development Flows for the Buildings are shown in Table 4.

Table 4: Development Sewage Flows

Design Parameter	Unit
Fixture Units (AS3500.2:2021)	471
Equivalent Tenements breakdown: MP01 (125sqm) BE00 (74.34sqm) 9 x RA02 4 x RA03 3 x RM03	 1.00 0.22 6.75 4 3
Total Equivalent Tenements	14.97
Average Dry Weather Flow (ADWF)	0.0808 L/s
Peaking Factor 'd'	11.508
Peak Dry Weather Flow (PDWF)	0.93 L/s

Note: The listed sewage flows require the installation of DN150 private sewer drainage at a minimum grade of 1.00% in accordance with AS3500.2:2021

A new connection is required to service the proposed development. This connection will be made to the existing TasWater sewer main on South Street and all other existing connections shall be capped by TasWater at developers cost. Refer C051 for the proposed connection location. The proposed grease arrestor will be pumped to the internal gravity sewer pipework.

3.2 Site Water Connections

Domestic water pipework has been sized in accordance with AS3500.1:2021 for probable simultaneous demand, this on the basis that Equivalent Tenements for the development are < 100 in accordance with TasWater Supplement to the Water Supply Code of Australia WSA 3-2011.3.1 MRWA Editions V2.0.

Development Flows for the accommodation buildings are shown in Table 5.

The proposed development has been classified as Class 2, Class 3 and Class 6 in accordance with the National Construction Code (NCC), with the basement carpark area Class 7. Fire compartments are likely to be over 500 m² and only two (2) fire hydrants are required to operate and deliver 20L/s at 350kPa in accordance with AS2419:2021. A firefighting booster assembly will be required as an internal hydrant system will be required to serve the upper levels. JAWS architects have suggested the apartment building will require sprinklers.

Table 5: Development Water Flows

Design Flows	Unit
Domestic Water (AS3500.1:2021)	2.12L/s at 600kPa (9.55ET's)
Fire Services (Hydrants)	20.0L/s at 700kPa (boosted)
Fire Services (Sprinklers)	12.0L/s at 600kPa

Note: The above listed domestic water flows require the installation of DN65 private water pipework in accordance with AS3500.1:2021

TasWater have been contacted to confirm available design pressure and confirmed via Service Inquiry TWSI 2022/00934-COH on 14.12.2022. A TasWater fire plug (Asset A387981) which is located in the vicinity of the property is at an assumed elevation of 28.27m AHD, giving a design static pressure of approximately 88.6m. TasWater's modelling indicates that with a fire flow of 20L/s applied at this hydrant at 2/3 Peak Hour (as per Table 3.1.5 of the TasWater Supplement), the residual pressure is approximately 88.5m.

The upper level has a floor level of 33.7m suggesting a 12.8m of elevation head is lost between this point and the site connection. As such, the TasWater system is expected to be capable of servicing the site fire demand across all parts of the site, inclusive of the upper-level floor (requirement 10L/s @ 350kPa). Flow testing will be undertaken during detailed design to confirm the TasWater modelling.

Due to the private sewer pump station servicing the grease arrestor, it is proposed that a new DN150 medium hazard fire and DN65 high hazard domestic water connection will be provided from the existing TasWater Main, with DN20 private domestic sub-meters provided for the house and each of the apartments. Refer drawing C060 for connection location.

4 Site Stormwater Management

4.1 Planning Scheme Requirements

The current Hobart Interim Planning Scheme 2015 requires that this development manages stormwater in compliance with the Stormwater Management Code. Code requirements for this development are:

Acceptable Solution A2 of Clause E7.7.1 Stormwater Drainage and Disposal states:

A stormwater system for a new development must incorporate water sensitive urban design principles for the treatment and disposal of stormwater if any of the following apply:

(a) the size of new impervious area is more than 600m^2;
(b) new car parking is provided for more than six (6) cars;
(c) a subdivision is for more than five (5) lots.

This development meets criteria (a) and (b) of the clause and therefore water sensitive urban design principles must be incorporated into the design of stormwater management for the site.

Acceptable Solution A3 of Clause E7.7.1 Stormwater Drainage and Disposal states:

A minor stormwater drainage system must be designed to comply with all of the following:

a) be able to accommodate a storm with an ARI of 20 years in the case of non-industrial zoned land and an ARI of 50 years in the case of industrial zoned land, when the land serviced by the system is fully developed;
b) stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure.

This development incorporates a minor stormwater drainage system, therefore the design must satisfy

both criterion (a) and criterion (b) of Acceptable Solution A3. As the development is located within an Urban Mixed-Use zone, the 20-year ARI storm must be accommodated in the design.

4.2 Rainfall Runoff Quantity

4.2.1 Stormwater connections

The design proposes separate stormwater connections for the main building discharging to Hampden Road and the proposed Townhouses and existing building discharging to South Street. Refer the following sections for OSD requirements. Refer *Figure 5* for stormwater breakdown to connections.

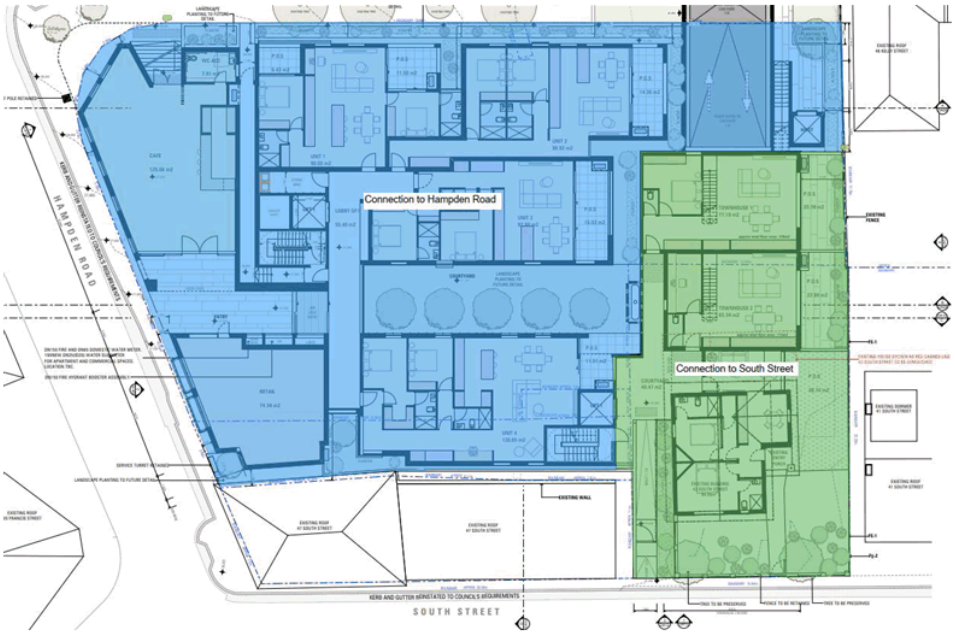

Figure 5: Development stormwater breakdown.

4.2.2 Site Analysis – Stormwater connection to Hampden Road

Site rainfall scenarios were analysed using the Rational Method with rainfall intensities from *AS/NZS 3500.3:2021*. The existing property consists of roofed area and impervious driveway, refer *Table 6*.

Table 6: Existing site areas and runoff flows for total site.

	Area (m^2)	Existing Runoff (L/s)
Roofed Areas (C=1.0)	521	12.3
Impervious Areas (Concrete/Driveways etc) (C=0.9)	822	17.4
Garden (Clay Soil) (C=0.2)	0	0
Total	1343	29.7

The proposed development sees an increase in the roofed and garden areas. There's a significant decrease in impervious areas, *refer Table 7*.

Table 7: Proposed development discharging to Hampden Road.

	Area (m^2)	Existing Runoff (L/s)
Roofed Areas (C=1.0)	941	22.2
Impervious Areas (Concrete/Driveways etc) (C=0.9)	124	2.6
Garden (Clay Soil) (C=0.2)	278	1.3
Total	1343	25.8

It is demonstrated that there is no increase in the run off from the site caused by the development and no onsite stormwater detention is proposed. A new connection is proposed to the existing stormwater gully pit on Hampden Road to service the building fronting Hampden Road. The stormwater collected off the ramp to the basement level carparking will be collected by a pump station and discharged to the stormwater system to Hampden Road. All other existing connections to be capped by CoH at developers cost. Refer drawings C040 & C041 for connection details.

4.2.3 Site Analysis – Stormwater connection to South Street

Site rainfall scenarios were analysed using the Rational Method with rainfall intensities from *AS/NZS 3500.3:2021.* The existing property consists of roofed area and impervious driveway, refer *Table 8.*

Table 8: Existing site areas and runoff flows for total site.

	Area (m^2)	Existing Runoff (L/s)
Roofed Areas (C=1.0)	125	2.9
Impervious Areas (Concrete/Driveways etc) (C=0.9)	163	3.5
Garden (Clay Soil) (C=0.2)	185	0.9
Total	473	7.3

The proposed development sees an increase in the roofed are and decreases in impervious and garden areas, *refer Table 9.*

Table 9: Proposed development discharging to South Street.

	Area (m^2)	Existing Runoff (L/s)
Roofed Areas (C=1.0)	270.5	6.4
Impervious Areas (Concrete/Driveways etc) (C=0.9)	79.5	1.7
Garden (Clay Soil) (C=0.2)	123	0.6
Total	473	8.7

4.2.4 Runoff Mitigation Proposal – Stormwater connection to South Street

To comply with Objective A3 of Clause E7.7.1 of the Hobart Interim Planning Scheme 2015,

Post-development runoff is to be no greater than pre-development runoff; thus, stormwater detention will be required for this development discharging to South Street.

Therefore, it is proposed that the stormwater runoff from the Townhouse roofs and existing house roof is detained by a 1000L Slimline tank produced by Orion, with a working detention volume of 895L. The discharge flow rate will be controlled by a 41mm orifice, producing a flow of 4.46L/s. The remaining flow from the ramp, courtyards and gardens will be unmitigated, totalling a flow of 2.3L/s.

A new kerb connection to South Street is proposed to service the townhouses and existing house. Refer drawing C040 for connection details.

4.3 Water Sensitive Urban Design

4.3.1 Performance Criteria

Performance Criteria P2 of Clause E7.7.1 requires:

A stormwater system for a new development must incorporate a stormwater drainage system of a size and design sufficient to achieve the stormwater quality and quantity targets in accordance with the State Stormwater Strategy 2010, as detailed in Table E7.1 unless it is not feasible to do so.

The acceptable stormwater quality and quantity targets for best practice are:

80% reduction in the average annual load of total suspended solids (TSS) based on typical urban stormwater TSS concentrations.
45% reduction in the average annual load of total phosphorus (TP) based on typical urban stormwater TP concentrations.
45% reduction in the average annual load of total nitrogen (TN) based on typical urban stormwater TN concentrations.
Stormwater quantity requirements must always comply with requirements of the local authority including catchment-specific standards. All stormwater flow management estimates should be prepared according to methodologies described in Australian Rainfall and Runoff (Engineering Australia 2004) or through catchment modelling completed by a suitably qualified person.

4.3.2 Stormwater Treatment

The proposed stormwater management system for the site development uses water sensitive urban design principles to treat and detain stormwater in accordance with Criteria P2 of Clause E7.7.1. The stormwater runoff from the Apartment/Commercial building roof will be charged to an above ground SF Chamber 1200sq pit, with a surface area of 0.9 m^2. The chamber includes a system of three (3) Ocean Protect StormFilter 460 filters with PSorb material. The impervious & pervious areas of the development shall be filtered through OceanGuard GPT's prior to the site discharge point. Refer *Figure 6* for Music Modelling.

It is proposed that the stormwater runoff from Townhouses roofs will be captured in a 1000L Slimline tank, before combining with the Townhouse impervious areas runoff in an EnviroAustralis Enviro G30 mechanical treatment device. The garden areas will connect downstream of the treatment device. Refer *Figure 7* for Music Modelling.

4.3.3 MUSIC Modelling – Stormwater connection to Hampden Road

MUSIC V6.3.0 was used to model the performance of the stormwater system for the proposed development. The model predicted outcomes as follows:

- Total Suspended Solids reduction of 84.9%
- Total Phosphorus reduction of 71%
- Total Nitrogen reduction of 49%

The above percentages provide are accepted as best practice for storm water treatment design.

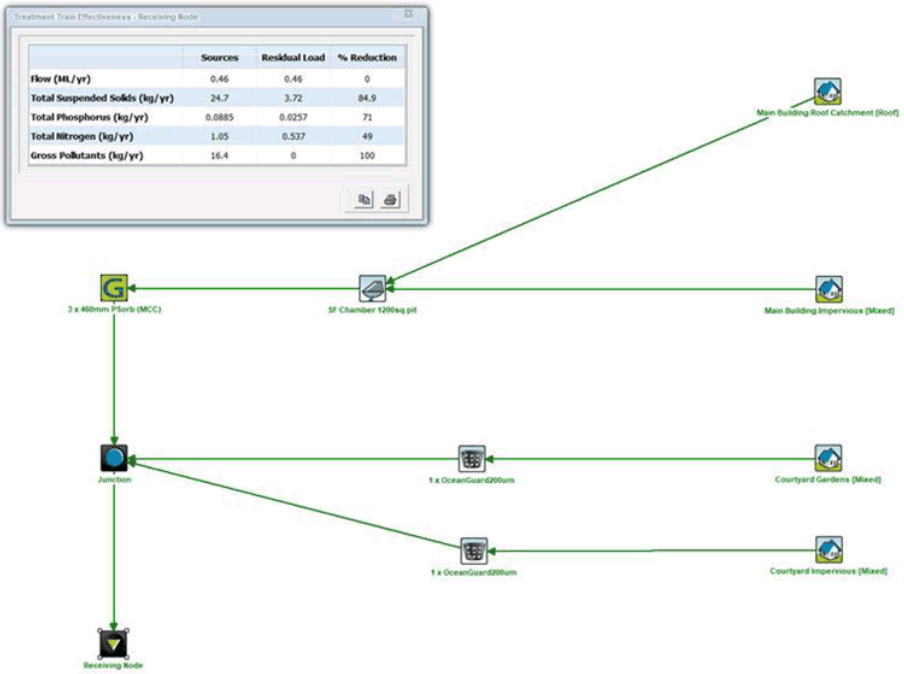

Figure 6: MUSIC V6.3.0 model treatment train diagram and effectiveness

4.3.4 MUSIC Modelling – Stormwater connection to South Street

MUSIC V6.3.0 was used to model the performance of the stormwater system for the proposed development. The model predicted outcomes as follows:

- Total Suspended Solids reduction of 80.7%
- Total Phosphorus reduction of 77.9%
- Total Nitrogen reduction of 72.1%

The above percentages provide are accepted as best practice for storm water treatment design.

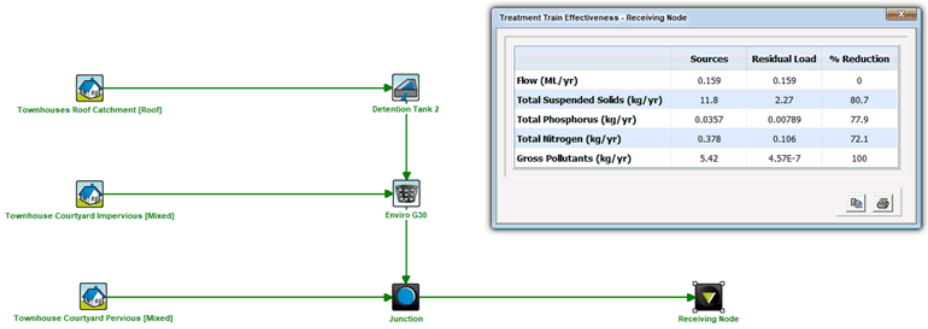

Figure 7*:* MUSIC V6.3.0 model treatment train diagram and effectiveness

5 Servicing Plans

The following drawings shall be read in conjunction with this report for a more detailed overview of the proposed development:

- C001 – Drawing Index
- C020 – Concept Siteworks – Ground Level
- C021 – Concept Siteworks – Basement Level
- C022 – Concept Ramp Section
- C040 – Concept Stormwater Plan
- C041 – Concept Stormwater Plan – Basement Level
- C050 – Concept Sewer Plan – Basement Level
- C051 – Concept Sewer Plan – Ground Level
- C060 – Concept Water Plan

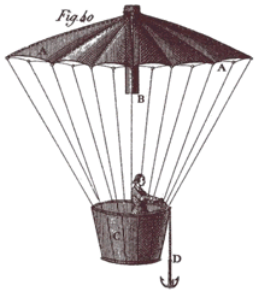
Fig 40
A
B
C
D

MRRC PTY LTD
PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004

DWG No.	DRAWING TITLE	REV	ISSUE DATE
C001	DRAWING INDEX AND NOTES	A	20.08.2025
C020	CONCEPT SITEWORKS - GROUND LEVEL	E	20.08.2025
C021	CONCEPT SITEWORKS - BASEMENT LEVEL	B	20.08.2025
C022	CONCEPT RAMP SECTION	B	20.08.2025
C040	CONCEPT STORMWATER PLAN - GROUND	E	20.08.2025
C041	CONCEPT STORMWATER PLAN - BASEMENT	A	20.08.2025
C050	CONCEPT SEWER PLAN - BASEMENT LEVEL	E	20.08.2025
C051	CONCEPT SEWER PLAN - GROUND LEVEL	E	20.08.2025
C060	CONCEPT WATER PLAN	E	20.08.2025

LOCALITY PLAN
NOT TO SCALE

LEGEND

EXISTING SURFACE LEVEL
PROPOSED BULK EARTHWORKS LEVEL
PROPOSED FINISHED SURFACE LEVEL
CUT (-)/FILL DEPTH
EXISTING WATER SUPPLY EXTERNAL TO BUILDING
PROPOSED WATER SUPPLY EXTERNAL TO BUILDING
EXISTING FIRE SUPPLY
PROPOSED FIRE SUPPLY
EXISTING SEWER DRAIN
PROPOSED SEWER DRAIN
EXISTING STORMWATER DRAIN
PROPOSED STORMWATER DRAIN
PROPOSED STORMWATER (LARGER)
PROPOSED DN100 SUBSOIL DRAIN WITH GEOTEXTILE SOCK
PROPOSED CONCRETE CONSTRUCTION JOINT
PROPOSED CONCRETE KEY JOINT
PROPOSED CONCRETE SAWN JOINT
EXISTING BATTER
PROPOSED BATTER

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REV	DESCRIPTION	APP'D	DATE
A	REISSUE FOR DEVELOPMENT APPROVAL	DH	20.08.2025

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North

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mail@gandyandroberts.com.au
ph 03 6223 8877 fx 03 6223 7183

PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004
DRAWING TITLE
DRAWING INDEX

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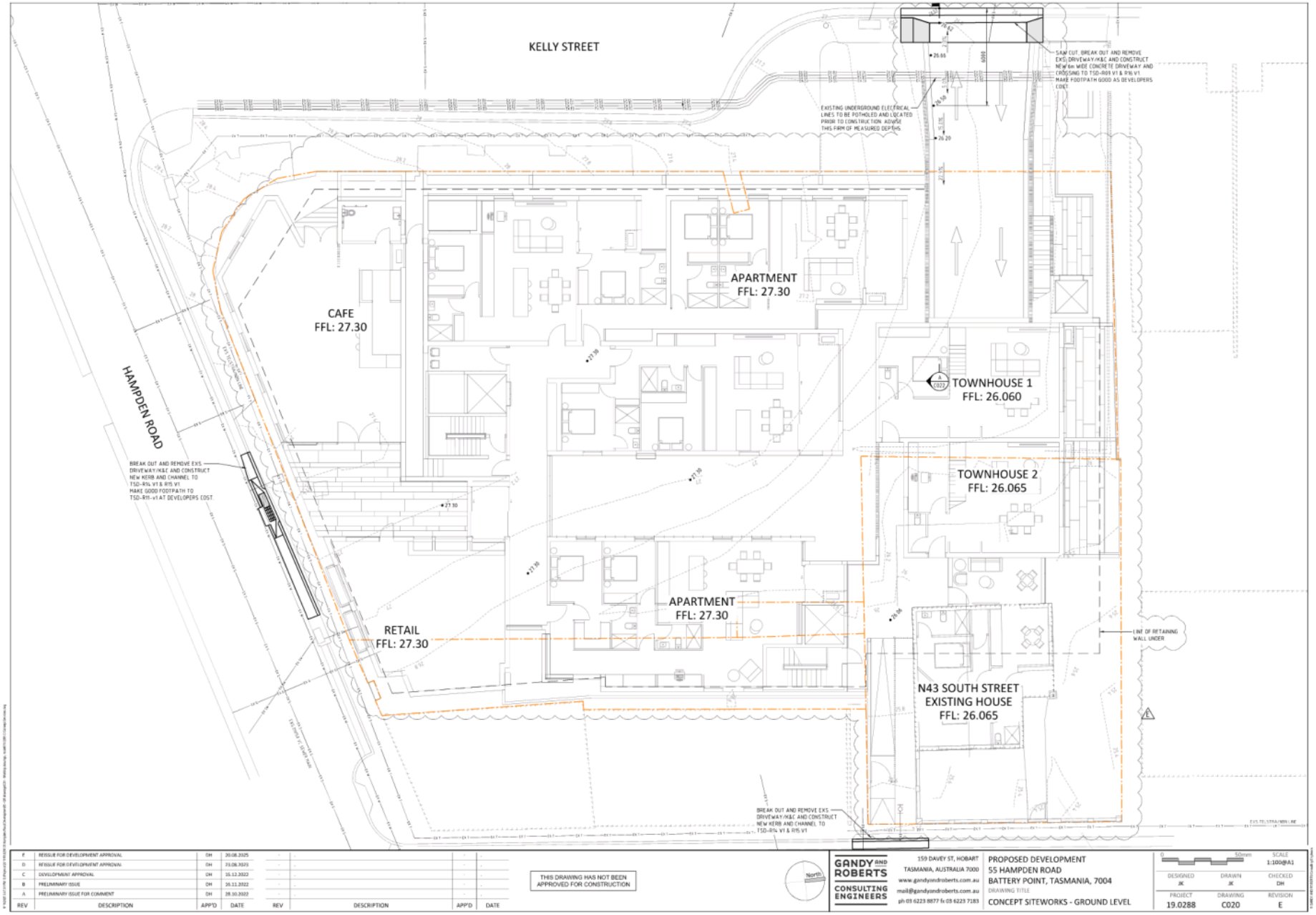
SCALE 1:100@A1

DESIGNED	DRAWN	CHECKED
JK	JK	DH

PROJECT	DRAWING	REVISION
19.0288	C001	A


KELLY STREET
HAMPDEN ROAD
CAFE
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APARTMENT
FFL: 27.30
TOWNHOUSE 1
FFL: 26.060
TOWNHOUSE 2
FFL: 26.065
APARTMENT
FFL: 27.30
RETAIL
FFL: 27.30
N43 SOUTH STREET
EXISTING HOUSE
FFL: 26.065
EXISTING UNDERGROUND ELECTRICAL LINES TO BE POTHOLED AND LOCATED PRIOR TO CONSTRUCTION. ADVISE THIS FIRM OF MEASURED DEPTHS.
SAW CUT, BREAK OUT AND REMOVE EXS. DRIVEWAY/K&C AND CONSTRUCT NEW 6m WIDE CONCRETE DRIVEWAY AND CROSSING TO TSD-R09 V1 & R16 V1. MAKE FOOTPATH GOOD AS DEVELOPERS COST
BREAK OUT AND REMOVE EXS. DRIVEWAY/K&C AND CONSTRUCT NEW KERB AND CHANNEL TO TSD-R14 V1 & R15 V1. MAKE GOOD FOOTPATH TO TSD-R11-v1 AT DEVELOPERS COST
BREAK OUT AND REMOVE EXS. DRIVEWAY/K&C AND CONSTRUCT NEW KERB AND CHANNEL TO TSD-R14 V1 & R15 V1
LINE OF RETAINING WALL UNDER
EXISTING CADASTRAL BOUNDARY
EXISTING TELSTRA/NBN LINE
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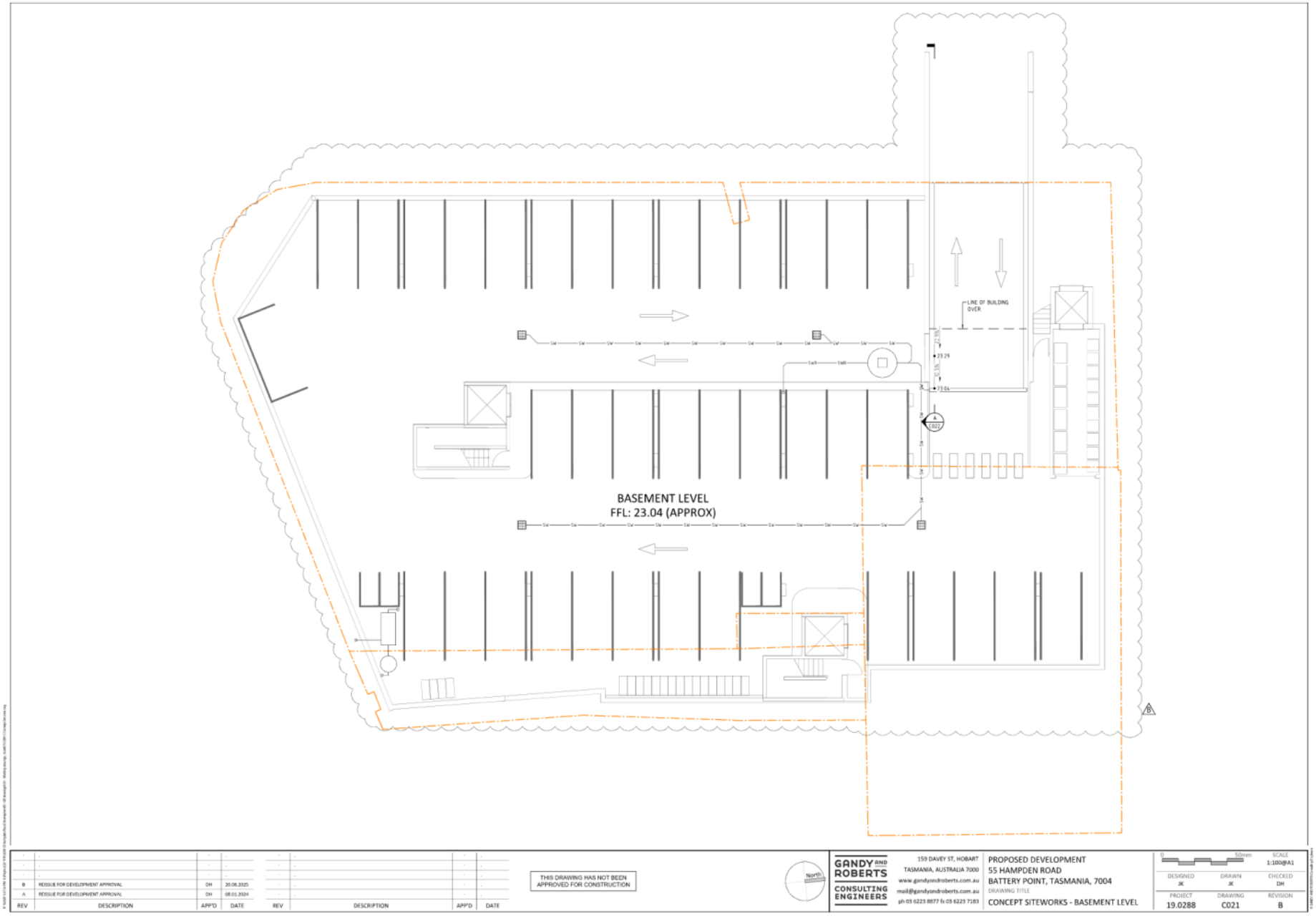
PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004
DRAWING TITLE
CONCEPT SITEWORKS - GROUND LEVEL
SCALE 1:100@A1
DESIGNED JK
DRAWN JK
CHECKED DH
PROJECT 19.0288
DRAWING C020
REVISION E



REV	DESCRIPTION	APP'D	DATE
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A	REISSUE FOR DEVELOPMENT APPROVAL	DH	08.01.2024

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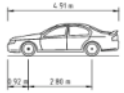
PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004

DRAWING TITLE
CONCEPT SITEWORKS - BASEMENT LEVEL

SCALE 1:100@A1

DESIGNED	DRAWN	CHECKED
JK	JK	DH

PROJECT	DRAWING	REVISION
19.0288	C021	B



STANDARDS AUSTRALIA AS/NZS 2890.1:2004
B85 VEHICLE (REALISTIC MIN RADIUS)

OVERALL LENGTH	4.91 m
OVERALL WIDTH	1.87 m
OVERALL BODY HEIGHT	1.42 m
MIN BODY GROUND CLEARANCE	0.15 m
TRACK WIDTH	1.77 m
LOCK-TO-LOCK TIME	6.00 s
KERB TO KERB TURNING RADIUS	5.75 m

SWEPT PATHS GENERATED USING AUTODESK VEHICLE TRACKING 2021 SOFTWARE

REV	DESCRIPTION	APP'D	DATE
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PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004

DRAWING TITLE
CONCEPT RAMP SECTION

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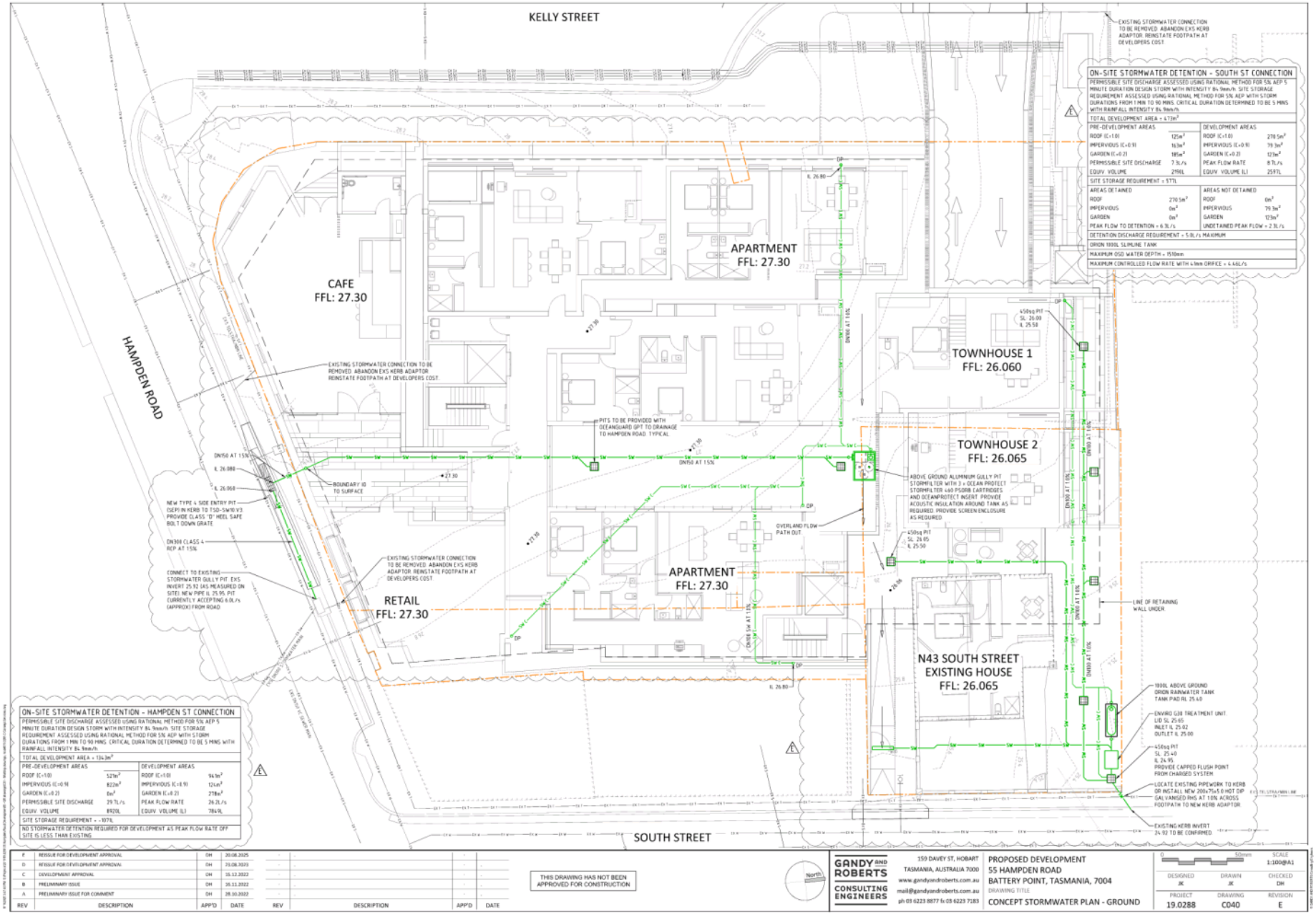
SCALE	DESIGNED	DRAWN	CHECKED
1:100@A1	JK	JK	DH

PROJECT	DRAWING	REVISION
19.0288	C022	B


KELLY STREET
HAMPDEN ROAD
SOUTH STREET
CAFE
FFL: 27.30
APARTMENT
FFL: 27.30
RETAIL
FFL: 27.30
APARTMENT
FFL: 27.30
TOWNHOUSE 1
FFL: 26.060
TOWNHOUSE 2
FFL: 26.065
N43 SOUTH STREET
EXISTING HOUSE
FFL: 26.065
EXISTING STORMWATER CONNECTION TO BE REMOVED ABANDON EXS KERB ADAPTOR REINSTATE FOOTPATH AT DEVELOPERS COST
ON-SITE STORMWATER DETENTION - SOUTH ST CONNECTION
PERMISSIBLE SITE DISCHARGE ASSESSED USING RATIONAL METHOD FOR 5% AEP 5 MINUTE DURATION DESIGN STORM WITH INTENSITY 84.9mm/h SITE STORAGE REQUIREMENT ASSESSED USING RATIONAL METHOD FOR 5% AEP WITH STORM DURATIONS FROM 1 MIN TO 90 MINS. CRITICAL DURATION DETERMINED TO BE 5 MINS WITH RAINFALL INTENSITY 84.9mm/h
TOTAL DEVELOPMENT AREA = 473m²
PRE-DEVELOPMENT AREAS
ROOF (C=1.0) 125m²
IMPERVIOUS (C=0.9) 163m²
GARDEN (C=0.2) 185m²
PERMISSIBLE SITE DISCHARGE 7.3L/s
EQUIV. VOLUME 219L
DEVELOPMENT AREAS
ROOF (C=1.0) 270.5m²
IMPERVIOUS (C=0.9) 79.3m²
GARDEN (C=0.2) 123m²
PEAK FLOW RATE 8.7L/s
EQUIV. VOLUME (L) 257L
SITE STORAGE REQUIREMENT = 577L
AREAS DETAINED
ROOF 270.5m²
IMPERVIOUS 0m²
GARDEN 0m²
PEAK FLOW TO DETENTION = 6.3L/s
AREAS NOT DETAINED
ROOF 0m²
IMPERVIOUS 79.3m²
GARDEN 123m²
UNDETAINED PEAK FLOW = 2.3L/s
DETENTION DISCHARGE REQUIREMENT = 5.0L/s MAXIMUM
ORION 1000L SLIMLINE TANK
MAXIMUM OSD WATER DEPTH = 1510mm
MAXIMUM CONTROLLED FLOW RATE WITH 41mm ORIFICE = 4.46L/s
ON-SITE STORMWATER DETENTION - HAMPDEN ST CONNECTION
PERMISSIBLE SITE DISCHARGE ASSESSED USING RATIONAL METHOD FOR 5% AEP 5 MINUTE DURATION DESIGN STORM WITH INTENSITY 84.9mm/h SITE STORAGE REQUIREMENT ASSESSED USING RATIONAL METHOD FOR 5% AEP WITH STORM DURATIONS FROM 1 MIN TO 90 MINS. CRITICAL DURATION DETERMINED TO BE 5 MINS WITH RAINFALL INTENSITY 84.9mm/h
TOTAL DEVELOPMENT AREA = 134.3m²
PRE-DEVELOPMENT AREAS
ROOF (C=1.0) 52m²
IMPERVIOUS (C=0.9) 82m²
GARDEN (C=0.2) 0m²
PERMISSIBLE SITE DISCHARGE 29.7L/s
EQUIV. VOLUME 892L
DEVELOPMENT AREAS
ROOF (C=1.0) 94.3m²
IMPERVIOUS (C=0.9) 12.4m²
GARDEN (C=0.2) 27.6m²
PEAK FLOW RATE 26.2L/s
EQUIV. VOLUME (L) 784.9L
SITE STORAGE REQUIREMENT = ~107L
NO STORMWATER DETENTION REQUIRED FOR DEVELOPMENT AS PEAK FLOW RATE OFF SITE IS LESS THAN EXISTING
PITS TO BE PROVIDED WITH OCEANGUARD GPT TO DRAINAGE TO HAMPDEN ROAD TYPICAL
NEW TYPE 4 SIDE ENTRY PIT OUTLET IN KERB TO TSD-SW10-V3 PROVIDE CLASS 'D' HEEL SAFE BOLT DOWN GRATE
DN300 CLASS 4 RCP AT 15%
CONNECT TO EXISTING STORMWATER GULLY PIT EXS INVERT 25.92 (AS MEASURED ON SITE). NEW PIPE IL 25.95. PIT CURRENTLY ACCEPTING 6.0L/s (APPROX) FROM ROAD
BOUNDARY RD TO SURFACE
OVERLAND FLOW PATH OUT
ABOVE GROUND ALUMINIUM GULLY PIT STORMFILTER WITH 3 x OCEAN PROTECT STORMFILTER 460 PSORB CARTRIDGES AND OCEANPROTECT INSERT. PROVIDE ACOUSTIC INSULATION AROUND TANK AS REQUIRED. PROVIDE SCREEN ENCLOSURE AS REQUIRED
LINE OF RETAINING WALL UNDER
1000L ABOVE GROUND ORION RAINWATER TANK PAD RL 25.40
ENVIRO G30 TREATMENT UNIT LID SL 25.65 INLET IL 25.02 OUTLET IL 25.00
450sq PIT SL 25.40 IL 24.95 PROVIDE CAPPED FLUSH POINT FROM CHARGED SYSTEM
LOCATE EXISTING PIPEWORK TO KERB OR INSTALL NEW 200x75x5.0 HOT DIP GALVANISED RHS AT 16% ACROSS FOOTPATH TO NEW KERB ADAPTOR
EXISTING KERB INVERT 24.92 TO BE CONFIRMED
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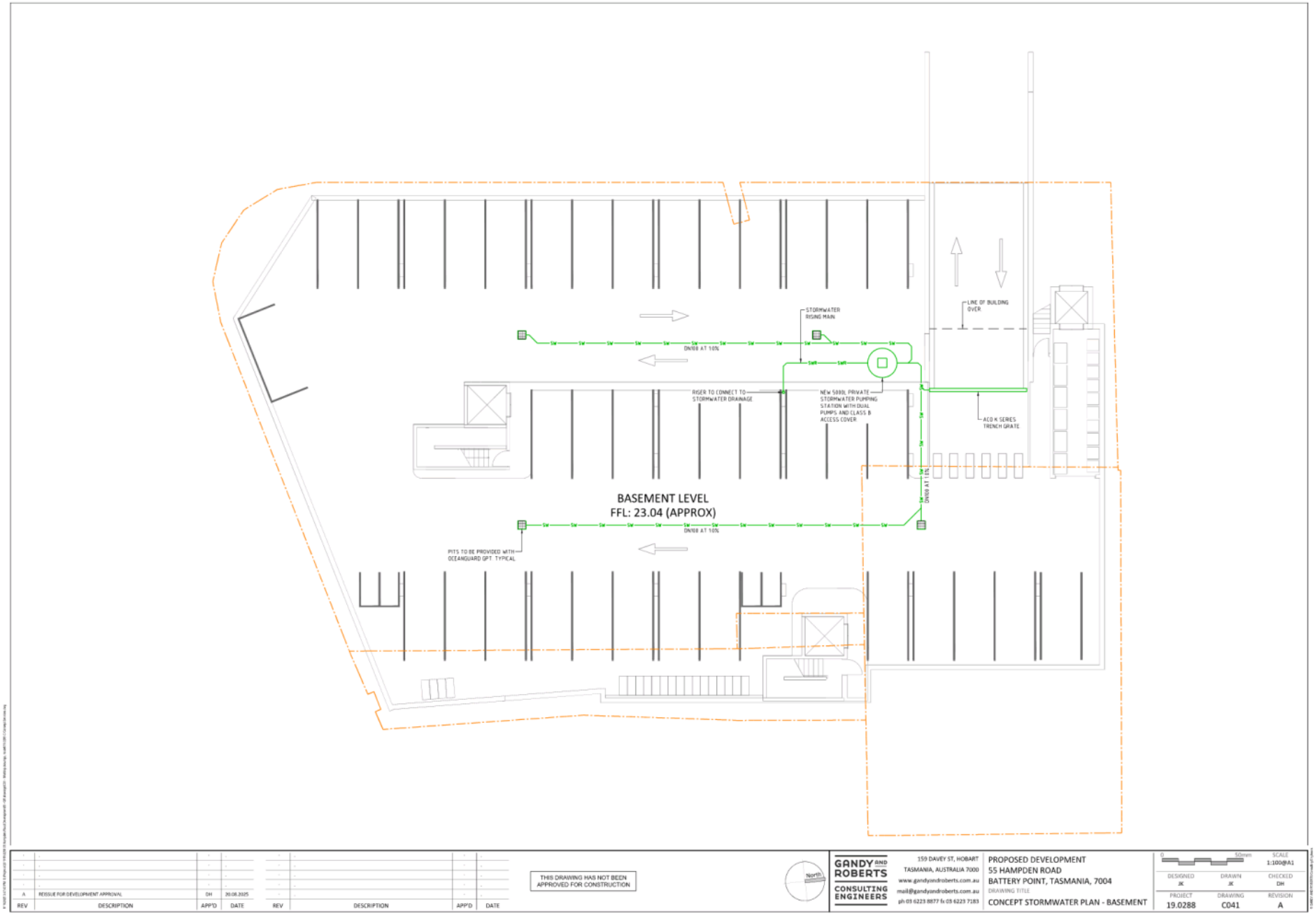
ph 03 6223 8877 fx 03 6223 7183
PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004
DRAWING TITLE
CONCEPT STORMWATER PLAN - GROUND
SCALE 1:100@A1
DESIGNED JK
DRAWN JK
CHECKED DH
PROJECT 19.0288
DRAWING C040
REVISION E
F REISSUE FOR DEVELOPMENT APPROVAL DH 20.08.2025
D REISSUE FOR DEVELOPMENT APPROVAL DH 23.06.2023
C DEVELOPMENT APPROVAL DH 15.12.2022
B PRELIMINARY ISSUE DH 16.11.2022
A PRELIMINARY ISSUE FOR COMMENT DH 28.10.2022



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A	REISSUE FOR DEVELOPMENT APPROVAL	DH	20.08.2025				

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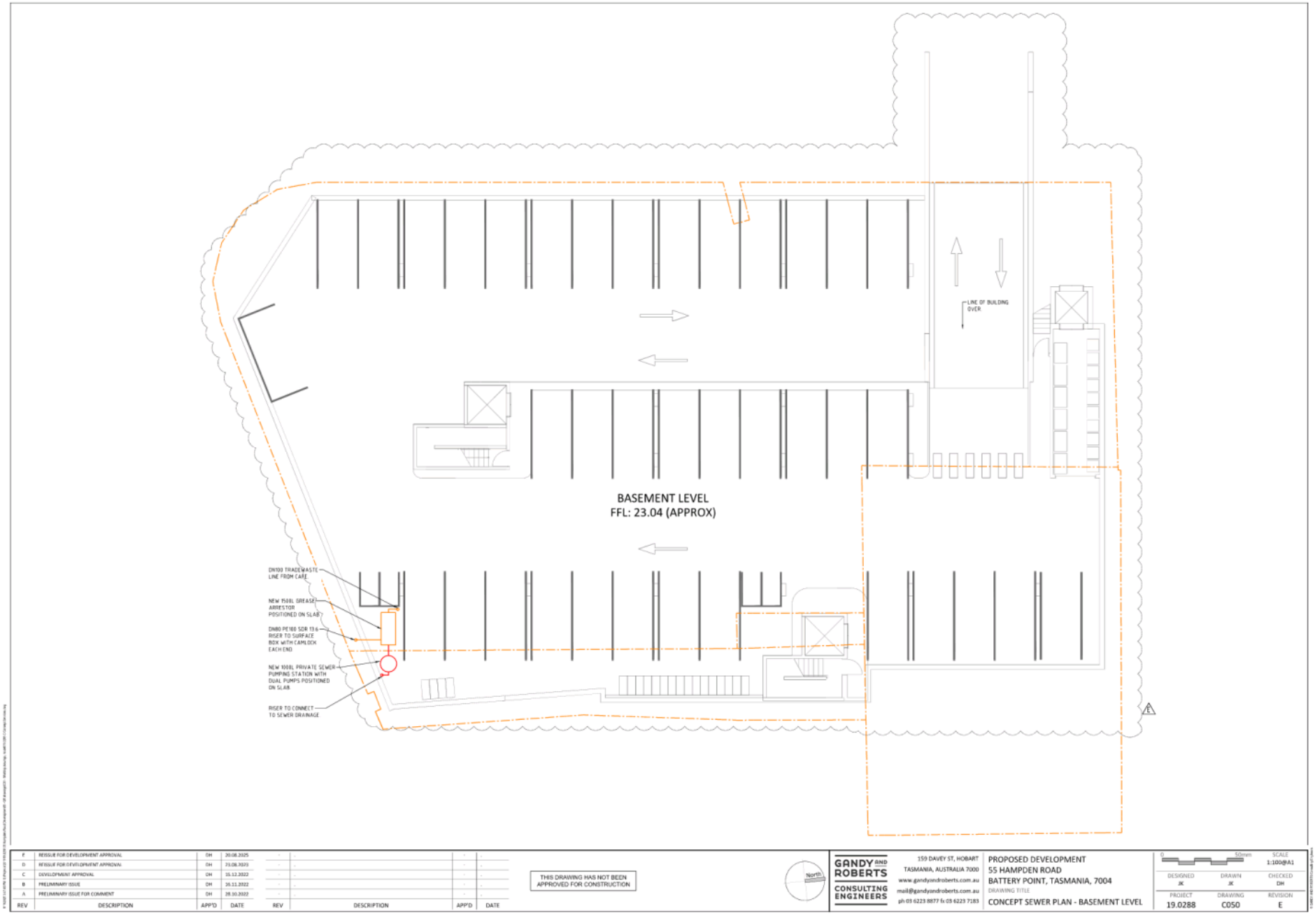
PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004

DRAWING TITLE
CONCEPT STORMWATER PLAN - BASEMENT

SCALE 1:100@A1

DESIGNED	DRAWN	CHECKED
JK	JK	DH

PROJECT	DRAWING	REVISION
19.0288	C041	A


LINE OF BUILDING OVER
BASEMENT LEVEL
FFL: 23.04 (APPROX)
DN100 TRADEWASTE LINE FROM CAFE
NEW 750L GREASE ARRESTOR POSITIONED ON SLAB
DN80 PE100 SDR 13.6 RISER TO SURFACE BOX WITH CAMLOCK EACH END
NEW 1000L PRIVATE SEWER PUMPING STATION WITH DUAL PUMPS POSITIONED ON SLAB
RISER TO CONNECT TO SEWER DRAINAGE
1
THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION
GANDY AND ROBERTS CONSULTING ENGINEERS
159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
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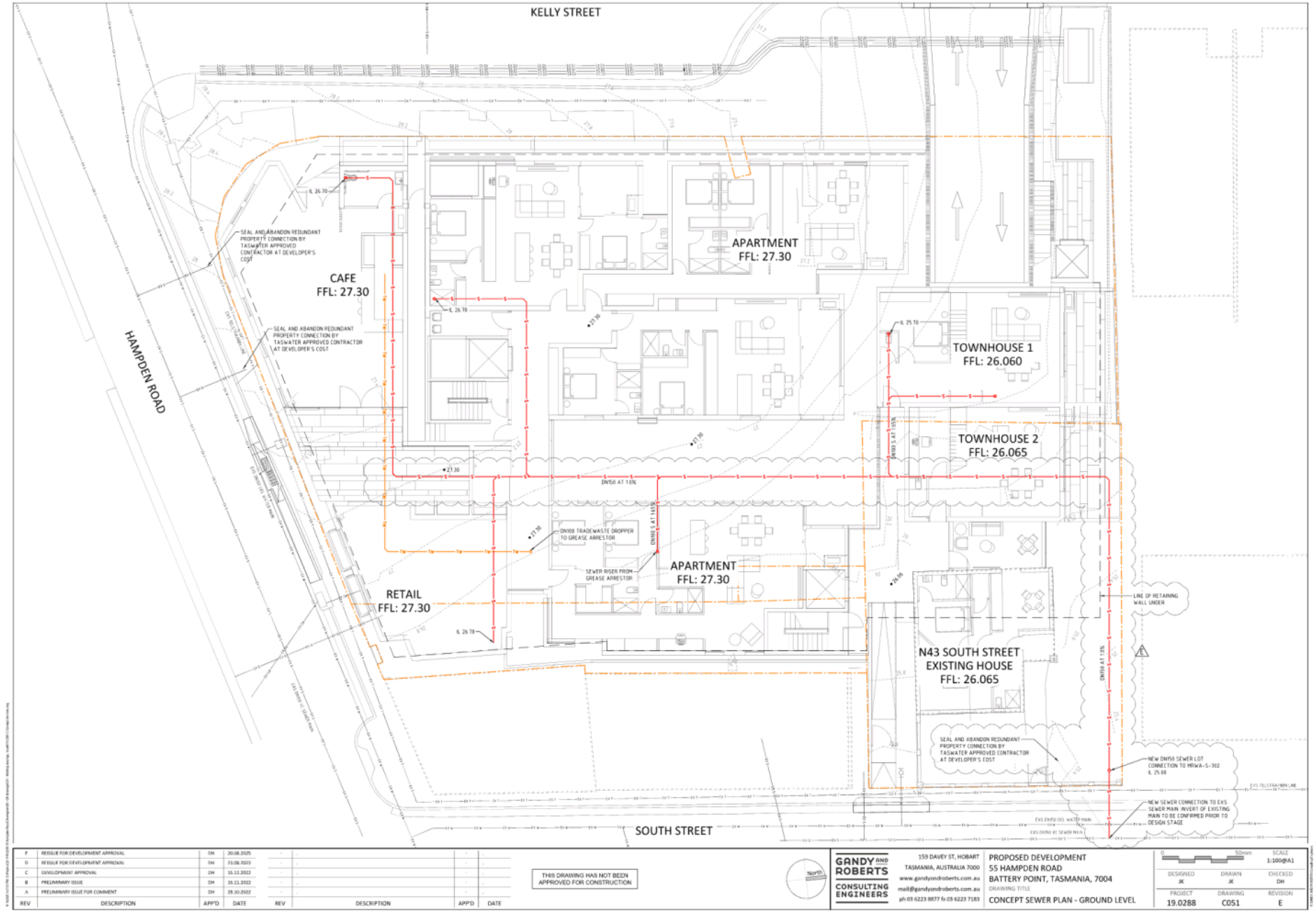
ph 03 6223 8877 fx 03 6223 7183
PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004
DRAWING TITLE
CONCEPT SEWER PLAN - BASEMENT LEVEL
SCALE 1:100@A1
DESIGNED JK
DRAWN JK
CHECKED DH
PROJECT 19.0288
DRAWING C050
REVISION E



REV	DESCRIPTION	APP'D	DATE
F	REISSUE FOR DEVELOPMENT APPROVAL	DH	20.08.2025
D	REISSUE FOR DEVELOPMENT APPROVAL	DH	23.06.2023
C	DEVELOPMENT APPROVAL	DH	15.12.2022
B	PRELIMINARY ISSUE	DH	16.11.2022
A	PRELIMINARY ISSUE FOR COMMENT	DH	28.10.2022

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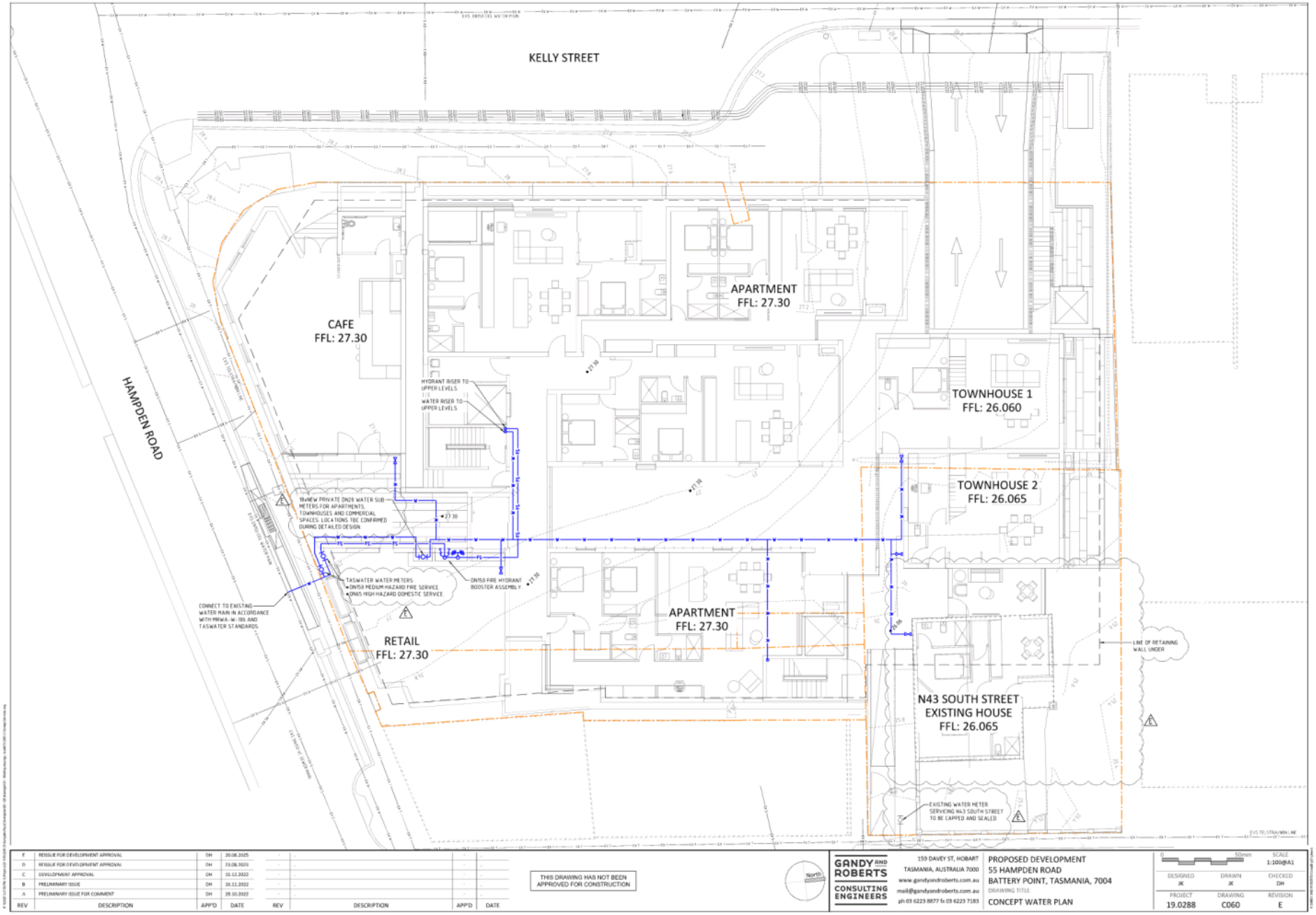
PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004

DRAWING TITLE
CONCEPT SEWER PLAN - GROUND LEVEL

SCALE	DESIGNED	DRAWN	CHECKED
1:100@A1	JK	JK	DH

PROJECT	DRAWING	REVISION
19.0288	C051	E


KELLY STREET
HAMPDEN ROAD
CAFE
FFL: 27.30
APARTMENT
FFL: 27.30
TOWNHOUSE 1
FFL: 26.060
TOWNHOUSE 2
FFL: 26.065
APARTMENT
FFL: 27.30
RETAIL
FFL: 27.30
N43 SOUTH STREET
EXISTING HOUSE
FFL: 26.065
HYDRANT RISER TO UPPER LEVELS
WATER RISER TO UPPER LEVELS
18 NEW PRIVATE DN20 WATER SUB METERS FOR APARTMENTS, TOWNHOUSES AND COMMERCIAL SPACES. LOCATIONS TBC CONFIRMED DURING DETAILED DESIGN
TASWATER WATER METERS
• DN150 MEDIUM HAZARD FIRE SERVICE
• DN65 HIGH HAZARD DOMESTIC SERVICE
DN150 FIRE HYDRANT BOOSTER ASSEMBLY
CONNECT TO EXISTING WATER MAIN IN ACCORDANCE WITH MRWA-W-186 AND TASWATER STANDARDS
LINE OF RETAINING WALL UNDER
EXISTING WATER METER SERVICING N43 SOUTH STREET TO BE CAPPED AND SEALED
THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION
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PROPOSED DEVELOPMENT
55 HAMPDEN ROAD
BATTERY POINT, TASMANIA, 7004
DRAWING TITLE
CONCEPT WATER PLAN
SCALE 1:100@A1
DESIGNED JK
DRAWN JK
CHECKED DH
PROJECT 19.0288
DRAWING C060
REVISION E

55 Hampden Road and 43 South Street, Battery Point

Supporting planning report

era

Final | 5 November 2025

Era Advisory acknowledge palawa as the Traditional Owners of lutruwita (Tasmania).

They are the original custodians of our land, sky and waters.

We respect their unique ability to care for country and deep spiritual connection to it.

We honour and pay our respect to Elders past and present, whose knowledge and wisdom has and will ensure the continuation of culture and traditional practices.

We acknowledge that their sovereignty has never been ceded.

Always was, always will be.

Era Advisory Pty Ltd

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Client	MRRC Pty Ltd
Document version	Final V2
Date	5 November 2025
Author	Patrick Carroll
Reviewer	Clare Hester
Job number	2122-115

Permit overview

Permit application details

Applicant	Era Advisory
Owner	MRRC Pty Ltd Hobart City Council
Address	55 Hampden Road, Battery Point 43 South Street, Battery Point Adjacent road reservations
Lot description	· Folio of the Register 40041, Lot 1 · Folio of the Register 40041, Lot 2 · Folio of the Register 40041, Lot 3 · Folio of the Register 40041, Lot 4 · Folio of the Register 40041, Lot 5 · Folio of the Register 40041, Lot 6 · Folio of the Register 40041, Lot 7 · Folio of the Register 40041, Lot 8 · Folio of the Register 40041, Lot 9 · Folio of the Register 79546, Lot 1 · Folio of the Register 90423, Lot 1 · Folio of the Register 229127, Lot 1 · Folio of the Register 48, Lot 6744 · Folio of the Register 48, Lot 6745
Description of proposal	The project seeks planning approval for a mixed-use development at 55 Hampden Road and 43 South Street, Battery Point. The project includes: · Demolition of all existing buildings at 55 Hampden Road. · Demolition of the existing lean-to on the building at 43 South Street. · Development of two, two-storey townhouses. · Development of 13 units across three storeys. · The two townhouses will be Residential. The 13 units will be Visitor Accommodation. The cottage at 43 South Street relies on its existing planning permit and will continue to be used for Visitor Accommodation. · A café (Food Services), located on the corner of Hampden Road and Kelly Street. · A retail offering (General Retail and Hire), located on Hampden Road. · An underground car park (for use by visitor accommodation and residential uses only)

Relevant Planning Provisions

Applicable planning scheme	*Hobart Interim Planning Scheme 2015*
Zone(s)	· Inner Residential Zone · Urban Mixed Use Zone
Codes	· Potentially Contaminated Land Code · Road and Railway Assets Code · Parking and Access Code · Stormwater Management Code · Historic Heritage Code
Discretions	· Clause 11.4.3 P1 – Site coverage and private open space for all dwellings · Clause 11.4.3 P2 – Site coverage and private open space for all dwellings · Clause 11.4.7 P1 – Frontage fences for all dwellings · Clause 15.3.1 P2 – Non-residential use · Clause 15.4.1 P1 – Building height · Clause 15.4.1 P2 – Building height · Clause 15.4.2 P1 – Setback · Clause 15.4.2 P2 – Setback · Clause 15.4.3 P1 – Design · Clause 15.4.4 P1 – Passive surveillance · Clause 15.4.5 P1 – Landscaping · Clause 15.4.5 P2 – Landscaping · Clause E2.5 P1 – Use standards · Clause E2.6.2 P1 – Excavation · Clause E5.5.1 P3 – Existing road accesses and junctions · Clause E6.6.1 P1 – Number of Car Parking Spaces · Clause E6.6.4 P1 – Number of Bicycle Parking Spaces · Clause E6.7.8 P1 – Landscaping of Parking Areas · Clause E6.7.10 P1 – Design of Bicycle Parking Facilities · Clause E6.7.10 P2 – Design of Bicycle Parking Facilities · Clause E6.7.13 P1 – Facilities for Commercial Vehicles · Clause E7.7.1 P1 – Stormwater drainage and disposal · Clause E7.7.1 P2 – Stormwater drainage and disposal · Clause E13.8.1 P1 – Demolition · Clause E13.8.2 P1 – Buildings and works other than demolition · Clause E13.8.2 P4 – Buildings and works other than demolition · Clause E13.8.4 P2 – Buildings and works in Heritage Precinct BP1 · Clause E13.8.4 P3 – Buildings and works in Heritage Precinct BP1 · Clause E13.8.4 P4 – Buildings and works in Heritage Precinct BP1 · Clause E13.8.4 P6 – Buildings and works in Heritage Precinct BP1 · Clause E13.8.4 P7 – Buildings and works in Heritage Precinct BP1 · Clause E13.8.4 P8 – Buildings and works in Heritage Precinct BP1 · Clause E13.8.4 P9 – Buildings and works in Heritage Precinct BP1

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1 Introduction

1.1 Purpose

Era Advisory has been engaged by MRRC Pty Ltd to provide a supporting planning report for the proposed mixed-use development in relation to 55 Hampden Road and 43 South Street, Battery Point.

The proposal is for the demolition of existing buildings at 55 Hampden Road, and for the retention of the existing building at 43 South Street, except for the demolition of the lean-to at the rear of the cottage. The development is for a mixed-use proposal, consisting of residential, visitor accommodation, a café and retail. A detailed project description is provided in Section 2.1 of this report.

This report considers the project against the relevant planning scheme requirements, specifically identifying where the project complies with acceptable solutions or relies on performance criteria.

1.2 Enquiries

Enquiries relating to this planning report should be directed to:

Patrick Carroll
Senior Planner
Era Advisory
enquiries@era-advisory.com.au
03 6165 0443

1.3 Planning authority

The relevant planning authority is the City of Hobart.

1.4 Planning scheme

The application must be considered against the provisions of the *Hobart Interim Planning Scheme 2015* (the planning scheme).

1.5 Project site

The project is located at 55 Hampden Road and 43 South Street, Battery Point. Minor works are also proposed within Council's road reserve.

The site consists of the following land parcels, as listed in Table 1 and as shown in Figure 2. Title documentation is provided as an appendix to this report, as well as landowner consent required pursuant to section 52(1B) of the *Land Use Planning and Approvals Act 1993* (the LUPA Act).

Table 1 - Titles comprising the project site.

Address	Owner	Title reference	Development proposed
55 Hampden Road Battery Point	MRRC Pty Ltd	40041/1	Demolition of the Prince of Wales Hotel
		40041/2	Main development
		40041/3	
		40041/4	
		40041/5	
		40041/6	
		40041/7	
		40041/8	
		40041/9	
		79546/1	
		90423/1	
43 South Street Battery Point	MRRC Pty Ltd	229127/1	Demolition of lean-to on existing cottage Main development
Not applicable	Hobart City Council	48/6744	Part of main development
Not applicable	Hobart City Council	48/6745	Part of main development
Kelly Street road reservation	Hobart City Council	Not applicable	Alterations to kerb and gutter Development of access to underground car park
Hampden Road road reservation	Hobart City Council	Not applicable	Alterations to kerb and gutter
South Street road reservation	Hobart City Council	Not applicable	Alterations to kerb and gutter

1.6 Background

The project is a revised application for the redevelopment of the site. The previous proposal, which included the demolition of the cottage at 43 South Street, was placed on public exhibition and a total of 114 representations were received. The key issues raised included:

- Demolition of South Street cottage
- Scale and modern design of the development

- Construction impacts
- Traffic, both during construction and once operational

Subsequently, the previous application was withdrawn and the subject project submitted in response to the representations which includes:

- Retention of 1920s South Street cottage at 43 South Street
- Reduction in roofscape of Apartments 12 and 13
- Amendments to Apartment 9
- Reduction in excavation for carpark, while retaining all proposed elements (car parks, bike parking, adequate bin storage)
- Managing construction impacts through a construction environmental management plan

2 The project

2.1 Project description

The project seeks planning approval for a mixed-use development at 55 Hampden Road and 43 South Street, Battery Point. Specifically, the following elements are included in the proposal:

- Demolition of all existing buildings at 55 Hampden Road.
- Demolition of the existing lean-to on the cottage at 43 South Street. The remainder of the cottage remains in-situ.
- Development of two, two-storey townhouses.
- Development of 13 units across three storeys.
- The two townhouses will be Residential. The 13 units will be Visitor Accommodation. The cottage at 43 South Street relies on its existing planning permit and will continue to be used for Visitor Accommodation[1].
- A café, located on the corner of Hampden Road and Kelly Street.
- A retail offering, located on Hampden Road.
- A shared private courtyard for occupants, which serves as a natural foyer to the development.
- An underground car park, which includes 37 car parking spaces, 4 motorcycle parking spaces, bicycle parking, storage, and waste storage. This car park space will be available to residents of the dwellings and guests of the visitor accommodation.
- Landscaping
- Removal of existing vehicular crossovers on Hampden Road and South Street, with the reinstatement of the kerb and gutter, resulting in the potential for an increase in on-street car parking and/or the potential for streetscape improvements. Any additional on-street car parking or streetscape improvements are, however, the responsibility of Council and will be separate to this proposal.

Collectively, the above components are referred to as the project.

The design for the development has been prepared by JAWS Architects, with inputs from a variety of expert consultants including heritage, stormwater management, noise, traffic, site contamination and planning. JAWS Architects have provided a design statement for the project, which is included in section 2.2.

Buildings have been thoughtfully designed and sited to maximise function and amenity for the users of the site, while respecting the residential uses on adjoining property and being sympathetic to the significant heritage values of Battery Point.

[1] Planning permit PLN-18-298, Change of Use to Visitor Accommodation, dated 24 May 2018.

2.2 Design statement

JAWS Architects, the architects for the project, have provided the following design statement in relation to the proposed development:

This project is a tangible demonstration of how through careful analysis of the existing condition, well-considered architectural design can repair damaged urban fabric to help consolidate a vibrant residential community.

The proposal is for a new mixed-use development in Battery Point, one of the most sensitive historic precincts in Hobart. Construction of the new complex requires demolition of the existing Prince of Wales Hotel (circa 1967) and its peripheral ground level car park, which is a conspicuous anomaly to the traditional pattern of settlement evident in the area. The proposal also a cottage at 43 South Street dating from 1922 within the development.

Outwardly addressing three separate streets, the new complex contains 13 apartments, 2 townhouses, with the existing South Street cottage continuing to be used for visitor accommodation. These are set around a centrally located, landscaped courtyard which forms the 'lungs' of the complex. Apartment amenity utilises this courtyard benefitting all of the apartments with cross ventilation and over 85% with north facing private outdoor terraces. These residential uses are complemented by a small cafe and a retail space which help activate the ground plane, gently stepping down Hampden Road to stitch the complex into the Battery Point Village commercial strip.

A basement car park contains sufficient parking for residents and visitors to the development. The existing public parking spaces in Kelly Street will be retained, complemented by the potential for two additional on-street car parking spaces or streetscape improvements, which will be created on Hampden Road by closing the crossover to the existing hotel car park.

The built form of Battery Point has been carefully analysed to identify the patterns of development and the formal characteristics that give this precinct its distinct personality.

The new complex is broken down into a series of two-storey masonry forms on the street-edge, reflecting the scale and massing of the surrounding cottages and creating a density appropriate to the precinct. Taller masonry elements are placed within the centre of the complex, roofscape and façade articulation helping to mitigate the bulk and mass.

All apartments are carefully sited to maximise access to natural light, with private sunny balconies providing residents with framed city, river and mountain views.

The buildings utilise a cohesive palette of design elements, drawn from a comprehensive morphological study of the buildings that help define the character of Battery Point. This methodology has developed a contemporary architectural response which respectfully references the wide range of traditional architectural styles evident in the precinct.

Roof forms, fences and gardens, materials and finishes, 'punched' window openings, chimneys, dormer windows, shopfronts, parapets and gable roofs, corbelling and expressed lintels are all reinterpreted to reflect the fine grain detailing of Battery Point.

The new complex provides a complementary layer of history that positively contributes to the character of Battery Point; contemporary in its language yet clearly grounded in its sense of place.

Figure 1 Three-dimensional render of the proposed development, as viewed from Hampden Road looking towards the intersection of Kelly Street.

2.3 Application documentation

The planning permit application includes the following documents, which are provided as appendices to this report:

- Title documentation (Appendix A)
- Landowner consent (Appendix B)
- Proposed building and works plans (Appendix C)
- Heritage impact assessment (Appendix D)
- Traffic impact assessment (Appendix E)
- Concept services report (Appendix F)
- Noise assessment (Appendix G)
- Contamination management plan (Appendix H)
- Environmental site assessment (Appendix I)

2.4 Construction management

As part of feedback received from officers of the City of Hobart, it was evident that adequately managing any construction impacts was going to be critical to the success of the development.

MRRC Pty Ltd, the owners of the site, are committed to developing a construction environmental management plan in conjunction with Council staff that adequately addresses concerns relating to any potential impacts resulting from construction and excavation at the site.

The construction environmental management plan will:

- Detail proposed methodology for construction and demolition activities.
- Identify all potential environmental impacts associated with the works, such as noise, dust, odours, air pollution, water pollution, and erosion.
- Include measures to avoid or mitigate environmental risks.

Additionally, MRRC Pty Ltd will work in conjunction with Council to develop a construction management plan for the development. This CMP will include:

- Communication plans to advise of any traffic impacts as a result of the development during construction.
- Estimated start and finish dates.
- Nominate times that construction traffic can operate.
- Identify a site superintendent who will liaise with Council regarding traffic management and/or traffic impacts on Council roads.
- Measures to control sediment transfer.
- Site fencing details to ensure public safety.

The site supervisor's contact details will be provided to Council, meaning open channels of communication between the owner, the builder and other contractors and Council.

MRRC Pty Ltd would welcome a condition on any planning permit granted that formalises the above commitments.

3 Site description and surrounds

The site is located at 55 Hampden Road and 43 South Street, Battery Point, as shown in Figure 2. Minor works are also proposed in Council's road reserve, such as changes to kerb and gutter due to vehicular access arrangements.

The site includes the existing Prince of Wales Hotel (55 Hampden Road) and an existing cottage (43 South Street). It is proposed that the buildings at the Prince of Wales Hotel will be demolished, while the demolition of a more recent lean-to at the cottage of 43 South Street is also proposed to be demolished. The main cottage at 43 South Street, however, will remain.

The site is split-zoned, as shown in Figure 3. Most of the site is within the Urban Mixed Use Zone, while the remainder is in the Inner Residential Zone.

Figure 2 Aerial photography of the subject site and surrounding area, with the subject site highlighted in blue.

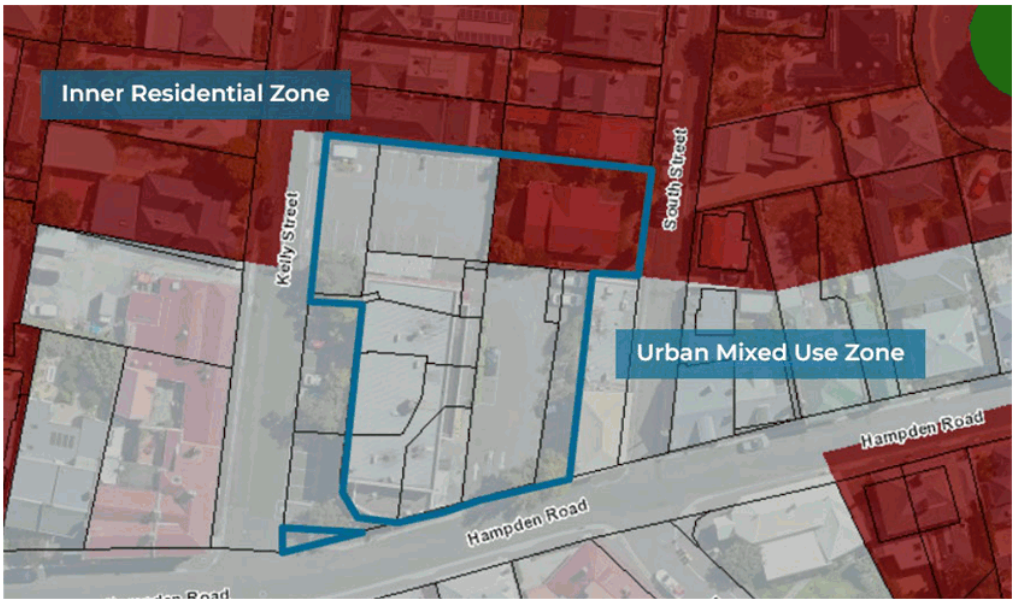

Figure 3 Zoning of the subject site, which is bound in blue.

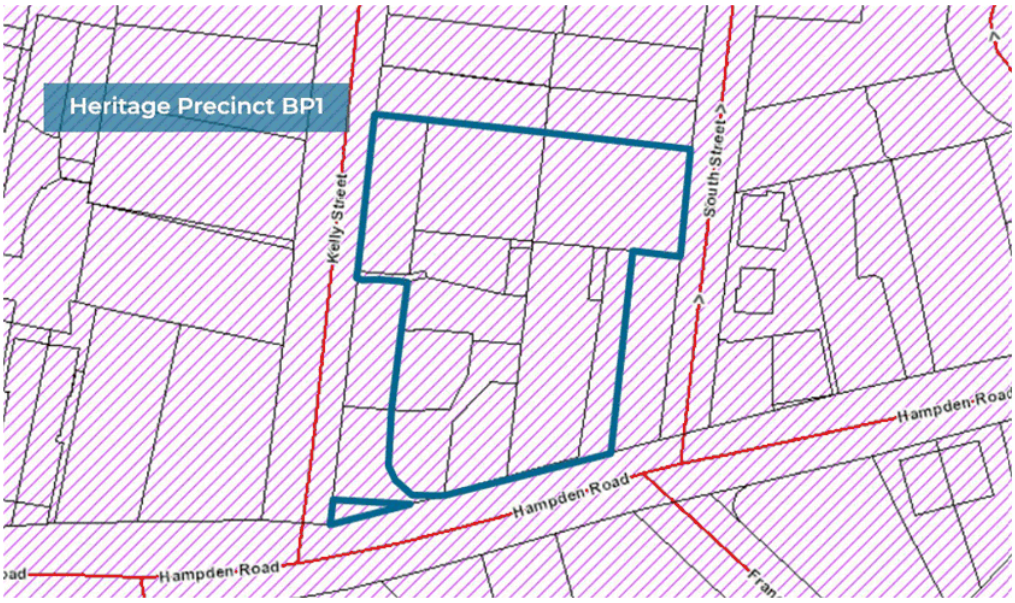

Figure 4 The hatched area denotes the extent of Heritage Precinct BP1.

4 Planning scheme operation

4.1 Existing use rights

The cottage at 43 South Street holds a valid planning permit issued by the City of Hobart for Visitor Accommodation (PLN-18-298).

Since the permit was granted in 2018, the 43 South Street cottage has been operating lawfully and continually as Visitor Accommodation under this planning permit.

It is proposed that the South Street cottage continues to operate as Visitor Accommodation under PLN-18-298, and as such, the ongoing use of that cottage as Visitor Accommodation does not form part of this application.

4.2 Planning scheme zones and codes

Section 7 of the planning scheme provides for the operational provisions of the planning scheme. Clause 7.3.4 of the planning scheme states:

> *Where there is conflict between a provision in a code and a provision in a zone, the code provision prevails.*

Put simply, a standard within a code will override a conflicting zone provision.

Clause 7.3.4 is particularly relevant to this application. This application includes matters that are addressed in both the zone and codes, specifically the Historic Heritage Code of the planning scheme.

It is Era Advisory's interpretation that, wherever there is a duplication of, or a conflict between a standard in the applicable zone and the Historic Heritage Code, the standard of the code prevails, and the zone standard does not apply to the proposal.

Clause 7.3.4, however, silent on when two or more codes deal with the same matter. For this application, this occurs between the Historic Heritage Code and the Parking and Access Code. Specifically:

- Clause E13.8.4 A9/P9 and clause E6.6.1 A1/P1 each deal with the number of car parks required.
- Clause E13.8.4 A8/P8 and clause E6.7.1 A1/P1 each deal with the number of vehicular crossovers per frontage.

The approach taken by Era Advisory is that neither provision is dominant, and the application has been assessed against all relevant code standards.

5 Zoning assessment

5.1 Zoning

The site is subject to the provisions of the *Hobart Interim Planning Scheme 2015* (the planning scheme). Specifically, the site, as shown in Figure 3, is zoned:

- Inner Residential
- Urban Mixed Use

5.2 Use classification

As described above, the proposed development is a mixed-use one.

Clause 8.2.1 states:

> *Each proposed use or development must be categorised into one of the use classes in Table 8.2.*

Clause 8.2.5 continues:

> *If more than one use or development is proposed, each use that is not directly associated with and subservient to another use on the same site must be individually categorised into a use class.*

That is, each use must be separately categorised into its own applicable use class. Table 8.2 of the planning scheme provides for the definitions of each use class, and these are reproduced in Table 2 below.

Table 2 - Applicable use class definitions.

Use class	Definition
Visitor Accommodation[2]	*Use of land for providing short or medium term accommodation, for persons away from their normal place of residence, on a commercial basis or otherwise available to the general public at no cost. Examples include a backpackers hostel, bed and breakfast establishment, camping and caravan park, holiday cabin, holiday unit, motel, overnight camping area, residential hotel and serviced apartment.*
Residential	*Use of land for self contained or shared living accommodation. Examples include an ancillary dwelling, boarding house, communal residence, homebased business,*

[2] The definition for Visitor Accommodation in Table 8.2 of the is currently suspended. The definition for Visitor Accommodation is contained in Planning Directive No. 6 – Exemption and Standards for Visitor Accommodation in Planning Schemes and has been reproduced in Table 2.

	hostel, residential aged care home, residential college, respite centre, retirement village, single or multiple dwellings, and a display home[3].
Food Services	*Use of land for preparing or selling food or drink for consumption on or off the premises. Examples include a cafe, restaurant and take-away food premises.*
General Retail and Hire	*Use of land for selling goods or services, or hiring goods. Examples include an adult sex product shop, amusement parlour, beauty salon, betting agency, commercial art gallery, department store, hairdresser, market, primary produce sales, shop, shop front dry cleaner, supermarket and video shop.*

5.3 Use status

Table 3 outlines the use status of each of the proposed uses within each of the respective zones.

Table 3 - Use status within the applicable zones

Use class	Use status in the Inner Residential Zone	Use status in the Urban Mixed Use Zone
Visitor Accommodation	Not applicable[4]	Discretionary[5]
Residential	Permitted	Permitted
Food Services	Not applicable	Permitted
General Retail and Hire	Not applicable	Discretionary

[3] 'Dwelling' is defined at clause 4.1.3 of the planning scheme as:

means a building, or part of a building, used as a self contained residence and which includes food preparation facilities, a bath or shower, laundry facilities, a toilet and sink, and any outbuilding and works normally forming part of a dwelling.

[4] Any visitor accommodation use within the Inner Residential Zone relies on the existing planning permit (PLN-18-298) and does not form part of this application.

[5] In the Urban Mixed Use Zone, 'Visitor Accommodation' can be a permitted use, however the use qualification in Table 15.2 cannot be met. The use qualification for a discretionary visitor accommodation use is:

Except if permitted.

Except if camping and caravan park or overnight camping area.

If for self-contained accommodation located on the same site as a dwelling providing long term residential accommodation, only if it has a separate ground level pedestrian access to a road or the site is mixed use.

In the Battery Point Heritage Precinct (BP1) any self-contained visitor accommodation must not displace an existing business and professional service or general retail and hire use.

This proposal is a mixed-use development with the visitor accommodation having a separate ground level pedestrian entrance to the residential uses on the same site.. The proposal is in Battery Point Heritage Precinct BP1 but does not displace an existing business and professional service or general retail and hire use.

5.4 Inner Residential Zone

5.4.1 Zone purpose

The purpose of the Inner Residential Zone is:

11.1.1.1 To provide for a variety of residential uses and dwelling types close to services and facilities in inner urban and historically established areas, which uses and types respect the existing variation and pattern in lot sizes, set back, and height.

11.1.1.2 To provide for compatible non-residential uses that primarily serve the local community.

11.1.1.3 To encourage residential development at higher densities in locations within walkable distance of services, facilities, employment and high frequency public transport corridors.

11.1.1.4 To encourage residential development that respects the neighbourhood character.

11.1.1.5 To provide a high standard of residential amenity.

11.1.1.6 To allow commercial uses which provide services for the needs of residents of a neighbourhood and do not displace an existing residential use or adversely affect their amenity particularly through noise, traffic generation and movement, and the impact of demand for on-street parking.

As Residential is a permitted use in the Inner Residential Zone when for multiple dwellings, the use is deemed to satisfy the Zone Purpose.

There are no Local Area Objectives or Desired Future Character Statements for this Zone.

5.4.2 Applicable standards

Not all standards in the Inner Residential Zone are applicable to the project. Table 4 identifies the applicable standards. An assessment of the applicable standards is provided in the following sections.

Table 4 - Applicable standards in the Inner Residential Zone.

Clause		Applicability
Use standards		
Clause 11.3.1 Non-residential use	A1/P1	Not applicable. All proposed use in the Inner Residential Zone is residential., with non-residential uses confined to the Urban Mixed Use Zone.
	A2/P2	Not applicable. All proposed use in the Inner Residential Zone is residential, with non-residential uses confined to the Urban Mixed Use Zone.
	A3/P3	Not applicable. All proposed use in the Inner Residential Zone is residential, with non-residential uses confined to the Urban Mixed Use Zone.
	A4/P4	Not applicable. All proposed use in the Inner Residential Zone is residential, with non-residential uses confined to the Urban Mixed Use Zone.

Clause 11.3.2 Visitor accommodation	A1/P1	Not applicable. No new visitor accommodation is proposed within the Inner Residential Zone.
	A2/P2	Not applicable. No new visitor accommodation is proposed within the Inner Residential Zone.
Development standards		
Clause 11.4.1 Residential density for multiple dwellings	A1/P1	Applicable.
Clause 11.4.2 Setbacks and building envelope for all dwellings	A1/P1	Not applicable. Frontage setback is addressed in clause E13.8.4 (A2/P2) of the Historic Heritage Code, which – pursuant to clause 7.3.4 of the planning scheme – prevails over the standards of the Zone.
	A2/P2	Not applicable. There is no garage or carport proposed in the Inner Residential Zone.
	A3/P3	Not applicable. The standard does not apply to Battery Point Heritage Precinct (BP1).[6]
Clause 11.4.3 Site coverage and private open space for all dwellings	A1/P1	Applicable.
	A2/P2	Applicable.
Clause 11.4.4 Sunlight to private open space of multiple dwellings	A1/P1	Not applicable. There is no dwelling on the site that is located to the north of the dwellings in the Inner Residential Zone.
Clause 11.4.5 Width of openings for garages and carports for all dwellings	A1/P1	Not applicable. There is no garage or carport proposed within the Inner Residential Zone.
Clause 11.4.6 Privacy for all dwellings	A1/P1	Applicable.
	A2/P2	Applicable.
	A3/P3	Applicable.
Clause 11.4.7 Frontage fences for all dwellings	A1/P1	Applicable.
Clause 11.4.8 Waste storage for multiple dwellings	A1/P1	Applicable.
Clause 11.4.9 Non-dwelling development		Not applicable. All development within the Inner Residential Zone is for a dwelling.
Subdivision standards		

[6] Height and setback provisions for Heritage Precinct BP1 are contained in the Historic Heritage Code – E13.8.4 Buildings and Works in Heritage Precinct BP1.

Clause 11.5 Development standards for subdivision	Not applicable. No subdivision is proposed.

5.4.3 Residential density for multiple dwellings

An assessment against Clause 11.4.1 of the planning scheme is provided below in Table 5.

Table 5 - Assessment against the residential density standard for multiple dwellings in the Inner Residential Zone.

Acceptable Solutions	Performance Criteria
Objective: That the density of multiple dwellings: (a) makes efficient use of land for housing; and (b) optimises the use of infrastructure and community services.	
A1 Multiple dwellings must have a site area per dwelling of not less than 200m^2.	**P1** Multiple dwellings must only have a site area per dwelling less than 200m^2 if: (a) the development contributes to a range of dwelling types and sizes appropriate to the surrounding area; or (b) the development provides for a specific accommodation need with significant social or community benefit.
Planner Response Both 'site' and 'site area per dwelling' are defined within clause 4.1.3 of the planning scheme[7] [8]. If applied across the whole site, the dwelling density, as defined in the planning scheme, is compliant. Two dwellings are proposed across 2,025 m^2 of site area. The dwelling density in this scenario is 1,012.5 m^2 of site area per dwelling (permitted is 200 m^2/dwelling). If, however, the density is applied to only the part of the site that is within the Inner Residential Zone, the density is 354 m^2 of Inner Residential zoned land per dwelling. One residential dwelling (Townhouse 02) is proposed within the zone, and the site area of Inner Residential Zone is 354 m^2. If applied to just the Inner Residential Zone portion of the site, the dwelling density is also compliant with the permitted standard. Therefore, using either interpretation of dwelling density (i.e. application across the whole 'site' or just the Inner Residential Zone), the proposal complies with the permitted standard. The acceptable solution (A1) is met.	

5.4.4 Site coverage and private open space for all dwellings

An assessment against Clause 11.4.3 of the planning scheme is provided below in Table 6.

[7] 'Site' is defined as:

The lot or lots on which a use or development is located or proposed to be located.

[8] 'Site area per dwelling' is defined as:

The area of the site (excluding any access strip) divided by the number of dwellings.

Table 6 - Assessment against the site coverage and private open space standard in the Inner Residential Zone.

Acceptable Solutions	Performance Criteria
Objective: That dwellings are compatible with the amenity and character of the area and provide: (a) for outdoor recreation and the operational needs of the residents; (b) opportunities for the planting of gardens and landscaping; and (c) private open space that is conveniently located and has access to sunlight	
A1 Dwellings must have: (a) a site coverage of not more than 65% (excluding eaves up to 0.6m wide); and (b) for multiple dwellings, a total area of private open space of not less than 40m^2 associated with each dwelling, unless the dwelling has a finished floor level that is entirely more than 1.8m above the finished ground level (excluding a garage, carport or entry foyer).	**P1** Dwellings must have: (a) site coverage consistent with that existing on established properties in the area; (b) private open space that is of a size and with dimensions appropriate for the size of the dwelling and is able to accommodate: (i) outdoor recreational space consistent with the projected requirements of the occupants and, for multiple dwellings, take into account any common open space provided for this purpose within the development; and (ii) operational needs, such as clothes drying and storage; and (c) reasonable space for the planting of gardens and landscaping.
Planner Response As described above, site coverage is assessed under clause E13.8.4 A6/P6 of the Historic Heritage Code, which prevails over any conflicting zone standard. However, this zone standard is different, as it deals with two matters: site coverage and private open space. The approach taken is that pursuant to clause 7.3.4 of the planning scheme, A1(a) and P1(a) are not applicable, and assessment of site coverage defers to assessment under the Historic Heritage Code. Each dwelling has an area of private open space. At ground level, Townhouses 1 and 2 each have 16.35 m^2 and 16.58 m^2 of private open space respectively (noting Townhouse 1 is in the Urban Mixed Use Zone), with the townhouses each having an additional small balcony on the upper level (3.69 m^2 and 3.84 m^2). Further, there are shared courtyards for the development, which provide additional areas of open space. Each of the areas of private open space are adequate for the projected requirements of the occupants and can accommodate outdoor relaxation and dining. The private open space can also accommodate operational needs, such as clothes drying. Storage is included in the basement carpark. Landscaping and planting are also provided for, in addition to the areas of private open space. The existing cottage at 43 South Street is not a dwelling and will continue to be used as visitor accommodation. Notwithstanding, this cottage has an area of private open space located to the north of the building, which has an area of approximately 36 m^2. The performance criteria (P1) are satisfied.	
A2 A dwelling must have private open space that: (a) is in one location and is not less than: (i) 24m2; or (ii) 12m2, if the dwelling is a multiple dwelling with a finished floor level that is entirely more than 1.8m above the finished ground level (excluding a garage, carport or entry foyer); (b) has a minimum horizontal dimension of: (i) 4m; or	**P2** A dwelling must have private open space that includes an area capable of serving as an extension of the dwelling for outdoor relaxation, dining, entertaining and children's play and is: (a) conveniently located in relation to a living area of the dwelling; and (b) orientated to take advantage of sunlight.

(ii) 2m, if the dwelling is a multiple dwelling with a finished floor level that is entirely more than 1.8m above the finished ground level (excluding a garage, carport or entry foyer);

(c) is located between the dwelling and the frontage only if the frontage is orientated between 30 degrees west of true north and 30 degrees east of true north;

(d) has a gradient not steeper than 1 in 10; and

(e) is not used for vehicle access or parking

Planner Response

Townhouse 2 is the only dwelling within the Inner Residential Zone. The dwelling at Townhouse 2 does not comply with the permitted standard, due to its area being 16.58 m^2.

It is opined that Townhouse 2's area of private open space is an extension of the dwelling. It is located immediately adjacent to the open plan dining, kitchen, and lounge area, and has a northerly aspect providing good solar access. The 16.58 m^2 of private open space is also greater than the suggested area under the Medium Density Design Guidelines, which identifies an area of 10 – 12 m^2 for a two-bedroom unit[9].

The size of the private open space, combined with the shared courtyard, are adequate to accommodate outdoor dining or relaxation and is suitable for the projected needs of the occupants.

The performance criteria (P2) are satisfied.

5.4.5 Privacy for all dwellings

An assessment against Clause 11.4.6 of the planning scheme is provided below in Table 7.

Table 7 - Assessment against the privacy for dwellings standard in the Inner Residential Zone.

Acceptable Solutions	Performance Criteria
Objective: To provide a reasonable opportunity for privacy for all dwellings.	
A1 A balcony, deck, roof terrace, parking space, or carport for a dwelling (whether freestanding or part of the dwelling), that has a finished surface or floor level more than 1m above existing ground level must have a permanently fixed screen to a height of not less than 1.7m above the finished surface or floor level, with a uniform transparency of not more than 25%, along the sides facing a: (a) side boundary, unless the balcony, deck, roof terrace, parking space, or carport has a setback of not less than 3m from the side boundary; (b) rear boundary, unless the balcony, deck, roof terrace, parking space, or carport has a setback of not less than 4m from the rear boundary; and (c) dwelling on the same site, unless the balcony, deck, roof terrace, parking space, or carport is not less than 6m:	**P1** A balcony, deck, roof terrace, parking space or carport for a dwelling (whether freestanding or part of the dwelling) that has a finished surface or floor level more than 1m above existing ground level, must be screened, or otherwise designed, to minimise overlooking of: (a) a dwelling on an adjoining property or its private open space; or (b) another dwelling on the same site or its private open space.

[9] Department of State Growth (2025) *Medium Density Design Guidelines*. Accessed at https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0005/570182/Medium-Density-Design-Guidelines.PDF

(i) from a window or glazed door, to a habitable room of the other dwelling on the same site; or

(ii) from a balcony, deck, roof terrace or the private open space, of the other dwelling on the same site.

Planner Response

The only dwelling that is located within the Inner Residential Zone is Townhouse 2. Townhouse 2's has a balcony that is more than 1 m above existing ground level.

This balcony is setback more than 3 m from the side boundary. Additionally, the balcony of Townhouse 2 is fully screened from Townhouse 1, which is the other dwelling on the site.

The proposal complies with the requirements of subclause (a) and (c).

Subclause (b) is not applicable, as the site has three frontages, and as such, does not have a rear boundary. Notwithstanding, in the alternative, and the site is considered to have a rear boundary, subclause (b) is met.

The acceptable solution (A1) is met.

A2

A window or glazed door, to a habitable room of a dwelling that has a floor level more than 1m above existing ground level, must satisfy (a), unless it satisfies (b):

(a) the window or glazed door:

(i) is to have a setback of not less than 3m from a side boundary;

(ii) is to have a setback of not less than 4m from a rear boundary;

(iii) if the dwelling is a multiple dwelling, is to be not less than 6m from a window or glazed door, to a habitable room, of another dwelling on the same site; and

(iv) if the dwelling is a multiple dwelling, is to be not less than 6m from the private open space of another dwelling on the same site.

(b) the window or glazed door:

(c) is to be offset, in the horizontal plane, not less than 1.5m from the edge of a window or glazed door, to a habitable room of another dwelling;

(d) is to have a sill height of not less than 1.7m above the floor level or have fixed obscure glazing extending to a height of at least 1.7m above the floor level; or

(e) is to have a permanently fixed external screen for the full length of the window or glazed door, to a height of not less than 1.7m above floor level, with a uniform transparency of not more than 25%.

P2

A window or glazed door, to a habitable room of dwelling, that has a floor level more than 1m above existing ground level, must be screened, or otherwise located or designed, to minimise direct views to:

(a) a window or glazed door, to a habitable room of another dwelling; and

(b) the private open space of another dwelling.

Planner Response

The only dwelling that is located within the Inner Residential Zone is Townhouse 2. This dwelling has habitable rooms that have a floor level of more than 1 m above existing ground level.

All windows or glazed doors of these habitable rooms that are more than 1 m above existing ground level are adequately screened by a solid wall, thus complying with subclause (b)(iii).

The acceptable solution (A2) is met.

A3

A shared driveway or parking space (excluding a parking space allocated to that dwelling) must be separated from a window, or glazed door, to a habitable room of a

P3

A shared driveway or parking space (excluding a parking space allocated to that dwelling), must be screened, or otherwise located or designed, to minimise unreasonable

multiple dwelling by a horizontal distance of not less than: (a) 2.5m; or (b) 1m if: (i) it is separated by a screen of not less than 1.7m in height; or (ii) the window, or glazed door, to a habitable room has a sill height of not less than 1.7m above the shared driveway or parking space, or has fixed obscure glazing extending to a height of not less than 1.7m above the floor level.	impact of vehicle noise or vehicle light intrusion to a habitable room of a multiple dwelling.

Planner Response

Part of the carpark extends into land zoned Inner Residential, albeit underground.

The carpark (including shared driveways and parking spaces) is separated from dwellings by more than 2.5 m.

The acceptable solution (A3) is met.

5.4.6 Frontage fences for all dwellings

An assessment against Clause 11.4.7 of the planning scheme is provided below in Table 8.

Table 8 - Assessment against the frontage fences standard for dwellings in the Inner Residential Zone.

Acceptable Solutions	Performance Criteria
Objective: The height and transparency of frontage fences: (a) provides adequate privacy and security for residents; (b) allows the potential for mutual passive surveillance between the road and the dwelling; and (c) is reasonably consistent with that on adjoining properties.	
A1 No Acceptable Solution.	**P1** A fence (including a free-standing wall) for a dwelling within 4.5m of a frontage must: (a) provide for security and privacy while allowing for passive surveillance of the road; and (b) be compatible with the height and transparency of fences in the street, having regard to: (i) the topography of the site; and (ii) traffic volumes on the adjoining road.

Planner Response

For this standard, there is no acceptable solution. The proposal must, therefore, be assessed against the corresponding performance criteria.

The existing frontage fence in the Inner Residential Zone is retained. There is, however, a new gate to the access ramp and courtyard that requires assessment. The proposed frontage fence in the Inner Residential Zone provides for adequate and security for residents, while providing mutual passive surveillance between the road and the dwellings.

The design of the frontage fence is sensitive to and compatible with the frontage fences of properties in South Street.

The performance criteria (P1) are satisfied.

5.4.7 Waste storage for multiple dwellings

An assessment against Clause 11.4.8 of the planning scheme is provided below in Table 9.

Table 9 - Assessment against the waste storage standard for multiple dwellings in the Inner Residential Zone.

Acceptable Solutions	Performance Criteria
Objective: To provide for the storage of waste and recycling bins for multiple dwellings.	
A1 A multiple dwelling must have a storage area, for waste and recycling bins, that is not less than 1.5m2 per dwelling and is within one of the following locations: (a) in an area for the exclusive use of each dwelling, excluding the area in front of the dwelling; or (b) in a common storage area with an impervious surface that: (i) has a setback of not less than 4.5m from a frontage; (ii) is not less than 5.5m from any dwelling; and (iii) is screened from the frontage and any dwelling by a wall to a height not less than 1.2m above the finished surface level of the storage area.	**P1** A multiple dwelling must have storage for waste and recycling bins that is: (a) capable of storing the number of bins required for the site; (b) screened from the frontage and any dwellings; and (c) if the storage area is a common storage area, separated from any dwellings to minimise impacts caused by odours and noise.
Planner Response Two dwellings are proposed at the site, requiring a waste storage area of 3 m^2. This application proposes a waste storage area of 25.6 m^2. The waste storage area is in a communal area in the property's basement, and has adequate storage space for general waste, recycling and FOGO bins. The waste storage area is setback more than 4.5 m from the frontage. The waste storage area is underground, is not visible from public space on Kelly Street, and is separated from any dwellings. The acceptable solution (A1) is met.	

5.5 Urban Mixed Use Zone

5.5.1 Zone purpose

Section 15.1.1 of the planning scheme provides for the Zone Purpose Statements for the Urban Mixed Use Zone. It states:

15.1.1.1 To provide for integration of residential, retail, community services and commercial activities in urban locations.

15.1.1.2 To encourage use and development at street level that generates activity and pedestrian movement through the area.

15.1.1.3 To provide for design that maximises the amenity at street level including considerations of microclimate, lighting, safety, and pedestrian connectivity.

15.1.1.4 To ensure that commercial use are consistent with the activity centre hierarchy.

15.1.1.5 To ensure development is accessible by public transport, walking and cycling.

15.1.1.6 To provide for a diversity of uses at densities responsive to the character of streetscapes, historic areas and buildings and which do not compromise the amenity of surrounding residential areas.

15.1.1.7 To encourage the retention of existing residential uses and the greater use of underutilised sites as well as the reuse and adaptation of existing buildings for uses with a scale appropriate to the site and area.

15.1.1.8 To ensure that the proportions, materials, openings and decoration of building facades contribute positively to the streetscape and reinforce the built environment of the area in which the site is situated.

15.1.1.9 To maintain an appropriate level of amenity for residential uses without unreasonable restriction or constraint on the nature and hours of commercial activities.

15.1.1.10 To ensure that retail shopping strips do not develop along major arterial roads within the zone.

Food Services and Residential are both permitted uses in the Urban Mixed Use Zone, and are deemed to satisfy the zone purpose.

General Retail and Hire is a discretionary use within the Urban Mixed Use Zone.

For this proposal, Visitor Accommodation is a discretionary use is the Urban Mixed Use Zone. Refer to Footnote 1 for detailed explanation.

In determining an application for a discretionary use, clause 8.10.2 of the planning scheme requires the Council to have regard to whether the proposal is consistent with the purpose of the zone.[10]

The assessment approach taken is to read and apply the zone purpose together to determine if the proposal is in 'harmony' with them, rather than assess the proposal against each individual statement. This is consistent with the practice established by the Tribunal across several decision, including in *R Brown and T Shaw v Launceston City Council and Bullock Consulting [2014] TASRMPAT 15*.

The proposed General Retail and Hire use, along with the permitted Food Services use, will assist in generating activity and pedestrian movement along Hampden Road. These retail and commercial uses are well integrated and are consistent with the scale of other commercial uses in the area, while offering a variety of uses in the small commercial strip of Hampden Road, and Battery Point more broadly. The activity centre hierarchy is not compromised by the commercial developments included in this proposal.

It is opined that the General Retail and Hire use will not impact residential amenity of the area, either through operating hours, noise, lighting, or vehicle movements. While a new General Retail and Hire use is proposed, Hampden Road would not be considered a retail shopping strip. Rather, it is a small collection of commercial businesses, such as a hairdresser, a post office, cafes, restaurants, and a community hall. The nature of Hampden Road is more akin to a village centre, rather than a retail strip, and the proposed mix of uses are considered to complement the nature of Hampden Road.

The proposed Visitor Accommodation use provides for additional commercial activity in the area, without unreasonably impacting the residential amenity of Battery Point. It is opined that the Visitor Accommodation use is compatible with the character and use of the area and will not distort the primary residential function of Battery Point.

[10] This position was affirmed by Blow CJ in Gillard v Launceston City Council [2024] TASSC 37 (19 July 2024).

The design is sympathetic to the heritage of the area, while providing for a diversity of uses. The design is also responsive to the character of Hampden Road streetscape and nearby buildings, while nearby residential amenity is considered and protected.

The proposal is easily accessed by public transport, by walking, or by cycling.

It is opined that the proposed development, specifically the General Retail and Hire and Visitor Accommodation uses are in harmony with the purpose for the Urban Mixed Use Zone.

There are no Local Area Objectives or Desired Future Character Statements for the Urban Mixed Use Zone.

5.5.2 Applicable standards

Not all standards in the Urban Mixed Use Zone are applicable to the project. Table 10 identifies the applicable standards. An assessment of the applicable standards is provided in the following sections.

Table 10 - Applicable standards in the Urban Mixed Use Zone.

Clause		Applicability
Use standards		
Clause 15.3.1 Non-residential use	A1/P1	Applicable.
	A2/P2	Applicable.
	A3/P3	Applicable.
	A4/P4	Applicable.
Development standards		
Clause 15.4.1 Building height	A1/P1	Applicable.
	A2/P2	Applicable.
Clause 15.4.2 Setback	A1/P1	Applicable.
	A2/P2	Applicable.
Clause 15.4.3 Design	A1/P1	Applicable
	A2/P2	Applicable.
Clause 15.4.4 Passive surveillance	A1/P1	Applicable.
Clause 15.4.5 Landscaping	A1/P1	Applicable.
	A2/P2	Applicable.
Clause 15.4.6 Outdoor storage areas	A1/P1	Not applicable. No outdoor storage areas are proposed.
Clause 15.4.7 Fencing	A1/P1	Not applicable. No fencing is proposed in the Urban Mixed Use Zone.

Clause 15.4.8 Residential amenity	A1/P1	Applicable.
	A2/P2	Applicable.
	A3/P3	Applicable.
	A4/P4	Not applicable. The development is not adjacent to a street that carries more than 6,000 vehicles per day.
Subdivision standards		
Clause 15.5 Subdivision		Not applicable. No subdivision is proposed

5.5.3 Non-residential use

An assessment against Clause 15.3.1 of the planning scheme is provided below in Table 11.

Table 11 - Assessment against the non-residential use standard in the Urban Mixed Use Zone.

Acceptable Solutions	Performance Criteria
Objective: To ensure that non-residential use does not unreasonably impact residential amenity.	
A1 Hours of operation must be within: (a) 7.00 am to 9.00 pm Mondays to Fridays inclusive; (b) 8.00 am to 6.00 pm Saturdays; (c) 9.00 am to 5.00 pm Sundays and Public Holidays; except for office and administrative tasks or visitor accommodation.	**P1** Hours of operation must not have an unreasonable impact upon the residential amenity through commercial vehicle movements, noise or other emissions that are unreasonable in their timing, duration or extent.
Planner Response The hours of operation of the café and retail will comply with the permitted standard. The operating hours do not apply to visitor accommodation. The acceptable solution (A1) is met.	
A2 Noise emissions measured at the boundary of the site must not exceed the following: (a) 55 dB(A) (LAeq) between the hours of 8.00 am to 6.00 pm; (b) 5dB(A) above the background (LA90) level or 40dB(A) (LAeq), whichever is the lower, between the hours of 6.00 pm to 8.00 am; (c) 65dB(A) (LAmax) at any time. Measurement of noise levels must be in accordance with the methods in the Tasmanian Noise Measurement Procedures Manual, issued by the Director of Environmental Management, including adjustment of noise levels for tonality and impulsiveness. Noise levels are to be averaged over a 15 minute time interval.	**P2** Noise emissions measured at the boundary of the site must not cause environmental harm.

Planner Response

The application is supported by noise assessment, prepared by NVC. NVC's assessment considers various noise sources, such as vehicle movements, mechanical plants, exhaust fans, and air conditioning units.

NVC's assessment concludes that the worst affected receivers would experience noise at a level of 42 dBA overnight. As such, discretion is invoked for this standard, and assessment is required against the corresponding performance criteria.

NVC identify, however, that the existing noise in the area is 47 dBA in the evening, and 45 dBA overnight. Therefore, any noise generated by the proposed development would be below existing background noise levels, and – in the opinion of NVC – unlikely to cause environmental harm to nearby residents.

The performance criteria (P2) are satisfied.

A3	P3
External lighting must comply with all of the following: (a) be turned off between 10:00 pm and 6:00 am, except for security lighting; (b) security lighting must be baffled to ensure they do not cause emission of light into adjoining private land.	External lighting must not adversely affect existing or future residential amenity, having regard to all of the following: (a) level of illumination and duration of lighting; (b) distance to habitable rooms in an adjacent dwelling.

Planner Response

All external lighting will be turned off between 10pm and 6am, except for security lighting. Any security lighting will be designed so light is not emitted onto adjoining private land.

The acceptable solution (A3) is met.

A4	P4
Commercial vehicle movements, (including loading and unloading and garbage removal) to or from a site must be limited to within the hours of: (a) 7.00 am to 5.00 pm Mondays to Fridays inclusive; (b) 8.00 am to 5.00 pm Saturdays; (c) 9.00 am to 12 noon Sundays and Public Holidays	Commercial vehicle movements, (including loading and unloading and garbage removal) must not result in unreasonable adverse impact upon residential amenity having regard to all of the following: (a) the time and duration of commercial vehicle movements; (b) the number and frequency of commercial vehicle movements; (c) the size of commercial vehicles involved; (d) the ability of the site to accommodate commercial vehicle turning movements, including the amount of reversing (including associated warning noise); (e) noise reducing structures between vehicle movement areas and dwellings; (f) the level of traffic on the road; (g) the potential for conflicts with other traffic.

Planner Response

All commercial vehicle movements will be limited to the permitted hours.

The acceptable solution (A4) is met.

5.5.4 Building height

An assessment against Clause 15.4.1 of the planning scheme is provided below in Table 12.

Table 12 - Assessment against the building height standard of the Urban Mixed Use Zone.

Acceptable Solutions	Performance Criteria
Objective:	

To ensure that building height contributes positively to the streetscape and does not result in unreasonable impact on residential amenity of land in the General Residential Zone or Inner Residential Zone.

A1	P1
Building height must be no more than: 10m	Building height must satisfy all of the following: (a) be consistent with any Desired Future Character Statements provided for the area; (b) be compatible with the scale of nearby buildings; (c) not unreasonably overshadow adjacent public space; (d) allow for a transition in height between adjoining buildings, where appropriate;

Planner Response

The maximum building height (measured above natural ground level) of the proposed development is 11.21 m. As such, discretion is invoked for this standard, and the proposed development must be assessed against the corresponding performance criteria as contained in P1.

There are no Desired Future Character Statements for the Urban Mixed Use Zone. Subclause (a) is not applicable.

In relation to subclause (b), consistent with the approach taken recently by the Tasmanian Civil and Administrative Tribunal, 'compatible' is taken to mean 'in harmony or broad correspondence with'[11][12].

The development is harmonious with the scale of development along the Hampden Road frontage – for example, the buildings at 47 Hampden Road (Da Angelo Ristorante) and 57-59 Hampden Road (Jackman and McRoss). Both buildings are two storeys and are constructed to their respective road frontages.

The development will not unreasonably overshadow adjacent public space. While 'public space' is not defined in the planning scheme, is taken to mean any land that the public can freely access. Reference is made to sun shadow diagrams prepared by JAWS. The diagrams show existing and proposed overshadowing to adjacent public spaces, such as the Hampden Road reservation. The public land near the site will not be unreasonably impacted by overshadowing generated by the proposed development, compared to existing overshadowing. Subclause (c) is satisfied.

The development is sensitively designed to allow for a transition in height between the taller elements of the development, transitioning through to the two storey townhouses, before meeting the adjoining single storey dwellings on Kelly Street and South Street. The design of the townhouses provide a visual bridge between the development and the single storey buildings on adjacent premises to the north of the site. Subclause (d) is satisfied.

The performance criteria (P1) are satisfied.

A2	P2
Building height within 10 m of a residential zone must be no more than 8.5 m.	Building height within 10 m of a residential zone must be compatible with the building height of existing buildings on adjoining lots in the residential zone.

Planner Response

As described above, the site is split-zoned, with part of the site in the Urban Mixed Use Zone and part of the site within the Inner Residential Zone.

As shown on the elevations, the maximum height of the proposed three-storey apartment building is approximately 10 m above natural ground level. At this point, the development is within 10 m of the Inner Residential Zoned part of the site. As such, discretion is invoked for this standard, and the proposal must be assessed against the corresponding performance criteria.

The performance criteria require assessment against the impacts on adjoining lots within the residential zone. For this site, these are the properties at 46 Kelly Street and 41 South Street.

Again, 'compatible' is taken to mean 'in harmony or broad correspondence with'. There is a clear transition in the height of the development proposed in the Urban Mixed Use Zone, to the development in the Inner Residential

[11] Wandoo Pty Ltd v Hobart City Council and 201 Macquarie Street Pty Ltd [2022] TASCAT 04

[12] B Rees v Hobart City Council and LXN Architecture & Consulting and Anor [2021] TASRMPAT 30

Zone. This combined with a minimum side boundary setback of 3.15 m to 46 Kelly Street and the existing setback of 43 South Street to 41 South Street being retained, results in the proposed height being compatible with the building height of existing buildings on adjoining lots in the residential zone.

The performance criteria (P2) are satisfied.

5.5.5 Setback

An assessment against Clause 15.4.2 of the planning scheme is provided below in Table 13.

Table 13 - Assessment against the setback standard of the Urban Mixed Use Zone.

Acceptable Solutions	Performance Criteria
Objective: To ensure that building setback contributes positively to the streetscape and does not result in unreasonable impact on residential amenity of land in a residential zone.	
A1 Building setback from frontage must be parallel to the frontage and must be no more than: 1m from the median street setback of all existing buildings on the same side of the street within 100m of the site.	**P1** Building setback from frontage must satisfy all of the following: (a) be consistent with any Desired Future Character Statements provided for the area; (b) be compatible with the setback of adjoining buildings, generally maintaining a continuous building line if evident in the streetscape; (c) enhance the characteristics of the site, adjoining lots and the streetscape; (d) provide for small variations in building alignment only where appropriate to break up long building facades, provided that no potential concealment or entrapment opportunity is created; (e) provide for large variations in building alignment only where appropriate to provide for a forecourt for space for public use, such as outdoor dining or landscaping, provided the that no potential concealment or entrapment opportunity is created and the forecourt is afforded very good passive surveillance.

Planner Response

All new building setbacks in the Urban Mixed Use Zone are constructed parallel to the boundary and within 1 m of the median street setback for all existing buildings on the same side of the street. The exception is Townhouse 1, which has a greater setback from Kelly Street due to the need for a vehicular access ramp to the underground car park.

For the remainder of the site, the existing setbacks for 43 South Street are maintained. Along the western side of South Street, most buildings are setback close to the property boundary, having a median frontage setback of 1 m, and a mean frontage setback of 1.5 m.

The existing frontage setback for 43 South Street is 4.6 m.

There are no Desired Future Character Statements for the area.

The proposed building setbacks are compatible with the setbacks of adjoining buildings, maintaining the continuous building line that is evident in the street.

The site will be enhanced by the development and will improve the overall characteristics of the streetscape and of adjoining lots.

The proposal provides for small variances in building alignment, while maintaining consistency with the overall setbacks in the street. No opportunities for concealment or entrapment are created.

The performance criteria (P1) are satisfied.

A2 Building setback from the General Residential or Inner Residential Zone must be no less than: (a) 3 m; or (b) half the height of the wall, (c) whichever is the greater.	**P2** Building setback from the General Residential or Inner Residential Zone must be sufficient to prevent unreasonable adverse impacts on residential amenity by: (a) overshadowing and reduction of sunlight to habitable rooms and private open space on adjoining lots to less than 3 hours between 9.00 am and 5.00 pm on June 21 or further decrease sunlight hours if already less than 3 hours; (b) overlooking and loss of privacy; (c) visual impact when viewed from adjoining lots, taking into account aspect and slope.

Planner Response

The site is split zoned, with part of the site being within the Inner Residential Zone. As such, discretion is invoked for this standard, and assessment is required against the corresponding performance criteria.

The development is generally to the south of dwellings on adjoining lots that are located within the Inner Residential Zone, being 41 South Street and 46 Kelly Street. There will be no significant or unreasonable impact on those dwellings (including their private open space) from overshadowing or reduction of sunlight due to the location of the development being south of these dwellings.

The separation between the development in the Urban Mixed Use Zone and those dwellings on adjoining lots is substantial. For example, Townhouse 1 is 3.15 m from the adjoining property, which is in the Inner Residential Zone, and Unit 2 is approximately 12 m from adjoining properties within the Inner Residential Zone. Therefore, there will be no unreasonable impacts in respect of overlooking or loss of privacy. The design of the development has building heights stepping down towards the adjoining dwellings, with the tallest elements of the development in the centre of the site. This, combined with the separation, limits any visual impacts of the proposal when viewed from adjoining lots.

The performance criteria (P2) are satisfied.

5.5.6 Design

An assessment against Clause 15.4.3 of the planning scheme is provided below in Table 14.

Table 14 - Assessment against the design standard of the Urban Mixed Use Zone.

Acceptable Solutions	Performance Criteria
Objective: To ensure that building design for non-residential uses contributes positively to the streetscape, the amenity and safety of the public and adjoining land in a residential zone.	
A1 Building design for non-residential use must comply with all of the following: (a) provide the main pedestrian entrance to the building so that it is clearly visible from the road or publicly accessible areas on the site; (b) for new building or alterations to an existing facade provide windows and door openings at ground floor level in the front façade no less than 40% of the surface area of the ground floor level facade ; (c) for new building or alterations to an existing facade ensure any single expanse of blank wall in the ground level front façade and facades facing other public spaces is not greater than 30% of the length of the facade;	**P1** Building design must enhance the streetscape by satisfying all of the following: (a) provide the main access to the building in a way that addresses the street or other public space boundary; (b) provide windows in the front façade in a way that enhances the streetscape and provides for passive surveillance of public spaces; (c) treat large expanses of blank wall in the front façade and facing other public space boundaries with architectural detail or public art so as to contribute positively to the streetscape and public space; (d) ensure the visual impact of mechanical plant and miscellaneous equipment, such as heat pumps, air

(d) screen mechanical plant and miscellaneous equipment such as heat pumps, air conditioning units, switchboards, hot water units or similar from view from the street and other public spaces; (e) incorporate roof-top service infrastructure, including service plants and lift structures, within the design of the roof; (f) provide awnings over the public footpath if existing on the site or on adjoining lots; (g) not include security shutters over windows or doors with a frontage to a street or public place.	conditioning units, switchboards, hot water units or similar, is insignificant when viewed from the street; (e) ensure roof-top service infrastructure, including service plants and lift structures, is screened so as to have insignificant visual impact; (f) not provide awnings over the public footpath only if there is no benefit to the streetscape or pedestrian amenity or if not possible due to physical constraints; (g) only provide shutters where essential for the security of the premises and other alternatives for ensuring security are not feasible; (h) be consistent with any Desired Future Character Statements provided for the area.

Planner Response

Due to the glazing detail proposed in response to the heritage characteristics of the precinct, the building design for non-residential uses (i.e., food services, general retail and hire, and visitor accommodation) does not meet the acceptable solution. The proposal invokes discretion for this standard and therefore requires assessment against the corresponding performance criteria.

The accesses for the property address the street. This includes the accesses to the café and retail uses, but also the visitor accommodation and dwellings on the site.

Windows are included on the façade, enhancing the appearance of the building. The design of the windows clearly differentiates between the café and retail uses, and the visitor accommodation and residential uses.

The design incorporates architectural detail on longer expanses of walls, contributing positively to the streetscape. All mechanical plant and roof infrastructure is also screened from public spaces, limiting the visual impact.

The provision of awnings would be incompatible with the Hampden Road streetscape, noting the important heritage values of the area.

No shutters are proposed.

There are no Desired Future Character Statements for the area.

The performance criteria (P1) are satisfied.

A2	P2
Walls of a building facing the General Residential Zone or Inner Residential Zone must be coloured using colours with a light reflectance value not greater than 40 percent.	No performance criteria.

Planner Response

All walls facing the Inner Residential Zone will be coloured using colours and materials that have a light reflectance value of less than 40 percent.

The acceptable solution (A2) is met.

5.5.7 Passive surveillance

An assessment against Clause 15.4.4 of the planning scheme is provided below in Table 15.

Table 15 - Assessment against the passive surveillance standard of the Urban Mixed Use Zone.

Acceptable Solutions	Performance Criteria
Objective: To ensure that building design for non-residential uses provides for the safety of the public.	
A1	**P1**

Building design for non-residential uses must comply with all of the following: (a) provide the main pedestrian entrance to the building so that it is clearly visible from the road or publicly accessible areas on the site; (b) for new buildings or alterations to an existing facade provide windows and door openings at ground floor level in the front façade which amount to no less than 40 % of the surface area of the ground floor level facade; (c) for new buildings or alterations to an existing facade provide windows and door openings at ground floor level in the façade of any wall which faces a public space or a park which amount to no less than 30% of the surface area of the ground floor level facade; (d) avoid creating entrapment spaces around the building site, such as concealed alcoves near public spaces; (e) provide external lighting to illuminate car parking areas and pathways; (f) provide well-lit public access at the ground floor level from any external car park.	Building design must provide for passive surveillance of public spaces by satisfying all of the following: (a) provide the main entrance or entrances to a building so that they are clearly visible from nearby buildings and public spaces; (b) locate windows to adequately overlook the street and adjoining public spaces; (c) incorporate shop front windows and doors for ground floor shops and offices, so that pedestrians can see into the building and vice versa; (d) locate external lighting to illuminate any entrapment spaces around the building site; (e) provide external lighting to illuminate car parking areas and pathways; (f) design and locate public access to provide high visibility for users and provide clear sight lines between the entrance and adjacent properties and public spaces; (g) provide for sight lines to other buildings and public spaces.

Planner Response

Due to the glazing detail proposed in response to the heritage characteristics of the precinct, the building design for non-residential uses (i.e., food services, general retail and hire, and visitor accommodation) does not meet the acceptable solution. As such, discretion is invoked for this standard, and the application must be assessed against the corresponding performance criteria.

The building design provides for high levels of passive surveillance of public spaces, namely Hampden Road, Kelly Street and South Street road reservations.

The main entrance of the building is clearly visible from Hampden Road, and windows on all frontages of the building provide for suitable overlooking of public space without impeding privacy.

The performance criteria (P1) are satisfied.

5.5.8 Landscaping

An assessment against Clause 15.4.5 of the planning scheme is provided below in Table 16.

Table 16 - Assessment against the landscaping standard of the Urban Mixed Use Zone.

Acceptable Solutions	Performance Criteria
Objective: To ensure that a safe and attractive landscaping treatment enhances the appearance of the site and if relevant provides a visual break from land in a residential zone.	
A1 Landscaping along the frontage of a site is not required if all of the following apply: (a) the building extends across the width of the frontage, (except for vehicular access ways); (b) the building has a setback from the frontage of no more than 1 m.	**P1** Landscaping must be provided to satisfy all of the following: (a) enhance the appearance of the development; (b) provide a range of plant height and forms to create diversity, interest and amenity; (c) not create concealed entrapment spaces; (d) be consistent with any Desired Future Character Statements provided for the area.

Planner Response

Within the Urban Mixed Use Zone, the design of the buildings largely comply with the acceptable solution, as buildings are setback less than 1 m from the frontage. However, the pedestrian entry fronting Hampden Road is not landscaped. As such, discretion is invoked for this standard, and the application must be assessed against the corresponding performance criteria.

The design of the development includes landscaping throughout. This includes landscaping along frontages, such as the South Street frontage and Kelly Street, and includes a mix of existing and new plantings. There is also an internal courtyard space, which also includes significant landscaping. Established street trees are retained.

The landscaping proposed creates interest and amenity and enhances the appearance of the development. Landscaping proposed is also in keeping with landscaping provided on nearby properties.

No entrapment spaces are created through the use of landscaping.

There are no Desired Future Character Statements for the area.

The performance criteria (P1) are satisfied.

A2	P2
Along a boundary with the General Residential Zone or Inner Residential Zone landscaping must be provided for a depth no less than: 2 m.	Along a boundary with the General Residential Zone or Inner Residential Zone landscaping or a building design solution must be provided to avoid unreasonable adverse impact on the visual amenity of adjoining land in the General Residential Zone or Inner Residential Zone, having regard to the characteristics of the site and the characteristics of the adjoining residentially-zoned land.

Planner Response

The site is split zoned, with a portion of the site being within the Inner Residential Zone and the acceptable solution cannot be met in this instance. Discretion is invoked for this standard, and the application must be assessed against the corresponding performance criteria.

Adjoining properties within the Inner Residential Zone are 41 South Street and 46 Kelly Street. Along the extent of the northern boundary of the site that adjoins these two properties, landscaping is proposed. This landscaping is variable in width but includes a variety of plantings. The landscaping has an amenity benefit to the occupants of the development but also helps mitigate against any visual impact issues to adjoining properties. The provision of landscaping is sympathetic to the character of the area, and enhances the appearance of the development, particularly when viewed from adjoining residentially-zoned land.

The performance criterion requires consideration of adjoining land only, and not the parts of the site that are within the Inner Residential Zone. Nevertheless, an assessment of any potential on-site impacts has been undertaken.

Looking at the site itself, the design of the development overall, through building design and the use of landscaping, provides for clear delineation between uses and individual units. The design (including the use of landscaping) minimises the visual impact of the development on the parts of the site that are zoned Inner Residential. This is primarily achieved by having the living spaces and the private open space of the townhouses face towards the north.

The design ensures that there are no unreasonable adverse impacts on the visual amenity of land in a residential zone.

The performance criteria (P2) are satisfied.

5.5.9 Residential amenity

An assessment against Clause 15.4.8 of the planning scheme is provided below in Table 17.

Table 17 - Assessment against the residential amenity standard of the Urban Mixed Use Zone.

Acceptable Solutions	Performance Criteria
Objective:	
To ensure that buildings for residential use provide reasonable levels of residential amenity and safety	
A1	**P1**

A dwelling must have at least one habitable room window (other than a bedroom) facing between 30 degrees west of north and 30 degrees east of north.	A dwelling must be sited and designed to optimise sunlight to at least one habitable room (other than a bedroom).

Planner Response

Townhouse 1 and Townhouse 2 are dwellings that are fully or partially within the Urban Mixed Use Zone. Each of these dwellings have a window/glazed door out to the private open space of that unit. This window faces between 30 degrees west and 30 degrees east of north.

The acceptable solution (A1) is met.

A2 The potential for direct overlooking from windows of habitable rooms with a finished surface or floor level more than 1m above natural ground level on one lot to the windows of habitable rooms, balconies, decks and roof gardens on adjacent lots must be avoided or minimised by complying with any of the following: (a) have a side boundary setback no less than 3 m; (b) be offset no less than 1.5 m from the windows of habitable rooms on adjacent lots where on the same horizontal lane; (c) have a window seal height no less than 1.5 m.	**P2** The potential for direct overlooking from windows of habitable rooms with a finished surface or floor level more than 1m above natural ground level on one lot to the windows of habitable rooms, balconies, decks and roof gardens on adjacent lots must be avoided or minimised through their separation and off-set or by use of solid or translucent screening.

Planner Response

As clause 15.4.8 relates to residential amenity, it is interpreted that it only applies to proposed residential uses, and not to other uses, including visitor accommodation.

Townhouse 1 and a small portion of Townhouse 2 are located within the Urban Mixed Use Zone and have windows on a floor level that is more than 1 m above natural ground level. Both townhouses are setback more than 3 m from the property boundary.

The acceptable solution (A2) is met.

A3 Outdoor living space must be provided for a dwelling that complies with all of the following: (a) be no less than 10 m^2; (b) have a width no less than 2 m.	**P3** Outdoor living space must be provided for a dwelling with dimensions sufficient for the projected requirements of the occupants.

Planner Response

Townhouse 1 and Townhouse 2 are dwellings that are fully or partially within the Urban Mixed Use Zone. Townhouse 1 and Townhouse 2 each have an area of private open space measuring 16.35 m^2 and 16.58 m^2 respectively The width of each of the areas of private open space is more than 2 m.

The acceptable solution (A3) is met.

6 Code assessment

6.1 Applicable codes

The following codes apply to the project, and have been considered below:

- Potentially Contaminated Land Code
- Road and Railway Asset Code
- Parking and Access Code
- Stormwater Management Code
- Historic Heritage Code

6.2 Potentially Contaminated Land Code

6.2.1 Application of the code

This code applies to development on potentially contaminated land.

'Potentially contaminated land' is defined in clause E2.3 of the planning scheme as:

> *Land that is, or adjoins, land that the applicant or the planning authority:*
>
> *(a) knows to have been used for a potentially contaminating activity by reference to: –*
>
> *(i) a notice issued in accordance with Part 5A of the Environmental Management and Pollution Control Act 1994; or*
>
> *(ii) a previous permit; or*
>
> *(b) ought reasonably to have known was used for a potentially contaminating activity.*

The site is adjacent to 47 Hampden Road, which Council has identified as being potentially contaminated. As such, the code applies to the project.

6.2.2 Applicable standards

Not all standards in the Potentially Contaminated Land Code are applicable to the project. Table 18 identifies the applicable standards. An assessment of the applicable standards is provided in the following sections.

Table 18 - Applicable standards in the Potentially Contaminated Land Code.

Clause		Applicability
Use standards		
Clause E2.5 Use standards	A1/P1	Applicable.
Development standards		
Clause E2.6.1 Subdivision	A1/P1	Not applicable. No subdivision is proposed.
Clause E2.6.2 Excavation	A1/P1	Applicable.

6.2.3 Use standards

An assessment against Clause E2.5 of the planning scheme is provided in Table 19.

Table 19 - Assessment against the use standards in the Potentially Contaminated Land Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that potentially contaminated land is suitable for the intended use	
A1 The Director, or a person approved by the Director for the purpose of this Code: (a) certifies that the land is suitable for the intended use; or (b) approves a plan to manage contamination and associated risk to human health or the environment that will ensure the land is suitable for the intended use.	**P1** Land is suitable for the intended use, having regard to: (a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or (b) an environmental site assessment that demonstrates that the level of contamination does not present a risk to human health or the environment; or (c) a plan to manage contamination and associated risk to human health or the environment that includes: (i) an environmental site assessment; (ii) any specific remediation and protection measures required to be implemented before any use commences; and (iii) a statement that the land is suitable for the intended use.
Planner Response The proposal has not been assessed by the Director of the Environment Protection Authority. As such, the application must be assessed against the performance criteria contained in P1. The application is supported by an environmental site assessment, prepared by Geo-Environmental Solutions. The environmental site assessment concludes that the site will be suitable for the proposed use without adversely impacting on human health or the environment, subject to the implementation of a suitable construction management plan and soil and water management plan. The performance criteria (P1) are satisfied.	

6.2.4 Excavation

An assessment against Clause E2.6.2 of the planning scheme is provided below in Table 20.

Table 20 - Assessment against the excavation standard of the Potentially Contaminated Land Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that works involving excavation of potentially contaminated land does not adversely impact on human health or the environment.	
A1	**P1**
No acceptable solution.	Excavation does not adversely impact on health and the environment, having regard to: (a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or (b) a plan to manage contamination and associated risk to human health and the environment that includes: (i) an environmental site assessment; (ii) any specific remediation and protection measures required to be implemented before excavation commences; and (iii) a statement that the excavation does not adversely impact on human health or the environment.
Planner Response	
For this standard, there is no acceptable solution. The project must be assessed against the performance criteria contained in P1. The environmental site assessment states that the site will be suitable for the proposed use without adversely impacting on human health or the environment, subject to the implementation of a suitable construction management plan and soil and water management plan. The performance criteria (P1) are satisfied.	

6.3 Road and Railway Assets Code

6.3.1 Application of the code

The Road and Railway Assets Code applies to use or development that requires a new vehicle crossing, junction or level crossing.

As a new vehicle crossing is proposed in Kelly Street, albeit in a similar location to an existing vehicle crossing, the code applies.

6.3.2 Applicable standards

Not all standards in the Road and Railway Assets Code are applicable to the project. Table 21 identifies the applicable standards. An assessment of the applicable standards is provided in the following sections.

Table 21 - Applicable standards in the Road and Railway Assets Code.

Clause		Applicability
Use standards		
Clause E5.5.1 Existing road accesses and junctions	A1/P1	Not applicable. The site is not adjacent to a Category 1 or 2 road.

Clause		Applicability
	A2/P2	Not applicable. The site is not adjacent to a road with a speed limit of more than 60 km/h.
	A3/P3	Applicable.
Clause E5.5.2 Exiting level crossings	A1/P1	Not applicable. The project is not located near rail infrastructure.
Development standards		
Clause E5.6.1 Development adjacent to roads and railways	A1.1 & A1.2/P1	Applicable.
Clause E5.6.2 Road accesses and junctions	A1/P1	Not applicable. The site is not adjacent to a road with a speed limit of more than 60 km/h.
	A2/P2	Applicable.
Clause E5.6.3 New level crossings	A1/P1	Not applicable. The project is not located near rail infrastructure.
Clause E5.6.4 Sight distance at accesses, junctions and level crossings	A1/P1	Applicable.

6.3.3 Existing road accesses and junctions

An assessment against Clause E5.5.1 of the planning scheme is provided below in Table 22.

Table 22 - Assessment against the existing road accesses standard of the Road and Railway Assets Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that the safety and efficiency of roads is not reduced by increased use of existing accesses and junctions.	
A3 The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is the greater.	**P3** Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to: (a) the increase in traffic caused by the use; (b) the nature of the traffic generated by the use; (c) the nature and efficiency of the access or the junction; (d) the nature and category of the road; (e) the speed limit and traffic flow of the road; (f) any alternative access to a road; (g) the need for the use; (h) any traffic impact assessment; and (i) any written advice received from the road authority.

Planner Response

The application is supported by a traffic impact assessment, prepared by Midson Traffic. The traffic impact assessment states that existing traffic generation for the site is unknown, but the number of vehicle movements generated by the proposal will exceed those specified in the acceptable solution, compared to existing conditions.

The traffic impact assessment assesses a variety of factors, including increase in traffic, nature of vehicle movements, the nature of the road and junctions, speed limits, alternatives for access, and the need for the access.

The traffic impact assessment concludes that the performance criteria is satisfied – that is, the increase in vehicle traffic and an existing access or junction is safe and does not unreasonably impact upon the efficiency of the road.

The performance criteria (P3) are satisfied.

6.3.4 Development adjacent to roads and railways

An assessment against Clause E5.6.1 of the planning scheme is provided below in Table 23.

Table 23 - Assessment against the development standard of the Road and Railway Assets Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that development adjacent to category 1 or category 2 roads or the rail network: (a) ensures the safe and efficient operation of roads and the rail network; (b) allows for future road and rail widening, realignment and upgrading; and (c) is located to minimise adverse effects of noise, vibration, light and air emissions from roads and the rail network.	
A1 Except as provided in A1.2, the following development must be located at least 50m from the rail network, or a category 1 road or category 2 road, in an area subject to a speed limit of more than 60km/h: (a) new buildings; (b) other road or earth works; and (c) building envelopes on new lots.	**P1** The location of development, from the rail network, or a category 1 road or category 2 road in an area subject to a speed limit of more than 60km/h, must be safe and not unreasonably impact on the efficiency of the road or amenity of sensitive uses, having regard to: (a) the proposed setback; (b) the existing setback of buildings on the site; (c) the frequency of use of the rail network; (d) the speed limit and traffic volume of the road; (e) any noise, vibration, light and air emissions from the rail network or road; (f) the nature of the road; (g) the nature of the development; (h) the need for the development; (i) any traffic impact assessment; (j) any recommendations from a suitably qualified person for mitigation of noise, if for a habitable building for a sensitive use; and (k) any written advice received from the rail or road authority.
A1.2 Buildings, may be: (a) located within a row of existing buildings and setback no closer than the immediately adjacent building; or (b) an extension which extends no closer than: (i) the existing building; or (ii) an immediately adjacent building.	

Planner Response

The proposed buildings are located more than 50 m from the rail network or a Category 1 or 2 road.

The acceptable solution (A1.1) is met.

6.3.5 Road accesses and junctions

An assessment against Clause E5.6.2 of the planning scheme is provided below in Table 24.

Table 24 - Assessment against the road accesses and junctions standard of the Road and Railway Assets Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions.	
A2	**P2**
No more than one access providing both entry and exit, or two accesses providing separate entry and exit, to roads in an area subject to a speed limit of 60km/h or less.	For roads in an area subject to a speed limit of 60km/h or less, accesses and junctions must be safe and not unreasonably impact on the efficiency of the road, having regard to: (a) the nature and frequency of the traffic generated by the use; (b) the nature of the road; (c) the speed limit and traffic flow of the road; (d) any alternative access to a road; (e) the need for the access or junction; (f) any traffic impact assessment; and (g) any written advice received from the road authority.
Planner Response	
For this proposal, one access is provided from Kelly Street that includes both entry and exit from the site. The acceptable solution (A2) is met.	

6.3.6 Sight distance at accesses, junctions and level crossings

An assessment against Clause E5.6.4 of the planning scheme is provided below in Table 25.

Table 25 - Assessment against the sight distance standard of the Road and Railway Assets Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that accesses, junctions and level crossings provide sufficient sight distance between vehicles and between vehicles and trains to enable safe movement of traffic.	
A1	**P1**
Sight distances at: (a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1; and (b) rail level crossings must comply with AS1742.7 Manual of uniform traffic control devices - Railway crossings, Standards Association of Australia.	The design, layout and location of an access, junction or rail level crossing must provide adequate sight distances to ensure the safe movement of vehicles, having regard to: (a) the nature and frequency of the traffic generated by the use; (b) the frequency of use of the road or rail network; (c) any alternative access; (d) the need for the access, junction or level crossing; (e) any traffic impact assessment; (f) any measures to improve or maintain sight distance; and (g) any written advice received from the road or rail authority.
Planner Response	

The application is supported by a traffic impact assessment, prepared by Midson Traffic.

The traffic impact assessment demonstrates that sight distances comply with the requirements of the Safe Intersection Sight Distance included in Table E5.1.

The acceptable solution (A1) is met.

6.4 Parking and Access Code

6.4.1 Application of the code

The code applies to all use and development

6.4.2 Applicable standards

Not all standards in the Parking and Access Code are applicable to the project. Table 26 identifies the applicable standards. An assessment of the applicable standards is provided in the following sections.

Table 26 - Applicable standards in the Parking and Access Code.

Clause		Applicability
Use standards		
Clause E6.6.1 Number of Car Parking Spaces	A1/P1	Applicable.
Clause E6.6.2 Number of Accessible Car Parking Spaces for People with a Disability	A1/P1	Applicable.
Clause E6.6.3 Number of Motorcycle Parking Spaces	A1/P1	Applicable.
Clause E6.6.4 Number of Bicycle Parking Spaces	A1/P1	Applicable.
Clause E6.6.5 Number of Car Parking Spaces - Central Business Zone	A1/P1	Not applicable. The site is not within the Central Business Zone.
Clause E6.6.6 Number of Car Parking Spaces - General and Local Business Zones	A1/P1	Not applicable. The site is not within the General Business or Local Business Zone.
Clause E6.6.7 Number of Car Parking Spaces - Particular Purpose Zone 4	A1/P1	Not applicable. The site is not within Particular Purpose Zone 4.
Clause E6.6.8 Number of Car Parking Spaces - Particular Purpose Zone 8	A1/P1	Not applicable. The site is not within Particular Purpose Zone 8.
Clause E6.6.9 Number of Car Parking Spaces - Particular Purpose Zone 10	A1/P1	Not applicable. The site is not within Particular Purpose Zone 10.
Clause E6.6.10 Number of Car Parking Spaces - Residential Zones	A1/P1	Not applicable. While Food Services and General Retail and Hire use classes are proposed, they are not proposed within the Inner Residential Zone.

Clause		Applicability
Development standards		
Clause E6.7.1 Number of Vehicular Accesses	A1/P1	Applicable.
	A2/P2	Not applicable. The site is not within the Central Business Zone or Particular Purpose Zone 10.
	A3/P3	Not applicable. The site is not within Particular Purpose Zone 4.
Clause E6.7.2 Design of Vehicular Accesses	A1/P1	Applicable.
Clause E6.7.3 Vehicular Passing Areas Along an Access	A1/P1	Applicable.
Clause E6.7.4 On-Site Turning	A1/P1	Not applicable. Kelly Street carries less than 6000 vehicles per day[13].
Clause E6.7.5 Layout of Parking Areas	A1/P1	Applicable.
Clause E6.7.6 Surface Treatment of Parking Areas	A1/P1	Applicable.
Clause E6.7.7 Lighting of Parking Areas	A1/P1	Applicable.
Clause E6.7.8 Landscaping of Parking Areas	A1/P1	Applicable.
Clause E6.7.9 Design of Motorcycle Parking Areas	A1/P1	Applicable.
Clause E6.7.10 Design of Bicycle Parking Facilities	A1/P1	Applicable.
	A2/P2	Applicable.
Clause E6.7.11 Bicycle End of Trip Facilities	A1/P1	Not applicable. The proposal does not require more than five bicycle parking spaces for employees.
Clause E6.7.12 Siting of Car Parking	A1/P1	Applicable.
		Not applicable. The site is not within the Central Business Zone.
Clause E6.7.13 Facilities for Commercial Vehicles	A1/P1	Applicable.
Clause E6.7.14 Access to a Road	A1/P1	Applicable.

[13] Although on-site turning is not required, it is provided.

Clause		Applicability
Clause E6.7.15 Access to Niree Lane Sandy Bay	A1/P1	Not applicable. The site is not located near Niree Lane.

6.4.3 Number of Car Parking Spaces

An assessment against Clause E6.6.1 of the planning scheme is provided below in Table 49.

Table 27 - Assessment against the number of car parking spaces standard in the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that: (a) there is enough car parking to meet the reasonable needs of all users of a use or development, taking into account the level of parking available on or outside of the land and the access afforded by other modes of transport. (b) a use or development does not detract from the amenity of users or the locality by: (i) preventing regular parking overspill; (ii) minimising the impact of car parking on heritage and local character.	
A1 The number of on-site car parking spaces must be: (a) no less than and no greater than the number specified in Table E6.1; except if: (i) the site is subject to a parking plan for the area adopted by Council, in which case parking provision (spaces or cash-in-lieu) must be in accordance with that plan; (ii) the site is subject to clauses E6.6.5, E6.6.6, E6.6.7, E6.6.8, E6.6.9 or E6.6.10 of this planning scheme.	**P1** The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following: (a) car parking demand; (b) the availability of on-street and public car parking in the locality; (c) the availability and frequency of public transport within a 400m walking distance of the site; (d) the availability and likely use of other modes of transport; (e) the availability and suitability of alternative arrangements for car parking provision; (f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces; (g) any car parking deficiency or surplus associated with the existing use of the land; (h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site; (i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity; (j) any verified prior payment of a financial contribution in lieu of parking for the land; (k) any relevant parking plan for the area adopted by Council;

	(l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code; (m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code.

Planner Response

The application proposes 37 car parking spaces, as well as 4 motorcycle parking spaces. The application is supported by a traffic impact assessment, prepared by Midson Traffic.

The traffic impact assessment assesses the proposed provision of car parking against the performance criteria and concludes the development meets the requirements of the performance criteria, noting that the residential and visitor accommodation components of the development is satisfied with on-site parking. There is also on-street, car parking near the subject site.

The performance criteria (P1) are satisfied.

6.4.4 Number of Accessible Car Parking Spaces for People with a Disability

An assessment against Clause E6.6.2 of the planning scheme is provided below in Table 28.

Table 28 - Assessment against the number of accessible car parking spaces standard in the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that a use or development provides sufficient accessible car parking for people with a disability.	
A1	**P1**
Car parking spaces provided for people with a disability must: (a) satisfy the relevant provisions of the Building Code of Australia; (b) be incorporated into the overall car park design; (c) be located as close as practicable to the building entrance.	No Performance Criteria.

Planner Response

No disability car parking spaces are provided for people with a disability in the underground car park. The supporting traffic impact assessment, prepared by Midson Traffic, concludes that the requirement under the Building Code of Australia for provision of car parking spaces for people with a disability is 0.

Notwithstanding, there is currently a dedicated disability car parking space located on Kelly Street, near the corner of Hampden Road. This proposal does not affect existing car parking arrangements within the road reserve. This disability car parking space is located closer to the entrance of both the café and shop than the proposed underground car park.

The acceptable solution (A1) is met.

6.4.5 Number of Motorcycle Parking Spaces

An assessment against Clause E6.6.3 of the planning scheme is provided below in Table 29.

Table 29 - Assessment against the motorcycle parking spaces standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria

Objective

To ensure enough motorcycle parking is provided to meet the needs of likely users of a use or development.

A1	P1
The number of on-site motorcycle parking spaces provided must be at a rate of 1 space to each 20 car parking spaces after the first 19 car parking spaces except if bulky goods sales, (rounded to the nearest whole number). Where an existing use or development is extended or intensified, the additional number of motorcycle parking spaces provided must be calculated on the amount of extension or intensification, provided the existing number of motorcycle parking spaces is not reduced.	The number of on-site motorcycle parking spaces must be sufficient to meet the needs of likely users having regard to all of the following, as appropriate: (a) motorcycle parking demand; (b) the availability of on-street and public motorcycle parking in the locality; (c) the availability and likely use of other modes of transport; (d) the availability and suitability of alternative arrangements for motorcycle parking provision.

Planner Response

The acceptable solution requires provision of one dedicated motorcycle parking space. Four motorcycle parking spaces are proposed in the underground car park.

The acceptable solution (A1) is met.

6.4.6 Number of Bicycle Parking Spaces

An assessment against Clause E6.6.4 of the planning scheme is provided below in Table 30.

Table 30 - Assessment against the bicycle parking spaces standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria

Objective

To ensure enough bicycle parking is provided to meet the needs of likely users and by so doing to encourage cycling as a healthy and environmentally friendly mode of transport for commuter, shopping and recreational trips.

A1	P1
The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.	The number of on-site bicycle parking spaces provided must have regard to all of the following: (a) the nature of the use and its operations; (b) the location of the use and its accessibility by cyclists; (c) the balance of the potential need of both those working on a site and clients or other visitors coming to the site.

Planner Response

Bicycle parking is required by Table E6.2 for a restaurant. Specifically, one bicycle parking space is required for each 100 m^2 of floor area available to the public. The total area of the café is 125 m^2. While the detailed layout of the café has not yet been prepared, the floor area to the public is expected to be approx. 100 m^2.

Bicycle parking is provided in the underground car park, but it is anticipated that this will be exclusively for residents of the dwellings and visitors to the accommodation, limited only to the use of the units and townhouses. Further, the location of this bicycle parking area is not conveniently located for café patrons. As such, no on-site bicycle parking is provided for the café or its patrons. The application invokes discretion for this standard, and requires assessment against the corresponding performance criteria.

Should Council see fit, it may consider imposing a condition on a permit to require the developer to construct a bicycle rack in Council's road reserve. While an appropriate location would need to be determined by the Council in its capacity as Road Authority, it is anticipated that it would likely be located near the café. Although the bicycle

rack would be conveniently located to the café, it would also be available to be used by the public visiting Battery Point more generally, and not limited to the exclusive use of café patrons.

The performance criteria (P1) are satisfied.

6.4.7 Number of Vehicular Accesses

An assessment against Clause E6.7.1 of the planning scheme is provided below in Table 31.

Table 31 - Assessment against the number of accesses standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that: (a) safe and efficient access is provided to all road network users, including, but not limited to: drivers, passengers, pedestrians, and cyclists, by minimising: (i) the number of vehicle access points; and (ii) loss of on-street car parking spaces; (b) vehicle access points do not unreasonably detract from the amenity of adjoining land uses; (c) vehicle access points do not have a dominating impact on local streetscape and character.	
A1 The number of vehicle access points provided for each road frontage must be no more than 1 or the existing number of vehicle access points, whichever is the greater.	**P1** The number of vehicle access points for each road frontage must be minimised, having regard to all of the following: (a) access points must be positioned to minimise the loss of on-street parking and provide, where possible, whole car parking spaces between access points; (b) whether the additional access points can be provided without compromising any of the following: (i) pedestrian safety, amenity and convenience; (ii) traffic safety; (iii) residential amenity on adjoining land; (iv) streetscape; (v) cultural heritage values if the site is subject to the Local Historic Heritage Code; (vi) the enjoyment of any 'al fresco' dining or other outdoor activity in the vicinity.
Planner Response On Kelly Street, only one vehicle access point is provided. For Hampden Road and South Street, the existing vehicle accesses are proposed to be removed. The acceptable solution (A1) is met.	

6.4.8 Design of Vehicular Accesses

An assessment against Clause E6.7.2 of the planning scheme is provided below in Table 32.

Table 32 - Assessment against the design of accesses standard in the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	

To ensure safe and efficient access for all users, including drivers, passengers, pedestrians and cyclists by locating, designing and constructing vehicle access points safely relative to the road network.

A1

Design of vehicle access points must comply with all of the following:

(a) in the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with section 3 – "Access Facilities to Off-street Parking Areas and Queuing Areas" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Offstreet car parking;

(b) in the case of commercial vehicle access; the location, sight distance, geometry and gradient of an access must be designed and constructed to comply with all access driveway provisions in section 3 "Access Driveways and Circulation Roadways" of AS2890.2 - 2002 Parking facilities Part 2: Off-street commercial vehicle facilities.

P1

Design of vehicle access points must be safe, efficient and convenient, having regard to all of the following:

(a) avoidance of conflicts between users including vehicles, cyclists and pedestrians;

(b) avoidance of unreasonable interference with the flow of traffic on adjoining roads;

(c) suitability for the type and volume of traffic likely to be generated by the use or development;

(d) ease of accessibility and recognition for users.

Planner Response

The application is supported by a traffic impact assessment, prepared by Midson Traffic. The traffic impact assessment concludes that the access complies with Australian Standard AS2890.1.

The acceptable solution (A1) is met.

6.4.9 Vehicular passing areas along an access

An assessment against Clause E6.7.3 of the planning scheme is provided below in Table 33.

Table 33 - Assessment against the vehicular passing areas standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that: (a) the design and location of access and parking areas creates a safe environment for users by minimising the potential for conflicts involving vehicles, pedestrians and cyclists; (b) use or development does not adversely impact on the safety or efficiency of the road network as a result of delayed turning movements into a site.	
A1 Vehicular passing areas must: (a) be provided if any of the following applies to an access: (i) it serves more than 5 car parking spaces; (ii) is more than 30 m long; (iii) it meets a road serving more than 6000 vehicles per day; (b) be 6 m long, 5.5 m wide, and taper to the width of the driveway; (c) have the first passing area constructed at the kerb; (d) be at intervals of no more than 30 m along the access.	**P1** Vehicular passing areas must be provided in sufficient number, dimension and siting so that the access is safe, efficient and convenient, having regard to all of the following: (a) avoidance of conflicts between users including vehicles, cyclists and pedestrians; (b) avoidance of unreasonable interference with the flow of traffic on adjoining roads; (c) suitability for the type and volume of traffic likely to be generated by the use or development; (d) ease of accessibility and recognition for users.

Planner Response

Access to the car park is by a 6 m wide ramp. This ramp has a dedicated lane for both ingress and egress to the site, providing safe and convenient access to the site.

The acceptable solution (A1) is met.

6.4.10 Layout of parking areas

An assessment against Clause E6.7.5 of the planning scheme is provided below in Table 34.

Table 34 - Assessment against the layout standard in the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that parking areas for cars (including assessable parking spaces), motorcycles and bicycles are located, designed and constructed to enable safe, easy and efficient use.	
A1	**P1**
The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with clause 5.3 "Headroom" of the same Standard.	The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and manoeuvring on-site.

Planner Response

The application is supported by a traffic impact assessment, prepared by Midson Traffic. The traffic impact assessment concludes that the layout of parking spaces, access aisles, circulation roadways and ramps are designed to comply with Australian Standard AS2890.1.

The acceptable solution (A1) is met.

6.4.11 Surface treatment of parking areas

An assessment against Clause E6.7.6 of the planning scheme is provided below in Table 35.

Table 35 - Assessment against the surface treatment standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that parking spaces and vehicle circulation roadways do not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.	
A1	**P1**
Parking spaces and vehicle circulation roadways must be in accordance with all of the following; (a) paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway; (b) drained to an approved stormwater system, unless the road from which access is provided to the property is unsealed.	Parking spaces and vehicle circulation roadways must not unreasonably detract from the amenity of users, adjoining occupiers or the quality of the environment through dust or mud generation or sediment transport, having regard to all of the following: (a) the suitability of the surface treatment; (b) the characteristics of the use or development; (c) measures to mitigate mud or dust generation or sediment transport.

Planner Response

The underground parking spaces and vehicle circulation roadways will be sealed and drained to a stormwater system.

The acceptable solution (A1) is met.

6.4.12 Lighting of parking areas

An assessment against Clause E6.7.7 of the planning scheme is provided below in Table 36.

Table 36 - Assessment against the lighting standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure parking and vehicle circulation roadways and pedestrian paths used outside daylight hours are provided with lighting to a standard which: (a) enables easy and efficient use; (b) promotes the safety of users; (c) minimises opportunities for crime or anti-social behaviour; and (d) prevents unreasonable light overspill impacts.	
A1 Parking and vehicle circulation roadways and pedestrian paths serving 5 or more car parking spaces, used outside daylight hours, must be provided with lighting in accordance with clause 3.1 "Basis of Design" and clause 3.6 "Car Parks" in AS/NZS 1158.3.1:2005 Lighting for roads and public spaces Part 3.1: Pedestrian area (Category P) lighting.	**P1** Parking and vehicle circulation roadways and pedestrian paths used outside daylight hours must be provided with lighting to a standard which satisfies all of the following: (a) enables easy and efficient use of the area; (b) minimises potential for conflicts involving pedestrians, cyclists and vehicles; (c) reduces opportunities for crime or antisocial behaviour by supporting passive surveillance and clear sight lines and treating the risk from concealment or entrapment points; (d) prevents unreasonable impact on the amenity of adjoining users through light overspill; (e) is appropriate to the hours of operation of the use.

Planner Response

The underground carpark will be lit using lighting that is in accordance with the relevant Australian Standard.

The acceptable solution (A1) is met.

6.4.13 Landscaping of parking areas

An assessment against Clause E6.7.8 of the planning scheme is provided below in Table 37.

Table 37 - Assessment against the landscaping standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that large parking and circulation areas are landscaped to: (a) relieve the visual impact on the streetscape of large expanses of hard surfaces; (b) screen the boundary of car parking areas to soften the amenity impact on neighbouring properties;	

(c) contribute to the creation of vibrant and liveable places;

(d) reduce opportunities for crime or anti-social behaviour by maintaining clear sightlines.

A1	P1
Landscaping of parking and circulation areas must be provided where more than 5 car parking spaces are proposed. This landscaping must be no less than 5 percent of the area of the car park, except in the Central Business Zone where no landscaping is required.	Landscaping of parking and circulation areas accommodating more than 5 cars must satisfy all of the following: (a) relieve the visual impact on the streetscape of large expanses of hard surfaces; (b) soften the boundary of car parking areas to reduce the amenity impact on neighbouring properties and the streetscape; (c) reduce opportunities for crime or antisocial behaviour by maintaining passive surveillance opportunities from nearby public spaces and buildings.

Planner Response

The car park is underground and is therefore not landscaped. As such, the application invokes discretion for this standard and must be assessed against the corresponding performance criteria.

Landscaping is, however, proposed either side of the access ramp. This landscaping reduces the visual impacts of the access ramp, while softening the boundary of car parking areas. The result is an improvement in the amenity of the existing Kelly Street streetscape.

The carpark will not be publicly accessible, and the access ramp has a good level of passive surveillance from public spaces and nearby buildings.

The performance criteria (P1) are satisfied.

6.4.14 Design of motorcycle parking areas

An assessment against Clause E6.7.9 of the planning scheme is provided below in Table 38.

Table 38 - Assessment against the design of motorcycle parking areas standard in the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that motorcycle parking areas are located, designed and constructed to enable safe, easy and efficient use.	
A1 The design of motorcycle parking areas must comply with all of the following: (a) be located, designed and constructed to comply with section 2.4.7 "Provision for Motorcycles" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking; (b) be located within 30 m of the main entrance to the building.	**P1** The design of motorcycle parking areas must provide safe, obvious and easy access for motorcyclists having regard to all of the following: (a) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building; (b) avoiding creation of concealment points to minimise the risk.

Planner Response

The proposal includes four motorcycle parking spaces. These will be located, designed, and constructed to comply with the relevant Australian Standard. Motorcycle parking spaces are provided in the car park within 30 m of the lift to the main entrance to the building.

The acceptable solution (A1) is met.

6.4.15 Design of Bicycle Parking Facilities

An assessment against Clause E6.7.10 of the planning scheme is provided below in Table 39.

Table 39 - Assessment against the bicycle parking standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To encourage cycling as a healthy and environmentally friendly mode of transport for commuter, shopping and recreational trips by providing secure, accessible and convenient bicycle parking spaces.	
A1	**P1**
The design of bicycle parking facilities must comply with all the following; (a) be provided in accordance with the requirements of Table E6.2; (b) be located within 30 m of the main entrance to the building.	The design of bicycle parking facilities must provide safe, obvious and easy access for cyclists, having regard to all of the following: (a) minimising the distance from the street to the bicycle parking area; (b) ... (c) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building; (d) avoiding creation of concealment points to minimise the risk.
Planner Response	
The proposal includes provision of 20 bicycle parking spaces, located in the secure underground car park. This bicycle parking will be accessible to residents of the dwellings and occupants of the visitor accommodation. It will not be accessible to staff or customers of the proposed General Retail and Hire or Food Services uses. Although the proposal includes well in excess of the requirements for bicycle parking spaces for the Residential and Visitor Accommodation uses, the proposal does not meet the requirements of Table E6.2 for the General Retail and Hire and Food Services components of the development. As such, discretion is invoked for this standard, and the application must be assessed against the requirements of the performance criteria. As stated, the bicycle parking spaces are in the underground car park, which is accessible by a lift to all apartments. This means that the parking area is suitably located for residents and visitors. It is also accessible from the street via the ramp to the car park from Kelly Street. Sight lines of the vehicular access to the car park have been assessed by Midson Traffic, and meet the relevant acceptable solution contained in Clause E5.6.4 A1. Refer to that standard for further detail. The bicycle parking spaces are in a secure, lit underground car park. No concealment spaces are created. It is our opinion that the bicycle parking facilities have been designed and located to ensure safe, obvious and easy access is provided, having regard to the requirement of subclauses (a) to (d). The performance criteria (P1) are satisfied.	
A2	**P2**
The design of bicycle parking spaces must be to the class specified in table 1.1 of AS2890.3-1993 Parking facilities Part 3: Bicycle parking facilities in compliance with section 2 "Design of Parking Facilities" and clauses 3.1 "Security" and 3.3 "Ease of Use" of the same Standard.	The design of bicycle parking spaces must be sufficient to conveniently, efficiently and safely serve users without conflicting with vehicular or pedestrian movements or the safety of building occupants.
Planner Response	
The bicycle parking spaces have been designed and sited to ensure that these spaces are convenient, efficient and safe for uses. The bicycle parking spaces have been co-located with vehicle parking spaces in the secure underground car park. The overall car park has been designed to ensure no conflict exists between users of that space. The performance criteria (P2) are satisfied.	

6.4.16 Siting of car parking

An assessment against Clause E6.7.12 of the planning scheme is provided below in Table 40.

Table 40 - Assessment against the siting standard in the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that the streetscape, amenity and character of urban areas is not adversely affected by siting of vehicle parking and access facilities.	
A1 Parking spaces and vehicle turning areas, including garages or covered parking areas in the Inner Residential Zone, Urban Mixed Use Zone, Village Zone, Local Business Zone and General Business Zone must be located behind the building line of buildings located or proposed on a site except if a parking area is already provided in front of the building line of a shopping centre.	**P1** Parking spaces and vehicle turning areas, including garages or covered parking areas in the Inner Residential Zone, Urban Mixed Use Zone, Village Zone, Local Business Zone and General Business Zone may be located in front of the building line where topographical or other site constraints dictate that this is the only practical solution because of one or more of the following: (a) there is a lack of space behind the building line to enable compliance with A1; (b) it is not reasonably possible to provide vehicular access to the side or rear of the property; (c) the gradient between the front and the rear of existing or proposed buildings is more than 1 in 5; (d) the length of access or shared access required to service the car parking would constitute more than 75% of the depth of the relevant lot; (e) the access driveway cannot be located at least 2.5 m from a habitable room window of a building defined as a residential building in the Building Code of Australia; (f) the provision of the parking behind the building line would result in the loss of landscaped open space and gardens essential to the values or character of a Heritage Place or Precinct listed in the Heritage Code in this planning scheme; (g) the provision of the parking behind the building line would result in the loss directly or indirectly of one or more significant trees listed in the Significant Trees Code in this planning scheme, and only if designed and located to satisfy all of the following: (i) does not visually dominate the site; (ii) maintains streetscape character and amenity; (iii) does not result in a poor quality of visual or audio amenity for the occupants of immediately adjoining properties, having regard to the nature of the zone in which the site is located and its preferred uses; (iv) allows passive surveillance of the street.
Planner Response The underground carpark is located behind the building line of buildings proposed for the site. The acceptable solution (A1) is met.	

6.4.17 Facilities for commercial vehicles

An assessment against Clause E6.7.13 of the planning scheme is provided below in Table 41.

Table 41 - Assessment against the commercial vehicle standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that facilities for commercial vehicles are provided on site, as appropriate.	
A1	**P1**
Commercial vehicle facilities for loading, unloading or manoeuvring must be provided onsite in accordance with Australian Standard for Off-street Parking, Part 2 : Commercial. Vehicle Facilities AS 2890.2:2002, unless: (a) the delivery of all inward bound goods is by a single person from a vehicle parked in a dedicated loading zone within 50 m of the site; (b) the use is not primarily dependent on outward delivery of goods from the site.	Commercial vehicle arrangements for loading, unloading or manoeuvring must not compromise the safety and convenience of vehicular traffic, cyclists, pedestrians and other road users.
Planner Response	
The proposed food services and general retail and hire uses will require commercial vehicles to deliver goods to the site. However, there are no dedicated loading zones within 50 m of the site. As such, the application invokes discretion for this standard, and will require consideration against the corresponding performance criteria. Within 50 m of the site – including Hampden Road, Kelly Street, Waterloo Crescent and Francis Street – there is substantial on-street car parking. These parking spaces would provide for loading and unloading of commercial vehicles to make deliveries to the site. It is also anticipated that any commercial deliveries would be made outside of operating hours wherever possible. The use of these on-street parking spaces would not compromise the safety and efficiency of the local traffic environment. The performance criteria (P1) are satisfied.	

6.4.18 Access to a road

An assessment against Clause E6.7.14 of the planning scheme is provided below in Table 42.

Table 42 - Assessment against the road access standard of the Parking and Access Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that access to the road network is provided appropriately.	
A1	**P1**
Access to a road must be in accordance with the requirements of the road authority.	No performance criteria.
Planner Response	
Access to Kelly Street will be in accordance with the requirements of Council as the road authority. The acceptable solution (A1) is met.	

6.5 Stormwater Management Code

6.5.1 Application of the code

The code applies to all development requiring the management of stormwater.

As such, the code applies.

6.5.2 Applicable standards

Not all standards in the Stormwater Management Code are applicable to the project. Table 43 identifies the applicable standards. An assessment of the applicable standards is provided in the following sections.

Table 43 - Applicable standards in the Stormwater Management Code.

Clause		Applicability
Use standards		
Clause E7.7.1 Stormwater drainage and disposal	A1/P1	Applicable.
	A2/P2	Applicable.
	A3/P3	Applicable.
	A4/P4	Not applicable. A major stormwater system is not proposed.

6.5.3 Stormwater drainage and disposal

An assessment against Clause E7.7.1 of the planning scheme is provided below in Table 44.

Table 44 - Assessment against the stormwater standards of the Stormwater Management Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that stormwater quality and quantity is managed appropriately.	
A1 Stormwater from new impervious surfaces must be disposed of by gravity to public stormwater infrastructure.	**P1** Stormwater from new impervious surfaces must be managed by any of the following: (a) disposed of on-site with soakage devices having regard to the suitability of the site, the system design and water sensitive urban design principles (b) collected for re-use on the site; (c) disposed of to public stormwater infrastructure via a pump system which is designed, maintained and managed to minimise the risk of failure to the satisfaction of the Council.
Planner Response Stormwater from most new impervious surfaces will be disposed of by gravity to public stormwater infrastructure.	

The stormwater collected from the ramp to the car park will be collected, pumped, and discharged to the Hampden Road stormwater system.

The performance criteria (P1) are satisfied.

A2	P2
A stormwater system for a new development must incorporate water sensitive urban design principles for the treatment and disposal of stormwater if any of the following apply: (a) the size of new impervious area is more than 600 m^2; (b) new car parking is provided for more than 6 cars; (c) a subdivision is for more than 5 lots.	A stormwater system for a new development must incorporate a stormwater drainage system of a size and design sufficient to achieve the stormwater quality and quantity targets in accordance with the State Stormwater Strategy 2010, as detailed in Table E7.1 unless it is not feasible to do so.

Planner Response

The application is supported by a concept services report prepared by Gandy and Roberts Consulting Engineers.

The concept services report addresses stormwater management and concludes that the proposed stormwater measures will be sufficient to achieve stormwater quality and quantity targets as set out in the State Stormwater Strategy 2010.

The performance criteria (P2) are satisfied.

A3	P3
A minor stormwater drainage system must be designed to comply with all of the following: (a) be able to accommodate a storm with an ARI of 20 years in the case of non-industrial zoned land and an ARI of 50 years in the case of industrial zoned land, when the land serviced by the system is fully developed; (b) stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure.	No performance criteria.

Planner Response

The application is supported by a concept services report prepared by Gandy and Roberts Consulting Engineers.

That report demonstrates that a minor stormwater system is required but demonstrates that it will be designed to meet the requirements of the acceptable solution, considering a storm with an ARI of 20 years, and quantities of stormwater runoff.

The acceptable solution (A3) is met.

6.6 Historic Heritage Code

6.6.1 Application of the code

The site is located within a Heritage Precinct, being Heritage Precinct BP1. The extent of Heritage Precinct BP1 is shown in Figure 4.

The site itself is not listed as a Heritage Place, either on the State or local register. However, the code applies due to development being located within the Heritage Precinct.

6.6.2 Applicable standards

Not all standards in the Historic Heritage Code are applicable to the project. Table 45 identifies the applicable standards. An assessment of the applicable standards is provided in the following sections.

Table 45 - Applicable standards in the Historic Heritage Code.

Clause		Applicability
Development standards for Heritage Places		
Clause E13.7 Development standards for Heritage Places		Not applicable. The site is not a heritage place.
Development standards for Heritage Precincts		
Clause E13.8.1 Demolition	A1/P1	Applicable.
Clause E13.8.2 Buildings and works other than demolition	A1/P1	Applicable.
	A2/P2	Not applicable. There are no relevant design criteria or conservation policy.
	A3/P3	Not applicable. No extensions to existing buildings are proposed.
	A4/P4	Applicable.
	A5/P5	Not applicable. No removal of landscaping is proposed that would result in the loss of landscape elements that contribute to historic heritage values.
Clause E13.8.3 Subdivision		Not applicable. No subdivision is proposed.
Clause E13.8.4 Buildings and works in Heritage Precinct BP1	A1/P1	Applicable.
	A2/P2	Applicable.
	A3/P3	Applicable.
	A4/P4	Applicable.
	A5/P5	Not applicable. The site has three frontages, and does not have a rear boundary.
	A6/P6	Applicable.
	A7/P7	Applicable.
	A8/P8	Applicable.
	A9/P9	Applicable.
Development standards for Cultural Landscape Precincts		
Clause E13.9 Development standards for cultural landscape precincts		Not applicable. The site is not within a cultural landscape precinct.
Development standards for Places of Archaeological Potential		

Clause	Applicability
Clause E13.10 Development standards for places of archaeological potential	Not applicable. The site is not identified as a place of archaeological potential.

6.6.3 Demolition

An assessment against Clause E13.8.1 of the planning scheme is provided below in Table 46.

Table 46 - Assessment against the demolition standards of the Historic Heritage Code.

Acceptable Solutions	Performance Criteria
Objective To ensure that subdivision of part of a heritage place maintains cohesion between the elements that collectively contribute to an understanding of historic cultural heritage values, and protects those elements from future incompatible development.	
A1 No acceptable solution.	**P1** Demolition must not result in the loss of any of the following: (a) buildings or works that contribute to the historic cultural heritage significance of the precinct; (b) fabric or landscape elements, including plants, trees, fences, paths, outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct; unless all of the following apply; (i) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place; (ii) there are no prudent or feasible alternatives; (iii) opportunity is created for a replacement building that will be more complementary to the heritage values of the precinct.
Planner Response This application proposes the demolition of all buildings at 55 Hampden Road and, while the dwelling at 43 South Street will remain, the proposal includes the demolition of the lean-to of the dwelling. The application is supported by a heritage impact assessment, prepared by Purcell. Purcell's assessment concludes that 55 Hampden Road makes no contribution to the historic cultural heritage significance of Battery Point. For 43 South Street, the main cottage is retained. However, minor demolition is proposed, being the addition of the lean-to at the rear of the dwelling. Purcell opine that no demolition of fabric or landscape elements that contribute to the historic cultural heritage significance of the precinct is proposed. The performance criteria (P1) are satisfied.	

6.6.4 Buildings and works other than demolition

An assessment against Clause E13.8.2 of the planning scheme is provided below in Table 47.

Table 47 - Assessment against the buildings and works standard of the Historic Heritage Code.

Acceptable Solutions	Performance Criteria

Objective	
To ensure that development undertaken within a heritage precinct is sympathetic to the character of the precinct.	
A1	**P1**
No acceptable solution.	Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2.

Planner Response

Purcell's heritage impact assessment concludes that the siting of the proposal corresponds with the setbacks of adjacent buildings and responds to the minimal setbacks within the heritage precinct.

Regarding design, the proposal emulates the pitched hipped or gabled roofs in the precinct. The higher elements of the proposal are in the centre of the site, minimising any heritage impacts.

The performance criteria (P1) are satisfied.

A4	**P4**
New front fences and gates must accord with original design, based on photographic, archaeological or other historical evidence.	New front fences and gates must be sympathetic in design, (including height, form, scale and materials), and setback to the style, period and characteristics of the precinct.

Planner Response

The timber paling fence on the South Street frontage is sympathetic to the character of the heritage precinct.

The performance criteria (P4) are satisfied.

6.6.5 Buildings and works in Heritage Precinct BP1

An assessment against Clause E13.8.4 of the planning scheme is provided below in Table 48.

Table 48 - Assessment against the Heritage Precinct BP1 standards of the Historic Heritage Code.

Acceptable Solutions	Performance Criteria
Objective	
To ensure that development undertaken within Heritage Precinct BP1 is sympathetic to the character of the precinct.	
A1	**P1**
Site area per dwelling unit in Heritage Precinct BP1 must be not less than 350m2.	Site area per dwelling may be less if the development does not detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site.

Planner Response

The planning scheme defines 'site' at clause 4.1.3 as:

means the lot or lots on which a use or development is located or proposed to be located.

The land comprising the 'site' is described in Table 1 of this report. This land has a total area of 1,815 m^2.

Clause 4.1.3 defines 'site area per dwelling' as:

means the area of the site (excluding any access strip) divided by the number of dwellings.

For this application, a variety of uses are proposed, including multiple dwellings, which is a Residential use. Each of these uses are defined in section 5.2 of this report. Critically, the proposed visitor accommodation use is not considered to meet the definition of a dwelling and is best classified using the 'Visitor Accommodation' definition.

This application proposes that most apartments will be used as visitor accommodation. Only Townhouses 1 and 2 will be used for Residential purposes and therefore meet the definition of a dwelling.

The site area per dwelling is, therefore, the overall site area (2,025 m^2) divided by the number of dwellings (two), or 1012.5 m^2 per dwelling.

The acceptable solution (A1) is met.

A2	P2
No acceptable solution.	Buildings should be close to the street frontage except where the prevailing setback on the same side of the street is substantial, in which case the setback shall conform to the general building line.

Planner Response

For this standard, there is no acceptable solution. The application invokes discretion and must be assessed against the corresponding performance criteria.

The application is supported by a heritage impact statement, prepared by Purcell. The heritage impact assessment concludes that the proposed buildings are close to the street frontage, conforming with the general building line.

The performance criteria (P1) are satisfied.

A3	P3
Building height (not including the basement or attic floor space with dormer windows) must not be greater than two storeys, or one storey if most buildings on the same side of the street in the immediate vicinity are single storey.	The height of development must neither be obtrusive in the streetscape nor detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site.

Planner Response

The proposed building height which includes three-storey elements, does not comply with the acceptable solution, and discretion is invoked.

The application is supported by a heritage impact statement, prepared by Purcell. The heritage impact assessment concludes that the elevations are consistent with the streetscape of Hampden Road, specifically the places at 47 and 57 Hampden Road, and that the design of the townhouses provide a bridge between the development and the single storey buildings on adjacent premises.

The performance criteria (P3) are satisfied.

A4	P4
No acceptable solution.	Where reasonable and practicable, a dwelling must substantially occupy the width of the frontage of a lot, except where the prevailing setbacks from side boundaries on the same side of the street are substantial and not so as to exclude a driveway or car parking at the side of the building.

Planner Response

For this standard, there is no acceptable solution. The application invokes discretion and must be assessed against the corresponding performance criteria.

The application is supported by a heritage impact statement, prepared by Purcell. The heritage impact assessment concludes that the proposed development substantially occupies the width of the frontages to Kelly Street, South Street, and Hampden Road.

It is further noted that the proposed townhouses, located behind the existing cottage at 43 South Street, are the only dwellings on the site. These townhouses that have direct street frontage via a pathway to South Street. All other parts of the development are not considered dwellings.

The performance criteria (P4) are satisfied.

A5	P5
The rear setback of the principal building must be at least: (a) 6 m for lots of up 14 m in width; (b) 5 m for lots greater than 14 m in width.	The rear setback of the principal building must not detract from the layout pattern of development that contributes to the cultural heritage significance of the precinct and its contribution to private amenity

	facilitated by the 'house and garden' form of development.

Planner Response

It is our opinion that, as the site has three frontages, the site has no rear boundary.

Notwithstanding, if the planning authority is of the opinion that the site does have a rear boundary, the heritage impact assessment concludes that the proposed setbacks, together with the wrapping nature of the proposal to three frontages appropriately responds to this performance criterion. Further, the proposal nominates courtyard gardens consistent with the 'house and garden' form of development.

The clause is not applicable. However, if it were to apply, the performance criteria (P5) are satisfied.

A6	P6
A site where the principal building, excluding the basement, in part or whole is: (a) not more than one storey in height, or one storey comprising attic floor space with dormer windows, must have a site coverage of not more than 50%; (b) two or more storeys must have a site coverage of not more than 40%.	The building must not detract from the pattern of development that is a characteristic of the cultural heritage significance of the Precinct in the vicinity of the site.

Planner Response

The heritage impact assessment concludes that the pattern of development that is characteristic of the cultural heritage significance of the Battery Point heritage precinct is well documented.

The existing building on the site (the Prince of Wales Hotel) and its expanses of hard stand carparking detract from the heritage significance of the precinct.

The heritage impact assessment concludes that the design of the proposal breaks this form and volume of the existing building into a more sympathetic manner and is reminiscent of the former Prince of Wales Hotel (1843-1967), with additional elements sympathetic to the building form of the early 1900s.

Noting that the existing dwelling on South Street is retained, the proposed townhouses that are oriented towards South Street are consistent with the siting and alignment of inter-war Californian bungalows that are located along South Street.

The performance criteria (P6) are satisfied.

A7	P7
No acceptable solution.	Land directly between a dwelling and the street shall not be designed or paved or used for the manoeuvring or parking of vehicles except to gain access.

Planner Response

The clause applies as vehicles will use land for access to the underground car park.

No land between a dwelling and the street will be designed, paved, or used for the manoeuvring or parking of vehicles, except for the vehicle ramp that provides access to the underground car park.

The performance criteria (P7) are satisfied.

A8	P8
No acceptable solution.	Each lot must have not more than one crossing over the footpath per frontage and have a maximum width of 3 m unless it can be demonstrated that the crossing and its width is essential and will: (a) not detract from the historic cultural heritage significance of the precinct; (b) provide a net benefit in parking quantum taking into account any loss in on-street parking required to facilitate the additional or wider access.

Planner Response

No lot has more than one crossing over the footpath per frontage.

The width of the crossing to Kelly Street will be greater than 3 m but is necessary to provide safe and functional ingress and egress to the underground car park. It is also noted that, at this location, there is an existing crossover that is wider than what is proposed, that serves the car park at the Prince of Wales Hotel. Resulting in a reduction of the width of the existing crossover and therefore no loss of historic cultural heritage significance.

Further, the proposal will remove the need for the vehicular crossover to the site on Hampden Road, resulting in the option for Council as road authority to reinstate on-street car park on the main thoroughfare through Battery Point, should it desire. It is noted, however, that any change in on-street parking does not form part of this proposal and is at the discretion of Council in its capacity as road authority,

Similarly, the existing vehicular crossover on South Street will also be removed with the kerb reinstated in this location.

There will be no loss of historic cultural significance because of access to the proposed development with the existing number of crossovers into the site being reduced from three to one and the width of the retained crossover being reduced.

The performance criteria (P8) are satisfied.

A9	P9
Maximum of 1 parking space per dwelling.	Parking must not detract from the cultural heritage significance or the setting of existing dwellings.

Planner Response

37 car parking spaces and two dwellings are proposed.

Reference is made to the traffic impact assessment, prepared by Midson Traffic. The number of car parks provided is suitable for the anticipated requirements of the overall development. All car parking on site is underground and does not detract from the cultural heritage significance of the area.

The performance criteria (P9) are satisfied.

7 Conclusion

This planning permit application seeks approval for a mixed-use development at 55 Hampden Road and 43 South Street, Battery Point.

Specifically, the following elements are included in the proposal:

- Demolition of all existing buildings at 55 Hampden Road.
- Demolition of the existing lean-to on the cottage at 43 South Street. The remainder of the building remains in-situ.
- Development of two, two-storey townhouses.
- Development of 13 units across three storeys.
- The two townhouses will be Residential. The remaining 13 units are proposed to be Visitor Accommodation. The existing cottage at 43 South Street will also be used for Visitor Accommodation, relying on an existing planning permit.
- A café, located on the corner of Hampden Road and Kelly Street.
- A retail offering, located on Hampden Road.
- A shared private courtyard for occupants, which serves as a natural foyer to the development.
- An underground car park, which includes 37 car parking spaces, 4 motorcycle parking spaces, bicycle parking, storage, and waste storage. This car park space will be available to residents of the dwellings and guests of the visitor accommodation.
- Landscaping
- Removal of existing vehicular crossovers on Hampden Road and South Street, with the reinstatement of the kerb and gutter, resulting in an increase in on-street car parking or the potential for streetscape improvements. Any streetscape improvements will, however, be undertaken by Council and will be separate to this proposal.

All buildings are contained within land owned by MRRC Pty Ltd, although minor works are proposed on the adjacent road reserve, owned by the City of Hobart.

This report identifies that the project is subject to the provisions of the *Hobart Interim Planning Scheme 2015*, in particular the Inner Residential Zone and the Urban Mixed Use Zone. The project is a mixed-use development, and includes Residential, Visitor Accommodation, Food Services and General Retail and Hire uses; assessment against the zone provisions has found that the project is consistent with all relevant standards.

The project also requires consideration against the following codes of the planning scheme:

- Potentially Contaminated Land Code
- Road and Railway Asset Code
- Parking and Access Code
- Stormwater Management Code

- Historic Heritage Code

An assessment of all applicable standards is contained in Section 5 and Section 6 of this report. A total of 60 separate standards apply, and the project demonstrates compliance with the acceptable solution with 27 of those applicable standards. The project, therefore, relies on Council to exercise its discretion in relation to 33 of those applicable standards. Additionally, there are two use discretions which must be assessed by Council, being the proposed General Retail and Hire and Visitor Accommodation uses in the Urban Mixed Use Zone.

The relevant standards, and whether the project complies with the acceptable solution or relies on the performance criteria is outlined in Table 49.

Table 49 - Applicable standards, and whether they meet the acceptable solution or rely on performance criteria.

Clause		Applicability
Inner Residential Zone		
Clause 11.4.1 Residential density for multiple dwellings	A1	Meets acceptable solution
Clause 11.4.3 Site coverage and private open space for all dwellings	P1	Relies on performance criteria
	P2	Relies on performance criteria
Clause 11.4.6 Privacy for all dwellings	A1	Meets acceptable solution
	A2	Meets acceptable solution
	A3	Meets acceptable solution
Clause 11.4.7 Frontage fences for all dwellings	P1	Relies on performance criteria
Clause 11.4.8 Waste storage for multiple dwellings	A1	Meets acceptable solution
Urban Mixed Use Zone		
Clause 15.3.1 Non-residential use	A1	Meets acceptable solution
	P2	Relies on performance criteria
	A3	Meets acceptable solution
	A4	Meets acceptable solution
Clause 15.4.1 Building height	P1	Relies on performance criteria
	P2	Relies on performance criteria
Clause 15.4.2 Setback	P1	Relies on performance criteria
	P2	Relies on performance criteria
Clause 15.4.3 Design	P1	Relies on performance criteria

	A2	Meets acceptable solution
Clause 15.4.4 Passive surveillance	P1	Relies on performance criteria
Clause 15.4.5 Landscaping	P1	Relies on performance criteria
	P2	Relies on performance criteria
Clause 15.4.8 Residential amenity	A1	Meets acceptable solution
	A2	Meets acceptable solution
	A3	Meets acceptable solution
Potentially Contaminated Land Code		
Clause E2.5 Use standards	P1	Relies on performance criteria
Clause E2.6.2 Excavation	P1	Relies on performance criteria
Road and Railway Assets Code		
Clause E5.5.1 Existing road accesses and junctions	P3	Relies on performance criteria
Clause E5.6.1 Development adjacent to roads and railways	A1.1	Meets acceptable solution
Clause E5.6.2 Road accesses and junctions	A2	Meets acceptable solution
Clause E5.6.4 Sight distance at accesses, junctions and level crossings	A1	Meets acceptable solution
Parking and Access Code		
Clause E6.6.1 Number of Car Parking Spaces	P1	Relies on performance criteria
Clause E6.6.2 Number of Accessible Car Parking Spaces for People with a Disability	A1	Meets acceptable solution
Clause E6.6.3 Number of Motorcycle Parking Spaces	A1	Meets acceptable solution
Clause E6.6.4 Number of Bicycle Parking Spaces	P1	Relies on performance criteria
Clause E6.7.1 Number of Vehicular Accesses	A1	Meets acceptable solution
Clause E6.7.2 Design of Vehicular Accesses	A1	Meets acceptable solution
Clause E6.7.3 Vehicular Passing Areas Along an Access	A1	Meets acceptable solution
Clause E6.7.5 Layout of Parking Areas	A1	Meets acceptable solution

Clause E6.7.6 Surface Treatment of Parking Areas	A1	Meets acceptable solution
Clause E6.7.7 Lighting of Parking Areas	A1	Meets acceptable solution
Clause E6.7.8 Landscaping of Parking Areas	P1	Relies on performance criteria
Clause E6.7.9 Design of Motorcycle Parking Areas	A1	Meets acceptable solution
Clause E6.7.10 Design of Bicycle Parking Facilities	P1	Relies on performance criteria
	P2	Relies on performance criteria
Clause E6.7.12 Siting of Car Parking	A1	Meets acceptable solution
Clause E6.7.13 Facilities for Commercial Vehicles	P1	Relies on performance criteria
Clause E6.7.14 Access to a Road	A1	Meets acceptable solution
Stormwater Management Code		
Clause E7.7.1 Stormwater drainage and disposal	P1	Relies on performance criteria
	P2	Relies on performance criteria
	A3	Meets acceptable solution
Historic Heritage Code		
Clause E13.8.1 Demolition	P1	Relies on performance criteria
Clause E13.8.2 Buildings and works other than demolition	P1	Relies on performance criteria
	P4	Relies on performance criteria
Clause E13.8.4 Buildings and works in Heritage Precinct BP1	A1	Meets acceptable solution
	P2	Relies on performance criteria
	P3	Relies on performance criteria
	P4	Relies on performance criteria
	P6	Relies on performance criteria
	P7	Relies on performance criteria
	P8	Relies on performance criteria
	P9	Relies on performance criteria

This assessment has demonstrated that, even where the acceptable solution is not met, the performance criteria is achieved.

Specifically, regarding the 33 performance criteria:

- The use of the land within the Urban Mixed Use Zone for Visitor Accommodation and General Retail and Hire is appropriate.
- The design and siting of the proposed development is appropriate for the site and considers the needs of the users, while limiting impacts to adjoining properties. This includes the provision of adequate private open space, suitable privacy, passive surveillance, and landscaping.
- The proposed parking and access arrangements provide adequate car, motorcycle and bicycle parking for the needs of the users, while ensuring that access is safe and designed to applicable standards.
- The development does not detract from the heritage significance of the heritage precinct.

It is our opinion that the project meets the requirements of the *Hobart Interim Planning Scheme 2015* and that the proposal should be approved.

Appendix A Title documents

Appendix B Landowner consent

Appendix C Plans

Appendix D Heritage impact assessment

Appendix E Traffic impact assessment

Appendix F Concept services report

Appendix G Noise assessment

Appendix H Contamination management plan

Appendix I Environmental site assessment

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PURCELL

55 HAMPDEN ROAD AND 43 SOUTH STREET, BATTERY POINT

HERITAGE IMPACT ASSESSMENT

OCTOBER 2025

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Acknowledgement of Country

Purcell acknowledge the Traditional Custodians of Country throughout Australia and pay our respects to Elders past, present, and emerging. We respectfully acknowledge and pay respect to the Palawa people of lutruwita/Tasmania, and to the Muwinina people, the traditional and original owners, and continuing custodians, of country.

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HERITAGE IMPACT ASSESSMENT

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INTRODUCTION

Background

MRRC Pty Ltd commissioned Purcell to prepare this Heritage Impact Assessment (HIA) to accompany a Development Application for the proposed development (Proposal) at 55 Hampden Road, (Hotel) and 43 South Street, (Cottage) Battery Point (together the Site). The Places are not registered in the Tasmanian Heritage Register (THR).[1] The Places are not included in Table E13.1 of the *Hobart Interim Planning Scheme 2015* (HIPS 2015).[2] They are located within the 'Battery Point (BP1)' Heritage Precinct.[3]

The following documentation details the Proposal assessed in this HIA:

- JAWS Architects, Hampden Road Project Development Application Architectural Plans, Rev 03, dated 26/09/2025 (see Appendix A for drawing list).

Linda Mott, (Senior Heritage Consultant) of Purcell prepared this report with oversite by Lucy Burke-Smith, (Partner). Lucy Burke-Smith visited the Place on Monday 12 December 2022 and completed a physical inspection of the exterior and interior, streetscape, and context. Unless otherwise cited, all images were taken at this site visit.

In addition, an internal and external inspection of the Place at 43 South Street was carried out on 1 April 2019. The findings of this inspection, and an assessment as to the historic cultural heritage significance of the Place is outlined within '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', April 2019, prepared by Margaret Desgrand on behalf of Purcell.

Limitations

This HIA is limited to an assessment of the potential statutory built heritage impacts of the Proposal to the setting, context, and significant fabric of the Battery Point Heritage Precinct (BP1) and 43 South Street as a Contributory place to the Precinct. It is based on the current statutory heritage controls, and non-statutory guidelines, applicable to the Battery Point (BP1) Heritage Precinct. Desk-based research, and client-provided information to date, form the basis of this report. New archival research is limited to that outlined within '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', April 2019, prepared by Margaret Desgrand for Purcell. This HIA does not consider the proposed works' responsiveness to the wider provisions of the *Hobart Interim Planning Scheme, 2015* (HIPS 2015), beyond that of built heritage.

All references to heritage, or heritage impacts, are to built heritage only. This report does not consider other potential heritage impacts of the Proposal, including, without limitation, to landscape, vegetation, sub-surface, archaeological or indigenous heritage.

Terminology

The conservation terminology used in this report is of a specific nature and is defined within The Burra Charter: 'The Australia ICOMOS Charter for Places of Cultural Significance', 2013, (the Burra Charter).

References

This HIA references the following documents:

- The *Hobart Interim Planning Scheme, 2015* (HIPS 2015), effective from 22 March 2024.
- Margaret Desgrand, '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', for Purcell, April 2019.
- NSW Heritage Office & RAIA, 'Design in Context – Guidelines for Infill Development in the Historic Environment', 2005.

1 Tasmanian Government Tasmanian Heritage Register (THR), 'Discover Heritage' (website), accessed 23/06/2025.
2 *Hobart Interim Planning Scheme 2015* (HIPS 2015), updated 22 March 2024, Part E13.0, Table E13.1.
3 HIPS 2015, Part E13.0, Table E13.2.

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UNDERSTANDING THE SITE

Location

The Place comprises two places, being:

- 55 Hampden Road, Battery Point (Certificates of Title: 40041/1-9, Property ID 5577044) located on the corner of Hampden Road and Kelly Streets, Battery Point; and
- 43 South Street, Battery Point (Cottage, Certificate of Title 229127/1; Property ID 5593888), located on the western side of South Street.

Figure 1: Aerial view, the approximate Places boundary outlined in yellow, boundary between Places dashed white. THR listed places shaded purple (Source: LISTmap, overlaid by Purcell)

Description

The Hotel is at a prominent intersection within Battery Point. The Hampden Road address generally features a mixture of Georgian, one, and two, storey properties of varying widths and materials which extend the full width of their allotment, and are built to the front street boundary. Retail properties on Hampden Road typically feature a shopfront window. The Site is flanked by two storey Victorian shops and residences. The one to the east across the carparking space on the South Street Corner (THR ID 1807), is operating as Da Angelo Ristorante. The other, to the west across Kelly Street (THR ID 1782), is operating as Jackman and McRoss bakery, both shaded purple in Figure 1.

The Sites's Kelly Street frontage offers a more domestic setting, with predominately single storey houses of Georgian and Victorian design, set somewhat back from the street behind fences and landscaped gardens. Kelly Street descends to the north, making its elevated southern end a dominant feature of the site as one ascends towards Hampden Road.

UNDERSTANDING THE SITE

South Street is narrow, is aligned in a north-south direction, and slopes downwards to the north. The 2019 '43 South Street, Battery Point Assessment' describes South Street's streetscape as follows:[4]

> *The majority of the buildings between No's. 3 to 41 South Street date from the mid and late Victorian periods, and the early Federation period, the exceptions being the subject site and the recently constructed dwellings at No's. 37A and 37B South Street. The pair of Victorian dwellings at No's. 29-31 are highly modified.*
>
> *To the north of the subject site, the western side of South Street displays several important characteristics. These include the subdivision pattern which dates from the early subdivision of land grants for the provision of workers' housing, and a cohesiveness of scale and of built form, indicative of the minimal level of change that has occurred since the construction of most of the dwellings in the nineteenth century, the exceptions being those noted in the paragraph above.*
>
> *To the north of the site, the historic urban character is one of cohesion, comprising predominantly single storey residential buildings with narrow frontages, either detached or semi-detached ('co-joined'), built close to, or aligning with, the street boundary. The dwellings on the western side of the street form an almost continuous street wall, the narrow spaces between pairs of single dwelling barely visible in acute views.*
>
> *The street frontage setbacks of the western side vary between zero and two metres, increasing slightly at No's 39-41.*[5]

The Cottage breaks the streets' predominant pattern of development, and does not conform to the predominant historic urban character of South Street. Despite being an Inter War bungalow, No.43 differs from other Inter War bungalows in the Battery Point Heritage Precinct in that it is detached and set in an encircling garden setting following the post WW1 suburban Garden City model. No. 43 also differs in character to the heritage listed Victorian and Federation dwellings that line South Street north of the site.

Images of the Places and their contexts

Figure 2: View east along Hampden Road at the Kelly Street intersection. The Hotel with the two State Heritage listed buildings, near left and far right beyond the Hotel carparking (Source: JAWS Architects, 2022).

Figure 3: View west along Hampden Road at the South Street intersection. The State Heritage listed buildings, near right and far right (with chimneys) beyond the Hotel. Illustrates the void in the streetscape caused by the Hotel carparking (Source: JAWS Architects, 2022).

4 Margaret Desgrand, '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', for Purcell, April 2019, pp 31-33.
5 Margaret Desgrand, '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', for Purcell, April 2019, pp 31-33.

UNDERSTANDING THE SITE

Figure 4: Kelly Street, view south, eastern side. The adjacent 46 Kelly Street (not part of the Proposal), and existing Hotel footpath crossover to be retained (Source: JAWS Architects, 2022).

Figure 5: South Street, view south, western side. 43 South Street to the right, barely visible owing to the setback and conifers with the State Heritage listed building at 47 Hampden Road beyond (Source: JAWS Architects, 2022).

Statutory Listings and Overview of Significance

Historic Cultural Heritage Act (TAS) 1995

The Places (Certificate of Title 40041 Folios 1-9, Property ID 5577044 and Certificate of Title 229127/1; Property ID 5593888) are not included as registered places on the Tasmanian Heritage Register.

Hobart Interim Planning Scheme 2015

The Places (Certificate of Title 40041 Folios1,3,4, 5,6,7, Certificate of Title 90423/1; Property ID 5577044 and Certificate of Title 229127/1; Property ID 5593888) are not identified as Locally Significant in Table E13.1, they are also not included in Table E13.9 Cultural Landscape Precincts, of the HIPS 2015.

The Site is within the 'Battery Point (BP1) Heritage Precinct,[6] (see Figure 8) which is significant for reasons including:

1. *The wide variety of architectural styles and historic features ranging from entire streets of 19th century Colonial Georgian cottages, to Victorian, Edwardian and Pre and Post War examples of single and attached houses that are of historic and architectural merit, many of which demonstrate housing prior to mass car ownership.*
2. *It is primarily a residential area with a mix of large substantial homes and smaller workers cottages on separate lots, gardens, an unstructured street layout, and lot sizes that show successive resubdivision into narrow lots that demonstrate early settlement patterns of Hobart.*
3. *The original and/or significant external detailing, finishes and materials demonstrating a high degree of integrity with a homogenous historic character.*

6 HIPS 2015, Part E13.0, Table E13.2

UNDERSTANDING THE SITE

Figure 6: 'Battery Point' (BP1) Heritage Precinct shown hatched in purple, approximate Site boundary outlined in yellow (Source: LISTmap, overlaid by Purcell).

Non-Statutory Listings

The Hotel was included on the Register of the National Estate, (non-statutory archive) as it is within "Hampden Road Buildings, 31-113, 36-88 Hampden Rd, Battery Point, TAS, Australia', Place ID 11252 on 21/03/1978.[7] The record is for reference only and has no statutory basis.

The National Trust list (in Tasmania) was rescinded by the Tasmanian Government after it was used as a base for the Tasmanian Heritage Council register and no longer has statutory force. The Tasmanian National Trust does not maintain a publicly available list of Tasmanian Heritage places.[8]

7 Department of Climate Change, Energy, the Environment and Water (DCCEEW), 'Search the Australian Heritage Database' [website], accessed 23/06/2025
8 Tasmanian National Trust, 'About us TAS' [website], accessed 23/06/2025.

Document Date: 6 October 2025
File Location & Name: 239534/00 Documentation/Reports/HIA/239534-PUR-HIA-55_Hampden_Rd-02-20251006.docx

HERITAGE IMPACT ASSESSMENT

Proposed Works

The proposal is for the construction of a mixed-use development encompassing properties including 55 Hampden Road and 43 South Street in Battery Point. Th Proposal includes demolition of the Prince of Wales Hotel and carparking at 55 Hampden Road, and a rear, late twentieth century, skillion extension[9] to the Cottage at 43 South Street.

The development will include fourteen visitor accommodation units, including the current South Street use, two townhouses, one café and one retail space, and a basement car park. The two townhouses proposed for the northern side (behind the 43 South Street cottage) are reduced in height from that previously proposed, to minimise their visibility from South Street.

The development is configured in three parts: apartments addressing the Kelly Street frontage, apartments addressing the Hampden Road frontage, and the retained, existing Cottage addressing the South Street frontage. The eastern side of the Hampden Road building will fill the uncharacteristic and detracting void in Hampden Road created by the existing carpark.

Materials used include red brick, common particularly on the north side of Hamden Road, a tactile reflection of the heritage context. In contrast, lower-level facades are in a selection of bagged and rendered finishes in tones to articulate and define the hospitality and commercial offerings and promote a village sensibility that seeks to strengthen a sense of place for occupants and the wider community.

- JAWS Architects, Hampden Road Project, Development Application Architectural Plans, Rev 03, dated 26/09/2025 of the DA package has further details of the proposal (see Appendix A for drawing list).

Guidance Documentation

This assessment follows the best practice management framework for historic sites contained in:

- The Burra Charter: 'The Australia ICOMOS Charter for Places of Cultural Significance', 2013.
- NSW Heritage Office & RAIA, 'Design in Context – Guidelines for Infill Development in the Historic Environment', 2005.

Assessment Methodology

This assessment follows the provision of preliminary heritage advice through an iterative design process, intended to mitigate potential impact to the significance and values of the place. It is based on observations made during a site visit and a review of the design proposal. The assessment considers the potential for detrimental impacts resulting from the proposal, as well as all mitigation measures proposed, within the context of the *Hobart Historic Heritage Code, 2015*. Proposed works have been assessed for their impact to the heritage value of the Heritage Place as identified in its Statement of Significance, and the place's setting and context. The Proposal has also been considered against non-statutory guidelines published by Australia ICOMOS. Direct (fabric) and indirect (visual) impacts are both considered in this assessment.

9 Margaret Desgrand '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', p 36.

HERITAGE IMPACT ASSESSMENT

Assessment against Historic Heritage Code Provisions of the *Hobart Interim Planning Scheme 2015*

The Site is within the 'Battery Point (BP1) Heritage Precinct.[10] The following table consider the responsiveness of the proposal against the Development Standards and specific Performance Criteria for Heritage Precincts in Table E13.8 of the Historic Heritage Code.

E13.8 Development Standards for Heritage Precincts

<table>
<tr><td colspan="3">'Battery Point (BP1) Heritage Precinct,[11] (see Figure 8) is significant for reasons including:

1. The wide variety of architectural styles and historic features ranging from entire streets of 19th century Colonial Georgian cottages, to Victorian, Edwardian and Pre and Post War examples of single and attached houses that are of historic and architectural merit, many of which demonstrate housing prior to mass car ownership.

2. It is primarily a residential area with a mix of large substantial homes and smaller workers cottages on separate lots, gardens, an unstructured street layout, and lot sizes that show successive resubdivision into narrow lots that demonstrate early settlement patterns of Hobart.

3. The original and/or significant external detailing, finishes and materials demonstrating a high degree of integrity with a homogenous historic character.</td></tr>
<tr><td colspan="3">E13.8.1 Demolition

Objective:

To ensure that demolition in whole or in part of buildings or works within a heritage precinct does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.</td></tr>
<tr><td>P1</td><td>Demolition must not result in the loss of any of the following:

(a) buildings or works that contribute to the historic cultural heritage significance of the precinct;

(b) fabric or landscape elements, including plants, trees, fences, paths, outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct;

unless all of the following apply;

(i) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;

(ii) there are no prudent or feasible alternatives;

(iii) opportunity is created for a replacement building that will be more complementary to the heritage values of the precinct.</td><td>55 Hampden Road

The proposed demolition includes the removal of the intrusive building at 55 Hampden Road and the expanse of hard stand car park which is equally intrusive to the historic cultural heritage significance of the precinct.

43 South Street

The street-facing, original portion of the Cottage is retained, demolition is confined to the rear, late twentieth century, skillion extension,[12] which is not visible from the Street and does not contribute to the historic cultural heritage significance of the precinct.

Existing trees are to be retained.

No demolition of fabric or landscape elements that contribute to the historic cultural heritage significance of the precinct is proposed.

P1 is satisfied.</td></tr>
</table>

10 HIPS 2015, Part E13.0, Table E13.2
11 HIPS 2015, Part E13.0, Table E13.2
12 Margaret Desgrand '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', p 36.

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HERITAGE IMPACT ASSESSMENT

E13.8.2 Buildings and Works other than Demolition Objective: To ensure that development undertaken within a heritage precinct is sympathetic to the character of the precinct.		
P1	Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2.	The proposal will not be detrimental to the significance of the heritage precinct as outlined in Table E13.2. The Battery Point Heritage Precinct (BP1) is noted for the wide variety of architectural styles and historic features (chimneys, picket fences, dormer windows, etc), and the varied roofscape that is a particularly unique feature of the area. The area is also characterised by minimal or absent setbacks to the streetscape. The siting of the proposal corresponds to the setbacks of adjacent buildings and responds to the predominately minimal setbacks within the heritage precinct. The roof design emulates the generally pitched hipped or gabled roofs in the precinct in form and material. To minimise the impact on the streetscape the highest points are set to the middle of the complex, with the roof height stepping down on the Kelly Street frontage. The proposal adds favourably to the streetscape while remaining respectful of its heritage precinct setting by deriving its form, fenestration, and materiality from the characteristics of surrounding buildings and reinterpreting them in a contemporary way. The contemporary reinterpretation adds another layer to the rich variety of the precinct's architectural styles and features, and to the varied roofscape that is a particularly unique feature of the area. The proposal responds to the surrounding heritage streetscape by incorporating retail and hospitality offerings facing Hampden Road. The inclusion of a hospitality offering on the corner of Hamden Road and Kelly Street continues the location's historical and current function since the original 'Prince of Wales' hotel was built there circa 1843.[13] Replacing the existing expanse of hard stand car park with a commercial and residential building, pedestrian access, and landscape elements will be more sympathetic to the characteristic of the place which was formed prior to mass-car ownership. P1 is satisfied.
P2	Design and siting of buildings and works must comply with any relevant design criteria / conservation policy listed in Table E13.2, except if a heritage place of an architectural style different from that characterising the precinct.	Not applicable. There are no design criteria or conservation policies for Precinct BP1 listed within Table E13.2. P2 is satisfied.
P3	Extensions to existing buildings must not detract from the historic cultural heritage significance of the	Not applicable. The application does not propose extensions

13 Margaret Desgrand '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', p 16.

	precinct.	to existing buildings. P3 is satisfied.
P4	New front fences and gates must be sympathetic in design, (including height, form, scale, and materials), and setback to the style, period and characteristics of the precinct.	The existing brick and metal fence to 43 South Street will be retained. A proposed timber screen and gate with 50% transparency, setback 2.5m from the boundary responds to the picket fences along South Street in form, scale and materials. The Kelly Street side is proposed to have planter boxes and a green wall to separate the footpath from the building. No new front fences are proposed along Hampden Road. P2 is satisfied.
A5	Areas of landscaping between a dwelling and the street must be retained.	Not applicable. Areas of landscaping between the dwelling at 43 South Street and the street are retained. A5 is satisfied.
E13.8.3 Subdivision Objective: To ensure that subdivision within a Heritage Precinct is consistent with historic patterns of development and does not create potential for future incompatible development.		
P1	Subdivision must not result in any of the following: (a) detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2; (b) a pattern of subdivision unsympathetic to the historic cultural heritage significance of the precinct; (c) potential for a confused understanding of the development of the precinct; (d) an increased likelihood of future development that is incompatible with the historic cultural heritage significance of the precinct.	Not applicable. No subdivision proposed.
P2	Subdivision must comply with any relevant design criteria / conservation policy listed in Table E13.2.	
P3	In Heritage Precincts SB1 (Quayle--King Street) and SB4 (Ashfield Street) residential properties must not be subdivided, other than for boundary adjustments that do not increase the development potential of lots.	
P4	Any new lot created in Heritage Precinct BP1 must not detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site.	

HERITAGE IMPACT ASSESSMENT

E13.8.4 Buildings and Works in Heritage Precinct BP1

Objective: To ensure that development undertaken within Heritage Precinct BP1 is sympathetic to the character of the precinct.		
A1	Site area per dwelling unit in Heritage Precinct BP1 must be not less than 350m^2.	Definitions Within the HIPS 2015, Part B 4.0, '**site**' *means the lot or lots on which a use or development is located or proposed to be located*. This would be the land contained across the South Street and Hampden Road titles. '**dwelling**' *means a building, or part of a building, used as a self-contained residence and which includes food preparation facilities, a bath or shower, laundry facilities, a toilet and sink, and any outbuilding and works normally forming part of a dwelling.* '**Visitor accommodation**' is separately defined to that of a dwelling. The definition within the planning scheme is suspended, and so we refer to the definition for visitor accommodation contained in Planning Directive No. 6 – Exemption and Standards for Visitor Accommodation in Planning Schemes,[14] which defines 'visitor accommodation' as: *Use of land for providing short or medium term accommodation, for persons away from their normal place of residence, on a commercial basis or otherwise available to the general public at no cost. Examples include a backpackers hostel, bed and breakfast establishment, camping and caravan park, holiday cabin, holiday unit, motel, overnight camping area, residential hotel and serviced apartment.* '**Site area per *dwelling***' *means the area of the site (excluding any access strip) divided by the number of dwellings*. For this site, there is no access strip. Discussion For this proposal only Townhouses 1-2 will be classified as residential, and meet the definition of a dwelling. The Cottage has an existing permit for visitor accommodation, and the remaining thirteen units are proposed as visitor accommodation. Therefore, the site area per dwelling is the area of the overall site divided by the two dwellings is calculated as: 2,025 / 2 = 1,012.50m^2 per dwelling. The proposal meets the Acceptable Solution. A1 is satisfied.

14 Planning Directive No. 6 – Exemption and Standards for Visitor Accommodation in Planning Schemes, Effective date 1 August 2018

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P2	Buildings should be close to the street frontage except where the prevailing setback on the same side of the street is substantial, in which case the setback shall conform to the general building line.	The proposed buildings are close to the street frontage and conform to the general building line, consistent with this Performance Criterion and sympathetic to the character of the precinct. P2 is satisfied.
P3	The height of development must neither be obtrusive in the streetscape nor detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site.	The height of the proposal has been developed through streetscape analysis which is depicted in Drawing 22019_DA11 Rev 03, prepared by JAWS Architects 26/09/2025. The Hampden Road elevations are consistent with the streetscape context of Hampden Road and the immediate context of the Places at 57 and 47 Hampden Road. The height responds to the return elevations of 57 and 47 Hampden Road along Kelly and South Street. The Cottage remains on South Street without alteration to its height. Overall the height of the development is neither intrusive nor detracting from the pattern f development characteristic of the area. P3 is satisfied.
P4	Where reasonable and practicable, a dwelling must substantially occupy the width of the frontage of a lot, except where the prevailing setbacks from side boundaries on the same side of the street are substantial and not so as to exclude a driveway or car parking at the side of the building.	The proposal reasonably occupies the width of the frontages to Kelly Street and Hampden Road, consistent with this Performance Criterion and sympathetic to the character of the precinct. P4 is satisfied.
P5	The rear setback of the principal building must not detract from the layout pattern of development that contributes to the cultural heritage significance of the precinct and its contribution to private amenity facilitated by the 'house and garden' form of development.	The integrated titles of the site at 55 Hampden Road detracts from the layout pattern of development that contributes to the cultural heritage significance of the precinct. The historic pattern of development being well documented and represented in Figures 21 and 22 of '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance'[15] (Appendix B) The proposed setbacks, together with the wrapping nature of the proposal to two frontages more appropriately responds to this Performance Criterion. Further the proposal nominates courtyard gardens consistent with the 'house and garden' form of development. P5 is satisfied.
P6	The building must not detract from the pattern of development that is a characteristic of the cultural heritage significance of the Precinct in the vicinity of the site.	The pattern of development, characteristic of the cultural heritage significance of the Precinct, is well documented. Archival plans such as the Metropolitan Drainage Board Hobart Detail Plan No.34, 1905-1909,[16] indicate a corner building form, the 'Prince of Wales Hotel' to the Hampden

15 Margaret Desgrand', '43 South Street, Battery Point 7004: Assessment', Figures 21 and 22, p 24.
16 'Metropolitan Drainage Board Hobart Detail Plan No.34, 1905-1909', TA, SD_ILS-553788, reproduced in Margaret Desgrand', '43 South Street, Battery Point 7004: Assessment', p 24.

		Road and Kelly Street intersections. It also indicates both free standing, and conjoined, forms fronting Hampden Road. Conjoined residential dwellings return down Kelly Street and the site at 43 South Street is largely undeveloped, except for a narrow shed to the southern boundary. While the current building, situated within a large expanse of hard stand carparking, considerably detracts from the pattern of development that is a characteristic of the Precinct, the proposal seeks to break the form and volume in a manner sympathetic to the character of the Precinct. The proposal nominates a corner form, reminiscent of the former 'Prince of Wales Hotel' (1843-1966/67) with additional built form broken into a pattern sympathetic to the early 1900s. The pattern of development remains intact to South Street with the retention of the Cottage. P6 is satisfied.
P7	Land directly between a dwelling and the street shall not be designed or paved or used for the manoeuvring or parking of vehicles except to gain access.	Placing the carpark underground and moving the current Hampden Road car access to Kelly Street, will allow the development to respond to the Hampden Road heritage streetscape which was predominately built before car ownership was common[17] (Table E13.2) The Cottage retains its existing driveway off South Street. P7 is satisfied.
P8	Each lot must have not more than one crossing over the footpath per frontage and have a maximum width of 3 m unless it can be demonstrated that the crossing and its width is essential and will: (a) not detract from the historic cultural heritage significance of the precinct; (b) provide a net benefit in parking quantum taking into account any loss in on-street parking required to facilitate the additional or wider access.	The site will have one, 7m, crossing over the Kelly Street Footpath located at the existing crossing. The width of the crossing is to allow two-way traffic to access the basement carpark, minimising disruption to the traffic on Kelly Street. The proposal will not result in a loss of on-street parking, rather the removal of the Hampden Road crossover may allow for an increase on-street parking. Moving the current Hampden Road car access to Kelly Street and the carparking underground will reinstate a more traditional frontage on Hampden Road, where street crossings are not in keeping with the historic cultural heritage significance of the precinct. P8 is satisfied.
P9	Parking must not detract from the cultural heritage significance or the setting of existing dwellings.	The underground parking will not be visible from the street, or within the site, and will not detract from the cultural heritage significance or the setting of existing dwellings adjacent to the Site. P9 is satisfied.

17 HIPS 2015, Part E13.0, Table E13.2

HERITAGE IMPACT ASSESSMENT

Summary of Assessment

The Site is within the 'Battery Point (BP1) Heritage Precinct.[18] The proposal accords with the provisions of the HIPS 2015 Historic Heritage Code Provisions for Heritage Precincts.

The following list summarises key findings:

- The demolition is limited to the c.1966/67 Hotel, and surrounding carpark. Both of which are uncharacteristic and detracting from the historic cultural heritage significance of the Precinct. The demolition includes the skillion extension to the rear of the 43 South St Cottage which does not contribute to the precinct.
- The proposal adds favourably to the streetscape while remaining sympathetic to the heritage precinct setting by deriving its form, fenestration and materiality from the characteristics of surrounding buildings and reinterpreting them in a contemporary way.
- The proposal responds well to the wide variety of building periods and styles in the Precinct. That the design is contemporary in nature is less important than its demonstrated responsiveness to the significance of the Precinct and its capacity to retain and enhance the Precincts' values.
- The contemporary design of the building as a series of articulated roof forms and masses reduces the potential bulk of the structure within the streetscape, and reflects the Precinct's characteristic development pattern. The proposal in this regard is not a departure from the established historic characteristics of the area and will not detrimentally impact upon its cultural heritage significance. Further, the balance of massing adjacent to the street boundary is well considered and responds to the predominant street alignment.
- The Statement of Significance for the heritage precinct notes finishes and materials which demonstrate a high degree of integrity with a homogenous historic character. The proposed material palette reflects this in a contemporary manner and utilises mixed materials, including exposed brick masonry and bagged and painted brick masonry, consistent with that represented across the precinct. The colour palette seeks to reflect the mixed tones found throughout the precinct, a design tool used to further break down form and avoid perceptions of mass.

Conclusion

The Place to the corner of Kelly Street and Hampden Road represents an opportunity for infill development that is responsive to its context. It is considered that the proposal has the potential to enhance the streetscape, which is otherwise compromised by the expanse, void, and visual impact, of the current carpark and Hotel building.

To achieve an appropriate architectural outcome the design has been informed by best-practice guidance on new development within heritage contexts used across Australia.

> *'Infill development can accommodate a rich variety of interpretations and expressions... Some designers may adopt a more traditional or vernacular approach, others may wish to explore a highly contemporary solution. Both are equally valid. It is the quality of the response that is the key.'*[19]

The proposed design is responsive to the above points and seeks to bridge the traditional or vernacular approach and highly contemporary design in a manner which is sympathetic to the Precinct.

> *'Good design in a historic context links the past to the present and projects into the future by demonstrating an understanding and responding to the context of a place. Similarly, new development affecting an established and valued setting, such as a conservation area, must be memorably representative of its own time. Infill buildings can successfully provide for new modern demands within the context of the historic environment.'*[20]

18 HIPS 2015, Part E13.0, Table E13.2
19 NSW Heritage Office & RAIA, 'Design in Context – Guidelines for Infill Development in the Historic Environment', 2005, p 3.
20 Office of the Victorian Government Architect, 'Good Design + Heritage', 2017, p 5.

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HERITAGE IMPACT ASSESSMENT

The proposal acknowledges and responds to the significant setting and context of the site and the Battery Point (BP1) Heritage Precinct. It is our position that the proposal does not impact on the values of the Heritage Precinct.

Recommendations

- In the event of unanticipated finds Practice Note 2: MANAGING HISTORICAL ARCHAEOLOGICAL SIGNIFICANCE IN THE WORKS PROCESS, Tasmanian Heritage Council, 2014, should apply.

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APPENDICES

Appendix A Document and Drawing List

Author	Drawing / Document Name	Drawing No.	Rev	Date
JAWS Architects	Cover Page & Drawing Schedule	22019_DA01	03	26/09/2025
JAWS Architects	Site Plan	22019_DA02	03	26/09/2025
JAWS Architects	Demolition Plan - Site Plan	22019_DA03	03	26/09/2025
JAWS Architects	Basement Floor Plan	22019_DA04	03	26/09/2025
JAWS Architects	Ground Floor Plan	22019_DA05	03	26/09/2025
JAWS Architects	Level 1 Floor Plan	22019_DA06	03	26/09/2025
JAWS Architects	Level 2 Floor Plan	22019_DA07	03	26/09/2025
JAWS Architects	Roof Plan	22019_DA08	03	26/09/2025
JAWS Architects	Sections A-B	22019_DA09	03	26/09/2025
JAWS Architects	Sections C-D	22019_DA10	03	26/09/2025
JAWS Architects	Battery Point : Morphology Study	22019_DA11	03	26/09/2025
JAWS Architects	Street Elevations	22019_DA12	03	26/09/2025
JAWS Architects	Elevations 1:100	22019_DA13	03	26/09/2025
JAWS Architects	Shadow Diagrams 01- June 21	22019_DA14	03	26/09/2025
JAWS Architects	Shadow Diagrams 02- September 23	22019_DA15	03	26/09/2025
JAWS Architects	3D Views	22019_DA16	03	26/09/2025
JAWS Architects	Artist Impression 01 - Hampden Road	22019_DA17	03	26/09/2025
JAWS Architects	Artist Impression 02 - Hampden Road	22019_DA18	03	26/09/2025
JAWS Architects	Artist Impression 03 - Kelly Street	22019_DA19	03	26/09/2025
JAWS Architects	Artist Impression 04 - South Street	22019_DA20	03	26/09/2025
JAWS Architects	Artist Impression 05 - Arthur Circus	22019_DA21	03	26/09/2025
JAWS Architects	Demolition Plan – Floor Plan	22019_DA22	03	26/09/2025
JAWS Architects	Elevations 1:100 (Fencing)	22019_DA23	03	26/09/2025

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APPENDICES

Appendix B Assessment of Historic Cultural Heritage Significance

Margaret Desgrand, '43 South Street, Battery Point 7004: Assessment of Historic Cultural Heritage Significance', for Purcell, April 2019.

43 SOUTH STREET, BATTERY POINT 7004

ASSESSMENT OF HISTORIC CULTURAL HERITAGE SIGNIFICANCE

APRIL 2019

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ASSESSMENT OF HISTORIC CULTURAL HERITAGE SIGNIFICANCE
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EXECUTIVE SUMMARY

This assessment of historical cultural heritage significance of the property at No. 43 South Street has been commissioned by Wilkins Constructions Pty Limited, in response to a request by the City of Hobart in relation to a development proposal at 55 Hampden Road, which extends to the subject site. Purcell have engaged the services of sub-consultant by Margaret Desgrand, Architect and heritage consultant, in the preparation of this assessment.

The property is not listed as a heritage place on the Hobart Interim Planning Scheme 2015 (HIPS 2015), or is it included on the Tasmanian Heritage Register (THR). However, the property is located within the Battery Point Heritage Precinct, which is identified in Table E13.2 of the Hobart Interim Planning Scheme 2015. This assessment sets out to facilitate a greater understanding of this place supported by historical, physical and comparative investigation and analysis.

This report is set out in five sections. The substance of Documentary Analysis is contained in Section 2, the Physical Analysis in Section 3, followed by a Comparative Analysis is Section 4. Section 5 contains the assessment of historic cultural heritage significance under the eight criteria established under the Historic Cultural Heritage Act 1995, Tasmania.

The documentary evidence has established that the building at No. 43 South Street was constructed on land originally granted to the Reverend Knopwood in 1804, and later transferred to Charles McLachlan during the 1830s. From this time, the property, remained undeveloped until 1922, except for a narrow shed-like structure along the length of the southern side boundary. Subsequent entries in the Hobart Post Office Directories suggest that the property remained tenanted after its construction. There is no documentary or physical evidence to suggest that any earlier substantive structures were built on the property prior to this date.

The building is a single storey detached face brick house of asymmetrical design, covered by a pair of low-pitched gable roofs, and located within an encircling garden setting. The physical evidence demonstrates that the dwelling is in fair condition with instances of settlement cracks indicating insufficiencies in the foundations and poor drainage. The rear portion of the dwelling has undergone a series of alterations, but the front is relatively intact.

This Interwar bungalow differs in character to the heritage listed Victorian and Federation dwellings that align South Street north of the site and collectively form a cohesive historic urban townscape.

The analysis of the context and setting of the place, reveals its level of contribution to the historic cultural heritage significance of the locality is limited by its lack of conformity to the predominant historic streetscape pattern of development of South Street.

The building's low-slung asymmetrical roof form with street facing gables, does not contribute to the historic character of the streetscape to the north of the property, which is derived from a predominance of bald-faced symmetrically composed dwellings, narrow frontages closely aligning the street, steeply pitched roof forms, projecting chimneys and dormer windows. The recessed location of the dwelling on the site contrasts with the predominant street frontage setbacks, results in limited visibility and streetscape presence, and breaks the continuity of the street wall along the western side of South Street. The suburban nature of this place with its encircling garden setting, fails to reinforce the historic urban character of South Street, and its contribution to the streetscape is limited.

The place has no scenic or landmark qualities, does not feature in any distant views of Battery Point, being nestled amongst buildings of greater height, nor is it visible in views within the immediate locality, from Hampden Road, Francis Street or McGregor Street. The dwelling has limited visibility in acute views within the broader streetscape context in South Street.

The assessment of historical cultural heritage significance under the eight criteria finds that the building and its surrounding garden at 43 South Street, Battery Point has a limited level of historic cultural heritage significance under Criterion (d). Whilst the building exhibits a number of design characteristics typical of the Inter War Californian Bungalow style, these characteristics are insufficient in number to clearly demonstrate this style. The place is an unremarkable example of its type that exhibits a low level of stylistic design merit and a low level of craftsmanship, particularly when comparable examples of Inter War bungalow dwellings in the locality.

The place does not meet the threshold for inclusion under criterion (f), as its level of contribution to the historic cultural heritage significance of the locality is limited by its lack of conformity to the predominant historic streetscape pattern of development of South Street. The suburban nature of this dwelling with its encircling garden, fails to reinforce the significant historic urban character of South Street, and its contribution to the streetscape is limited.

Whereas the heritage listed Victorian and Federation dwellings that align South Street to the north of the site collectively form a cohesive historic urban townscape that has high historic cultural heritage significance under criterion (f), this property does not play a contributory role in the derivation of that significance.

This report finds that the place does not achieve a level of historic cultural heritage significance to warrant any contributory streetscape status, or inclusion as a heritage place on the Hobart Interim Planning Scheme 2015 or on the Tasmania Heritage Register.

1.0 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES OF THE STUDY

This Assessment of Heritage Significance of the property at No. 43 South Street, Battery Point has been prepared for Wilkins Construction Pty Limited, as part of the documentation for an application to the Council of the City of Hobart for a planning permit for a mixed-use development encompassing a number of properties including 55 Hampden Road.

1.2 LOCATION AND SITE IDENTIFICATION

The property at No. 43 South Street Battery Point is located on the west side of South Street, in close proximity to the intersection of Hampden Road. South Street is a narrow street with a cohesive historic streetscape character. The property title is Volume 229127 Folio 1.

Figure 1 Location of the property outlined in red, overlaid on the current State Aerial Photo Image and Topographic Map, DPIPWE

1.3 STATUTORY HERITAGE MANAGEMENT FRAMEWORK

The property is not identified as a heritage place on the Hobart Interim Planning Scheme 2015 (HIPS 2015), or is it included on the Tasmanian Heritage Register (THR).

No. 43 South Street is located within the Battery Point Heritage Precinct, which is identified in Table E13.2 of the Hobart Interim Planning Scheme 2015. Section E13.3 of the HIPS 2015 defines a heritage precinct as '*an area shown on the planning scheme maps as a heritage precinct and described in Table E13.2 as having particular historic cultural heritage significance because of the collective heritage value of individual places as a group for their streetscape or townscape values*'.

The Statement of Historic Cultural Heritage Significance under the entry for the Battery Point Heritage Precinct in Table E13.2 of the Hobart Interim Planning Scheme 2015 explains the precinct '*is significant for reasons including*:

01 *The wide variety of architectural styles and historic features ranging from entire streets of 19th century Colonial Georgian cottages, to Victorian, Edwardian and Pre and Post War examples of single and attached houses that are of historic and architectural merit, many of which demonstrate housing prior to mass car ownership.*

02 *It is primarily a residential area with a mix of large substantial homes and smaller workers cottages on separate lots, gardens, an unstructured street layout, and lot sizes that show successive re-subdivision into narrow lots that demonstrate early settlement patterns of Hobart.*

03 *The original and/or significant external detailing, finishes and materials demonstrating a high degree of integrity with a homogenous historic character.*

A large proportion of the properties in South Street are identified as being 'Heritage Places' on Table E13.1 of the Hobart Interim Planning Scheme 2015 and on the Tasmania Heritage Register (refer table 1).

Table 1: Properties in South Street that are listed on the Hobart Interim Planning Scheme 2015 (HIPS 2015) and Tasmania Heritage Register (THR)

South Street: Westside			
HIPS 2015	THR	Address	
Yes	Yes	3	South Street
Yes	Yes	5	South Street
Yes	Yes	7	South Street
Yes	Yes	9	South Street
Yes	Yes	11	South Street
Yes	Yes	13	South Street
Yes	Yes	15	South Street
Yes	Yes	17	South Street
Yes	Yes	19	South Street
Yes	Yes	21	South Street
Yes	Yes	23	South Street
Yes	Yes	25	South Street
Yes	Yes	27	South Street
Yes	Yes	33	South Street
Yes	Yes	35	South Street
Yes	Yes	39	South Street
Yes	Yes	41	South Street

South Street: Eastside			
HIPS 2015	THR	Address	
Yes	Yes	12	South Street
Yes	Yes	14	South Street
Yes	Yes	14	South Street
Yes	Yes	22	South Street
Yes	No	22A	South Street
Yes	Yes	24	South Street
Yes	Yes	26	South Street
Yes	Yes	30	South Street
Yes	Yes	38	South Street

1.4 REVIEWS OF HERITAGE LISTS

The current list of 'Heritage Places' on Table E13.1 of the Hobart Interim Planning Scheme 2015 includes properties that were listed by the Battery Point Planning Scheme 1979, as well as additional properties that were identified as part of a comprehensive review by Hobart City Council in 2000. The Battery Point Heritage Review, which was undertaken by Katheryn Bennett, was completed in September 2000 and recommended the listing of a considerable number of buildings throughout Battery Point. The subject site was not recommended for listing although a number of buildings in close proximity to the site were recommended for inclusion as listed places. These included the commercial building adjacent to the subject site on the corner of South Street and Hampden Road, at 47 Hampden Road, and seven dwellings in Kelly Street. The additional heritage listings recommended by the Battery Point Heritage Review are shaded in blue on Figure 2 below.

Figure 2 Battery Point Heritage Review, Main Report, Volume 1, September 2000, P 7. Places recommended for inclusion on the Battery Point Planning Scheme are shaded in blue

1.5 METHODOLOGY AND TERMINOLOGY

This heritage assessment uses primary sources as well as information contained in secondary sources and accessible electronic databases.

The site survey was undertaken on 1 April 2019, with access facilitated by Robert Wilkins of Wilkins Constructions Pty Limited. This inspection did not involve any disturbance of fabric as the building was occupied at the time of the survey.

This assessment also follows the approach set out in '*Stage 1: Understanding the Place*', of the publication '*The Conservation Plan*', by James Semple Kerr (Australia ICOMOS, seventh edition, 2013). The methodology of this assessment is also consistent with guidelines set out in the publication '*The Burra Charter: The Australia ICOMOS Charter for the Places of Cultural Significance 2013* (the Burra Charter), and having regard to the methodology outlined in the *Assessing Historic Heritage Significance for Application with the Historic Cultural Heritage Act 1995*', prepared by Department Primary Industry Parks Water and the Environment, 2011.

Terminology is consistent with the Burra Charter, and with the publication, '*Assessing Historic Heritage Significance for application with the Historic Cultural Heritage Act 1995*', prepared by the Tasmanian Department Primary Industry Parks Water and the Environment, 2011.

The terminology to describe building styles generally follows that which is set out in Apperly, R., Irving, R., and Reynolds, P., 1989, *A Pictorial Guide to Identifying Australian Architecture*.

1.6 LIMITATIONS

This report does not consider Aboriginal heritage values. Owing to the early and intensive use of Battery Point by Europeans, there has been limited opportunity to investigate archaeologically the indigenous occupation of the area. The presence of Aboriginal people, however, in the locality and their dislocation in the early nineteenth century is recognised, while not included in the description of the phases of development for this subject property.

This report does not include a historical landscape assessment, nor an archaeological assessment of the site nor does it assess issues associated with natural values, flora or fauna.

Historical sources and reference material used in the preparation of this report are acknowledged and referenced at the bottom of each page, at the end of the report and/or in figure captions. Reasonable effort has been made to identify, acknowledge and obtain permission to use material from the relevant copyright owners.

1.7 AUTHOR IDENTIFICATION

This heritage assessment has been prepared by Margaret Desgrand, Architect (Tasmania Board of Architects No 1016) and heritage consultant and reviewed by Lucy Burke-Smith, Assoicate, Purcell.

1.8 ACKNOWLEDGEMENTS

The assistance of Robert Wilkins, Wilkins Constructions Pty Limited is gratefully acknowledged.

1.9 ABBREVIATIONS

The following abbreviations are used:

- BPHR 2000 Battery Point Heritage Review 2000.
- CMP Conservation Management Plan
- DPIPWE Department of Primary Industries, Parks, Water and Environment
- HCC Hobart City Council
- HIPS 2015 Hobart Interim Planning Scheme 2015
- NAA National Archives of Australia
- NLA National Library of Australia
- TAHO Tasmanian Archive and Heritage Office
- THR Tasmanian State Heritage Register

2.0 DOCUMENTARY EVIDENCE

2.1 INTRODUCTION

The history of the property at 43 South Street, Battery Point, and its historical context has been researched and presented as phases of development under separate themes. Historic information, including plans were obtained from the Tasmanian Archive and Heritage Office, the Department of Primary Industries, Parks, Water and Environment, and other referenced electronic databases, primary and secondary sources.

The phases of development area from the first beginnings of European settlement are:

- Phase 1: Initial land grants at Battery Point (1804-1818).
- Phase 2: Establishment of military fortifications at Battery Point (1811-1818).
- Phase 3: Subdivision of initial land grants (1824-1840).
- Phase 4: Consolidation of Battery Point as a village (1840-1890).
- Phase 5: The 1890s Depression and early years of Federation (1890-1915).
- Phase 6: World War One and the Inter War years (1915-1940s).
- Phase 7: Post World War Two, visions of a 'modern city', and the rise of community action and heritage protection (1945-2000).

2.2 THEMATIC HISTORY

Owing to the early and intensive use of Battery Point by Europeans, there has been limited opportunity to investigate archaeologically the indigenous occupation of the area. The presence of Aboriginal people, however, in the locality and their dislocation in the early nineteenth century is recognised, while not included in the description of the phases of development for this subject property. The following is a brief outline of pre-colonial Aboriginal culture and settlement, and the dislocation of Aboriginal peoples from their land and practices following the British invasion and subsequent colonial settlement:

'Aboriginal languages in lutruwita (Tasmania) developed over tens of thousands of years. In earlier generations there was some interaction with people in what is now southern Victoria until rising sea levels formed the islands of Tasmania about 12 000 years ago'.[01]

The first permanent British settlement in Van Diemen's Land had begun on 8 September 1803, at Risdon Cove on the Derwent River's eastern shore. However, Lieutenant-Governor David Collins on his arrival in 16 February 1804, made the decision to relocate the settlement to Sullivan's Cove on the western shore of the Derwent River. The traditional and original owners of the land around the Hobart region were the Mouheneenner people of the Tahuni Lingah or Nuenonne language group. The first settlers referred to the Mouheener people as the 'South-East tribe'.[02]

The invasion of Aboriginal lands by the British and the lack of sensitivity towards the indigenous culture led to the disruption of tribal movements and direct competition for the local food supply. As European settlers expanded deeper into Tasmanian, continued conflicts resulted in the depletion of the Aboriginal populations.[03]

'In response to the escalating conflict between Aboriginal people and colonists during the 1820s, the colonial authorities discussed options to remove the Aboriginal people from their lands'.[04]. By the end of 1828 Lieutenant Governor Colonel George Arthur had declared martial law. *'The activities of 'roving parties' in the 1820s, George Robinson's so-called 'friendly mission' in 1829 – 1831, and the Black Line in 1830, led to an agreement – or, some say, a treaty – between Aboriginal clan leaders and Governor Arthur in October 1831. The agreement led to the progressive removal of Aboriginal people from mainland Tasmania from 1831 to 1835. After trialing several sites to house the removed Aboriginal people Commandant W J Darling settled on the current site on Flinders Island in February 1833. It was named 'Wybalenna'. This was chosen as it meant 'Black man's houses' in the language of the Ben Lomond people, the largest Aboriginal nation at the site.'*[05]

01 *Aboriginal Heritage Council Tasmania, Cultural Heritage, Aboriginal Languages and Trade.*

02 *Dallery, E.M. April 1967, Defences of the Derwent, Papers and Proceedings, Tasmanian Historical Research Association. 14 (4): 148–164.*

03 *Comey, G. 2017, Conservation Management Plan (CMP) for Franklin Square.*

04 *Aboriginal Heritage Council Tasmania, Cultural Heritage, Aboriginal Historical Places, Wybalenna.*

05 *Aboriginal Heritage Council Tasmania, Cultural Heritage, Aboriginal Historical Places, Wybalenna*

2.3 PHASE 1: INITIAL LAND GRANTS AT BATTERY POINT (1804 -1818)

The subject property at 43 South Street, Battery Point was once part of the grounds of the Reverend Robert Knopwood, the colony's first chaplain.

Reverend Knopwood was awarded the first land grant at Battery Point by Lieutenant Governor Collins in 1804. The grant comprised 34 acres on the northern side of Battery Point extending south of the Burial Grounds, which were at this time the burial grounds considered the outskirts of Hobart Town. By 1805, Knopwood had completed the constructed of his house known as 'Cottage Green'. Being located on the foreshore, and with a fresh water stream, groups of the local Aboriginal tribe continued to visit the land, and fish, with whom Knopwood reputedly established a good relationship.

The second land grant in the area, comprising 90 acres on the southern half of Battery Point, was awarded much later, in 1818, by Governor Macquarie to Lieutenant Governor Sorell, who first arrived in Van Diemen's Land in in 1817.

These two initial land grants are recorded in the 'Plan of Layout of Streets of Hobart' (refer figure 3). There is no recorded date for this plan, but it is possibly circa 1820. The plan indicates the land granted to Reverend Knopwood to the north of Colonel William Sorell's to the south. The Plan shows the confine of the streets of Hobart Town, the Colonial Burial Grounds, now St David's Park, the Battery at the point and the proposed roadway along the southern edge of Sullivan's Cove, now Salamanca Place.

The 'Land Commissioner's Map', dated 1826 provides a less accurate but more descriptive survey indicating Knopwood's house (refer figure 4).

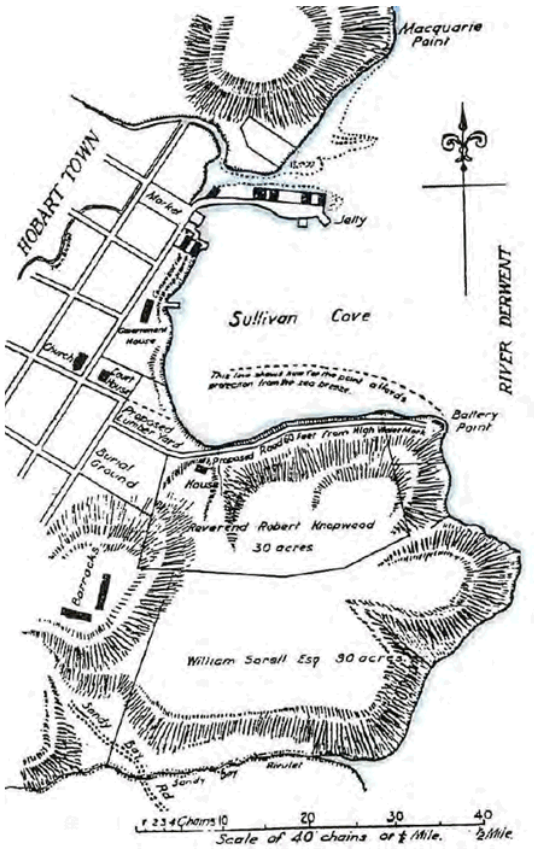

Figure 4 The 'Land Commissioner's Map', dated 1826. Source: DPIPWE. This map indicates the location of Knopwood's house

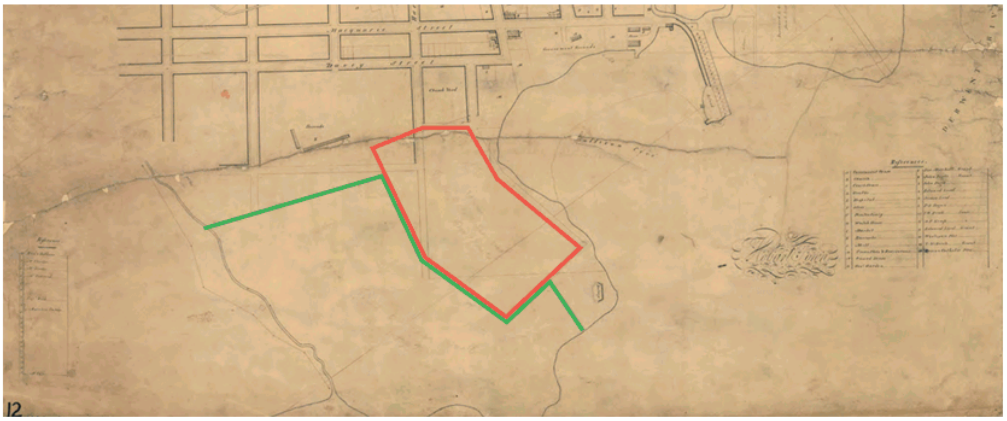

Figure 3 Map - Hobart 12 – Excerpt from the 'Plan of layout of Streets of Hobart'. Tasmania Archive and Heritage Office, Series: Hobart Maps (AF394) Item Number: AF394/1/10. The map shows both Knopwood's and Sorell's grants. Knopwood's grant of 30 acres is outlined in red, and Sorell's grant of 90 acres in green.

2.4 PHASE 2: ESTABLISHMENT OF MILITARY FORTIFICATIONS AT BATTERY POINT (1811-1818)

The history of military defences at Battery Point is not directly related to the historical development of No. 43 South Street. However, indirectly, the relationship of the various defence components shaped the development of Battery Point and contributed to the nature of its development and as such, it is an important part of the historical context of all properties at Battery Point.

In 1811, Governor Lachlan Macquarie embarked upon an inspection of Van Diemen's Land, then a dependency of the colony of New South Wales. On his arrival in Hobart in November that year, Macquarie was alarmed by the random and irregular arrangement of the town, and the unsatisfactory temporary nature of its buildings. The alarm was such that Macquarie, within a few days, issued a series of Government Orders that were to set the pattern of development for many years. The most notable of these related to the need for a new town plan comprising a grid of streets for the settlement at Hobart, the setting out of land for public purposes, and the commissioning of military barracks and hospital. Macquarie also suggested the construction of a series of more permanent fortifications.[06] Macquarie ordered the Deputy Surveyor General James Meehan to survey a proposal for a more regular street pattern, that was to determine the form of the current city centre of Hobart.[07]

Accompanied by Captain Antill, Macquarie selected a strategic site for the construction of new barracks to accommodate 150 men, quarters for the officers and a hospital for 32 patients, located on a rise above the town that become known as Barrack Hill.[08] The Barracks were completed between 1814 and 1818.

Following Governor Macquarie's advice, a location for battery fortifications, comprising an area of 8 acres (32,000 m2) was selected at the eastern end of what is now Battery Point on the southern side of Sullivan's Cove.[09]

By 1818 Lieutenant-Governor Sorell had completed the battery, which was named Mulgrave Battery after the first Earl of Mulgrave, Master General of the King's Ordnance.[10] The battery comprised six guns which projected forward through earthwork embrasures. Described as a '*a poor pitiful mud fort*' the battery was to form part of a series of coastal defensive installations to protect the settlement. The original nearby guardhouse built in 1818, remains within Princes Park.[11] [12]

The track between the Military Barracks and the Battery later became the alignment of Hampden Road.

The Plan of Hobart and its vicinity by Surveyor William S Sharland in 1827 demonstrates the strategic nature of Battery Point at the time, indicating the relative locations of the Barracks on the rise above the battery on the point (refer figure 5).

—

06 Robson, L.L.1983, A History of Tasmania, Volume 1, Van Diemen's Land from the Earliest Times to 1855. Melbourne, Victoria: Oxford University Press

07 Bolt, F, 1981, James Meehan's Survey of Hobart Town 1811. Papers and Proceedings of the Royal Society of Tasmania, Vol 115, 1981

08 Quentin B. 2011, Address on the occasion of the Anglesea Barracks Bicentennial Celebrations.

09 Dollery, E.M. April 1967, Defences of the Derwent. Papers and Proceedings. Tasmanian Historical Research Association. 14 (4): 148–164

10 On the Convict Trail

11 Heritage Tasmania (2006)

12 Chapman, J and Chapman, M. 1996, Tasmania. Hawthorne, Victoria: Lonely Planet

Figure 5 'Plan of Hobart and its vicinity' by Surveyor William S Sharland, dated 1827 copied from Mr Scott's survey the remainder by W. S. Sharland. Tasmanian Archive and Heritage Office, Series: Hobart Maps (AF394) Item Number:AF394/1/4

2.5 PHASE 3: SUBDIVISION OF INITIAL LAND GRANTS (1824-1840)

The subject site at 43 South Street is located on the portion of Knopwood's land transferred to Charles McLachlan.

In 1824, Reverend Knopwood, owing to financial difficulties was forced to subdivided part of his land, whilst retaining the western portion.[13] The new land owners ceded the northern portions of their land along the water front for the formation of a public road, Salamanca Place.[14]

Knopwood finally disposed of the remainder of his grant in 1829. The subdivision and sale coincided with the development of the new wharf on the southern shore of Sullivan's Cove. By this time, local merchants and entrepreneurs were keenly aware of the growing value of the water frontage, with a new wharf planned alongside Salamanca Place which was to be completed in 1830.

Until the end of the 1830s much of the whaling was undertaken in the Derwent River and its estuary. Whale oil was the most valuable trading commodity exported from Hobart, in much demand in England, for street lighting and industrial purposes.[15]

The development of Sullivan's Cove as a trading port supported local industries of shipwrights, sailmakers, ship chandlers, coopers, smiths, wharf labourers and associated hotels and lodging keepers. There was a high demand for waterfront structures as well as for workers housing close to the wharves, and for officers of the nearby garrison.

The 1832 'Detail Drawing of Sullivan's Cove & Battery Point' by Surveyor George Frankland indicates the subdivision of the portion of Knopwood's original grant, west of Montpelier Retreat, into the series of parallel blocks, and a strip of land proposed to be excised from the grant owners for waterfront purposes (refer figure 6). The Plan also indicates the fountain at the corner of Montpelier Retreat and Hampden Road to which water supply was recently reticulated from the Cascades, as well as the improvements that had been made to Mulgrave Battery in 1929 including a semaphore station and signal mast, allowing communication with ships entering the mouth of the river, and through a relay system of masts, stretching 60km to the Port Arthur penitentiary on the Tasman Peninsula.[16]

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13 Monks, L. Knopwood, 'Robert (Bobby) (1763–1838)' Australian Dictionary of Biography, National Centre of Biography, Australian National University, published first in hardcopy 1967

14 Freeman, P. 2012, Hobart Supreme Court Conservation Management Plan

15 Evans, K. 2006, 'Whaling', Companion to Tasmanian History, Centre for Tasmanian Historical Studies

16 Barnard, E. 2012, Capturing Time: Panoramas of Old Australia, Canberra: National Library Australia, pp 37-39

Figure 6 Map entitled 'Detail Drawing of Sullivan's Cove & Battery Point' by Surveyor G Frankland, July 1832. Tasmanian Archive and Heritage Office, Series: Hobart Maps (AF394) Item Number: AF394/1/8.

A detailed survey of the transfer of Knopwood's land grant appears on the Town Grants Chart for Buckingham 1N, Chart Number 3, circa 1840 (refer Figure 7). Commencing in succession from the eastern side of Montpelier Retreat, the transfers to Thomas Hewitt, James Grant, Captain Andrew Haig, John Montagu, Captain James Kelly, Charles McLachlan, and lastly adjacent to the military reserve were the grants of Askin Morrison and William Thomas Parramore, are clearly defined. The Town Grants Chart also shows that land to the south of Hampden Road, that is now occupied by the properties aligning Francis Street, as belonging to McLachlan. The Town Grants Chart indicates the future alignment of South Street along the eastern edge of McLachlan's grant. The alignments of Cross Street and Kelly Street are also marked.

Both Charles McLachlan and Captain James Kelly, were speculative businessmen who were engaged in whaling and shipping industries, in conjunction with other money-making ventures, and would have been keenly aware of the value of the land and the proposed construction of the 'New Wharf.'[17]

Captain James Haig and James Grant were both trading merchants.[18] At the northern end of his land, James Haig erected a pair of warehouses facing Salamanca Place, between 1833 and 1835.[19]

John Montagu, who purchased two acres adjacent to the western side of Kelly's land, was the nephew of Lieutenant-Governor Arthur. Appointed as Secretary to the Lieutenant-Governor, he reputedly benefited from Arthur's patronage, as well as obtaining financial loans from his uncle.[20]

In contrast to Charles McLachlan and James Kelly, both John Montagu and Captain James Haig built substantial mansions on their land. John Montagu built 'Stowell' by in 1831, and Captain Andrew Haig built 'Narryna', which was finally complete by 1840.

17 *Evans, K. 2006, 'Whaling', Companion to Tasmanian History, Centre for Tasmanian Historical Studies*

18 *Manuscripts relating to James and John Grant, donated by W. K. Grant in 1972, University of Tasmania Open Access Repository*

19 *Tasmanian Museum and Art Gallery: Narryna Visitor Guide*

20 *Reynolds, J. 'Montagu, John (1797–1853)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, first published in hardcopy 1967*

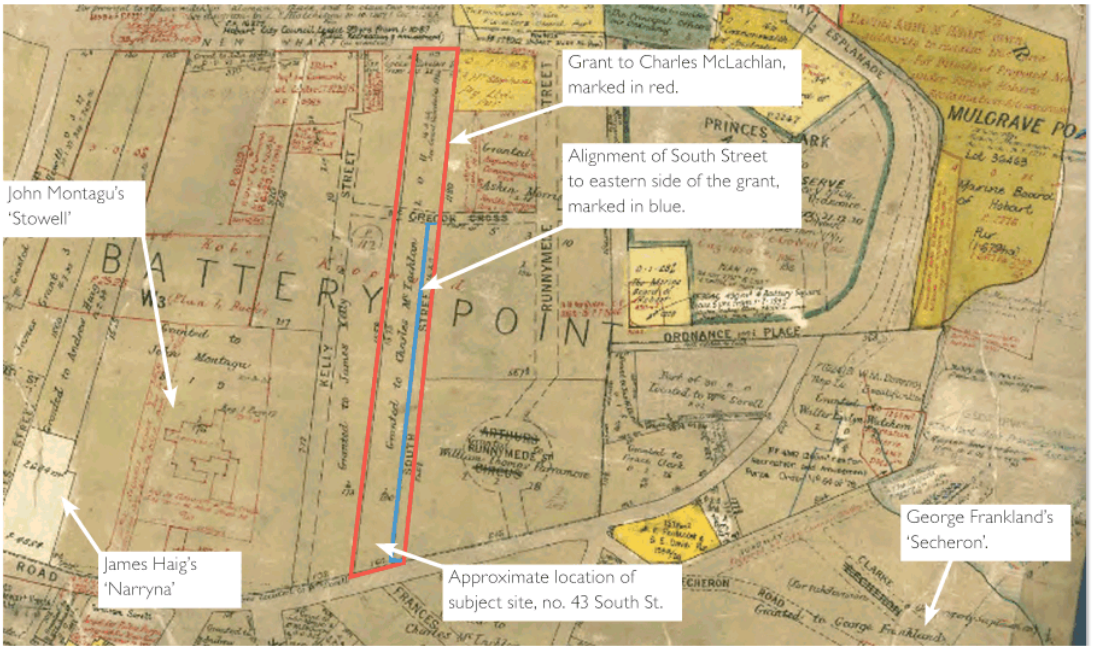

Figure 7 Town Grants Chart for Buckingham 1N, Chart Number 3, circa 1840. DPIPWE. The portion of Knopwood's grant at Battery Point transferred to Charles McLachlan is outlined in red for clarity. The alignment of South Street on the eastern portion of McLachlan's land, extending between Cross Street and Hampden Road, is shown on the map & has been outlined in blue for clarity

Askin Morrison, was also a merchant and later in the 1850s became a member of the state Legislative Council.[21] William Parramore was a solicitor with close associations with Lieutenant- Governor Arthur, and later charged with the management of Arthur's Richmond estate.[22]

Two maps by Surveyor George Frankland, one dated 1836, and a colour version, dated 1839, provide an indication of the extent of development on Battery Hill (refer Figures 8 and 9). Both maps indicate John Montagu's residence 'Stowell' and the limited number of roads defined by this stage, includes Harington Street and Hampden Road intersected by Montpelier Retreat, De Wit Street, Colville Street and Napoleon Street, all three terminating at Cromwell Street, and Trumpeter and Sloane Street both terminating at Napoleon Street.

—

21 Bolger, P, 'Morrison, Askin (1800–1876)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, published first in hardcopy 1974

22 Levy, M, 'Parramore, William Thomas (1797–1854)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, published first hardcopy in Australian Dictionary of Biography, Volume 2, (MUP), 1967

Figure 8 Map by Surveyor George Frankland, dated 1836

Figure 9 Map by Surveyor George Frankland, dated 1839, SD_ILS:548683, Tasmanian Archive and Heritage Office

Sections X3 and W3 of the trigonometric survey of 1841 by Assistant Surveyor James Sprent, indicate that Charles McLachlan's land remained largely undeveloped except for a substantial masonry building fronting Salamanca Place, and a number of small timber outbuildings located behind (refer figures 10 and 11). Charles McLachlan was born in Scotland circa 1795. After a period of employment in the West Indies he returned to Scotland in 1822, before accepting a position in Hobart in 1824, to take over as their principal agent for Leith of the Australian Co., the first shipping company to establish regular services between Britain and the Australian colonies. McLachlan soon earnt prominence in the Hobart mercantile circle, including as a promoter of the Hobart Exchange and Chamber of Commerce, and as a director of the Bank of Van Diemen's Land. In 1832 he was appointed to the Legislative Council, a position which he held till 1842. He later assisted in founding the Commercial Bank of Tasmania and the Derwent Bank. It is unlikely that Charles McLachlan made any further improvements to his land prior to his return to England in 1842.[23]

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23 Macmillan, D S and J. R. Morris, J R, 'McLachlan, Charles (1795–1855)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, published first in hardcopy in Australian Dictionary of Biography, Volume 2, (MUP), 1967

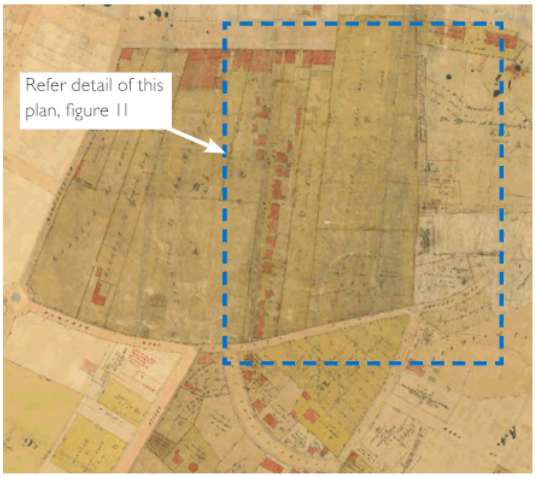

Figure 10 Trigonometric survey by Assistant Surveyor James Sprent, dated 1841, Plan of Sections X3 and W3 bounded by Hampton Rd and Montpelier Retreat, Hobart, and allotment granted to the officers of Her Majesty's Ordnance. This plan was formerly page 31 of Sprent's Mosaic Book. Tasmania Archive and Heritage Office Series: Hobart Maps (AF394) Item No: AF394/1/114

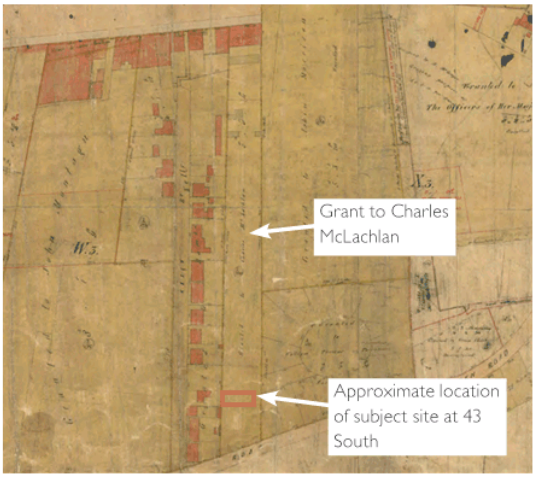

Figure 11 Extract from Figure 10 preceding (Sprent, 1841, Plan of Sections X3 and W3)

Captain James Kelly was one of the first land owners at Battery Point to subdivide his land into small allotments for much needed workers' tenement housing, in contrast to Montague and Haig who established mansions for their own use.

Kelly was born at Parramatta in 1791 to Catherine Devereaux, a convict transported for life from Dublin. From his young teens, Kelly displayed confidence in undertaking risky activities in sealing and whaling, with numerous sea voyages, including circumnavigating Van Diemen's Land in a whale boat in 1815. In 1819, Governor Macquarie appointed Captain Kelly as Derwent River pilot and harbour-master, a position he resigned from in 1829 to focus on whaling and his land acquisitions, both on Bruny Island and in Battery Point.[24]

The alignment of Kelly Street is first surveyed on the 'Map of Sullivan's Cove and part of Hobart Town', dated 1840 (refer Figure 12). This map shows a series of small dwellings on both sides of Kelly Street, as well as a series of steps at the northern end of the street. These were built by Kelly to provide quick access to Salamanca Place, and became known as 'Kelly Steps'.

This map also indicates the warehouses that had been constructed along Salamanca Place by 1840.

Sprent's trigonometric survey plan of 1841 indicates a series of small masonry dwellings aligning both sides of Kelly Street, except in the southwestern end where land belonged to John Montague (refer figures 10 and 11, on preceding pages). This plan marks the full alignment of Kelly Street, extending between Hampden Road to the south, and Kelly's steps to the north.

The early 1840s marked a change in the fortunes of the merchants who purchased Knopwood's grant. As also eventuated in Sydney, the depression of the early 1840s forced many merchants to sell, including Charles McLachlan who returned to England in 1842. Captain James Kelly was forced to assign his land to creditors and resume a position of employment with the port authorities, whilst Captain Andrew Haig was forced to sell Narryna in 1842.[25] John Montagu also encountered financial difficulties before departing Hobart for Cape Town in 1842.[26]

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24 Pretyman, E. R. 'Kelly, James (1791–1859)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, published first in hardcopy in Australian Dictionary of Biography, Volume 2, (MUP), 1967

25 Pretyman,E. R. 'Kelly, James (1791–1859)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, first published in hardcopy in Australian Dictionary of Biography, Volume 2, (MUP), 1967

26 Reynolds, J. 'Montagu, John (1797–1853)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, first published in hardcopy in Australian Dictionary of Biography, Volume 2, (MUP), 1967

Figure 12 'Map of Sullivan's Cove and part of Hobart Town', dated Nov 1840. Tasmanian Archive and Heritage Office, Series: Hobart Maps (AF394) Item Number: AF394/1/171

2.6 PHASE 4: CONSOLIDATION OF BATTERY POINT VILLAGE (1840-1890)

Whaling declined in the 1840s, due to the reduction in the population of southern right whales in the estuaries along the east coast of Tasmania, together with changing consumer demands and economic pressures.[27] Despite the recession of the early 1840s and the decline of the coastal whaling industry, the village of Battery Point slowly developed, with other industries establishing in the area providing employment. Investment on the battery defense installations assisted the growth of the area. In 1840, construction commenced on the larger Prince of Wales Battery further up the hillside on Battery Point, behind the location of the Mulgrave Battery.[28] At the same time the Mulgrave Battery was enhanced. Due to concerns prompted by the outbreak of the Crimean War in the 1850s, an additional battery, named the Albert Battery, was constructed behind the Prince of Wales Battery.

Allotments in Arthur's Circus were sold circa 1843. Two hotels were licensed including the 'Shipwright Arms' corner of Sloane and Colville Streets, and the 'Prince of Wales' hotel on the corner of South Street and Hampden Road (refer figure 13, and also figure 28). Construction of the sandstone spire and portico of St Georges Church commenced in 1847.

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27 Evans, K. 2006, 'Whaling', Companion to Tasmanian History, Centre for Tasmanian Historical Studies

28 Dollery, E.M. (April 1967). 'Defences of the Derwent'. Papers and Proceedings. Tasmanian Historical Research Association. 14 (4): 148–164

Figure 13 The 'former 'Prince of Wales' hotel located on the corner of Kelly Street and Hampden Road circa 1960. Tasmanian Archive and Heritage Office Item No. PH30-1-9158

The Valuation rolls published in the Hobart town Gazette of 1853 provide an indication of the number of residences that have been constructed in South Street in the early 1850s, eight of the eleven dwellings being tenanted (refer figure 14).

The 'Hobart Map and Street Directory' published in 1860 by the Westbrook family indicate the development of the street pattern in Battery Point (refer figure 15). De Witt and Napoleon Street now extend beyond Cromwell Street to meet the newly formed St Georges Terrace. Francis Street, Wellington Crescent and Arthurs Circus, Francis Street and Cross Street, now McGregor Street, are all formed. A '*Chemist and Druggist*' is established in Hampton Road, between South Street and Kelly Street.

COTTAGE GREEN, leading from Montpellier Retreat to Hampden-road.

No. of House.	Name of Occupant.	Description of Premises.	Name of Landlord.	Annual Rent.	Amount of Rate of Nine-pence in the Pound.
				£ s.	£ s. d.
	Charles Williams	House	— Butler	100 0	3 15 0
	John Gray	ditto	Mrs. Smith	23 0	0 17 3
	Matthew Harrison	ditto	Mrs. Martin	21 0	0 15 9
	Erecting	ditto	James Lee	15 0	0 11 3
	ditto	ditto	ditto	15 0	0 11 3
	ditto	ditto	ditto	18 0	0 13 6
	ditto	ditto	ditto	18 0	0 13 6
	James Goodwin	ditto	ditto	18 0	0 13 6
	Robert Jones	ditto	ditto	18 0	0 13 6
	James Spencer	ditto	H. Hobden	21 0	0 15 9
	Capt. Lyons	ditto	ditto	21 0	0 15 9
	Mrs. Harcourt	ditto	ditto	21 0	0 15 9
	School, Hobden	..	ditto	10 0	0 7 6

WILMOT-STREET, leading from Harrington-street into Hampden-road.

	Mrs. Pettingham & Miss Thornloe.	House	William Murray	70 0	2 12 6
	Peter Hughes	ditto	P. Hughes	25 0	0 18 9
	— Ray	ditto	— Wimms	23 0	0 17 3
	— Barrett	ditto	ditto	15 0	0 11 3
	John Emsell	ditto	ditto	15 0	0 11 3
	G. Pontings	ditto	— Barns	23 0	0 17 3

CROSS-STREET—*Battery Point.*

No. of House.	Name of Occupant.	Description of Premises.	Name of Landlord.	Annual Rent.	Amount of Rate of Nine-pence in the Pound.
				£ s.	£ s. d.
	Frederick Lovett.	House	— Taylor	30 0	1 2 6

SOUTH-STREET—*Battery Point.*

	Capt. Stuart	House	Wm. Woodcock	19 0	0 14 3
	Wm. Woodcock	ditto	ditto	19 0	0 14 3
	William Wevill	ditto	William Wevill	21 0	0 15 9
12	George Murray	ditto	Henry Grubb	21 0	0 15 9
	Joseph White	ditto	ditto	21 0	0 15 9
	James Innis	ditto	ditto	21 0	0 15 9
9	John Maynard	ditto	ditto	21 0	0 15 9
	Edward Marr	ditto	Handley	23 0	0 17 3
	John Foley	ditto	ditto	18 0	0 13 6
	Mrs. Handley	ditto	ditto	23 0	0 17 3
	J. Brown	ditto	J. Brown	23 0	0 17 3

RUNNYMEDE-STREET—*Battery Point.*

	Capt. Haig	House	W. L. Crowther	60 0	2 5 0
	B. Williams	ditto	Mrs. Barns	19 0	0 14 3
	William Dowher	ditto	ditto	19 0	0 14 3
	Capt. Hargrave	ditto	T. R. Wilson	34 0	1 5 6
	H. Bowden	ditto	ditto	34 0	1 5 6

Figure 14 Valuation Roll for South Street Battery Point, Hobart Town Gazette, 1853. Tasmanian Heritage and Archive Office

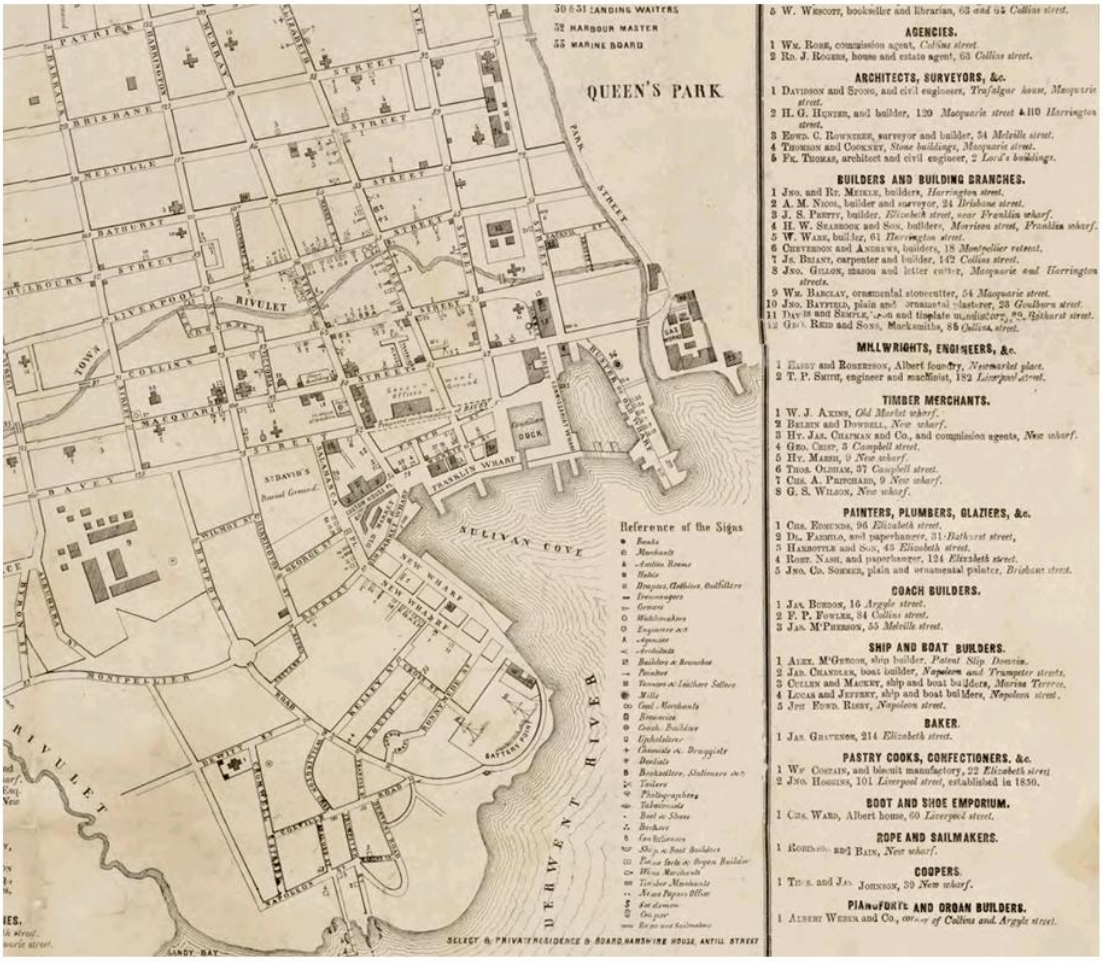

Figure 15 'Hobart Map and Street Directory' published from engravings by Westbrook in 1860, Tasmanian Heritage and Archive Office, Westbrook Family (NG760), Item Number NS760/1/10. Despite being an engraving produced by an artist rather than a surveyor, the maps were reputed at the time to be remarkably accurate.

A view of Battery Point taken from the tower of St David's Cathedral in 1857, provides evidence of the nature and scale of development at the time. Small dwellings are visible along the alignment of South Street (refer figure16).

As estuarine whaling declined, it was replaced by deep-sea sperm whaling, which required specially fitted out oceangoing ships and associated greater capital investment and more skilled labour.[29]

One such merchant with the investment capability, was Alexander McGregor, who reputedly accumulated the largest individually owned fleet of sailing ships south of the equator. In the late 1870s, McGregor rebuilt the original 'Lenna' cottage, originally owned by Captain James Bayley, transforming it into a grand home that demonstrated wealth and influence.[30]

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29 Evans, K. 2006, 'Whaling', Companion to Tasmanian History, Centre for Tasmanian Historical Studies

30 'McGregor, Alexander (1821–1896)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, published first in hardcopy 1974

Figure 16 View of Battery Point, excerpt from a photograph entitled 'Hobart Town from tower of St. David's Cathedral', 1857, AUTAS001139592695, Tasmanian Archive and Heritage Office.

Two photographs captured in the 1870s provide glimpses of South Street. One, a view taken from Morrison Street looking toward Battery Point by the photographer Henry Hall Bailey circa 1870, provides glimpses of dwellings aligning South Street (refer figure 17). The second, a photograph of Battery Point taken by the photographer Anson Bros. in 1878, provides glimpses of dwellings aligning South Street to the west of the Runnymede Street and 'Lenna' (refer figure 18)

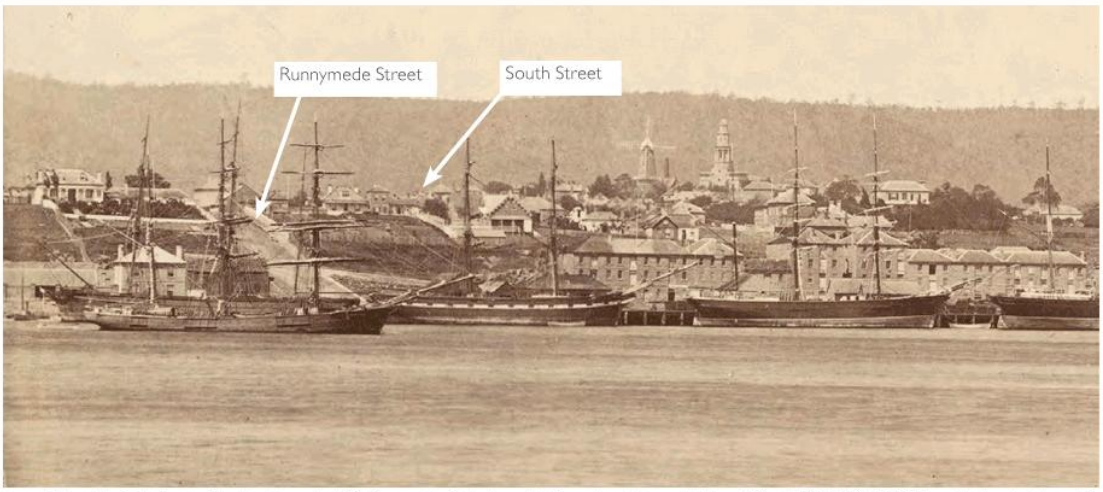

Figure 17 'New Wharf with Battery Point in background', c1870. Photographer: Baily, Henry Hall. Tasmanian Archive and Heritage Office AUTAS001136190253. The windmill on the ridge to left of the newly constructed spire of St Georges Church was a prominent landmark 1839 to 1885

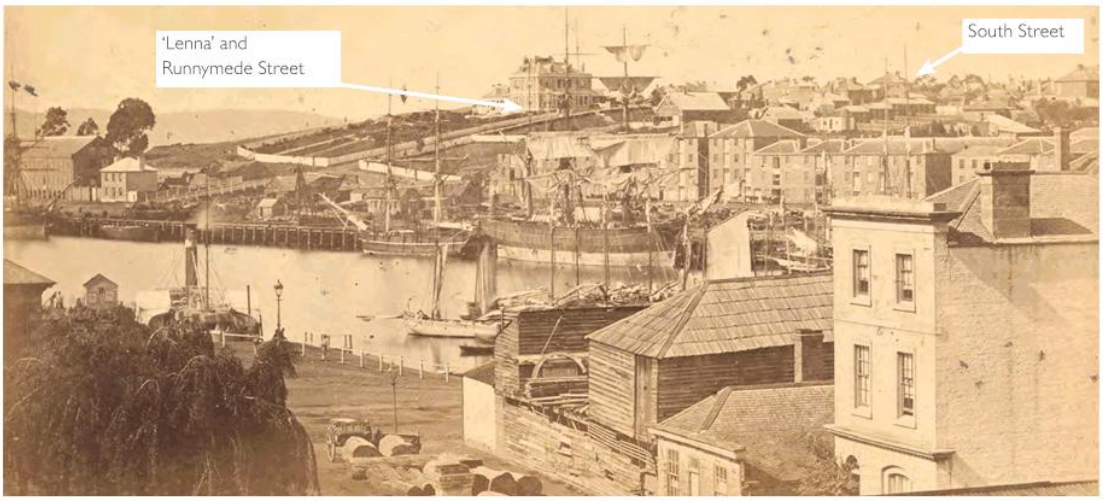

Figure 18 'New wharf showing 'Lenna' in the background', 1878. Photographer: Anson Bros. Tasmanian Archive and Heritage Office AUTAS001136156981j2k . A number of dwellings aligning South Street are visible to the west of the Runnymede Street and 'Lenna.'

By 1878, the Mulgrave, Prince of Wales and Albert Batteries were considered inadequate for defence purposes and dismanatled in 1881. In 1882, the sites were handed over to Hobart City Council for use as public space, which is now Princes Park. Finger wharves and large storage sheds at Princes Wharf were constructed in the 1880s, to provide the necessary improvements to port facilities to cater for the larger scale of shipping of steam powered ships entering the Derwent River. Not only did this mean a decline in the number of ships utilizing the 1830s wharf, the wooden boat building industries at Battery Point were also in decline. New industries that moved into the area in the 1880s included fruit and vegetable preserving works and jam making factories, as well as fertilizer manufacturers, tanning industries, metal foundries and steel fabrication and more noxious forms of industry.

In the same period, poverty in areas such as Battery Point received more attention, with the appearance of the Salvation Army and a revitalized Hobart City Mission. Other social improvements occurred. In 1883, educational opportunities broadened with the establishment of the first government school, the Battery Point Model School on the corner of Hampden Road and Sandy Bay Road.[31]

By the end of the 1880s, most of the current street street pattern of Battery Point is developed, as evident in the 'Plan of the City of Hobart' compiled in 1887 from existing maps (refer Figure 19).

31 *Alexander, A and Petrow, S. The Companion to Tasmanian History: 'Hobart' Centre for Tasmanian Studies*

Figure 19 The Plan of the City of Hobart compiled in 1887 from existing maps, AUTAS001139593792, Tasmanian Archive and Heritage Office

2.7 PHASE 5: THE 1890S DEPRESSION AND EARLY YEARS OF FEDERATION (1890- 1915)

By 1890, the Valuation Rolls of the Hobart Gazette provide evidence that much of the western side of South Street is developed, except for No's 37-41 and the subject site at No. 43 South Street.[32] The Roll for 1890 indicates that majority of the dwellings in South Street tenanted (refer figure 20).

However, the first decade following 1890, was a period of hardship in Battery Point. A downturn in world mineral prices resulted in a severe recession that affected all Australian colonies. The 1890s Depression in Australia which resulted from falling mineral prices reduced exports, inevitably led to a reduction in trading in and out of the ports of Sullivan's Cove. Unemployment rose sharply in the 1890s and led to a period of comparative poverty in Battery Point and throughout Tasmania.[33]

Generally, the economy of Hobart remained precarious and employment uncertain throughout the 1890s and the early years of Federation. The whaling and boat building industries continued in their decline and industrialization was slow to develop.

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32 *Valuation Rolls, 1853-1890. Extracts from the Hobart Town Gazette, Tasmanian Archive and Heritage Office, Record ID: SD_ILS:1194266*

33 *Felminham, B, The Companion to Tasmanian History: 'Economy', Centre for Tasmanian Studies*

No.	Description of the Property.	Name and Residence of the Occupier of the Property.	Name and Residence of the Owner of the Property.	Rateable Value.
				£
4	House	Chas. Hy. Richardson	Eliza Walker [agent	20
6	ditto	Frederick Foster	Thomas Cullen, S. Livingstone	22
8	ditto	Manuel Desoza	ditto	13
10	ditto	Henry H. Grubb	ditto	24
12	ditto	Matthew Rogers	ditto	18
14	ditto	William Butchers	Mrs. Prentis	20
16	ditto	—	Mrs. Watson, Queenborough	22
		SOUTH STREET.		
35	House	Joseph Edward Gates	James Hogg, Kelly-street	18
33	ditto	Edward Chas. Geappen	ditto	18
31	ditto	James Miley	Stone's estate	18
29	ditto	John P. Suckling	ditto	13
27	ditto	Walter Johnson	Elizabeth Martin, Murray-street	16
25	ditto	Edwin H. Cooper	ditto	16
23	ditto	William Hall	ditto	15
21	ditto	Fredk. Haitzemer	ditto	15
19	ditto	Andrew Blong	Julia Handley	18
17	ditto	William R. Davidson	ditto	16
15	ditto	Frederick Miller	ditto	16
13	ditto	Julia Handley	ditto	20
11	ditto	John Dawson	ditto	15
9	ditto	David Hogarth	D. Hogarth	18
7	ditto	George Watt	George Watt	26
	Land	Alexander M'Gregor	Alexander M'Gregor	5
2	House	John Ruddoch	Hannah Lee	16
4	ditto	Joseph Paxton	ditto	16
6	ditto	Hannah Lee	ditto	13
8	ditto	James C. Fisher	James C. Fisher	26

Figure 20 Valuation Rolls of 1890, Extracts from the Hobart Town Gazette, Tasmanian Archive and Heritage Office, Record ID: SD_ILS:1194266

The property at No. 43 South Street remains undeveloped during this period. This is confirmed by the Metropolitan Drainage Board Plans that were produced between 1905 and 1910. Detail Plan No.34 of The Metropolitan Drainage Board Plans of Hobart, indicates the site at 43 South Street still to be vacant apart from a narrow shed-like structure along the length of the southern side boundary. No. 37 South Street is also undeveloped (refer figures 21 and 22).

Figure 21 Metropolitan Drainage Board Hobart Detail Plan No.34, 1905-1909. Tasmanian Archive and Heritage Office, Item No. 628292

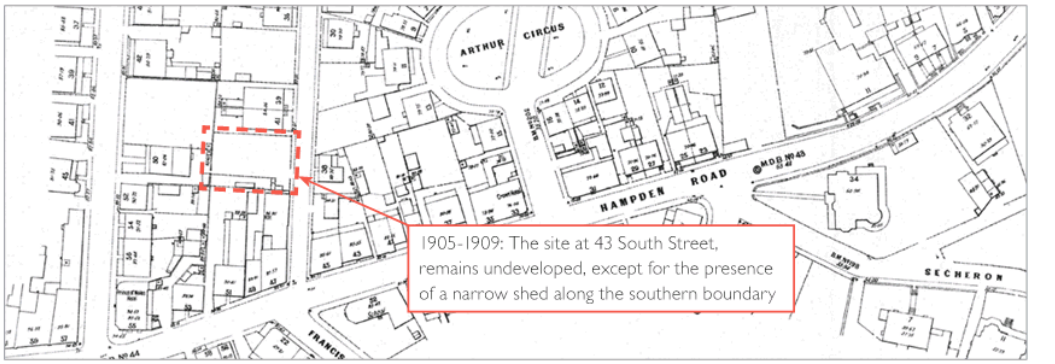

Figure 22 Detail of the Metropolitan Drainage Board Hobart Detail Plan No.34, 1905-1909. Tasmanian Archive and Heritage Office, Item No. 628292

Bazaar. The image provides an insight into the nature of the shops along Hampden Road and the roadway construction in both South Street and Hampden Road (refer Figure 23). Stone kerbs, and gutters formed of pebbles and edged with stone are evident along Hampden Road, and stone kerbs and a pebble pavement is evident in South Street.

However, the population of Battery Point steadily grew. By 1912, the population of the Model School at Battery Point, that had been designed for 450 students, had risen to 922 and the need for a new school building had become obvious, and as a new government school building was opening in Albuera Street the following year, replacing the earlier school.[34]

34 *Local History: The Albeura Street Primary School, Tasmanian Government*

Figure 23 Adcock's Meat Bazaar, Battery Point, corner South St and Hampden Rd, circa 1901. Tasmanian Archive and Heritage Office PH30/1/7741. Stone kerbs the gutters formed of pebbles and edged with stone are evident along Hampden Road. Stone kerbs and pebble pavement are evident in South Street to the left-hand view.

Tourism was emerging with evidence provide by a number of photographs including a photographic postcard of a view from 'Lenna' of Hobart, looking across the wharves of Sullivan's Cove in the foreground.

Two photographs in the E R Pretyman collection, captured between 1890 and 1900, provide glimpses of the nature and scale of development in South street in the last decade of the nineteenth century. The photograph of Waterman's Dock captured in 1890, provides a bare glimpse of the northeastern end of South Street (refer figure 24). The second, a photograph of Battery Point taken from the Domain in 1900 provides glimpses of dwellings aligning South Street to the west of the Runnymede Street (refer figure 25).

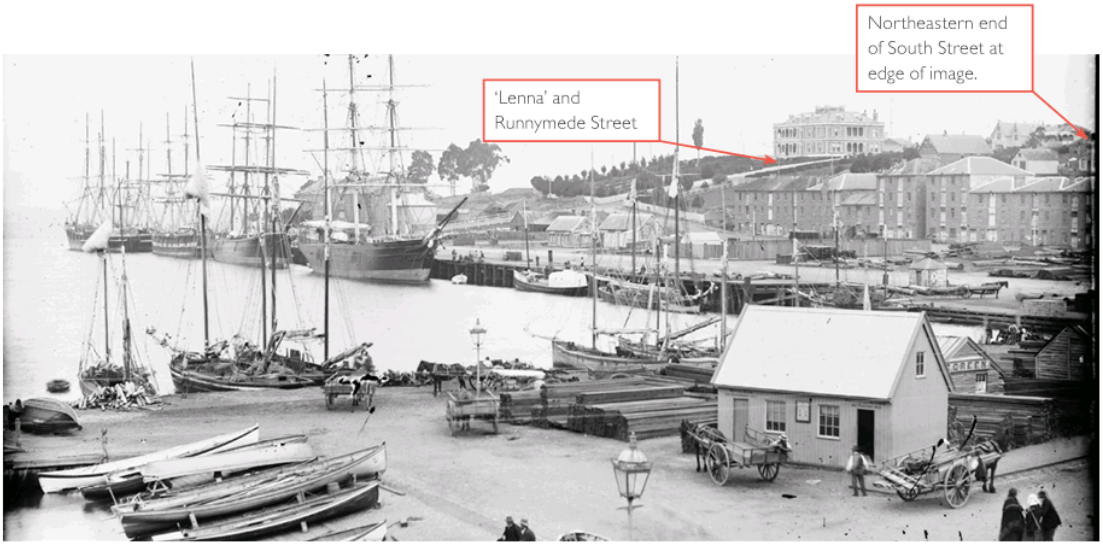

Figure 24 'Waterman's dock & Lenna', 1890, collected by E R Pretyman (NS1013). Tasmanian Archive and Heritage Office Item Number: NS1013/1/366 Hobart A 154 1 - A 154 2

Figure 25 Hobart from the Domain Battery, dated 1900, collected by E R Pretyman (NS1013). Tasmanian Archive and Heritage Office.

2.8 PHASE 6: WORLD WAR ONE AND THE INTER WAR YEARS (1915-1940S)

During the First World War, the trade out of Hobart suffered due to shipping problems, but revived in the 1920s with new industries including growth in fruit processing, the Electrolytic Zinc Works established in 1916, and Cadbury establishing in Hobart in 1920, all providing employment opportunities, attracting people to live in the new suburbs west of Hobart close to these factories.

The Battery Point locality continued to house workers in rented dwellings, but the approach of the depression and the amenity impacts of the nearby noxious industries, the district which by then had become densely populated and developed, faced decline and deterioration of building fabric and socio-economic status. As elsewhere the residents of Battery Point suffered in the 1930s Depression. Because of the high percentage of tenanted housing in Battery Point, many places were slow to be fitted with electricity, running water and sewerage.[35]

Within the historical context of this period, the vacant lot at 43 South Street is finally developed. A comparison of the Tasmanian Post Office Directories (Wise's) between 1920 and 1922, provides evidence that the house at No. 43 South Street was under construction in 1921, and then occupied by Jas H Davies in 1922. From 1922 to 1930 the property appears in Wise's Post Office Directories under several differing names suggesting that it may have been tenanted.[36]

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35 *Duckett, I, 'Battery Point: Engagement, activism and green bans', Tasmanian Planner Volume 8, Issue 1 March 2015*

36 *The Tasmania Post Office Directory,1891-1948, Hobart: H. Wise & Co.; London: Kelly & Co., Tasmanian Archive and Heritage Office, Record ID: SD_ILS:981598*

Tasmanian Post Office Directories (Wise's)

1920	1921	1922
Wisel's Tasmanian Directory 1920	Directory 1921	Directory 1922

Table 2: The Tasmania Post Office Directory, extract for the western side of South Street, years 1920-1922. Hobart: H. Wise & Co., 1891-1948. Tasmanian Heritage and Archive Office, Record ID: SD_ILS:981598

2.9 PHASE 8: POST WORLD WAR TWO, VISIONS OF A 'MODERN CITY', AND THE RISE OF COMMUNITY ACTION AND HERITAGE PROTECTION (1945-2000)

Progress halted during the Second World War with the focus on the war effort and defending the city. Many of the war time controls and rationing continued into the late 1940s. After these difficult post-war years, Hobart prospered in the long boom of the 1950s and 1960s. Industry developed with plentiful hydro-electricity, and there was little unemployment. The population of greater Hobart rose to 120,000, including many European immigrants. The University of Tasmania was established on the new site at Sandy Bay, and the city centre was transformed by new retail and office buildings. New building activity in Hobart flourished from the late 1940s after the lifting of wartime restrictions on buildings material but the resultant boom of residential development occurred in new outer suburbs of Hobart, whilst population densities in the inner areas such as Battery Point began to decline.[37] A photograph taken from the Hydro Electricity Commission building, circa 1950, provides evidence of recently constructed buildings at Battery Point closer to the wharves but that little changed has occurred on the higher areas up to the ridge line and Hampden Road (refer figure 26).

In 1945, Hobart City Council released the 'City of Hobart Plan', which incorporated a modernist approach, in that it envisaged large scale redevelopment of the central district of Hobart and of areas around Sullivan's Cove, and nominated areas described as '*old and decadent*' to be substantially demolished and rebuilt (refer figure 27). Such areas included a large proportion of Battery Point centered around South Street and Kelly Street, and Salamanca Place. Hobart Council was slow to adopt the Plan and continued to operate under zoning bylaws. In 1966 under such a By-Law, a number of demolitions in Battery Point were approved.[38]

Figure 27 City of Hobart Plan,1945. 'Old and decadent' areas recommended for demolition shown in yellow.

37 Alexander, A and Petrow, S, 'The Companion to Tasmanian History:' Hobart', Centre for Tasmanian Studies

38 Duckett, I, 'Battery Point: Engagement, activism and green bans', Tasmanian Planner Volume 8, Issue 1 March 2015

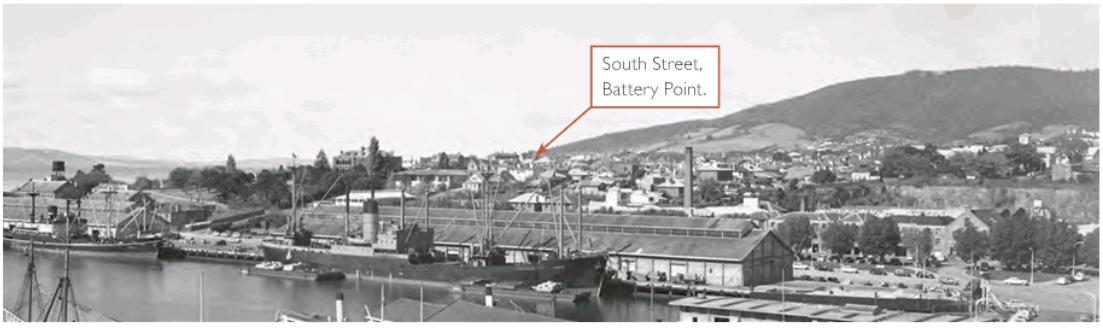

Figure 26 Photograph of the Hobart wharves, Battery Point from the Hydro Electric Commission building circa 1950. Tasmanian Archive and Heritage Office, Item Number AB713/1/4842

Amongst these were buildings on land encircling the subject site at 43 South Street, including the 'Prince of Wales' hotel built in 1843 and a number of single storey buildings immediately to its north between Kelly and South Streets (refer figure 28). The footprints of the hotel and the adjacent single storey buildings that were demolished are most likely those indicated on the Metropolitan Drainage Board Hobart Detail Plan No.34, 1905-1909 (refer figure 22, on preceding pages). Cottages and shops in nearby Montpelier Retreat and Avon Court were also demolished.[39]

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39 White, J, Dead Man's Hand on Battery Point, Battery Point Progress Association. https://www.batterypointhall.org.au/dead-mans-hand/

Figure 28 Photograph of the original 'Prince of Wales' hotel, photographer: by F. G. Robinson, circa 1925. Tasmanian Archive and Heritage Office, NS2511/1/346. The hotel was constructed circa 1843 and demolished 1966-67.

It was the approval of demolition for the erection of 'Empress Towers, a thirteen storey building' on the Battery Point ridge that galvanized broad community opposition, and led to the call for greater statutory protection of both heritage buildings and heritage townscapes.

As elsewhere in Australia, the degree of demolition of nineteenth century buildings during the 1950s and 1960s to be replaced by higher scale buildings in the absence of planning controls was causing increasing concerns amongst the community. The National Trust of Australia (Tasmania) was established in 1960, and like its counterpart in NSW, it prepared a register of buildings of heritage significance, published in 1967. Despite having no statutory foundation, the list provided an important reference for local councils.[40] In Battery Point, the National Trust advocated, not only for the conservation of individual buildings, but also for the preservation of the historic townscape qualities of the area. In 1967, the following letter was sent by the Trust (authored by Barry McNeill) to the Town Clerk of Hobart Council outlining the townscapes qualities and character of Battery Point that the Trust considered were fundamentally important:

'*The Trust considers that the value of Battery Point lies not only in the historical associations with colonial Hobart and the early shipping and whaling era, but also in its intimate relationship with the waterfront and the unique townscape of narrow streets, small unpretentious cottages, glimpses of docks and down river, and its essentially pedestrian nature. These qualities are probably more important than the individual buildings, already listed by the National Trust...*'

Continued demolitions in Battery Point led to further community activism and the formation, in 1973, of the Battery Point Society. Inspired by the 'Green Bans' in Sydney, a number of Tasmanian unions including the Tasmanian Workers Union under the leadership of Brian Harradine, imposed a 'Green Ban' on a large area of Battery Point, encompassing its historic townscape area.[41]

The coordinated and consolidated efforts of both unions and community action groups throughout Australia in the early 1970s, was instrumental in the establishment of the Register of the National Estate under the Australian Heritage Commission Act of 1975, in turn followed by the compiling of state and local heritage lists. Hobart established its first heritage list as part of the 1979 Battery Point Planning Scheme. In 2000, following the Battery Point Heritage Review, the heritage list was expanded.

The National Trust continued to play a pivotal role in the protection of heritage dwellings in Battery Point, commenting on proposed developments. One such example, commenting on a development proposal at 20 South Street in 1994, John Powel Davies, Acting Chairman of the Trust, describes South Street in his comments on the proposal as follows:

'*The importance of this* [removal of later extensions to a Victorian cottage] *is not for this particular house so much as for the consistency of setbacks within the quite unique 'cottage street'.*[42]

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40 Duckett, I, 'Battery Point: Engagement, activism and green bans', Tasmanian Planner Volume 8, Issue 1 March 2015

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41 Duckett, I, 'Battery Point: Engagement, activism and green bans', Tasmanian Planner Volume 8, Issue 1 March 2015

42 National Trust of Australia (Tasmania) 1994, South Street, Battery Point, Tasmanian Archive and Heritage Office, File NS 5048/1/970

3.0 PHYSICAL EVIDENCE

3.1 INTRODUCTION

The purpose of the following analysis is to identify what remains of the original fabric or early building components together with their integrity and condition, as well as analysing the nature and character of the physical context and setting of the property, to facilitate an assessment of heritage significance.

An internal and external inspection of the building was carried out on 1 April 2019. The conditions of the building at the time of inspection was recorded on marked up plans and digital photographs and later identified on various tables. The descriptions below reflect the state of all the property at the time of inspection.

The majority of dwellings of the western side of South Street are listed as 'Heritage Places' on the Hobart Interim Planning Scheme 2015, and on the Tasmanian Heritage Register, the exceptions being a heavily modified pair of dwellings at No's. 29-31, a recently constructed pair of dwellings at No's. 37A and 37B South Street, and the subject site at No. 43 South Street. No.47 Hampden Road, which is adjacent to the site and located on the corner of South Street and Hampden Road, is also listed on both the Hobart Interim Planning Scheme 2015 and the Tasmanian Heritage Register.

3.2 LOCATION

The property is located on the west side of South Street, in close proximity to, the intersection of Hampden Road which is parallel to ridge line of the area.

Adjacent to the north side boundary of the site at Nos 39-41 South Street is a pair of single storey semi-detached (co-joined) dwellings built during the Federation period. Adjacent to the south, is No.47 Hampden Road is a two storey commercial and residential building. Adjacent to the west side boundary is a carpark situated to the north of the "Prince of Wales' hotel.

3.3 PHYSICAL CONTEXT AND SETTING

South Street a narrow street, aligned in a north south direction, is located on the northern side of the ridge of Battery Point. The street extends between Hampden Road to the south and McGregor Street to the north. The land slopes gently down towards McGregor Street. The escarpment above Salamanca Place is located north of McGregor Street.

The majority of the buildings between No's. 3 to 41 South Street date from the mid and late Victorian periods, and the early Federation period, the exceptions being the subject site and the recently constructed dwellings at No's. 37A and 37B South Street. The pair of Victorian dwellings at No's. 29-31 are highly modified.

To the north of the subject site, the western side of South Street displays several important characteristics. These include the subdivision pattern which dates from the early subdivision of land grants for the provision of workers' housing, and a cohesiveness of scale and of built form, indicative of the minimal level of change that has occurred since the construction of most of the dwellings in the nineteenth century, the exceptions being those noted in the paragraph above.

To the north of the site, the historic urban character is one of cohesion, comprising predominantly single storey residential buildings with narrow frontages, either detached or semi-detached ('co-joined'), built close to, or aligning with, the street boundary. The dwellings on the western side of the street form an almost continuous street wall, the narrow spaces between pairs of single dwelling barely visible in acute views.

The street frontage setbacks of the western side vary between zero and two metres, increasing slightly at No's 39-41. Figure 31 below provides a diagrammatic overly on an aerial image, the blue linework indicating the front building alignments along the western side of South Street.

Figure 30 View along the western side of South street to the north of the subject site demonstrates the predominance of bald-faced single storey dwellings, located close to the street boundary, giving rise to a cohesive character.

Figure 31 Diagrammatic overly in blue, on an aerial image, indicating the front building alignments along the western side of South Street. State Aerial Photo, the List, DPIPWE, accessed 02.04.2019.

To the north of the subject property, there is a consistency of built form, derived from the predominance of bald-faced symmetrically composed dwellings, and of steeply pitched roof forms, projecting chimneys and dormer windows. The majority of the roof forms on the western side of the street present as inclined planes to the street frontage rather than as street front gables. The design of the semi-detached dwellings at No's 37A and 37B South Street, has respected the predominant street setbacks and pitched roof forms of neighbouring Victorian dwellings.

The eastern side of South Street has a similar character, although the street setbacks are more varied. Nevertheless, there is a consistency of built form, derived of bald-faced dwellings interspersed with shallow front verandahs, and a predominance of steeply pitched roof forms, projecting chimneys and dormer windows, as evident in Figures 32 to 35 below.

Views to both the north and the south ends of South Street are terminated by the small-scale Victorian buildings aligning McGregor Street to the north, and Francis Street to the south, providing a visual enclosure.

Figure 32 Views to the south end of South Street are terminated by the small-scale Victorian buildings aligning Francis Street, providing a visual enclosure.

Figure 33 Views to the north end of South Street are terminated by the small-scale Victorian buildings aligning McGregor Street, providing a visual enclosure

Figure 34 Eastern side of South Street.

Figure 35 Eastern side of South Street.

The historic streetscape character experienced to the north of the site is consistent with parts '2' and '3' of the Statement of Historic Cultural Heritage Significance under the entry for the Battery Point Heritage Precinct in Table E13.2 of the Hobart Interim Planning Scheme 2015:

2. *It is primarily a residential area with a mix of large substantial homes and smaller workers cottages on separate lots, gardens, an unstructured street layout, and lot sizes that show successive re-subdivision into narrow lots that demonstrate early settlement patterns of Hobart.*

3. *The original and/or significant external detailing, finishes and materials demonstrating a high degree of integrity with a homogenous historic character.'*

The subject dwelling at No. 43 South Street does not conform to the predominant historic urban character of South Street, being a detached house set in an encircling garden setting, following the suburban Garden City model that became popular, and was to proliferate in Australian suburbs, after the First World War.[01] The dwelling has a large front setback, broad spaces encircling the dwelling, low ridge height, and low-pitched roof forms compared with the urban character and built form of the Victorian and Federation dwellings that predominate in the street.

The front setback of the dwelling is 4,600mm, more than double that setback of the majority of dwellings in the street (refer figure 38). The dwelling has side setbacks of 4,600mm from the north and 2,900mm from the south, providing comparatively broad encircling garden spaces. The recessed location of the building on the property is such that the dwelling has limited visibility in acute views within the broader streetscape context in South Street, and consequently results in a break, or void, in the street wall of the western side of South Street.

The ridge height and pitch roof of the dwelling is comparatively low when compared with the higher ridge heights, the steeply pitched roof forms, projecting chimneys and dormer windows that predominate in the streetscape (refer figure 38).

The accommodation for off-street parking including the vehicular crossing and side driveway passage located to the southside of 43 South Street is also an uncharacteristic feature of this historic urban context.

The analysis of the streetscape demonstrates that the property at No. 43 South Street does not conform to the predominant historic pattern of development of South Street. The building's low-slung asymmetrical roof form with street facing gables, does not contribute to the historic character of the streetscape to the north of the property, which is derived from a predominance of bald-faced symmetrically composed dwellings, narrow frontages closely aligning the street, steeply pitched roof forms, projecting chimneys and dormer windows. The recessed location of the dwelling on the site contrasts with the predominant street frontage setbacks, results in limited visibility and streetscape presence, and breaks the continuity of the street wall along the western side of South Street. The suburban nature of this dwelling with its encircling garden, fails to reinforce the historic urban character of South Street, and its contribution to the streetscape is limited.

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01 Rayworth, B. 'Our Inter-war Housing', National Trust of Australia (Victoria) Technical Bulletin 10.1

Figure 36 The subject dwelling at 43 South Street is barely visible in acute views looking north along the street.

Figure 37 The subject dwelling at 43 South Street is barely visible in acute views looking south along the street

Figure 38 Diagrammatic overly in red, indicating the relative roof ridge heights, roof slopes and roof projections, in the vicinity of the site at 43 South Street. The viewpoint from the 'Prince of Wales' hotel carpark in Kelly Street.

3.4 DESCRIPTION OF THE EXTERIOR OF THE BUILDING AT 43 SOUTH STREET

The documentary evidence has established that the house was constructed on land originally granted to the Reverend Knopwood in 1804, later transferred to Charles McLachlan, in 1921 and completed for occupation by 1922.

The building is a single storey detached face brick house of asymmetrical design. The main roof is low pitched, covered in corrugated metal sheeting, with the main gable projecting forward towards the street, and faced with timber shingles. A lower gable roof intersects the northern face of the main gable and extends lower than the main eaves to provide a protective canopy over the side entry porch, to be supported by a single brick pillar. A single brick chimney is located along the southern side of the house.

The two front windows of the house are of dissimilar proportions to accentuate the asymmetry. On the left side, the window is a large triple casement assembly, each casement subdivided into 12 glazed panes, whilst on the right side, the window is a narrow single casement with a high sill. The windows on each of the two side elevations have vertical sliding sashes (double hung), the top sash of each of which is subdivided into 8 glazed panes.

The original portions of eaves linings that remain are of timber. The timber barge boards that terminate each gable front are of a simple profile.

The brickwork is constructed of dry pressed clay bricks of a red-brown colour, and the base of each external wall is detailed with splayed plinth stretcher bricks, and each window sill is laid in plinth header bricks.

A skillion-roofed addition, constructed in the late twentieth century, extends the length of the original rear (west) elevation.

The front fence and wrought metal balustrade date from a later period than the house, as is evident by the differing texture and lighter colour, and the angular design of the metalwork suggesting it was constructed during the 1950s or early 1960s. The side and rear fences vary in material between blockwork timber paling and metal sheeting. There are no significant plantings in either the front, northern side or rear portions of the garden. The three columnar golden cypress trees that feature in the streetscape views are typical of popular plantings during the decades following WWII.

The design of the dwelling displays a number of characteristics that demonstrate aspects typical of an Inter War Californian Bungalow. This was an unpretentious style that grew out of California and was embraced by speculative builders throughout Australia in the 1920s, to varying degrees of sophistication and eclecticism. The expression was robust, ground hugging, with an emphasis on the horizontal proportions.

The style, as it became adapted to standardised versions used by speculative suburban builders throughout Australian towns and suburbs, was characterised by low pitched gable roofs, expressed structural elements, a predominance of facebrick walling, contrasted with rock-faced stone or roughcast render. Shingle cladding and roughcast render was commonly applied to gables, piers and walls to give further texture and emphasis. Low pitched roofs were given additional horizontal emphasis with broad eave overhangs and street front gables were often tiered (stepped) and belcast to increase the depth of the overhang. The forward projection of gables and bay windows was commonly supported by bracketed purlins. Exaggerated horizontal emphasis was a common feature of verandah design, achieved through the use of substantial brick piers with deep capping, and squat columnettes. Verandah piers were often linked by solid forms of balustrade, of shingle cladding or brick. Front windows were commonly projected forward from the face of the building, supported by masonry or shingle base walls, or by timber brackets, and glazed with leadlights. Additional horizontal emphasis was applied to external joinery by being oversized, taper cut, or bracketed.[02 03]

No. 43 South Street features a number of the above stylistic characteristics, including:

- The asymmetrical composition of the two gable roofs, the two front windows, and the side entry porch;
- The low pitch of the main roofs;
- The front street facing gable and its shingle cladding;
- The low-slung pitched roof over the side porch supported by a brick pier with timber pillar;
- The two front multipaned timber casement windows.

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02 Apperly, R, Irving, R, and Reynolds, P. 1989, A Pictorial Guide to Identifying Australian Architecture, Styles and Terms from 1788 to the Present

03 Rayworth, B. 'Our Inter-war Housing', National Trust of Australia (Victoria) Technical Bulletin 10.1

Despite exhibiting a number of characteristics, the range of design characteristics is low, and their execution lacks design finesse when compared to examples that define their stylistic class. This is further explored within the Comparative Analysis.

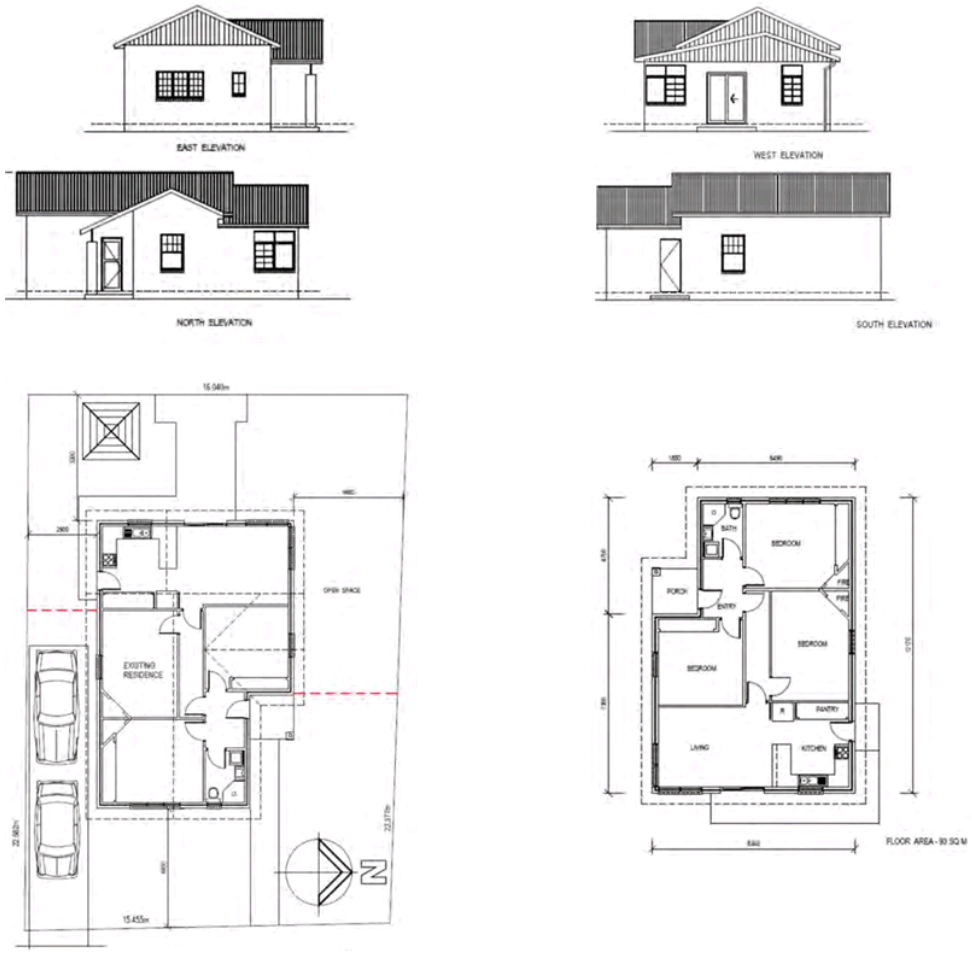

Figure 39 Existing Elevations, Site Plan and Floor Plan, 43 South Street prepared, by 'Quality Home Design'

Figure 40 Front (east) elevation.

Figure 41 Side Entry Porch.

Figure 42 North side elevation.

Figure 43 South side elevation.

Figure 44 Rear elevation and rear garden.

Figure 45 Rear elevation as viewed from Kelly Street.

3.5 DESCRIPTION OF THE INTERIOR OF THE BUILDING AT 43 SOUTH STREET

The interior of the original portion of the house comprises an entry hall, located to the side of the house, one main room and a bathroom, both of which front the street, a central rear hallway with a room to either side. The three main rooms are currently utilized as bedrooms.

The main front room facing the street has a corner fireplace with a semicircular arch opening constructed of bullnose bricks. The timber mantel is supported by accentuated chamfered brackets.

The open planned rear addition comprises a kitchen, dining and living spaces.

All internal walls are constructed of brick, with the exception of the wall on the south side of the rear hall, which is timber framed construction.

Floors are constructed of timber. The internal doors are all framed with four solid timber panels and retain their original 'Florentine bronze' door hardware. The timber joinery is of 'Tasmanian oak', clear finished. All original architraves, skirting and picture rails are detailed with a splayed edge.

Figure 46 Front entry hall.

Figure 47 Front bathroom

Figure 48 Fireplace, main south room.

Figure 49 Fireplace detail, main front room.

Figure 50 Main front room, utilized as a bedroom.

Figure 51 Main north side room, utilized as a bedroom.

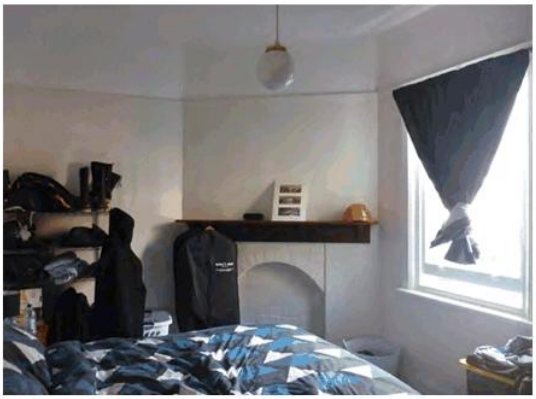

Figure 52 South side main room, utilized as a bedroom

Figure 53 Rear addition.

3.6 INTEGRITY AND CONDITION OF THE BUILDING

Integrity:

The physical evidence in the fabric of the interior suggests that the original spatial configuration of the house has been altered. The diagram below represents the alterations to fabric and the original spatial configuration of the building. These internal alterations to the spatial configuration provide evidence that the dwelling original comprised only three main rooms.

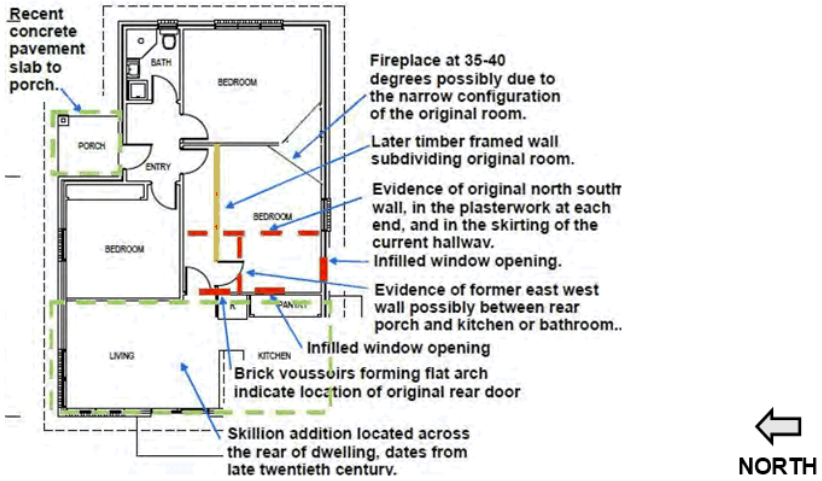

Figure 54 Diagram indicating evidence of former room configuration and door and window openings

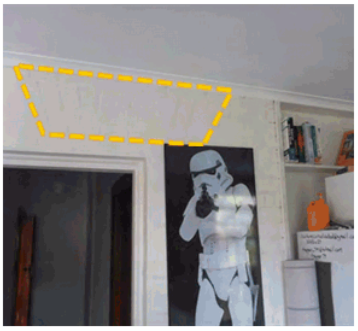

Figure 55 - Brick voussoirs forming a flat arch indicate the location of the original rear external door brickwork.

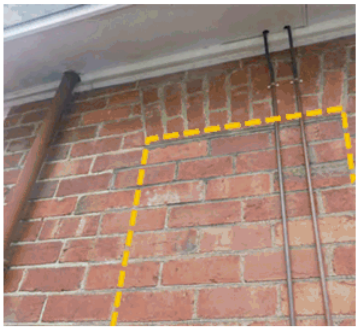

Figure 56 - Original window opening in the western wall infilled with bookcase joinery.

Figure 57 - Original window opening in the western wall infilled with bookcase joinery.

Figure 58 - Jointing in the set plaster of the northern wall of the rear hallway and jointing in the skirting at the base of the wall, provide evidence of the removal of an original wall running in a north south direction

Figure 59 - A concrete slab has been constructed over original front porch pavement.

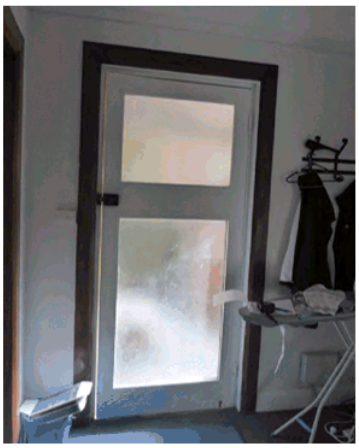

Figure 60 - The front door is not original

Condition of fabric:

The condition of the exterior fabric of the dwelling is fair except for areas of settlement evident in the external brickwork and interior plaster finishes to external walls. The following are noted:

- Settlement cracking in the brickwork above and below both front windows and the south side window is indicative of structurally insufficient footings.
- Generally, around the perimeter of the house, the lower sections of brickwork of the building have open mortar joints indicative of rising damp.
- The settlement cracking in the brickwork above the window of the bathroom radiates across the corner of the house is indicative of structurally insufficient footings and possibly poor drainage. The settlement is evident internal walls, indicating that both the inner and outer skins of brickwork are affected by the cracking.

Figure 61 Settlement cracking in the brickwork below the front window indicative of structurally insufficient footings.

Figure 62 Settlement cracking in the brickwork above the front window indicative of structurally insufficient footings.

Figure 63 Generally the lower sections of brickwork of the building have open mortar joints indicative of rising damp.

Figure 64 Settlement cracking in the brickwork below the south side window indicative of structurally insufficient footings.

Figure 65 Settlement cracking in the brickwork above the window of the bathroom and radiating across the corner of the house indicative of structurally insufficient footings.

Figure 66 Internal view of the settlement cracking in the brickwork above the window of the bathroom and radiating across the corner of the house indicative of structurally insufficient footings

4.0 COMPARATIVE ANALYSIS

4.1 AIMS AND APPROACH

The purpose of the comparative analysis is to provide supporting information for Section 5 Analysis of Significance. This section identifies the building types utilized as a means of comparison including key features, characteristics and/or historic themes.

The comparative analysis will establish the rarity or representativeness value of the property based on comparable typologies and associated historical themes, and other suitable comparisons in the local area.

4.2 INTRODUCTION

From the physical and documentary evidence, the building at 43 South Street, Battery Point was originally constructed in the Inter War period, circa 1922. The documentary analysis has shown that during the Inter War period, following a period of dormancy in building activity during WW1, there was an increase in residential density incorporating dwellings on isolated parcels of land within the dense urban environment of Battery Point. Areas of the suburbs of Sandy Bay and Dynnyrne, which are adjacent to Battery Point, experienced an increase in their density at this time.

The physical evidence has demonstrated that the design of the dwelling displays a number of characteristics that demonstrate aspects typical of an Inter War Californian Bungalow. This was an unpretentious style that grew out of California and was embraced by speculative builders throughout Australia in the 1920s, to varying degrees of sophistication and eclecticism. The expression was robust, ground hugging, with an emphasis on the horizontal proportions.[01] [02]

The physical evidence has shown that the exterior of the house displays a number of design characteristics that demonstrate aspects typical of the design of an Inter War bungalow but the range of design characteristics is low, and their execution lacks design finesse when compared to examples that define their stylistic class, as demonstrated by the following:

- Both the front and side gables comprise a single plane of shingle cladding and lack the tiering and bracketing that typify even the standardised speculative examples.
- The external joinery components, such as barge boards, are of simple rectangular sections rather than being of an exaggerated depth or profile, splay cut or tapered
- Although the roof is low pitched, the horizontal expression is restrained by the lack of broad eaves overhangs.
- Eaves overhangs rafters and roof beams are enclosed above eaves linings rather than exposed.
- The brick pillar surmounted by a single timber columnette supporting the entry porch roof is modest in dimensioning and scale and lacks typical detailing such as a heavy capping detail, tapering or groping of columnettes.
- Window joinery is set within the wall depth without forward projection. The front windows lack the decoration provided by lead lights.
- The chimney is unremarkable. Being of low height with no decorative treatment, the chimney does not feature as a dominant element on the roofline and does not contribute to the overall asymmetrical composition of the building.

The physical evidence has concluded that the building does not include a reasonably sufficient range of design characteristics or exhibit sufficient design finesse or craftsmanship to demonstrate the Inter War Californian Bungalow style, as it became interpreted throughout the suburbs of Australian cities and towns.

4.3 ASPECTS OF COMPARISON

To undertake a comparative analysis to establish the rarity or representativeness value of the property in the local area, buildings of a similar scale and typology within Battery Point, in the vicinity of the subject site were selected. In addition, a number of dwellings, in the suburbs of Sandy Bay and Dynnyrne, which are adjacent to Battery Point, and which experienced an increase in their density at this time, were selected for comparison were single storey detached dwellings of modest scale.

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01 Apperly, R, Irving, R, and Reynolds, P. 1989, A Pictorial Guide to Identifying Australian Architecture, Styles and Terms from 1788 to the Present

02 Rayworth, B. 'Our Inter-war Housing', National Trust of Australia (Victoria) Technical Bulletin 10.1.

4.4 COMPARATIVE ANALYSIS: THE INTER WAR CALIFORNIAN BUNGALOW IN THE LOCALITY

The following comparative examples in the locality have been analysed in the table below:

Table 3 Comparative Analysis

Name, Address, Listings and Description:	Image: (The majority of images taken by M D between 2-6 April 2019)	Comparative Criteria: (b) Rarity; (d) Representative.
14 De Witt Street, Battery Point • *Identified for heritage listing in the BPHR 2000.* • *Listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register.*		
Although this is identified in the BPHR 2000 as a Federation Bungalow, this dwelling is transitional with the Inter War period. The building demonstrates the principal characteristics Inter War Bungalow, including its assembly of low-pitched gable roof forms, low-slung roof over the side entry Porch supported by multiple brick piers with rendered capping and short timber columnettes, decorated with angular, tapered joinery. The piers are given additional solidity through the connecting brick balustrade. The features also include half-timbered and rough cast infill to both gables, tapered beam detail to the front gable, exposed rafters at the eaves, squint brick sills and base walls, single brick chimney and paired double hung sash windows with broad muntin between.		(b) Rarity: The building is not rare. (d) Representative: *The building has 'historic heritage significance because of its ability to demonstrate the principal characteristics of a single storey brick house in the Bungalow style.'* (from BPHR 2000)
2 Logan Street, Battery Point • *Identified for heritage listing in the BPHR 2000.* • *Listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register*		
A single storey brick Inter War Bungalow house, built in 1922. It has multiple low-pitched roofs, two street-facing gables, one creating a deep front porch area, the other with a flat roofed bay window. Other details include polychrome brickwork, swag brick balustrade, rock-faced sandstone base, bracketed projecting bay window with flat roof, exposed rafters at the eaves and exposed verandah beam, and half-timbered infill to the projecting bracketed gables. The fence appears to be original.		(b) Rarity: The building is not rare. (d) Representative: The building has *'historic heritage significance because of its ability to demonstrate the principal characteristics of a single storey brick house in the Inter War Bungalow style.'* (from BPHR 2000)

Name, Address, Listings and Description:	Image: (The majority of images taken by M D between 2-6 April 2019)	Comparative Criteria: (b) Rarity; (d) Representative.
4 Logan Street, Battery Point • *Identified for heritage listing in the BPHR 2000.* • *Listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register.*		
A single storey brick Inter War house with Queen Anne styling, built in 1925. It has an ensemble of low-pitched gable roof forms clad with 'Marseilles' pattern terracotta tiles. The design of the house takes full advantage of the corner position as numerous gables project toward both street frontages. Other details include the bracketed step in the plane of the timber infill to the gables, a projecting bay window with flat roof, casement windows with stained glass top-lights, rock-faced sandstone base, and exposed rafters and beams.		(b) Rarity: The building is not rare. (d) Representative: *The building has 'historic heritage significance because of its ability to demonstrate the principal characteristics of a single storey brick house in the Inter War Bungalow style.'* (from BPHR 2000)
23 St Georges Terrace, Battery Point. • *Identified for heritage listing in the BPHR 2000.* • *Listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register*		
A single storey brick Inter War house with an ensemble of low-pitched gable roof forms, including one set low to form a deep entry porch. Each gable is timber clad and elaborated with a bracketed belcast skirt. The verandah has elaborate joinery including brackets and tapered valance, providing an unusual degree of visual emphasis to the supporting columns, coupled tapered posts supported on multiple brick piers with exaggerated rendered capping, projecting bay window with flat roof, exposed eaves rafters and exposed verandah beam, and swag brick balustrade (now painted).		(b) Rarity: The building is not rare. (d) Representative: *The building has 'historic heritage significance because of its ability to demonstrate the principal characteristics of a single storey brick house in the Inter War Bungalow style.'* (from BPHR 2000)
4 Adam Street, Sandy Bay. • *Not listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register.*		
A single storey Inter War house with an ensemble of low-pitched gable roof forms, including one gable set low to form an entry porch. The deep forward projection of each gable is supported on bracketed purlins. Each gable is tiered and has taper-cut barge boards. Both the verandah balustrade and the lower section of each gable is shingle clad and belcast to form a skirt. The brick piers of the verandah are of an exaggerated size and detailed with stepped cappings and recessed panels to provide further visual emphasis to the frontage. Other details include the projecting bay window with flat roof supported by timber brackets		(b) Rarity: The building is not rare. (d) Representative: The building has historic heritage significance because of its ability to demonstrate the principal characteristics of a single storey brick house in the Inter War Bungalow style.

Name, Address, Listings and Description:	Image: (The majority of images taken by M D between 2-6 April 2019)	Comparative Criteria: (b) Rarity; (d) Representative.
5-11 Digney Street Dynnyrne • *Not listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register.*		
A group of four single storey Inter War dwellings constructed in 1919. Each dwelling is constructed of face brick with rough cast render above a stringer course adding a horizontal proportion to the walls, providing a textural contrast. Each dwelling has a pair of low-pitched roofs comprising a main street fronting gable and a lower gable to one side. Each gable is tiered. The upper tier is shingle clad and belcast, and the lower tier is battened roughcast render. The brick piers of each entry porch are decorated with a detailed capping. The porch columnettes have tapered fretwork which extends across the verandah beams as a valance. Other details include the projecting bay window with roof supported by decorative timber brackets and lead light windows. The brick chimneys add to the asymmetrical composition of the paired gable roofs	 	(b) Rarity: This group of intact Inter War Californian Bungalow dwellings forms a rare group of modest dwellings that are unusual in that each dwelling demonstrates a substantial number of key stylistic characteristics. (d) Representative: The group of buildings at 5-11 Digney Street have historic heritage significance because of their ability to demonstrate the principal characteristics of a single storey brick house in the Inter War Californian Bungalow style.

Name, Address, Listings and Description:	Image: (The majority of images taken by M D between 2-6 April 2019)	Comparative Criteria: (b) Rarity; (d) Representative.
103 York Street, Sandy Bay. • *Not listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register.*		
A single storey brick Inter War house with low-pitched gable roofs, including one set low to form a side entry porch. The street front gable is shingle clad, has a central louvred ventilator, and is supported by brackets so as to project beyond the rendered frieze of the walls below. The verandah is supported by a tapered roughcast pillar set on a face-brick pier. The roof of the projecting bay window is supported by bracketed purlins. Other details include the taper-cut barge, and the exposed eaves rafters. The front windows have multiple double hung sash windows with broad muntins, and multipaned upper sashes.		(b) Rarity: The building is not rare. (d) Representative: The building has historic heritage significance because of its ability to demonstrate the principal characteristics of a single storey brick house in the Inter War Bungalow style.
120 York Street, Sandy Bay. • *Not listed on HIPS 2015.* • *Not listed on the Tasmanian Heritage Register.*		
A single storey brick Inter War house with low-pitched street front gable roof. The street front gable is tiered, and its deep forward projection is supported by bracketed purlins. The upper section of the gable is bracketed and is lattice clad to form a ventilator. The lower section is belcast to form a skirt, and is clad in timber that is scalloped to imitate shingles. and Other details the exposed eaves rafters. The front windows are double hung sash windows, the top sash being multipaned. Emphasis is provided to the front windows by the concrete lintels.		(b) Rarity: The building is not rare. (d) Representative: The building has historic heritage significance because of its ability to demonstrate the principal characteristics of a single storey brick house in the Inter War Bungalow style.

It is concluded from the above analysis that a number of buildings of a similar scale and typology within the locality have a sufficient range of characteristic to define the Inter War Californian Bungalow style, as it became interpreted in the area. By comparison, the building at No. 43 South Street has limited ability to demonstrate the principal characteristics of a single storey residential building constructed in the Inter War Californian Bungalow style, and is an unremarkable example of an Inter War Californian Bungalow in the locality. The range of characteristics exhibited is insufficient and exhibit a low level of design merit and craftsmanship in their execution.

5.0 ANALYSIS OF SIGNIFICANCE

5.1 INTRODUCTION

Cultural significance (or heritage significance), as defined by the Burra Charter (2013) means 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations.' Heritage significance is 'embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.' These values are considered in accordance with the Assessment Criteria.

5.2 BASIS FOR THE ASSESSMENT OF SIGNIFICANCE

The analysis of the building fabric, together with analysis of the documentary evidence and comparative evidence provide the necessary basis for the assessment of historic cultural heritage significance.

The assessment of significance is a pre-requisite for establishing the basis for subsequent decisions on the management of any given place.

5.3 SIGNIFICANCE CRITERIA FOR DETERMINING HISTORIC CULTURAL HERITAGE SIGNIFICANCE

The ICOMOS Burra Charter describes five categories of cultural significance –aesthetic, historic, scientific, social or spiritual value.

According to the current version of the *Tasmanian Historic Cultural Heritage Act 1995*, entry in the Tasmanian Heritage Register requires it be determined that the place has historic cultural heritage significance, if it is the place meets one or more of the following criteria:

- (a) *the place is important to the course or pattern of Tasmania's history;*
- (b) *the place possesses uncommon or rare aspects of Tasmania's history;*
- (c) *the place has the potential to yield information that will contribute to an understanding of Tasmania's history;*
- (d) *the place is important in demonstrating the principal characteristics of a class of place in Tasmania's history;*
- (e) *the place is important in demonstrating a high degree of creative or technical achievement;*
- (f) *the place has a strong or special association with a particular community or cultural group for social or spiritual reasons;*
- (g) *the place has a special association with the life or works of a person, or group of persons, of importance in Tasmania's history;*
- (h) *the place is important in exhibiting particular aesthetic characteristics.*

5.4 HISTORIC THEMES

Historic themes provide a historical context within which to assess a place. The Heritage Council publication: *'Assessing Historic Heritage Significance for application with the Historic Cultural Heritage Act 1995'*, prepared by DPIPWE 2011, advises that 'any place having a strong association with one of the following key historical themes can generally be said to possess historical value at a state level.

- I. *European colonization, contact with Aboriginals peoples and evolving relationships*
- II. *Later migration*
- III. *Defence of colony and state*
- IV. *Exploration and survey*
- V. *The convict experience*
- VI. *Maritime communications and the maritime activity and industry*
- VII. *(including whaling and sealing)*
- VIII. *Agricultural, orcharding and pastoral industries*
- IX. *Natural resource utilization*
- X. *Hydro power and water management*
- XI. *Developing centre's for trade, governance, patterns of domestic life and health and welfare*
- XII. *Human interaction with the natural environment, remote places and defence of the environment*
- XIII. *Memorialising the past, people and society's achievements*
- XIV. *Secondary and tertiary industry and communications*
- XV. *Education, spiritual* and cultural life

5.5 STATEMENTS OF CULTURAL SIGNIFICANCE

Using the criteria of the *Historic Cultural Heritage Act 1995*, appropriate Statements of Historic Heritage Significance for the building at 43 South Street are as follows:

Criterion (a): It is important in demonstrating the evolution or pattern of Tasmania's history.

The historical analysis does not reveal any evidence that the place demonstrates any important evolution or pattern in the history of the locality. Whilst the property has some ability to demonstrates that a minor level of growth occurred in the locality following the decade after the end of World War One, the comparative analysis indicates this growth pattern is more clearly demonstrated by the development of the outer suburbs of Hobart.

This criterion is not fulfilled.

Criterion (b): It demonstrates rare, uncommon or endangered aspects of Tasmania's heritage.

The documentary, physical and comparative evidence conclude that the building does not demonstrate any rare or uncommon aspects of the heritage of Battery Point. The building is not rare in the locality.

This criterion is not fulfilled.

Criterion (c): It has potential to yield information that will contribute to an understanding of Tasmania's history.

There is no physical evidence on the site or within the building of any earlier above ground structures. Although no archaeological assessment has been undertaken, the documentary evidence reveals that the site at 43 South Street was left undeveloped until the 1920s, except for a small shed-like structure. The site is not listed as having archaeological potential and is unlikely to contribute to further knowledge of natural or cultural history. In the light of this, 43 South Street does not fulfil the criterion for potential to yield information contributing to an understanding of the history of the locality.

Criterion (d): It is important as a representative in demonstrating the characteristics of a broader class of cultural places.

The comparative analysis reveals that the building has limited ability to demonstrate the principal characteristics of a single storey residential building constructed in the Inter War Californian Bungalow style. Whilst it exhibits a number of characteristics typical of the style, these display a low level of stylistic design merit and a low level of craftsmanship, particularly when compared to examples of Inter War bungalow dwellings of a similar modest scale in the locality. The place does not include a reasonable sufficient range of characteristic that define the class.

The place has a limited level of historic cultural heritage significance when assessed under this Criterion.

Criterion (e): It is important in demonstrating a high degree of creative or technical achievement.

The physical evidence of the place demonstrates a low level of both creative and technical achievement. The place demonstrates a low level of design merit and a low level of craftsmanship when compared to appropriate comparable typologies. Its contribution to the streetscape is limited, with no apparent consideration in its design and siting to reinforcing the historic urban character of South Street as had developed by the date of its construction.

This criterion is not fulfilled.

Criterion (f): It has strong or special meaning for any group or community because of social, cultural or spiritual associations.

The historical analysis does not reveal any evidence that the subject property has any strong or special meaning for any group or community because of spiritual associations.

The place is an unremarkable example of an Inter War Californian Bungalow in the locality. The level of contribution to the historic cultural heritage significance of the locality is further limited by its lack of conformity to the predominant historic streetscape pattern of development of South Street. The analysis of the streetscape demonstrates that the property at No. 43 South Street does not conform to the predominant historic pattern of development of South Street. The building's low-slung asymmetrical roof form with street facing gables, does not contribute to the historic character of the streetscape to the north of the property, which is derived from a predominance of bald-faced symmetrically composed dwellings, narrow frontages closely aligning the street, steeply pitched roof forms, projecting chimneys and dormer windows.

The recessed location of the dwelling on the site contrasts with the predominant street frontage setbacks, results in limited visibility and streetscape presence, and breaks the continuity of the street wall along the western side of South Street. The suburban nature of this dwelling with its encircling garden, fails to reinforce the historic urban character of South Street, and its contribution to the streetscape is limited.

The place has no scenic or landmark qualities, as it does not feature in any distant views of Battery Point, being nestled amongst buildings of greater height, nor is it visible in views within the immediate locality, from Hampden Road, Francis Street or McGregor Street. The dwelling has limited visibility in acute views within the broader streetscape context in South Street.

Whereas the heritage listed Victorian and Federation dwellings that align South Street to the north of the site collectively form a cohesive historic urban townscape of historic cultural heritage significance when assessed under criterion (f), the subject property does not play a contributory role in the derivation of that significance.

This criterion is not fulfilled.

Criterion (g): It has special association with the life or work of a person, group or organization that was important in Tasmania's history.

The property has no special association with the life or work of a person, group or organization that was important in the history of the locality. The place lacks reasonable prominence or importance to historical importance to the locality

This criterion is not fulfilled.

Criterion (h) the place is important in exhibiting particular aesthetic characteristics.

The building and surrounding garden at 43 South Street, Battery Point does not exhibit any particular aesthetic characteristics, and is an unremarkable example of its type.

This criterion is not fulfilled.

In conclusion:

The building and its surrounding garden at 43 South Street, Battery Point has a limited level of historic cultural heritage significance under Criterion (d). Whilst the building exhibits a number of design characteristics typical of the Inter War Californian Bungalow style, these characteristics are insufficient in number to clearly demonstrate this style. The place is an unremarkable example of its type that exhibits a low level of stylistic design merit and a low level of craftsmanship, particularly when comparable examples of Inter War bungalow dwellings in the locality.

The place does not meet the threshold for inclusion under criterion (f), as its level of contribution to the historic cultural heritage significance of the locality is limited by its lack of conformity to the predominant historic streetscape pattern of development of South Street. The suburban nature of this dwelling with its encircling garden, fails to reinforce the historic urban character of South Street, and its contribution to the streetscape is limited.

Whereas the heritage listed Victorian and Federation dwellings that align South Street to the north of the site collectively form a cohesive historic urban townscape of historic cultural heritage significance when assessed under criterion (f), the subject property does not play a contributory role in the derivation of that significance.

This report finds that the place does not achieve a level of historic cultural heritage significance to warrant any contributory streetscape status, or inclusion as a heritage place on the Hobart Interim Planning Scheme 2015 or on the Tasmania Heritage Register.

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Traffic Impact Assessment

September 2025

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1. Introduction

1.1 Background

Midson Traffic were engaged by JAWS Architects to prepare a traffic impact assessment for a proposed redevelopment of the Prince of Wales Hotel site at 55 Hampden Road, Battery Point.

Figure 1 Proposed Development

1.2 Traffic Impact Assessment (TIA)

A traffic impact assessment (TIA) is a process of compiling and analysing information on the impacts that a specific development proposal is likely to have on the operation of roads and transport networks. A TIA should not only include general impacts relating to traffic management, but should also consider specific impacts on all road users, including on-road public transport, pedestrians, cyclists and heavy vehicles.

This TIA has been prepared in accordance with the Department of State Growth (DSG) publication, *Traffic Impact Assessment Guidelines*, August 2020. This TIA has also been prepared with reference to the Austroads publication, *Guide to Traffic Management,* Part 12: *Integrated Transport Assessments for Developments*, 2020.

Land use developments generate traffic movements as people move to, from and within a development. Without a clear understanding of the type of traffic movements (including cars, pedestrians, trucks, etc), the scale of their movements, timing, duration and location, there is a risk that this traffic movement may contribute to safety issues, unforeseen congestion or other problems where the development connects to the road system or elsewhere on the road network. A TIA attempts to forecast these movements and their impact on the surrounding transport network.

A TIA is not a promotional exercise undertaken on behalf of a developer; a TIA must provide an impartial and objective description of the impacts and traffic effects of a proposed development. A full and detailed assessment of how vehicle and person movements to and from a development site might affect existing road and pedestrian networks is required. An objective consideration of the traffic impact of a proposal is vital to enable planning decisions to be based upon the principles of sustainable development.

This TIA also addresses the relevant clauses in Codes E5.0, *Road and Railway Assets Code*, and E6.0, *Parking and Access Code*, of the Hobart Interim Planning Scheme, 2015.

1.3 Statement of Qualification and Experience

This TIA has been prepared by an experienced and qualified traffic engineer in accordance with the requirements of Council's Planning Scheme and The Department of State Growth's, *Traffic Impact Assessment Guidelines*, August 2020, as well as Council's requirements.

The TIA was prepared by Keith Midson. Keith's experience and qualifications are briefly outlined as follows:

- 29 years professional experience in traffic engineering and transport planning.
- Master of Transport, Monash University, 2006
- Master of Traffic, Monash University, 2004
- Bachelor of Civil Engineering, University of Tasmania, 1995
- Engineers Australia: Fellow (FIEAust); Chartered Professional Engineer (CPEng); Engineering Executive (EngExec); National Engineers Register (NER)

1.4 Project Scope

The project scope of this TIA is outlined as follows:

- Review of the existing road environment in the vicinity of the site and the traffic conditions on the road network.
- Provision of information on the proposed development with regards to traffic movements and activity.
- Identification of the traffic generation potential of the proposal with respect to the surrounding road network in terms of road network capacity.
- Review of the parking requirements of the proposed development. Assessment of this parking supply with Planning Scheme requirements.
- Traffic implications of the proposal with respect to the external road network in terms of traffic efficiency and road safety.

1.5 Subject Site

The subject site is located at 55 Hampden Road, Battery Point. The site is currently the Prince of Wales Hotel.

The subject site and surrounding road network is shown in Figure 2.

Figure 2 Subject Site & Surrounding Road Network

Image Source: LIST Map, DPIPWE

1.6 Reference Resources

The following references were used in the preparation of this TIA:

- Hobart Interim Planning Scheme, 2015 (Planning Scheme)
- Austroads, *Guide to Traffic Management,* Part 12: *Integrated Transport Assessments for Developments*, 2020
- Austroads, Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections, 2021
- Department of State Growth, *Traffic Impact Assessment Guidelines*, 2020
- Transport NSW, *Guide to Traffic Impact Assessment*, 2024 (TfNSW Guide)
- Australian Standards, AS2890.1, *Off-Street Parking*, 2004 (AS2890.1)

2. Existing Conditions

2.1 Transport Network

The transport network relevant to this report consists of Hampden Road, Kelly Street and South Street. Other roads such as Sandy Bay Road were considered in the context of the study area but were not examined in detail.

2.1.1 Hampden Road

Hampden Road is the major collector road that traverses through Battery Point. It connects between Sandy Bay Road and Castray Esplanade and provides access to numerous side roads and property accesses along its length. Parking is only permitted on the northern side of the road near the subject site.

Hampden Road carries approximately 4,000 vehicles per day. The signed speed limit of Hampden Road is 40-km/h. Hampden Road near the subject site is shown in Figure 3.

Figure 3 Hampden Road

2.1.2 Kelly Street

Kelly Street is a minor residential street that connects between Hampden Road and McGregor Street. Kelly's Steps are located at the northern end of Kelly Street, providing direct pedestrian access to Salamanca Place.

Kelly Street is relatively narrow (6 metres) and is approximately 275 metres in length. Parking is available on the western side of Kelly Street only apart from a section of 90-degree angle parking adjacent to the

subject site (12 spaces including 1 disabled space). The posted speed limit of Kelly Street is 40-km/h (area speed zone signage for Battery Point).

Kelly Street near the subject site is shown in Figure 4.

Figure 4 Kelly Street

2.1.3 South Street

South Street is a local residential access road that connects between Hampden Road at its southern end and McGregor Street at its northern end. It provides one-way flow between Hampden Road and McGregor Street, with a narrow pavement width of approximately 4-metres.

On-street parking is only available on the western side of South Street.

The proposed development does not rely on South Street for vehicular access, however pedestrian access is provided via South Street.

2.2 Road Safety Performance

Crash data can provide valuable information on the road safety performance of a road network. Existing road safety deficiencies can be highlighted through the examination of crash data, which can assist in determining whether traffic generation from the proposed development may exacerbate any identified issues.

Crash data was obtained from the Department of State Growth for a 5+ year period between 1st January 2020 and 31st June 2025 for Hampden Road between De Witt Street and Colville Street and the full length of Kelly Street.

The findings of the crash data is summarised as follows:

Hampden Road

- A total of 3 crashes were reported. The Hampden Road crashes are shown in Figure 5.

- 10:15pm, Friday 4th March 2022 – 'other-on-path' crash near Collville Street junction resulting in property damage only.
- 9:45am, Thursday 20th July 2023 – 'other-on-path' crash adjacent to the subject site resulting in property damage only.
- 5:49pm, Tuesday 26th September 2023 – 'parking-vehicles-only' collision adjacent to the subject site resulting in property damage only.

Kelly Street

- A total of 9 crashes were reported during this time. The crash locations are shown in Figure 6.
  - 6:40pm, Wednesday 29h January 2020 – 'parked-car-runaway' incident near the northern end of Kelly Street resulting in property damage only.
  - 3:40pm, Friday 30th April 2021 – 'parking-vehicles-only' collision adjacent to the subject site resulting in property damage only.
  - 6:26pm, Sunday 19th June 2022 – 'other-on-path' collision at the northern end of Kelly Street resulting in property damage only.
  - 7:06pm, Friday 14th October 2022 – 'other-manoeuvring' collision adjacent to the subject site resulting in property damage only.
  - 5:30pm, Saturday 18th February 2023 – 'other-on-path' collision near the northern end of Kelly Street resulting in property damage only.
  - 11:00am, Saturday 25th March 2023 - 'other-on-path' collision adjacent to the subject site resulting in property damage only.
  - 10:30am, Monday 22nd May 2023 – 'other-on-path' collision adjacent to the subject site resulting in property damage only.
  - 10:30am, Tuesday 18th March 2025 – no crash type recorded, adjacent to the subject site resulting in property damage only.
  - 12:00pm, Saturday 31st May 2025 – no crash type recorded, adjacent to the subject site resulting in property damage only.

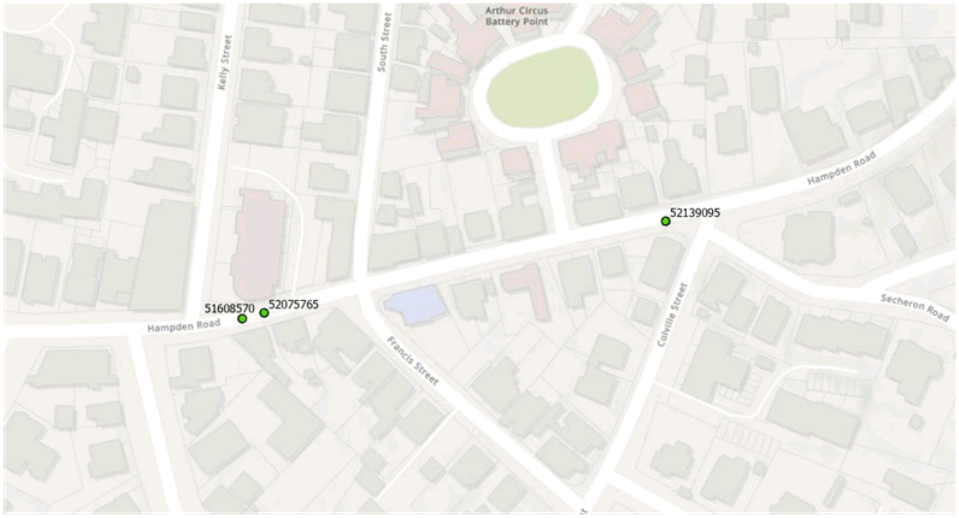
2.2.1 Crash Analysis Summary:

The crash analysis reveals a relatively benign safety environment across both Hampden Road and Kelly Street. Key findings include:

- Crash Severity: All reported crashes (3 on Hampden Road, 9 on Kelly Street) resulted in property damage only, with no recorded injuries or fatalities. This indicates a low-severity crash environment.
- Vulnerable Road Users: The crash data shows no involvement of pedestrians, cyclists, or other vulnerable road users, suggesting the road environment does not present significant risks to these user groups.

- Crash Frequency: The crash frequency remains relatively low across both streets, with Hampden Road experiencing only 3 crashes over the reporting period and Kelly Street recording 9 crashes.
- Crash Patterns: A notable trend continues with parking and manoeuvring-related incidents, particularly on Kelly Street where several crashes are classified as 'parking-vehicles-only', 'other-manoeuvring', and 'parked-car-runaway' incidents. Multiple crashes have occurred adjacent to the subject site on both streets, reinforcing the connection to local parking arrangements.
- Conclusion: The crash data does not indicate significant road safety concerns that would be exacerbated by the proposed development. However, the continued prevalence of parking-related incidents, particularly those adjacent to the subject site, suggests that existing parking configurations (likely the 90-degree angle parking) remain a contributing factor to minor property damage crashes in the immediate vicinity.

Figure 5 Hampden Road Crash Locations



Source: Department of State Growth

Figure 6 Kelly Street Crash Locations

Source: Department of State Growth

3. Proposed Development

3.1 Development Proposal

The proposed development involves the demolition of the existing hotel and the construction of the following components:

- Demolition of all existing buildings at 55 Hampden Road.
- Removal of four trees, which are all located within the property boundary.
- Minor works within the road reserve, including:
  - → Changes to vehicular access on Kelly Street
  - → Removal of vehicular access on Hampden Road and reinstatement of kerb. This will increase the number of on-street car parking spaces on Hampden Road.
- Construction of a new building with a mix of residential, visitor accommodation and commercial tenancies with the following:
  - → 2 x 2-bedroom residential townhouses
  - → 14 x visitor accommodation units (includes Units 1-13 and the existing dwelling at 43 South Street which has an existing visitor accommodation permit)
  - → Ground floor commercial tenancy (café) located on the corner of Hampden Road and Kelly Street. Floor area = 125.06m².
  - → Ground floor commercial tenancy (shop) located on Hampden Road. Floor area = 74.34m².
- Parking provision: 37 on site car parking spaces, 4 motorcycle spaces and 20 bicycle parking spaces.

Access to the basement car park will be via a ramp in Kelly Street. The existing 90-degree on-street parking in Kelly Street will be retained (13 spaces). The removal of the existing car park access on Hampden Road will result in the addition of 3 on-street car parking spaces, noting that the potential additional on-street parking does not form part of the proposed development and will be the responsibility of Council as road authority to implement.

The proposed development is shown in Figure 7 and Figure 8 for the basement and ground floors respectively (an additional three levels extend above the ground floor, however these are not relevant to the traffic and parking elements of the development and are therefore not shown in this report).

Figure 7 Proposed Development Plans – Basement

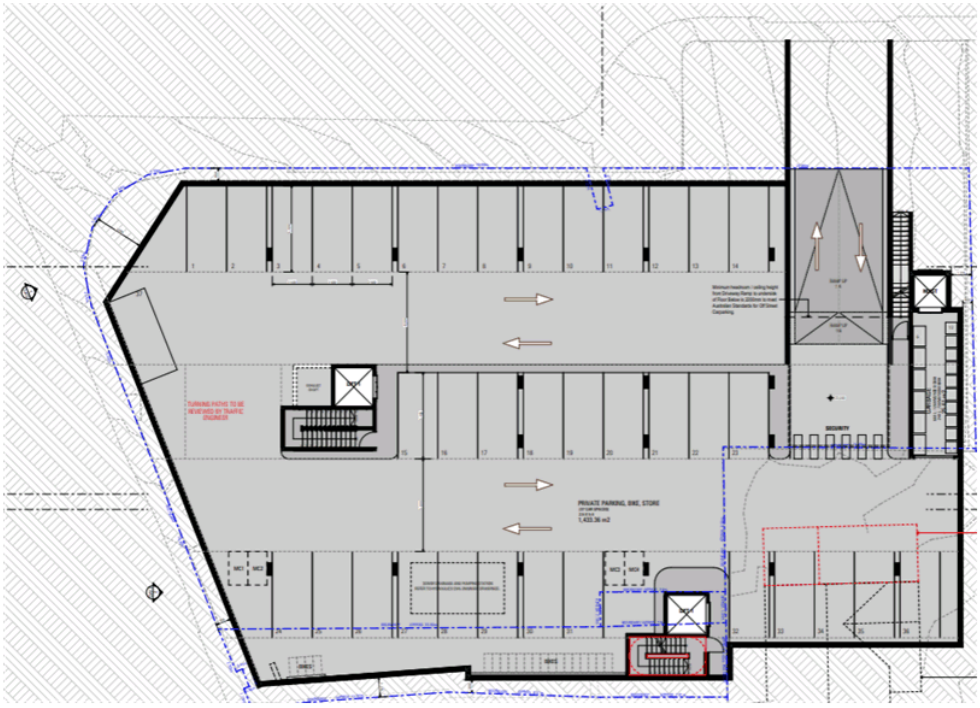
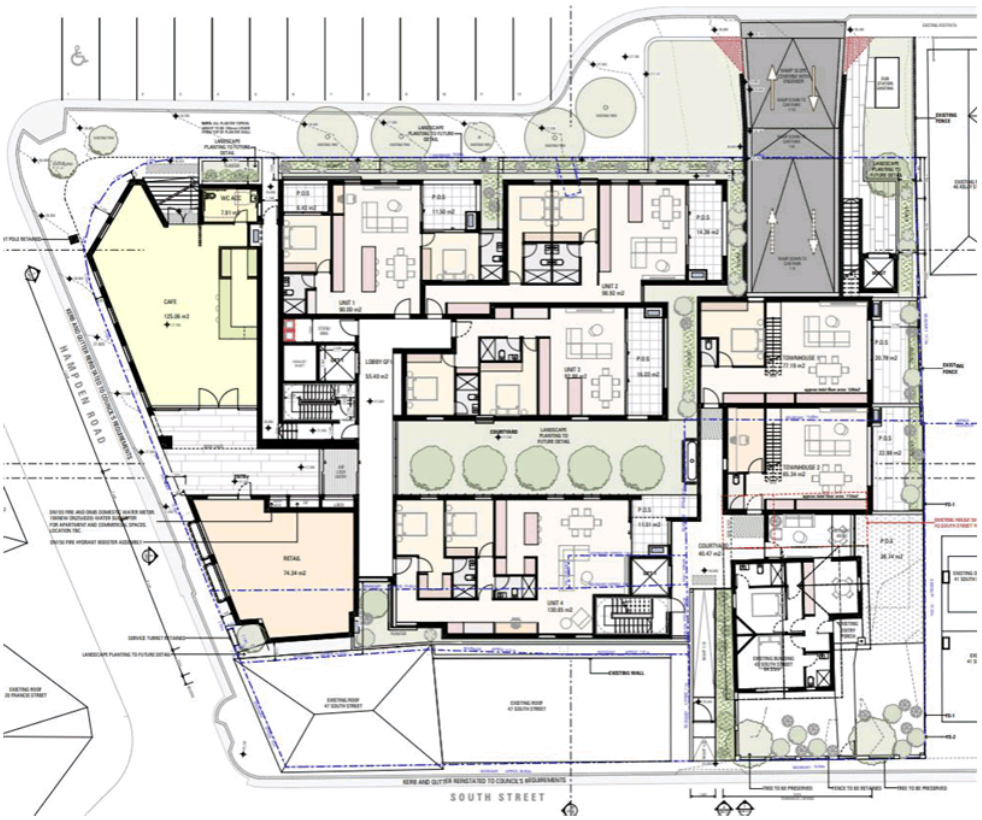


Figure 8 Proposed Development Plans – Ground Floor



4. Traffic Impacts

4.1 Trip Generation

Traffic generation was sourced from the TfNSW Guide.

4.1.1 Residential Component

For medium density residential dwellings, the TfNSW Guide recommends a rate of 4 trips per day per dwelling for regional areas (rounded up from 3.67 trips per day per dwelling), with a peak of 0.6 trips per dwelling per hour.

This equates to 8 vehicles per day, with a peak of 1 vehicle per hour.

4.1.2 Visitor Accommodation Component

Trip generation rates for visitor accommodation is assumed to be similar to residential. A rate of 4 trips per day per dwelling, with a peak of 0.6 trips per dwelling per hour has been adopted.

With a total of 14 units of visitor accommodation, this equates to the following traffic generation:

- 56 trips per day
- 8 trips per hour during peak periods

4.1.3 Commercial Component (Shop)

A commercial tenancy is proposed with a floor area of 79.3m^2.

The TfNSW Guide recommends a rate of 2.022 vehicles per day x floor area, with a peak of 0.259 x floor area. This equates to a traffic generation of 159 vehicles per day with a peak of 21 vehicles per hour.

4.1.4 Café Component

A café with floor area of 125.06m^2 is proposed on the ground floor.

A rate of 60 trips per day per 100m^2 of gross floor area has been adopted from the TfNSW Guide, with a peak rate of 5 trips per hour per 100m^2 of gross floor area.

This equates to 75 trips per day, with an evening peak of 6 trips per hour.

4.1.5 Total Trip Generation

The total daily trip generation of the development is:

- Residential 8 trips per day
- Visitor accommodation 56 trips per day
- Commercial 159 trips per day

- Café 75 trips per day
- TOTAL 298 trips per day

The evening peak period will have the highest traffic generation as this coincides with the peaks for the café and commercial components.

The total evening peak hour trip generation of the development is:

- Residential 1 trip per hour
- Visitor accommodation 8 trips per hour
- Commercial 21 trips per hour
- Café 6 trips per hour
- TOTAL 36 trips per hour

4.2 Trip Assignment

Parking is only provided for the residential and visitor accommodation components of the proposed development. The trip assignment of the café and shop components of the proposed development will be experienced as nearby on-street parking, or by other modes of transportation, in much the same way as the majority of commercial developments in the Battery Point area.

Vehicles accessing the basement car park in Kelly Street will predominantly access via right-in/ left-out manoeuvres.

4.3 Access Impacts

4.3.1 Number of Accesses

The Acceptable Solution A2 of Clause E5.6.2 of the Planning Scheme states "*No more than one access providing both entry and exit, or two accesses providing separate entry and exit, to roads in an area subject to a speed limit of 60km/h or less*".

Similarly, the Acceptable Solution A1 of Clause E6.7.1 of the Planning Scheme states "*The number of vehicle access points provided for each road frontage must be no more than 1 or the existing number of vehicle access points, whichever is the greater*".

The development provides one access in Kelly Street providing both entry and exit movements, therefore satisfying the Acceptable Solution A2 of Clause E5.6.2 and Acceptable Solution A1 of Clause E6.7.1 of the Planning Scheme.

4.3.2 Access Traffic Generation

The Acceptable Solution A3 of Clause E5.5.1 of the Planning Scheme states "*The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is the greater*".

The traffic generation of the existing site is not known, but it is assumed that the traffic generation of the development will exceed the Acceptable Solution requirements. The Performance Criteria P3 of Clause E5.5.1 states:

> *"Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:*
>
> *(a) the increase in traffic caused by the use;*
>
> *(b) the nature of the traffic generated by the use;*
>
> *(c) the nature and efficiency of the access or the junction;*
>
> *(d) the nature and category of the road;*
>
> *(e) the speed limit and traffic flow of the road;*
>
> *(f) any alternative access to a road;*
>
> *(g) the need for the use;*
>
> *(h) any traffic impact assessment; and*
>
> *(i) any written advice received from the road authority".*

The following is relevant with respect to the development:

a. Increase in traffic. The total generation of the development is likely to be 298 vehicles per day. Whilst the actual traffic generation of the existing hotel on the site is unknown, it is likely that it is a similar magnitude to the development proposal (noting that the existing car park has approximately 25 spaces with higher turnover associated with restaurant/ bar use compared to residential/ accommodation use associated with the proposed development).

b. Nature of traffic. The traffic generated by the development will be cars associated with the residential and visitor accommodation components of the development. All traffic utilising the underground car park will be associated with residential and visitor accommodation components of the development. This is consistent with nearby land use in the surrounding transport network. The peak traffic generation of the development is relatively low, being 9 vehicles per hour (considering only residential and visitor accommodation components that accesses the car park).

c. Nature and efficiency of junction. The access junction with Kelly Street will be approximately 7 metres wide and will have a peak generation of 9 vehicles per hour (residential and visitor

accommodation components only using the access). The access will therefore operate at a high level of efficiency.

d. Nature and category of the road. Kelly Street is a local residential street that carries a relatively low traffic volume. At its southern end, Kelly Street is commercial in nature (due to the existing site, the bakery opposite, and the various commercial sites in Hampden Road near the site). The balance of the street is exclusively residential in nature. The traffic generated by the development is consistent with these land uses.

e. Speed limit. The general urban speed limit of 40-km/h is applicable to Kelly Street. This speed limit is compatible with the residential nature of the street and facilitates a relatively safe environment for residential land use. It is noted that actual travel speeds in Kelly Street are lower than the speed limit due to the narrow width of the road.

f. Alternative access. Alternative access would be available via Hampden Road, which is not considered appropriate due to the higher traffic volumes and narrow road width.

g. Need for use. The driveway is required to provide car parking access for the development.

h. Traffic impact assessment. This report documents the findings of a traffic impact assessment.

i. Road authority. The road authority (Council) have stated that a traffic impact assessment is required.

Based on the above assessment, the development meets the requirements of Performance Criteria P3 of Clause E5.5.1 of the Planning Scheme.

4.4 Access Design

The Acceptable Solution A1 of Clause E6.7.2 of the Planning Scheme states "*Design of vehicle access points must comply with all of the following: in the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with section 3 – "Access Facilities to Off-street Parking Areas and Queuing Areas" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off street car parking*".

AS2890.1 defines the access as 'Category 1' access facility (Class 1A[1] parking with between than 25 and 100 spaces fronting onto a local road).

4.4.1 Access Location

The location of the proposed driveway access satisfies the requirements of Figure 3.1 of AS2890.1 in terms of no conflicts with nearby road junctions.

[1] AS2890.1 defines Class 1A as "residential, domestic and employee parking". Whilst the car park will service short term accommodation, the nature of the accommodation varies from traditional 'hotel' or 'motel'. The accommodation units are functionally similar to residential dwellings.

4.4.2 Access Sight Distance

AS2890.1 requires a minimum sight distance provision of 35 metres for a frontage road speed of 40-km/h. As noted in Section 4.5, the available sight distance exceeds this requirement.

4.4.3 Driveway Width

The AS2890.1 minimum driveway width requirement is 3.0 metres. The driveway width is 6.0 metres (increasing to 7.6 metres kerb-to-kerb at the interface with Kelly Street), therefore the access width complies with the requirements of AS2890.1.

4.4.4 Ramp Assessment

Section 2.5.3(b) of AS2890.1 states the following regarding the maximum grade of straight ramps:

i. Longer than 20 metres – 1 in 5 (20%) maximum.

ii. Up to 20 metres long – 1 in 4 (25%) maximum. The allowable 20 m maximum length shall include any parts of the grade change transitions at each end that exceed 1 in 5 (20%).

In this the ramp is less than 20 metres in length and has a maximum grade of 20%, thereby complying with the requirements of AS2890.1.

4.4.5 Access Summary

The proposed access satisfies the requirements of AS2890.1 and therefore satisfies the requirements of Acceptable Solution A1 of Clause E6.7.2 of the Planning Scheme.

4.5 Sight Distance

The Acceptable Solution A1 of Clause E5.6.4 of the Planning Scheme states "*Sight distances at an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1*". The requirements of Table E5.1 are reproduced in Table 1.

Table 1 Planning Scheme SISD Requirements

Vehicle Speed	Safe Intersection Sight Distance in metres, for speed limit of:	
km/h	60 km/h or less	Greater than 60 km/h
50	80	90
60	105	115
70	130	140
80	165	175
90		210
100		250
110		290

The requirements of Table E5.1 for a vehicle speed of 50-km/h in a speed limit of 60-km/h or less (Kelly Street is 40-km/h) is 80 metres. The available sight distance at the access's junction with Kelly Street exceeds this minimum requirement in both directions (noting that Kelly Street is 40-km/h). It is further noted that the vehicle speeds are also lower than 40-km/h due to the narrow pavement width (thus resulting in a lower SISD than provided in Table E5.1).

The available sight distance therefore complies with the Acceptable Solution A1 of Clause E5.6.2 of the Planning Scheme.

4.6 Pedestrian Impacts

A relatively high standard of pedestrian infrastructure is provided on both Kelly Street, Hampden Road and South Street connecting to the site. Existing pedestrian infrastructure in the surrounding road network near the subject site consists of footpaths on both sides of the road.

The nature of the development is likely to result in pedestrian movements to/ from the site to areas such as Hobart CBD and Salamanca/ Sullivans Cove.

Pedestrian access to the site is separated from the vehicular access.

4.7 Road Safety Impacts

The proposed development was assessed against key road safety considerations. Road safety predominantly relates to the access conditions for all road users.

The following points are relevant for the proposed development:

- Pedestrian access to the site is separated from the vehicular access at Kelly Street. This design approach minimizes potential conflicts between pedestrians and vehicles, contributing to a safer access environment.
- Access conditions at Kelly Street are considered safe in terms of the speed environment and sight distance provision. The existing road geometry and traffic conditions support safe vehicular movements to and from the development.
- There is sufficient spare capacity in Kelly Street, Hampden Road and the surrounding road network to absorb the predicted increase in peak hour traffic generated from the proposed development. No change to the level of service of the road network would be expected as a result of the development, ensuring that traffic operations remain within acceptable safety parameters.
- The development removes a vehicular access on Hampden Road. This is a positive road safety outcome, by reducing vehicular conflicts on the busier narrow road frontage and consolidating access to the less constrained Kelly Street frontage.
- The crash analysis of the surrounding road network confirms a low-risk safety environment. The updated crash data spanning recent years shows that all reported crashes (3 on Hampden Road, 9 on Kelly Street) resulted in property damage only, with no recorded injuries, fatalities, or

involvement of vulnerable road users. This demonstrates a benign crash severity profile in the immediate area.

- While crash frequency remains relatively low, the data reinforces a pattern of parking-related incidents, particularly on Kelly Street. Several crashes were classified as parking and manoeuvring-related incidents, with multiple occurrences adjacent to the subject site. This pattern is consistent with the presence of 90-degree angle parking arrangements, but does not indicate any systemic safety deficiencies that would be exacerbated by the proposed development.
- The crash history does not indicate that there are any existing road safety issues in the immediate area that would be adversely impacted by the increase in traffic generated by the proposed development. The predominance of minor property damage crashes related to parking manoeuvres suggests localised operational issues rather than fundamental safety concerns that would be worsened by additional through traffic.

5. Parking Assessment

5.1 Existing Parking Provision

The existing site has off-street parking for approximately 25 spaces. The existing car park is located at the northern and eastern boundaries of the site, with access from both Kelly Street and Hampden Road.

A total of 13 angle parking spaces (12 spaces and 1 disabled space) are located on Kelly Street adjacent to the site immediately north of the Hampden Road. A further 6 spaces are available on the opposite side of Kelly Street.

On Hampden Road, a total of 3 parking spaces are located immediately adjacent to the subject site. The spaces on Hampden Road are controlled by one-hour parking restrictions Monday to Friday between 8:00am and 5:00pm. Between 5:00pm and 10:00pm, 5-minute parking restrictions apply to enable short term parking associated with Da Angelos, neighbouring the subject site.

5.2 Parking Provision

The development proposes a total of 37 on-site parking spaces within the basement of the proposed development. All on-site parking is provided for the residential and visitor accommodation components of the development proposal. The parking will not be visible to the public. It would also be unusual for undercover parking to be provided in the context of nearby sites with similar land uses.

The design of the development's car park was intended to provide parking for residential and visitor accommodation components only. This ensures that the parking is secure and private for these components.

The development also includes on-site parking for 4 motorcycles.

The removal of the existing driveway in Hampden Road may result in additional 3 on-street car parking spaces. This does not form part of the proposed development and would be subject to road authority consideration.

The layout of the basement car park is shown in Figure 7.

5.3 Theoretical Parking Demand

Theoretical parking demands were calculated using the TfNSW Guide.

5.3.1 Residential Parking

The TfNSW Guide provides guidance on parking demands associated with medium density residential developments in Category 1 locations. The TfNSW Guide recommends the following parking provision for the residential units:

- 1-bedroom dwellings 0.5 spaces per dwelling = 0 spaces
- 2-bedroom dwellings 0.8 spaces per dwelling = 1.6 spaces

- 3-bedroom dwellings 1.2 spaces per dwelling = 0 spaces
- Visitor parking 1 space per 5 dwellings = 0.4 spaces
- TOTAL = 2 spaces

5.3.2 Visitor Accommodation Parking

The visitor accommodation component is likely to generate parking 1 space per visitor accommodation unit. This equates to a total of 14 spaces.

5.3.3 Commercial Parking

Commercial parking typically generates parking demands in the order of 1 space per 30m^2 of floor area. This equates to a parking demand of 3 spaces.

5.3.4 Café Parking

The TfNSW Guide recommends a rate of 15 spaces for each 100m^2 of floor area or 1 space for each 3 seats, whichever is greater.

This equates to a parking demand of 19 spaces (based on area as seating is unknown).

5.3.5 Total Parking Demand

The total parking demand is likely to be 38 spaces. The provision of 37 spaces does not satisfy this demand.

It is noted that commercial properties in the nearby surrounding area (including shops and cafes) rely upon the provision of on-street car parking. Parking is only provided for the residential and visitor accommodation components of the development. The likely demand for residential and visitor parking is 16 spaces. In this regard, there is flexibility to provide additional parking for some residential dwellings and/or staff (owner) parking for the commercial components of the development.

The customers associated with the commercial and café components of the proposed development are likely to rely on the availability of on-street or nearby off-street public parking. It is further noted that the development will increase the available on-street parking supply by three spaces through the closure of a driveway on Hampden Road.

The parking provision in association with the increased on-street car parking is therefore considered appropriate for the development.

5.4 Existing Parking Assessment

The existing use of the site is a hotel. It contains 11 x 3-star rooms, an 80 seat restaurant and bar facilities. The actual parking demands associated with the existing use of the site was difficult to determine, as on-street parking surveys would have difficulty differentiating users of the hotel with other nearby uses (such as Jackman & McRoss and other commercial sites nearby).

The existing car park of the hotel was observed to be at or close to capacity during evening periods. The car park has capacity for 25 spaces.

The unrestrained parking demand can be calculated from the RMS Guide:

- Hotel rooms – 1 space per 4 bedrooms = 3 spaces
- Restaurant – 15 spaces per 100m^2 or 1 space per 3 seats (greater of) = 27 spaces (seats)
- Bar – 1 space per 3m^2 = 17 spaces (assuming nominal 50m^2)
- TOTAL = 47 spaces

The existing site provides a total of 25 spaces, which is a deficit of 22 spaces. This is directly comparable to the café and commercial components of the proposed development that require 20 spaces in accordance with Planning Scheme requirements (Table E6.1 – 3 spaces for commercial and 17 spaces for café). The commercial and café components of the proposed development do not have on-site parking provision.

On this basis, the proposed development is unlikely to have any change of on-street car parking demand compared to the existing use of the site a hotel.

5.5 Planning Scheme Requirements

The Acceptable Solution A1 of Clause E6.6.1 of the Planning Scheme states "*The number of on-site car parking spaces must be no less than and no greater than the number specified in Table E6.1*".

Schedule E6.6.1 of the Planning Scheme sets out the normal parking requirements for residential developments.

The requirements of Table E6.1 of the Planning Scheme are set out in Table 2.

Table 2 Planning Scheme Parking Requirements

Component	Use/ Unit Rate	Quantity	Parking Requirement
Residential (multiple dwellings)	2 spaces per dwelling + 1 space per 4 dwellings visitor parking	2	5 spaces
Visitor accommodation	1 space for each bedroom	32 bedrooms	32 spaces
Commercial	General retail and hire – 1 space for each 30m^2 of floor area	74.34 m^2	3 spaces
Café	Restaurant – 15 spaces for each 100m^2 of floor area or 1 space for each 3 seats (greater of)	125.06 m^2	19 spaces
TOTAL			**59 spaces**

The development provides a total of 37 spaces and therefore does not comply with the requirements of Acceptable Solution A1 of Clause E6.6.1 of the Planning Scheme with a shortfall of 22 spaces.

The Performance Criteria P1 of Clause E6.6.1 of the Planning Scheme states:

"The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:

(a) car parking demand;

(b) the availability of on-street and public car parking in the locality;

(c) the availability and frequency of public transport within a 400m walking distance of the site;

(d) the availability and likely use of other modes of transport;

(e) the availability and suitability of alternative arrangements for car parking provision;

(f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;

(g) any car parking deficiency or surplus associated with the existing use of the land;

(h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;

(i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;

(j) any verified prior payment of a financial contribution in lieu of parking for the land;

(k) any relevant parking plan for the area adopted by Council;

(l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code;

(m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code".

The following is relevant with respect to the development proposal:

a. Car parking demand. The theoretical parking demands associated with the proposed development are set out in Section 5.3. The parking demand has been calculated to be 38 spaces. The provision of 37 spaces represents a shortfall of 1 space for the development as a whole. The development will only provide on-site parking for the residential and visitor accommodation components of the development however. These components have sufficient on-site parking to satisfy the likely demands.

b. On-street parking. There is a relatively large pool of available parking in Kelly Street, Hampden Road and connecting streets in the surrounding area. Whilst this parking is typically in high demand, the on-street parking demands for the commercial and café components are likely to be similar to the existing Prince of Wales Hotel's parking demands.

   It is also noted that the removal of the existing driveway in Hampden Road is likely to result in the addition of 3 on-street car parking spaces (responsibility for this is with Council as the road authority as it does not form part of the development application). The increased provision of on-street parking brings the total number of spaces (on-street and off-street combined) to meet the requirements of the calculated parking demands associated with the development.

   The existing use of the site as a hotel creates a comparable on-street parking demand to what is proposed. Refer to Section 5.4.

c. Public transport. Metro Tasmania operate frequent bus services along Sandy Bay Road.

d. Other modes of transport. The site is located near residential and commercial catchments. Walking and cycling modes of transport are likely to be utilised from Salamanca and Hobart areas.

e. Alternative parking arrangements. Not applicable.

f. Shared parking. Not applicable.

g. Parking deficiency or surplus. Not applicable.

h. Parking credit. Not applicable.

i. Cash in lieu. Not applicable.

j. Payment of cash in lieu. Not known.

k. Parking plan. Not applicable.

l. Historic cultural heritage significance. The subject site is located within a Heritage precinct (BP1) and as such Clause E13.8.4 of the Planning Scheme is relevant. the Acceptable Solution A9 of Clause E13.8.4 of the Planning Scheme states that "*there must be a maximum of one car space per dwelling*". This reduces the residential parking requirement of the proposed development to 2 spaces (reducing this component by 3 spaces). The commercial parking also reduces by 3 spaces, thus reducing the overall parking requirement by 6 spaces total. Refer to Section 5.6.

m. Significant trees code. Not applicable.

Based on the above assessment, the development meets the requirements of Performance Criteria P1 of Clause E6.6.1 of the Planning Scheme. Specifically the parking demands of the residential component of the development are met on-site and there is a relatively large pool of on-street car parking near the subject site.

5.6 Heritage and Residential Zones Parking Provision

The Acceptable Solution A1 of Clause E6.6.10 of the Planning Scheme states "*No on-site parking is required for: (a) food services uses up to 100m2 floor area or 30 seats, whichever is the lesser; and (b) general retail and hire uses up to 100m2 floor area; provided the use complies with the hours of operation specified for the relevant zone*".

The subject site is located within a Heritage precinct (BP1) and as such Clause E13.8.4 of the Planning Scheme is relevant. the Acceptable Solution A9 of Clause E13.8.4 of the Planning Scheme states that "*there must be a maximum of one car space per dwelling*".

In this case, the requirement for the commercial component of the proposed development is zero as the floor area is less than 100m^2. This reduces the parking requirement for this component by 3 spaces.

Similarly the residential component of the proposed development requires only 1 space per dwelling (2 spaces), thus reducing the parking requirement by 3 spaces.

The overall reduction in parking as a result of application of the Heritage precinct requirements is therefore 6 spaces.

The Acceptable Solution A1 of Clause E6.6.10 of the Planning Scheme is therefore satisfied.

5.7 Accessible Parking

Acceptable Solution A1 of Clause E6.6.2 of the Planning Scheme states "*Car parking spaces provided for people with a disability must: (a) satisfy the relevant provisions of the Building Code of Australia; (b) be incorporated into the overall car park design; (c) be located as close as practicable to the building entrance*".

The restaurant and commercial tenancy components of the development are classified as Class 6 building under the BCA Code. This requires an accessible parking provision of 1 space per every 50 car parking

spaces or part thereof. The proposed development does not provide parking for either the restaurant or commercial tenancies and therefore the disabled parking requirement is zero (0 spaces divided by 50 spaces). It is further noted that the on-site parking is only accessible for the residential and short-term accommodation components of the proposed development, which is restricted by way of a boom gate.

An existing disabled parking space is provided on-street in Kelly Street immediately adjacent to the subject site. This disabled parking space is incorporated into the overall on-street parking design and is located as close as practicable to the building entrance for the restaurant and commercial tenancies associated with the proposed development.

On this basis the proposed development satisfies the requirements of Acceptable Solution A1 of Clause E6.6.2 of the Planning Scheme.

5.8 Motorcycle Parking

The Acceptable Solution A1 of Clause E6.6.3 of the Planning Scheme states "*The number of on-site motorcycle parking spaces provided must be at a rate of 1 space to each 20 car parking spaces after the first 19 car parking spaces except if bulky goods sales, (rounded to the nearest whole number). Where an existing use or development is extended or intensified, the additional number of motorcycle parking spaces provided must be calculated on the amount of extension or intensification, provided the existing number of motorcycle parking spaces is not reduced*".

This is a requirement for 1 motorcycle parking space. The provision of 4 motorcycle parking spaces therefore satisfies the requirements of Acceptable Solution A1 of Clause E6.6.3 of the Planning Scheme.

The Acceptable Solution A1 of Clause E6.7.9 of the Planning Scheme states "*The design of motorcycle parking areas must comply with all of the following: (a) be located, designed and constructed to comply with section 2.4.7 "Provision for Motorcycles" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking; (b) be located within 30 m of the main entrance to the building*".

AS2890.1 requires minimum dimensions of 2.5m long x 1.2m width per motorcycle space. The dimensions of the motorcycle parking complies with these requirements. The location of the motorcycle parking spaces is also within 30m of the building entry (being the elevators and stairwell within the car parking area).

The design of motorcycle parking spaces therefore satisfies the requirements of Acceptable Solution A1 of Clause E6.7.9 of the Planning Scheme.

5.9 Bicycle Parking

5.9.1 Bicycle Parking Quantity Requirements

The Acceptable Solution A1 of Clause E6.6.4 of the Planning Scheme states "*The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2*".

Table E6.2 requires the following bicycle parking provision:

- Restaurant 1 bicycle space for each 100m^2 of floor area = 1 space

- Visitor accommodation 1 bicycle space for each 40 accommodation rooms = 1 space
- TOTAL 2 bicycle spaces

A total of 20 bicycle parking spaces are provided, thus satisfying the requirements of Acceptable Solution A1 of Clause E6.6.4 of the Planning Scheme. Bicycle parking is provided along the eastern side of the car parking area.

5.9.2 Bicycle Parking Location

The Acceptable Solution A1 of Clause E6.7.10 of the Planning Scheme states "*The design of bicycle parking facilities must comply with all the following; (a) be provided in accordance with the requirements of Table E6.2; (b) be located within 30 m of the main entrance to the building*".

All bicycle spaces are located within 30m of the building entry (being the elevators and stairwell within the car parking area). The design of bicycle parking spaces therefore satisfies the requirements of Acceptable Solution A1 of Clause E6.7.10 of the Planning Scheme.

5.9.3 Design of Bicycle Parking

The Acceptable Solution A2 of Clause E6.7.10 of the Planning Scheme states "*The design of bicycle parking spaces must be to the class specified in table 1.1 of AS2890.3-1993 Parking facilities Part 3: Bicycle parking facilities in compliance with section 2 "Design of Parking Facilities" and clauses 3.1 "Security" and 3.3 "Ease of Use" of the same Standard*".

The design of the bicycle parking spaces satisfies the dimensional requirements oof AS2890.3. The Acceptable Solution A2 of Clause E6.7.10 of the Planning Scheme is therefore met.

5.9.4 Bicycle Facilities

The Acceptable Solution A1 of Clause E6.7.11 of the Planning Scheme states "*For all new buildings where the use requires the provision of more than 5 bicycle parking spaces for employees under Table E6.2, 1 shower and change room facility must be provided, plus 1 additional shower for each 10 additional employee bicycle spaces thereafter*".

In this case the proposed development requires less than 5 bicycle parking spaces and therefore shower and change room facilities are not required. The Acceptable Solution A1 of Clause E6.7.11 is satisfied.

5.10 Car Parking Layout

The Acceptable Solution A1 of Clause E6.7.5 of the Planning Scheme states "*The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with clause 5.3 "Headroom" of the same Standard*".

The car park is classified as a mix of User Class 1A (residential) and User Class 2 (hotels, motels, etc) under AS2890.1. The assessment of the requirements of AS2890.1 are set out in the following sections.

5.10.1 Car Parking Dimensions

For User Class 2, Australian Standards, AS2890.1 requires the following dimensions for 90-degree parking spaces:

- Space width 2.5 metres
- Space length 5.4 metres
- Aisle width 5.8 metres

All spaces meet the minimum AS2890.1 dimension requirements.

5.10.2 AS2890.1 Assessment Summary

The parking space dimensions and manoeuvring areas comply with the requirements of AS2890.1. The development therefore complies with the requirements of Acceptable Solution A1 of Clause E6.7.5 of the Planning Scheme.

5.11 On-Site Turning

The Acceptable Solution A1 of Clause E6.7.4 of the Planning Scheme states "*On-site turning must be provided to enable vehicles to exit a site in a forward direction, except where the access complies with any of the following: (a) it serves no more than two dwelling units; (b) it meets a road carrying less than 6000 vehicles per day*".

In this case the proposed development serves more than 2 dwelling units and on-site parking is required.

The car parking layout was assessed using B85 Vehicle swept paths for all parking spaces. This is shown in Figure 9, Figure 10 for key parking spaces and Figure 11. For a vehicle entering the car park and not accessing a space, demonstrating that vehicles can enter and exit the site in a forward motion, as shown in Figure 11.

The swept paths clearly demonstrate that on-site parking is provided, thus satisfying the requirements of Acceptable Solution A1 of Clause E6.7.4 of the Planning Scheme.

Figure 9 B85 Vehicle Manoeuvring – Spaces 13 and 14

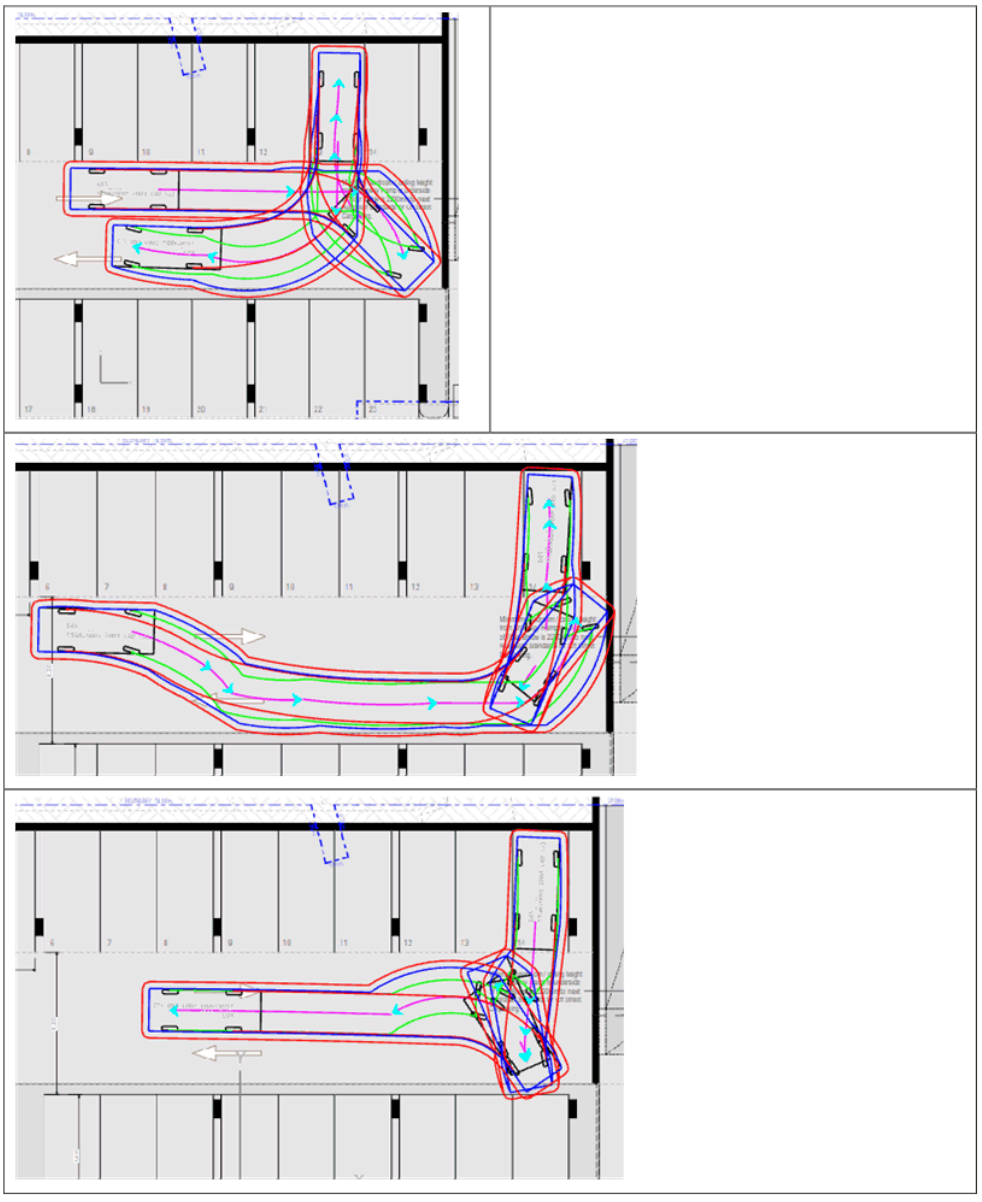


Figure 10 B85 Vehicle Swept Path - Space 36 Turning

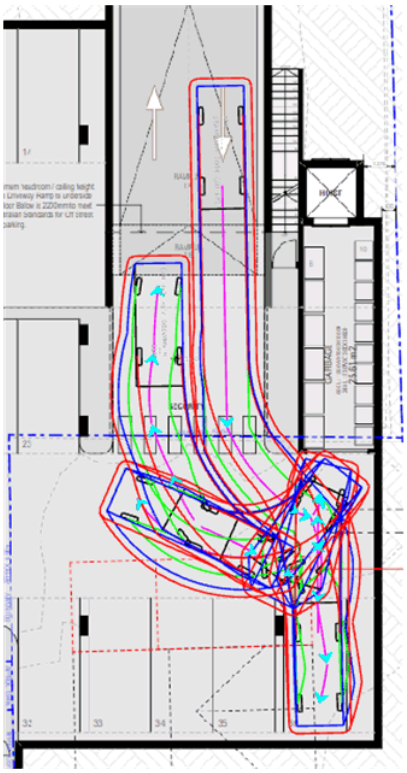
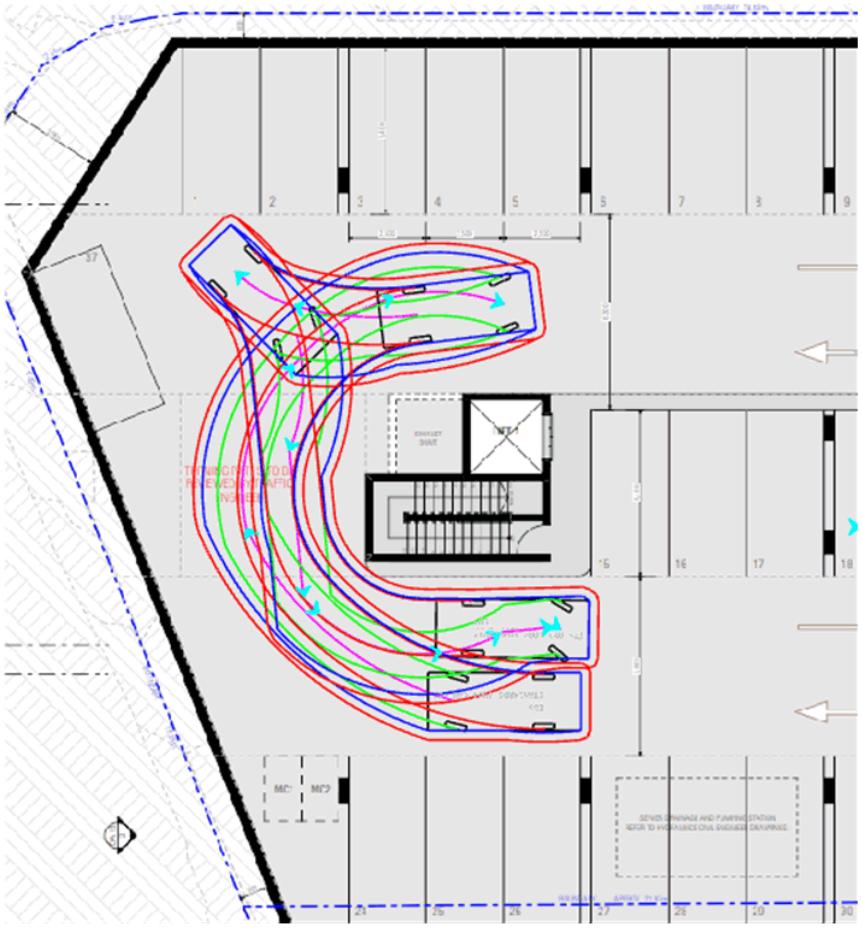


Figure 11 B85 Vehicle Swept Path On-Site Turning



5.12 On-Street Parking

The removal of the existing car park access on Hampden Road could facilitate the addition of 3 on-street car parking spaces.

6. Conclusions

This traffic impact assessment (TIA) investigated the traffic and parking impacts of a proposed mixed-use at 55 Hampden Road, Battery Point.

The key findings of the TIA are summarised as follows:

- **Development Description:** The development involves the demolition of the existing Prince of Wales Hotel and the construction of a new building comprising 2 residential dwellings (townhouses), 14 visitor accommodation units (including the existing dwelling at 43 South Street), and 2 commercial tenancies. A total of 37 on-site car parking spaces, 4 motorcycle spaces, and 20 bicycle spaces are proposed.
- **Mixed Use Components:** The development includes 2 x 2-bedroom townhouses, 14 visitor accommodation units (8 x 2-bedroom and 5 x 3-bedroom including 43 South Street), a café (125.06m²), and a retail shop (74.34m²).
- **Traffic Generation:** The development is likely to generate approximately 298 vehicle trips per day, with a peak of 36 vehicles per hour during evening periods when café and commercial components experience their highest demand.
- **Access Design**: The development provides a single access point on Kelly Street serving the basement car park. The access design complies with AS2890.1 requirements including location, sight distance (exceeding 80m requirement), driveway width (6.0-7.6m), and ramp gradient (20% maximum). All vehicular access will be consolidated to Kelly Street, with the existing Hampden Road access removed.
- **Parking Provision**: On-site parking (37 spaces) is provided exclusively for residential and visitor accommodation components. The café and retail shop rely on existing on-street parking, consistent with the existing hotel's parking arrangement. The existing 90-degree on-street parking in Kelly Street will be retained (13 spaces). The removal of the existing car park access on Hampden Road will potentially facilitate the addition of 3 on-street car parking spaces.
- **Planning Compliance**: While the Planning Scheme requires 59 spaces total, the development meets the requirements of Performance Criteria P1 of Clause E6.6.1. The Heritage Overlay BP1 limits residential parking to a maximum of one space per dwelling, reducing the residential requirement by 3 spaces. Similarly the parking requirement for the commercial component reduces by 3 spaces as the floor area is less than 100m². The on-site parking provision satisfies the empirical parking demands calculated for the residential and visitor accommodation components (16 spaces required).
- **Motorcycle and Bicycle Parking**: The development provides 4 motorcycle spaces (exceeding the requirement of 1 space) and 20 bicycle spaces (exceeding the requirement of 2 spaces), both complying with Planning Scheme requirements.

- **Design Standards**: The layout of the car parking complies with the requirements of User Class 2 in AS2890.1, with all spaces meeting minimum dimensions (2.5m width, 5.4m length) and aisle widths (5.8m). On-site turning is provided enabling vehicles to exit in a forward direction.
- **Design Standards**: The layout of the car parking complies with the requirements of AS2890.1, with all spaces meeting minimum dimensions (2.5m width, 5.4m length) and aisle widths (5.8m). On-site turning is provided enabling vehicles to exit in a forward direction.
- **Road Safety**: The crash analysis reveals a benign safety environment with all 12 reported crashes (3 on Hampden Road, 9 on Kelly Street) between January 2020 and June 2025 resulting in property damage only, with no injuries, fatalities, or involvement of vulnerable road users. The consolidation of access to Kelly Street and removal of the Hampden Road access represents a positive road safety outcome.

Based on the findings of this report, the proposed development is supported on traffic and parking grounds.

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GEO-ENVIRONMENTAL SOLUTIONS

CONTAMINATION MANAGEMENT PLAN (CMP)

55 HAMPDEN ROAD, BATTERY POINT

For MRRC Pty Ltd

***Version 3* – July 2025**

Geo-Environmental Solutions P/L 29 Kirksway Place, Battery Point 7004. Ph 6223 1839 Email: office@geosolutions.net.au

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DOCUMENT CONTROL

Title	Version	Date	Author	Reviewed
Contamination Management Plan, 55 Hampden Road, Battery Point	Version 1	19/02/2020	M Downie	JP Cumming
Contamination Management Plan, 55 Hampden Road, Battery Point	Version 2	18/05/2023	M. Downie	JP Cumming
Contamination Management Plan, 55 Hampden Road, Battery Point	Version 3	15/07/2025	Sarah Joyce	M Downie

1 Introduction

Geo-Environmental Solutions Pty. Ltd. (GES) were engaged by Neil Shephard and Associates on behalf of their client MRRC Pty Ltd (the 'Client') to prepare a site Contamination Management Plan (CMP) for 55 Hampden Road - hereby referred to as 'The Site' for the proposed redevelopment of the site into a multilevel apartment building in 2019. Catherine Williams of Jaws Architects requested a revision to the report in 2023, in light of changes to the proposed designs. Patrick Caroll requested a revision to this report in 2025 in light of changes to the proposed designs.

1.1 Assessment Framework

GES completed an Environmental Site Assessment (ESA) report for the site in February 2020 in accordance with IPS E2.0 performance criteria, and a review to this ESA in May 2023, then again for the current report in July 2025.

The ESA included a Tier 1 health risk assessment to determine potential soil contamination risks which may arise from a proposed building development and associated works. The ESA report has been prepared by a suitably qualified person and 'defines the nature, extent and levels of existing contamination and the actual or potential risk to human health or the environment, on or off the site, resulting from that contamination, prepared in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 16 May 2013.'

The council contaminated site register does not have the site listed as a potential contaminated site. The site is nearby to other sites considered potentially contaminated:

- 47 Hampden Road – Gas Cylinder
- 57-59 Hampden Road 'Terrys Bakery' – Hydrocarbon storage 1974

The proposed development has not flagged the Interim Planning Scheme (IPS) E2.0 Potentially Contaminated Land Code. However, contaminants have been found on site in results from the ESA. The contaminants on site are likely to be the result of demolitions works in site in 1967, with the new Prince Of Wales Hotel and surrounding car parking area likely to have been built on patches of fill of highly variable content and highly variable depths.

1.2 Conclusions From the ESA

GES considers that substantial data regarding the site contamination has been acquired during desktop investigation and the invasive site assessment and recommends the following to manage the soil on site during construction:

- The following contaminants of potential concern (COPC) associated with uncontrolled fill have been identified on site:
  - Total Petroleum/Recoverable Hydrocarbons (TPH/TRH);
  - Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene (BTEX);
  - Polycyclic Aromatic Hydrocarbons (PAH) including Benzo(a)pyrene, and
  - Suite of 15 Heavy Metals

  Asbestos was dismissed due to the fact that the buildings demolished in 1967 were all built prior to asbestos being commonly used (all buildings are present in 1946 aerial photographs).
- There were elevated levels of Benzo(a)pyrene in BH01, BH02 and BH03 at 0.5-0.6m depth, which exceeded ecological screening levels. There were elevated levels of zinc in BH03, BH04, and BH05, and lead in BH04 (all at 0.5-0.6m depths). This means that a Soil and Water Management Plan (SWMP) will be required during the site redevelopment to manage the potential leaching of contaminates into the groundwater and offsite movement of sediment towards downgradient ecological receptors.
- There were elevated levels of Lead in BH03 and BH04 at 0.5-0.6m depth, exceeding guidelines for soil direct contact for dust inhalation or soil ingestion for recreational land use levels in BH03 and commercial/industrial land use levels in BH04.
- The soil samples were compared against IB105 guidelines for soil disposal. The following heavy metals were detected at levels which classified the material as Level 2 Material in six of the twelve samples; Barium, Cadmium, Copper, Lead, Manganese and Zinc, Benzo(a)pyrene was also present at IB105 Level

2 in three of these samples. Two of these samples also yielded results at IB105 Level 3; Cadmium in BH03 0.5-0.6 and Lead in BH04 0.5-0.6. As half of the samples could have been classified as Level 1 Material – Clean fill, and contamination is attributed to fill material which is less prevalent at depth; when future excavations take place at the site, all material should be stockpiled based on appearance and excavation depth, samples collected by a suitably qualified and experienced environmental consultant and results compared against IB105 for appropriate soil disposal.

- Given the presence of Polycyclic Aromatic Hydrocarbons (PAHs) including Benzo(a)pyrene, leachate testing would be recommended for any stockpiled soil to assist with classification for disposal.
- If deemed necessary, excavated soil is to be transported to a Level 3 waste facility (Copping). A permit to transport the waste (obtained through the EPA) will be required.
- Groundwater was not encountered within the 6.4m drilled during the Preliminary Geotechnical Investigation (GES, August 2018).
- In the soil samples TRH and BTEXN hydrocarbons were at low levels, and did not exceed any thresholds including; CRC CARE Health Screening Level for Dermal Contact, NEPM ASC 2013 Indoor Vapour risk or CRC CARE Health Screening Level for inhalation risk to trench workers. The only hydrocarbon exceedance was Benzo(a)pyrene for NEPM ASC 2013 Ecological Screening Level and IB105 for soil disposal.
- If the site use changes to a more sensitive land use and or building designs change then the results will need to be compared against the applicable land use guidelines and / or further onsite soil, groundwater or soil vapour investigations may be required.
- Although the site has a proposed multilevel residential development, a car parking basement will be present between the excavated surface and ground floor across the majority of the site, this creating a barrier between the natural soil and the residential areas. The areas of the site that the car parking basement will not be present includes the area of 43 South Street, and in the northern corner of the site between the existing substation and the proposed hoist. It should be noted that the area around 43 South Street consists of natural soil and not uncontrolled fill, the contamination issues were only detected in areas of uncontrolled fill and we deem the areas of natural soil to be suitable for residential developments and ongoing residential use.
- A Contamination Management Plan (CMP) will be required to; manage soil/ water run off during construction to ensure contaminated soil or surface water does not enter the open drain/ waterway (ecological receptors), to manage human risks of dust inhalation and soil ingestion due to heavy metals (lead) present in areas of uncontrolled fill, and to manage movement of dust containing heavy metals (lead) to nearby residential receptors (neighbouring properties) and nearby public space (footpath etc).

Given the contamination risks, as per the Hobart City Council Interim Planning Scheme (IPS), there is a requirement that this CMP document is implemented and followed to mitigate any adverse impact upon human health or the environment as a result of the proposed works.

1.3 Objectives

The objective of this CMP is to comply with HCC IPS requirements. The purpose of this CMP is to:

- Identify the site hazards associated with contaminated soil exposure;
- Minimise risks to site workers and the environment; and
- Provide advice on and advise of safety measures to be adopted during future excavation or construction works at the site.

1.4 Scope of Works

The scope of work for the CMP is to produce a guidance document that includes information in relation to identifying measures and outlining procedures to minimise human health hazards and potential environmental impacts during all phases of site works including demolition, additional soil testing, excavation, construction and post construction future trench works at the site. This report is intended to:

- Minimise potential adverse environmental consequences associated with exposing contaminated soils. The most significant and direct pathway is through soil erosion into stormwater drains and into the River Derwent approximately 310m to the east and 370m to the north.
- Minimise potential health risks from the exposure of contaminated soil during demolition and excavation works. Contaminated soil may be spread onsite and offsite through various mechanisms including foot traffic, vehicle movements, dust erosion as well as stormwater erosion; and
- Provide guidance for management of soil for onsite reuse or off-site soil disposal in accordance with IB105 guidelines.

1.5 Environmental Regulatory Requirements

Key regulations, legislation and policies considered most applicable to soil and groundwater management during any intrusive site works (excavation, construction or maintenance) include:

- Environmental Management and Pollution Control Act (1994).
- Environmental Management and Pollution Control (Waste Management) Regulations 2010.
- Environmental Management and Pollution Control (Controlled Waste Tracking) Regulations 2010
- Information Bulletin 105: Classification and Management of Contaminated Soil for Disposal (Version 3 2018), EPA Tasmania.
- NEPM (2013) National Environment Protection (Assessment of Site Contamination) Measure, 1999 as amended 2013.
- CRC CARE (2011) – Technical Report No. 10 – Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater, September 2010. Friebel, E., Nadebaum, P. & GHD Pty Ltd.
- ANZG (2018) – Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
- DPIWE (1997) – State Policy on Water Quality Management, 1997.
- Australian Standard: AS 4482.1-2005 Guide to the investigation and sampling of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds
- Australian Standard: AS 4482.2-1999 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances

1.6 Site Details

Site details are presented in Table 1 and the site investigation areas are presented in Figure 1.

Table 1 Site Details

Site Address Prince of Wales Hotel at 55 Hampden Road, and incorporating 43 South Street, Battery Point, Tasmania
Current Title identification details and Current Ownership (as per current certificates of title; The LIST) CT 48/6744 & 48/6745 – Local Government Authority (western edge between hotel and Kelly Street). CT 40041/1 & 40041/2 & 40041/3 & 40041/4 & 40041/5 & 40041/6 & 40041/7 & 40041/8 40041/9 & 40046/1 & 90423/1 PID 5577044 – MRRC PTY LTD (location of hotel and hotel car parking) CT 229127/1, PID 5593888 – MRRC PTY LTD (location of 43 Short Street)
Investigation Area Approximately 2300m^2
Site Surfacing The surface of the investigation area is road base asphalt surrounding the existing hotel, with some natural soil surrounding the residence at 43 South Street.
Current land use 55 Hampden Road is a licenced hotel (The Prince Of Wales Hotel) and surrounding car parking areas, 43 South Street is a residential dwelling.
Site Land Zoning and Land Use 55 Hampden Road is zoned *Urban Mixed Use* and 43 South Street is zoned *Inner Residential* under the Tasmanian Interim Planning Scheme, 2015.
Previous/ Historic Land use A hotel and surrounding car parking areas have been present on site since the demolition in 1967. Prior to 1967 many small buildings were on site, likely to be a hotel and residential buildings.
Local Council Hobart City Council
Proposed Site Use Potential residential apartments with basement car park
Requirement for current Investigation The ESA was requested by the client in due diligence, the geotechnical investigation (GES 2018) and the ESA (GES 2020, GES 2023, GES 2025) suggest that uncontrolled fill derived from 1967 demolitions is present on the site.

1.7 Responsibility of Implementation

It will be the responsibility of the owner(s) of the site to implement this CMP. The owner(s) of the site may at times expressly delegate responsibility for site management as appropriate. The site owner(s) retains overall responsibility for implementation of this CMP and any modifications required to this CMP should site conditions change.

The owner(s) of the site are responsible for the distribution of this CMP to any contractors working on site associated with the site redevelopment and these contractors must comply with the requirements of this CMP.

To manage potential health risks, the advice stipulated in this CMP should be followed by all persons involved in works or other activities at the site that may result in the disturbance and/or excavation of soil.

Figure 1 Aerial Photograph of Pre-Development Site for Construction (The LIST Map).

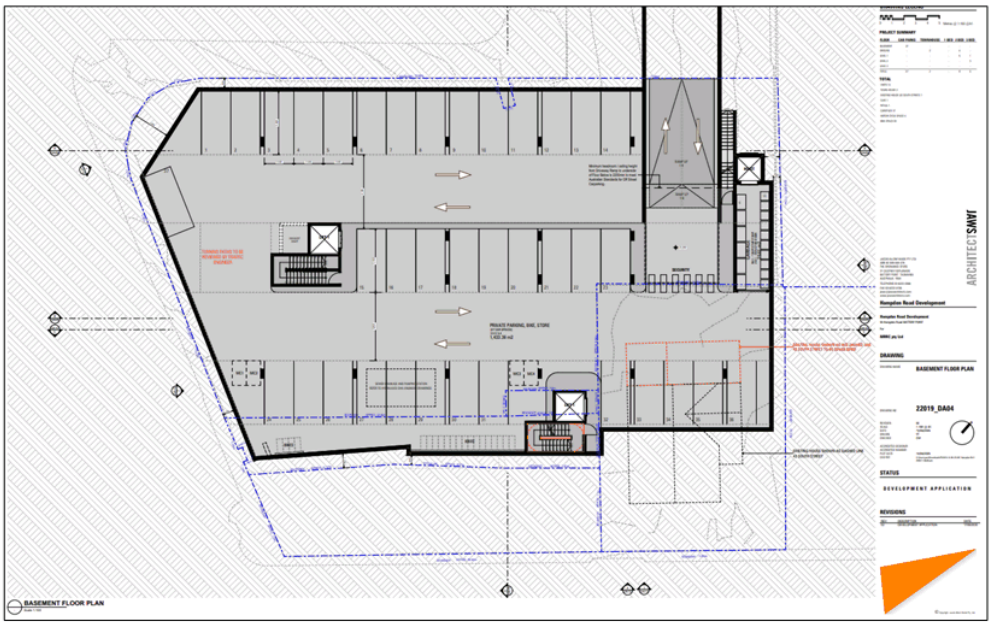

Figure 2 Site plans (basement) – source Jaws Architect (2025 redesign)

Figure 3 Site plans (ground level) – source Jaws Architect (2025 redesign)

2 Background Environmental Site Assessment Information

2.1 Assessment Criteria

2.1.1 Site Soil Assessment

The reported soil analytical results were compared against investigation guidelines presented in Table 2.

Table 2 Guideline on Investigation Levels for Soil.

Construction Phase	Location	Receptor	Pathway	Land Use Class
During	Site	Commercial Workers (demolition, excavation and construction)	PVI & DC	Commercial/Industrial (D)
	Offsite	Nearby Residents	DC	High Density Residential (B)
		Derwent River	ECO	Urban Setting
		Public - Open Space	DC & PVI	Recreational (C)
Post	Site	Private Open Space (Between Townhouse 4 and South Street, Northern corner of the block between Hoist and Sub Station)	DC	High Density Residential (B)
			PVI	Commercial/Industrial (D)
		Basement Car Park Users	DC & PVI	Commercial/Industrial (D)
	Offsite	Derwent River	ECO	Urban Setting

DC – Direct Contact:
Dermal Contact - HSL's (CRC CARE 2013)
Dust Inhalation - HIL's (NEPM ASC 2013)
Soil Ingestion - HIL's (NEPM ASC 2013)
PVI – Petroleum Vapour Intrusion:
Trenches & Excavations - HSL's (CRC CARE 2013)
Indoor - HSL's (NEPM ASC 2013)
ECO – Ecological – EIL's & ESL's (NEPM ASC 2013)
ALL – All of above

2.1.2 Offsite Soil Disposal Assessment

Soil samples were compared against EPA Tasmania (2018) Information Bulletin 105 (IB105). Classification and Management of Contaminated Soil for Disposal, Version 3 (2018)

2.1.3 Groundwater

No groundwater was encountered within 6.4m drilled (GES 2018). Groundwater is not likely to be encountered.

2.1.4 Surface Water

Should surface water be encountered it will need to be disposed of and compared against the following:

- ANZG 2018 ecosystem protection guidelines for 90% & 95% protection of fresh water ecosystems

2.2 Invasive Site Investigations

One site visit was conducted to complete the ESA. Site investigation works comprised of soil bore drilling and groundwater sampling which is summarised in Table 3 and Figure 4.

Table 3 Summary of Site Investigation Work Dates

Hole ID	Soil Bore Drill & Sample	Geotech Drill & Log
BH1-BH6	14th November 2019	-
BH01-BH02	-	30th March 2018

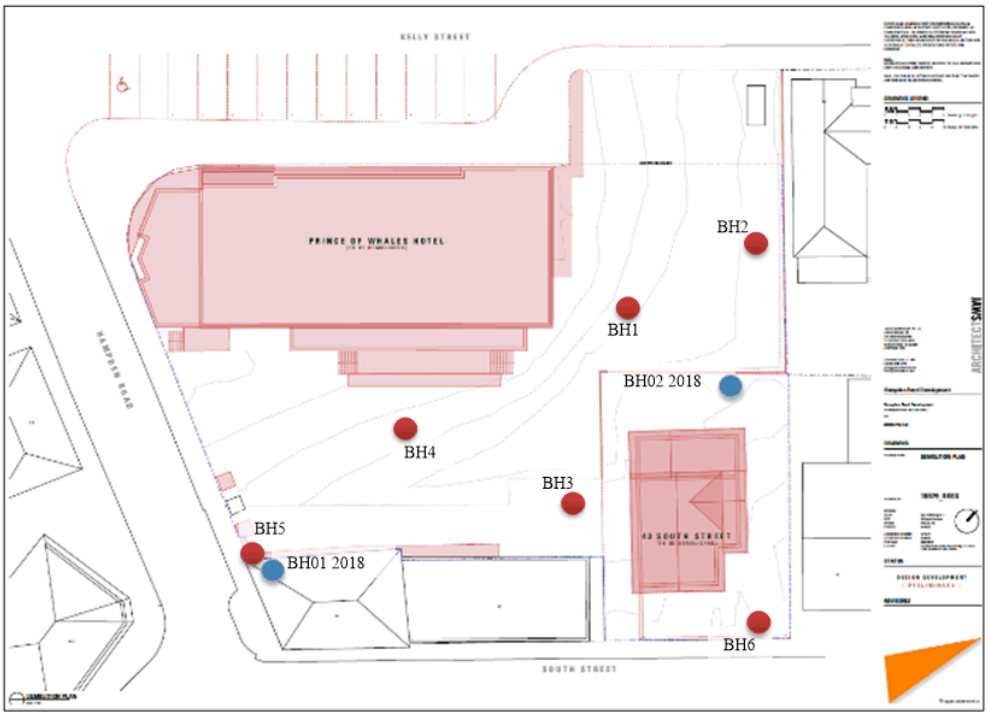

Figure 4 ESA Borehole (red) and Geotech Borehole (blue) locations

2.3 Soil Assessment Results

2.3.1 Environmental

Ecological Screening Level Guidelines

Benzo(a)pyrene exceeded guideline limits for ESL's in three samples, all at 0.5-0.6m depth.

Ecological Investigation Level Guidelines

Zinc exceeded guideline limits for EIL's in three samples, all at 0.5-0.6m depth

Lead exceeded guideline limits for EIL's in one sample, at 0.5-0.6m depth.

Environmental Risks

As identified, the contaminates of concern at the site are Benzo(a)pyrene, Zinc and Lead. Where excavation works are proposed, this soil will need to be managed carefully in accordance with measures identified within this document. The greatest risk is the mobilisation of sediments into the stormwater. Soil at the site will need to be managed in accordance with the Soil and Water Management Plan (SWMP). The soil and water management plan will need to be designed in accordance with recommendations presented in within this CMP.

Although there is a low likelihood that surface waters will exceed ANZG (2018) fresh water ecosystem guideline limits, given the whole site has not been tested, care must be taken to monitor surface water exiting the site.

2.3.2 Human Health

Health Screening Levels – Dermal Contact

There were no guideline exceedances for dermal contact.

Health Investigation Levels – Dust Inhalation and Soil Ingestion

Lead exceeded guideline limits for HIL's at Class D (commercial/industrial), in one sample at 0.5-0.6m depth – this is applicable to soil contact with on-site construction workers. This sample also exceeded guideline limits for HIL's at Class B (medium/high density residential), and is applicable to dust movement off-site effecting nearby residential neighbours.

Lead exceeded guideline limits for HIL's at Class C (recreation), in two samples at 0.5-0.6m depth – this is applicable to dust movement off-site effecting public spaces such as nearby footpaths.

Health Screening Levels – Vapour Intrusion/ Trench worker

There were no *HSL D* guideline exceedances for assessing petroleum vapour intrusion risks

Human Health Risks

As identified, the contaminant of concern at the site is Lead. Other contaminants are likely to be present in the uncontrolled fill at variable concentrations. Where excavation works are proposed (majority of the site), this soil will need to be managed carefully in accordance with measures identified within this document. The greatest risk is direct contact between construction worker and soil. Soil at the site will need to be managed in accordance this CMP.

2.3.3 IB105

The soil samples were compared against IB105 guidelines for potential future soil disposal, see Table 4. The following heavy metals were detected at levels which classified the material as Level 2 Material; Barium (1 sample), Cadmium (3 samples), Copper (1 sample), Lead (3 samples), Manganese (1 sample), Mercury (2 samples), Zinc (5 samples), Benzo(a)pyrene (3 samples). Of these results, two were detected at Level 3 material (Cadmium in BH3 0.5-0.6 and Lead in BH4 0.5-0.6).

The majority of contaminants present at Level 2 and Level 3 concentrations were observed in the 0.5-0.6m depth samples. This suggests that the contaminants are present in the disturbed soil and fill material, and samples reflecting natural soil material does not contain contaminants beyond IB105 Level 1 Material (Clean Fill) in six out of seven occasions. The one exception is at BH6 (natural soil) where Barium was detected at 1.5-1.6m depth, this is likely to be naturally derived from weathered parent material.

As the majority of samples reflective of natural soil are free of contamination, when future excavations take place at the site, all material should be stockpiled, samples collected by a suitably experienced environmental consultant and results compared against IB105 for appropriate soil disposal. It is possible that as the soil is excavated it could be segregated by depth as the upper horizons will contain fill and disturbed soil (more likely to contain contaminants), and the lower horizons will contain undisturbed soil and weathered parent material (less likely to contain contaminants).

All soil excavated at the site is to be sampled by a suitably qualified environmental consultant to determine the appropriate location to dispose of excavated material.

3 Potential Receptors

3.1 Ecological Receptors & Environmental Considerations

It is considered unlikely that groundwater impacts would extend to the nearest receiving waters of River Derwent which is 310m in an easterly direction and 370m in a northerly direction. As per the SWMP, stormwater runoff from the site is proposed to be diverted into the Legal Point of Discharge (LPOD) stormwater pits in the laneway adjacent to the site.

There is a responsibility that the water quality is assessed against guidelines for protection of the freshwater receiving environment being the Derwent River. ANZG 2018 ecosystem protection guidelines for 90% & 95% protection of fresh water ecosystems should be applied. Percentage species protection values are based on various reports (Desmond 2002; DEP 2011).

3.2 Human Receptors and Exposure Routes

As a result, from the previous land use activities, there is localised contamination within fill material and disturbed soil at the site. Potential health exposure risks may be associated with soil excavation and management activities as well as general movement of soil around the site caused by foot & vehicle traffic, mobile machinery, as well as natural elements including wind and rain. Onsite and offsite exposure pathways include ingestion of contaminated soil and inhalation of dust.

The SWMP developed for the site will need to reflect management measures identified within this document to minimise erosion of soil by surface water movement.

4 Minimising of Potential Environmental Impacts

Potential environmental impacts during any subsurface works or excavations may be associated with:

- Soil excavation and management
- Movement of soil
- Off-site disposal of soil
- Where relevant, and surface water extraction, removal and disposal
- Dust and odour
- Stormwater management and sedimentation

To minimise potential environmental impacts, all work must be conducted in accordance with the:

- The Environmental Management and Pollution Control Act (EMPCA, 1994)
- Environmental Management and Pollution Control (Waste Management) Regulations (2010),
- Environmental Management and Pollution Control (Controlled Waste Tracking) Regulations 2010, and
- The guidance set out in this plan.

4.1 Soil

4.1.1 Soil Excavation and Management

The relevant sections of the CMP should be referred to during the following phases of site work: prior to commencement, demolition, additional soil testing, excavation, construction and ongoing future trenchwork at the site.

Prior to Commencement

Contractors and workers must be made aware of the potential soil contamination and be familiar with the requirements of the CMP and they should also know that there may be environmental or human health consequences that result from noncompliance which may incur a fine from the EPA Tasmania.

Contractors must prepare one or more of the following: a site-specific Health and Safety Plan, a Job Safety Analysis (JSA) or a Safe Work Methods Statement (SWMS) covering their workers at the site for any reasonably anticipated risks.

Work procedures conducted on the site must be in accordance with relevant Occupational Health and Safety (OH&S) Regulations. It is the responsibility of the principal contractor that site workers are made aware of the OH&S issues at the site.

A Soil and Water Management Plan (SWMP) should be written and implemented prior to the commencement of any site demolition or excavation work. The SWMP should be closely aligned with recommendations identified in this CMP and Fact Sheets presented in Appendix 4.

Demolition

The time between site demolition and site resurfacing is a period where there is a heightened risk of offsite spread of contaminated soil. During this time there is expected to be the greatest chance of offsite spread of contaminates through soil leaching, dust generation, as well as soil erosion from vehicle and foot traffic, precipitation and stormwater runoff.

Limiting the exposure of paved surfaces through keeping pavement in place for as long as possible, this includes limiting the length of time the service trenches and footing pads remain open.

Demolition site work will involve removal of all site buildings and decommissioning redundant service infrastructure. Due to the contamination risk the impermeable surfaces should remain onsite and intact during this process for as long as practically possible even if this means concrete coring to obtain additional soil samples (the next phase).

It should be noted that asphalt surfaces often have hydrocarbon contamination, so any asphalt surface material should be managed separately to other materials.

Asbestos may be present in the site buildings, this is beyond the scope of the ESA or this CMP and will not be addressed again in this document. Demolition contractors should refer to their own JSA's or standard operating procedures regarding asbestos management.

Soil Excavation & Stockpiling

Soil exposed and excavated from the site must be managed so as not to cause environmental harm in accordance with the Environmental Management and Pollution Control (Waste Management) Regulations (2010) and the Environmental Management and Pollution Control Act (EMPCA, 1994). Harm can be caused from contaminated soils leaching further underground, leaving the site through wind (as dust), carried off site with rain (as runoff stormwater), or released into the atmosphere as vapour.

Stockpiles should be sampled by a suitably experienced and qualified environmental assessor and analysed using a NATA registered laboratory to determine their contamination status, consistent with the procedures described in Section 4.1.3.

In order to prevent soil leaving the site the following erosion control measures must be followed:

- Develop a stabilised site access (Fact Sheet 12 Appendix 4);
- Clean up any soil spilt on roads adjoining the site.
- Ensure vehicles and equipment are free from excess soil when leaving the site, to avoid tracking soil off-site.
- Establish an equipment wash down area if necessary (Fact Sheet 13 Appendix 4);

Soil stockpiles must be managed in accordance with the Environmental Management and Pollution Control (Waste Management) Regulations, 2010 and best practice guidelines. The following are recommended:

- It is recommended that separate stockpiles be constructed to separate varying levels of apparent soil contamination, if encountered. This will likely enable cost savings during disposal phases.

- The source area of stockpiled soil must be noted on a plan for reference to ensure the movement of potentially contaminated soil is tracked (see Section 4.1.2).
- Soil should be classified for disposal or reuse in accordance with EPA Tasmania (2018) Information Bulletin 105 (IB105) before being transported off site (see Section 4.1.3).
- Always keep stockpiles covered and sealed (refer Section 4.1.5 Dust and Odour Control & Fact Sheet 9 Appendix 4).
- If stockpiled for greater than 12 hours, should be covered with an impermeable layer (eg. PVC plastic 2mm thick) to prevent the contents being affected by wind or rain;
- All soil stockpiles must have sediment control devices (silt fencing) around any temporary or longer-term stockpiles (Fact Sheet 14 Appendix 4)

Construction

If there are any changes to the plans during the construction phase and additional excavations are required, the CMP should be revisited. Additional soil testing may be required, or current results may need to be reassessed against different criteria.

SWMP measures must remain in place as long as soil is exposed at surface or in excavations including footing exposures and service trenches.

Following Completion of Excavation Works

Equipment used for excavation of potentially contaminated soil must be cleaned of loose soil prior to use in another area. The loose soil must be contained within the stockpiles at the site.

Future Trench Work

It is anticipated that over time, future trench workers or contractors will visit the site from time to time as services require repairs or new infrastructure is required.

Post site redevelopment it is anticipated that the site layout will vary greatly to the current conditions; the majority of the site will be sealed by concrete in the basement carpark, and the majority of soil removed off site. The risk of future trench workers being exposed to contaminated soils will be reduced as some soil will remain on site around the existing house on South Street and near the entrance of the underground basement carpark on Kelly Street.

4.1.2 Movement of Soil

If soil is going to be removed from site it is to be assessed and sampled by an Environmental Consultant and results compared against Information Bulletin 105 (IB105) for Classification and Management of Contaminated Soil for Disposal. It is not necessary for undisturbed soil that remains on site to be classified against IB105.

Movement of soil at the site must be tracked to ensure its origin, contamination status and fate is documented. An example soil tracking form is provided in Appendix 5. Soil tracking forms are to be completed by the Site Foreman/supervisor of the site.

The source and destination of any soil moved around the site or off-site can be identified using references to development features, or a site grid. The appearance of soils encountered during excavation must be noted and checked to confirm they are consistent with those materials noted in the preliminary assessment. Soil appearance checks must be conducted by the Site Foreman or delegated to a suitably experienced and trained person.

4.1.3 Off-site Disposal of Soil

Waste soil generated at the site must be managed, transported and disposed in accordance with the Environmental Management and Pollution Control (Waste Management) Regulations 2010 and the Environmental Management and Pollution Control (Controlled Waste Tracking) Regulations 2010.

Aspects of these regulations related to classification and disposal of contaminated soils are summarised in Information Bulletin 105: Classification and Management of Contaminated Soil for Disposal (November 2018), published by EPA Tasmania.

See Appendix 2 for the comparison of soil analytical results from the ESA against IB105 plus IB105 in full. It is anticipated benzo(a)pyrene, and some heavy metals will be encountered across the site.

GES recommends that all soil excavated at the site is stockpiled systematically. Unclassified material will require systematic sampling for contamination levels. Soil flagged for landfill disposal is to be assessed by an Environmental Consultant and results compared against *Information Bulletin 105 (IB105) for Classification and Management of Contaminated Soil for Disposal.*

Soil samples would need to be obtained from the excavated soil and must comply with the sampling frequency in the EPA guidelines for off-site soil disposal.

If additional stockpiling and sampling can be undertaken at the site, this would provide an opportunity to separate material based on appearance (fill or natural soil), and for additional testing (including leachate testing) which could reduce the volume of soil classified as Level 3 Material, and consequently reduce soi disposal costs to the client.

Where excavated soil requires off-site disposal, the following is required:

- Communicate with the environmental consultant as early as possible. This will enable classification to be undertaken and relevant documentation prepared, prior to the proposed disposal date.
- Ensure that excavated soil volumes and origins are documented, to assist with classification for off-site disposal.
- Separate soils based on appearance and location of excavation. This will minimise the volume of higher category waste for disposal, and in turn minimise costs associated with disposal.
- Soils must be classified in accordance with Information Bulletin 105: Classification and Management of Contaminated Soil for Disposal (November 2018), published by EPA Tasmania or as updated.
- An application for disposal to an approved waste facility must be submitted to the Director, EPA Tasmania for review in accordance with Environmental Management and Pollution Control (Waste Management) Regulations, 2010 and the Environmental Management and Pollution Control (Controlled Waste Tracking) Regulations 2010.
- If approved, waste soils must be transported to the approved facility by a Controlled Waste Handler approved by EPA Tasmania.
- The Controlled Waste Handler must meet requirements for waste collection as well as disclosure of tracking information.

4.1.4 Importation of Fill Material

Fill is not planned to be imported to the site.

4.1.5 Dust and Odour Control

Generation of dust can spread contaminated soil and pose a risk to human health risk onsite and offsite, and to off-site ecological receptors. Fact Sheet 18 in Appendix 4 should be used as a guide for managing dust onsite. Measures that can be undertaken to assist in minimising the generation of dust and limit the amount of soil leaving the site include:

- Minimise movement of equipment on the site.
- Minimise excavation and movement of soils.
- Use a water spray sparingly to dampen work areas if excess dust is generated.
- Use a water spray sparingly to dampen soil prior to and during excavation if excess dust is generated.
- Avoid soil excavations that create dust on windy days.

- Always keep soil stockpiles covered where possible, with an impermeable membrane (eg. plastic sheeting) to minimise generation of dust, release of odours and to limit runoff of sediment.
- Avoid extended stockpiling of soil.
- Consider the use of dust barriers such as hessian or cloth screening.

4.2 Groundwater & Stormwater Management

To minimise potential migration of contaminants into the River Derwent, all work must be conducted in accordance with the State Policy on Water Quality Management 1997 and the guidance set out in this plan.

Although there was no groundwater or surface water observed on site, there remains a concern that during the site redevelopment, that potentially impacted surface and groundwater will drain either:

- Offsite as overland flow onto neighboring properties; or
- Into stormwater systems without appropriate silt traps being put in place; or
- Exceeds recommended ANZG (2018) guidelines limits.

Based on post demolition conditions, it is expected that surface waters will drain to the nearest EPOD. Advice should be sought on whether the EPOD can be used and if there are any risks that sediments may block the EPOD and cause a risk to offsite receptors. Otherwise, water is to be directed to the nearest LPOD.

The following needs to be put in place to manage groundwater and surface water at the site:

- Surface water at the site will need to bypass a main primary surface water sample collection point which will be used to test water before it enters the stormwater system;
- Sampled by an Environmental Consultant and compared against ANZG (2018) guidelines for 90% & 95% protection of fresh water ecosystems and freshwater ecosystems and TasWater's disposal requirements.
- Sampling should occur when rainfall exceeds 10 mm within a 24 hours period for the Ellerslie Road gauging station (approximately 1.5 weather front passing per month based on 2018 Bureau of Meteorology records).
- In the event there is a trigger, management measures will need to be put in place to collect water existing the site to ensure compliance with identified ANZG (2018) guidelines.

4.3 Surface Water and Sediment Control

Measures to minimise the potential for contamination of stormwater and migration of contaminants include:

- Silt fencing is required around the perimeter of the site to reduce the extent of soil erosion from wind and rain (Fact Sheet 14 Appendix 4).
- Where possible overland flow should be diverted away from excavation workings to reduce the risk of surface waters becoming impacted as a result of mixing with contaminated soil (Fact Sheet 7 Appendix 4);
- The site will need to be regularly inspected for signs of scour including around all earthen drains (Fact Sheet 11 Appendix 4) and site slopes. Where scour is identified, erosion should be controlled with the use of erosion control matts and blankets (Fact Sheet 8 Appendix 4)
- Collect stormwater on-site and allow suspended solids to settle before disposal in accordance with EMPCA and/or local Water Authority requirements (Fact Sheet 17 Appendix 4).
- Control measures such as cut-off drains/mounds and or sand bags will be required to prevent soil and water from exiting the site boundary at locations which are not identified as a legal point of discharge (LPOD).
- Silt traps will be required around drainage pits to prevent soil from entering the stormwater system (Fact Sheet 15 Appendix 4). Soil collected around the pits will need to be excavated and placed into skip bins for disposal with other excavated soil. The silt traps will need to be regularly maintained and checked to ensure they are not discharging sediments into the stormwater.

- Install drainage and/or grade soil surfaces to minimise pooling of water on exposed soils. Pooling surface water may be contaminated and can be managed through placement of aggregate.

4.4 Spill Avoidance

The following measures are recommended to manage preventable spills and contamination during site redevelopment works:

- Avoid conducting vehicle or machinery maintenance on-site.
- Ensure any fuel, oil or other chemicals are stored safely and securely in a temporary bunded area and that storage containers are absent from leaks and cracks.
- Repair or remove any leaking containers or machinery from the site immediately.
- Always have a complete spill kit onsite during site works.
- Clean up any spilt fuel, oil or other chemicals as soon as practically possible.
- Check sediment control measures regularly (at least daily) and clean and maintain as necessary.
- Inspect sediment control measures more frequently during rain periods, to check they are adequate for site conditions.

5 Minimisation of Risk to Health of Site Workers

Work procedures conducted on the site must be in accordance with relevant Occupational Health and Safety (OH&S) Regulations. It is the responsibility of the principal contractor that site workers are made aware of the OH&S issues at the site. An OH&S Specialist or an Occupational Hygienist must be engaged by the principal contractor to ensure OH&S measures are implemented on this site.

Engaged companies/contractors must prepare a site-specific Health and Safety Plan covering their workers at the site.

5.1 Exposure Routes

5.1.1 Soil

Potential hazards for site workers associated with the presence of contaminants at the site may be encountered during excavation or construction works must be considered as part of the overall Health and Safety Plan for the site, including:

- Ingestion of contaminated soil.
- Inhalation of dust.
- Dermal (skin) contact (low risk)
- Inhalation of petroleum hydrocarbon vapours (low risk)

5.1.2 Groundwater and Surface Water

Potential hazards for site workers associated with the presence of contaminants in groundwater or surface water that may be encountered during excavation works must be considered as part of the overall Health and Safety Plan for the site, including:

- Ingestion of contaminated water (low risk)
- Dermal (skin) contact (low risk)
- Inhalation of petroleum hydrocarbon vapours (low risk)

5.2 Control measures

Personnel working at or visiting the site during any construction (including demolition and excavation) works must be provided with an induction briefing, based on the example Site Induction Record provided in Appendix 6. This induction record may be incorporated into the general site induction procedure. The principal contractor may delegate responsibility for the induction briefing to their environmental consultant or occupational hygienist.

Measures that must be undertaken to manage exposure of site workers to contaminants include:

- Observations of unusual odours or discolouration of soil should be reported to an environmental consultant who can make an informed decision on the level of risk to workers.
- Avoid handling of potentially contaminated soil and/or water.
- Wash hands before eating, drinking or smoking.
- Avoid activities that may introduce soil and/or water to the mouth, such as nail biting.
- Store and consume food and drink in a designated clean area.
- Remove soiled clothing and footwear before entering a designated clean area and before leaving the site.
- Use personal protective equipment (PPE) as required. In addition to hard hats, safety boots, safety glasses and hearing protection, this equipment may include:
    - Impermeable (latex or nitrile) gloves, if handling potentially contaminated soil and/or water

  - Long sleeved shirt and long trousers
  - Dust masks
  - Vapour masks
- Store personal protective equipment in a clean place to avoid contamination.
- Replace gloves and masks regularly, and other equipment as required.
- The principal contractor must ensure that site workers and visitors are provided with:
  - Site safety induction briefing.
  - Adequate hand washing facilities.
  - A designated clean area for storage and consumption of food and drink.
  - Adequate personal protective equipment, as described above.

6 CMP review and reporting

6.1 Review

Following changes in the understanding of site contamination conditions, work requirements, legislation, or work scope (including excavation or construction), this CMP must be revised and reviewed by a competent person prior to use for the proposed works. If no changes to the above-mentioned conditions occur, the CMP should be reviewed every 2 years. The CMP must be revised to reflect any changes and provide adequate procedures for ensuring continued worker, public and environmental safety and compliance with legislation.

6.2 Reporting

It is recommended that Site Management maintain documentation demonstrating that the requirements of this CMP have been met. Such documentation is likely to include:

- Site survey levels.
- Soil tracking records for Fill only. Bedrock material is anticipated NOT to be contaminated.
- Volumes of fill removed and imported to the site.
- Records of complaints, notices or breaches of the CMP requirements and an outline of actions taken.
- Signed induction records to the site which demonstrate workers commitment to following the CMP.
- Evidence that excavated fill was disposed of in accordance with EMPCA (1994) requirements.

7 Concluding Statement

It is concluded that provided that specific remediation and protection measures identified in this document are implemented before any use and/or excavation commences:

- The land is suitable for the intended use;
- The proposed excavation works will not adversely impact on human health or the environment

8 SUMMARY OF ROLES AND RESPONSIBILITY

Site Owner	The owner(s) of the site are responsible for the distribution of this CMP to any building or development contractors working on site and these contractors must also comply with the requirements of this CMP. There is a responsibility to ensure the soil and water management plan (SWMP) is put in place prior to site demolition works, and the plan is active as soon as site coverings are removed. The SWMP should not be removed until all surfaces have been sealed. Post the site redevelopment, the site owner(s), who may delegate to a site operator is responsible and must inform future site contractors and trench workers of the CMP and the requirements to follow its contents.
Site Manager during site redevelopment (including following phases of site work: prior to commencement, demolition, additional soil testing, excavation, construction and future trenchwork)	Responsible for the preliminary assessment of potential contamination discovered and assessing whether further action is required. The Site Manager is responsible for ensuring the induction of Site Operatives, assessing the adequacy of quarantine measures and contacting the relevant Consultant and/or Contractors where appropriate. Potential offsite migration of surface water and soil needs to be assessed. The site manager is to contact the Environmental Consultant to arrange for surface water to be tested in accordance with ANZG (2018) and Stockpiled soil to be tested in accordance with IB105. The site manager is to become familiar with IB105 and determine the appropriate actions for soil transport and disposal following receiving final laboratory testing results. All soil must remain onsite until fate of the soil material is determined.
Site Operatives	During the works, the Site Operative will be vigilant for potential contamination. Where potential contamination is identified, Site Operatives will quarantine the area and inform the Site Manager. An Environmental Consultant may be required to assess the site. Potential offsite migration of surface water and soil needs to be assessed during and after rain events. The site operator is to notify the site manager when soil is ready for testing to discern the appropriate disposal actions.
Environmental Consultant	The services of an Environmental Consultant will be required for additional drilling and soil testing in accordance with IB105. The Environmental Consultant may also be required to sample temporarily stored groundwater. If unexpected or gross soil contamination is encountered (not identified in the ESA), an Environmental Consultant will need to be engaged to assess the potential contamination find, undertaking any necessary sampling and delineation, if required, developing a remedial scope and validating remediation. The Environmental Consultant must have appropriate qualifications and expertise in environmental assessment (e.g. an experienced environmental scientist, environmental soil scientist, environmental geologist or environmental engineer). All findings and conclusions will be reported, as appropriate, to the satisfaction of the Site Manager and the Site Owner

LIMITATIONS STATEMENT

This Contamination Management Plan has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and MRRC Pty Ltd (the 'Client'). To the best of GES's knowledge, the information presented herein represents the Client's requirements at the time of printing of the Report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in findings differing from that described in this Report. In preparing this Report, GES has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations referenced herein. Except as otherwise stated in this Report, GES has not verified the accuracy or completeness of such data, surveys, analyses, designs, plans and other information.

The conclusions described within this report are based the results of analysis from the Environmental Site Assessment by GES (2023) and an assessment of their contamination status. The scope of the ESA does not allow for the review of every possible soil and groundwater contaminant over the whole area of the site.

This report does not purport to provide legal advice. Readers of the report should engage professional legal practitioners for this purpose as required.

No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third party.

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Appendix 1 GES Staff

Geo-Environmental Solutions (GES) is a specialist geotechnical and environmental consultancy providing advice on all aspects of soils, geology, hydrology, and soil and groundwater contamination across a diverse range of industries.

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Dr John Paul Cumming B.Agr.Sc (Hons) Phd CPSS GAICD

- Principle Environmental Consultant
- PhD in Environmental Soil Chemistry from the University of Tasmania in 2007
- 18 years' experience in environmental contamination assessment and site remediation.

Mr Aaron Plummer (Cert. IV)

- Soil Technician
- 6 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

Mr Mark Downie B.Agr.Sc, RSP

- Soil Scientist with 20 years of professional experience.
- Registered Soil Practitioner – Soil Management
- 12 years' experience in contamination assessment and reporting of soils and groundwater.

Ms Sarah Joyce BSc (Hons)

- Senior Environmental Scientist
- Honours in Geography and Environmental Science at the University of Tasmania in 2003
- 20 years professional work experience and 12 years contaminated site assessment.

GES STAFF – CONTAMINATED SITES EXPERIENCE

Mr Grant McDonald (Adv. cert. hort.)

- Soil Technician
- 10 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

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Appendix 2 IB105

Table 4 Soil Analytical Results Compared Against IB105 Investigation Limits for soil Disposal – All Soil Samples

Information Bulletin 105 Classification and Management of Contaminated Soil For Disposal		Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Copper	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Zinc	Benzo(a)pyrene	C6 - C9 Fraction	C10 - C36 Fraction (sum)	Sum of polycyclic aromatic hydrocarbons	Benzene	Toluene	Ethylbenzene	Total Xylenes
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		5	10	1	1	2	5	2	5	5	0.1	2	5	5	0.5	10	50	0.5	0.2	0.5	0.5	0.5
Investigation Level Selected																						
IB105 Level 1		<20	<300	<2	<3	<50	<100	<100	<300	<500	<1	<60	<10	<200	<0.08	<65	<1000	<20	<1	<1	<3	<14
IB105 Level 2		20	300	2	3	50	100	100	300	500	1	60	10	200	0.08	65	1000	20	1	1	3	14
IB105 Level 3		200	3000	40	40	500	2000	200	1200	5000	30	600	50	14000	2	650	5000	40	5	100	100	180
IB105 Level 4		750	30000	400	400	5000	7500	1000	3000	25000	110	3000	200	50000	20	1000	10000	200	50	1000	1080	1800
14/11/2019	BH01 0.5-0.6 X	<5	190	<1	<1	12	50	11	210	267	0.2	10	<5	229	1.1	<10	290	11.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH01 1.5-1.6 X	<5	100	<1	<1	17	38	16	<5	166	<0.1	16	<5	10	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH02 0.5-0.6 X	<5	260	<1	<1	12	54	11	580	268	0.3	10	<5	318	1.3	<10	<50	13	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH02 1.5-1.6 X	<5	110	<1	<1	17	32	21	5	176	<0.1	20	<5	9	<0.5	<10	<50	0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH03 0.5-0.6 X	12	290	<1	43	18	94	16	717	500	1.8	20	<5	7850	0.8	<10	<50	6.8	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH03 1.5-1.6 X	<5	40	<1	<1	8	23	7	36	36	<0.1	5	<5	30	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH04 0.5-0.6 X	<5	140	<1	16	12	162	13	1920	210	1.9	15	<5	3170	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH04 1.5-1.6 X	<5	50	<1	<1	15	81	25	<5	254	<0.1	25	<5	12	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH05 0.5-0.6 X	<5	90	<1	3	15	32	16	52	329	0.2	10	<5	1290	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH05 0.9-1.0 X	<5	60	<1	<1	15	51	11	<5	98	<0.1	18	<5	34	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH06 0.5-0.6 X	<5	80	<1	<1	7	19	9	10	229	<0.1	6	<5	9	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH06 1.5-1.6 X	<5	340	<1	<1	12	33	26	<5	287	0.1	24	<5	11	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5

IB105

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ENVIRONMENT PROTECTION AUTHORITY

INFORMATION BULLETIN No. 105

Environmental Management and Pollution Control (Waste Management) Regulations 2010

CLASSIFICATION AND MANAGEMENT OF CONTAMINATED SOIL FOR DISPOSAL

1. Introduction

This bulletin defines the criteria used by the Environment Protection Authority (EPA) for the classification of contaminated soil that requires treatment and/or off-site disposal, and outlines the management of each classification in accordance with the *Environmental Management and Pollution Control (Waste Management) Regulations 2010* (the 'Regulations'). Although criteria set out in this bulletin have been determined for soil, they may be applicable to the classification of other solid waste material on an 'as needs basis' (see section 2.2.3). Please note, for the purposes of this Bulletin soil also includes dredge spoil (refer Section 2.2.5).

This bulletin is designed to be used by waste producers, consultants, local government, waste transporters and landfill operators that are responsible for determining whether potentially contaminated soil is suitable to be disposed of at a landfill, in assessing alternative options for contaminated soil management and how to make an application for disposal approval to the EPA.

The EPA encourages effective waste management by promoting on-site remediation, treatment and/or re-use, where appropriate, as the preferred options for dealing with contaminated soil. In accordance with the hierarchy of waste management options, direct disposal of soil to landfills should be used only when no other approved method of dealing with the contaminated soil is available. For further details on these waste management principles, see Section 1.2 of the *Landfill Sustainability Guide 2004* (DPIWE, 2004).

Treatment, re-use options and disposal of soil will be assessed and approved on a case by case basis by the Director, EPA ('the Director') or the Director's delegate.

2. Classification

The EPA uses 4 categories to classify contaminated soil: (Level 1) *Fill Material*; (Level 2) *Low Level Contaminated Soil*; (Level 3) *Contaminated Soil*; and (Level 4) *Contaminated Soil for Remediation*, Table 1 below summarises each classification.

Criteria in Table 2 below shows the maximum total concentration, and the maximum leachable concentration values for specific pollutants that are used to classify soil for off-site disposal. For soils classified as potentially acid sulfate soils (PASS), the criteria in Table 2 do not apply. Determination of risk associated with these soils should be conducted in line with the *Tasmanian Acid Sulfate Soil Management Guidelines* published by Department of Primary Industries, Parks, Water and Environment (refer Section 2.2.5).

For potential per and poly – fluoroalkyl substances (PFAS) contaminated soils, the criteria as detailed in the National Environmental Management Plan (NEMP 2018), section 14.6, should

be used for the classification and determination of risk associated with soils containing PFAS for disposal (refer to section 2.2.6 of this bulletin for further detail).

Potentially contaminated soils are classified by analysis of representative samples of the soil and comparison of the results to the chemical concentrations given in Table 2.

It is not necessary to sample for all contaminants listed in Table 2 for soil classification. However, all contaminants that are reasonably likely to be present in the soil above background levels should be included in the sample analysis.

Generally, where a leachable concentration is prescribed in Table 2 that value takes precedence over the total concentration and is used as the sole determinant of final classification for disposal (see section 2.2.4 for further information).

Please note that these values in Table 2 are ***not*** to be interpreted as clean up target levels for certain land uses.

Table 1. Summary of the classification process

	Classification (with reference to Table 2)	**Controlled Waste**[1]	**Comments**
Fill Material[2] **(Level 1)**	Soil that exhibits levels of contaminants below the limits defined under *Fill Material* in Table 2.	Unlikely	Soil classified as *Fill Material* can still be a 'pollutant' under the *Environmental Management and Pollution Control Act 1994* and needs to be responsibly managed.
Low Level Contaminated Soil (Level 2)	Soil that exhibits levels of contaminants above the limits defined under *Fill Material* but below the limits defined under *Low Level Contaminated Soil* in Table 2.	Likely	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil (Level 3)	Soil that exhibits levels of contaminants above the limits defined under *Low Level Contaminated Soil* but below the limits defined under *Contaminated Soil* in Table 2.	Yes	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil for Remediation (Level 4)	Soil that exhibits levels of contaminants above the limits defined under *Contaminated Soil* in Table 2 (regardless of the maximum total concentrations) is generally ***not*** considered acceptable for off-site disposal without prior treatment.	Yes	Soil that contains contaminants that do not have criteria for leachable concentrations (*e.g.* petroleum hydrocarbons), and the levels of contaminants exceed the maximum total concentrations listed in *Contaminated Soil*, are generally classified as *Contaminated Soil for Remediation*.

[1] Controlled Waste is defined in the *Environmental Management and Pollution Control Act 1994*.
[2] Criteria for *Fill Material* are the limits set by the Director for the purposes of R.9(2)(a)(ii) in the *Regulations*.

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Table 2. Maximum total concentration and leachable concentration values permitted for waste classification (Note, does not apply for material classified as PASS (refer section 2.2.5) or PFAS (refer section 2.2.6))

	FILL MATERIAL Level 1	LOW LEVEL CONTAMINATED SOIL Level 2		CONTAMINATED SOIL Level 3	
CONTAMINANT	Maximum total concentration mg/kg dry weight	Maximum total concentration mg/kg dry weight	Maximum (TCLP) leachable concentration (pH 5.0 extract) mg/L	Maximum total concentration mg/kg dry weight	Maximum (TCLP) leachable concentration (pH 5.0 extract) mg/L
Arsenic	20	200	0.5	750	5
Barium	300	3,000	35	30,000	350
Beryllium	2	40	1	400	4
Cadmium	3	40	0.1	400	0.5
Chromium (total)	50	500	0.5	5,000	5
Chromium (VI)	1	200	NA*	2,000	NA
Copper	100	2,000	10	7,500	100
Cobalt	100	200	NA	1,000	NA
Lead	300	1,200	0.5	3,000	5
Manganese	500	5,000	25	25,000	250
Mercury (total)	1	30	0.01	110	0.1
Molybdenum	10	1,000	2.5	4,000	20
Nickel	60	600	1	3,000	8
Selenium	10	50	0.1	200	1
Silver	10	180	0.5	720	5
Tin (total)	50	500	NA	900	NA
Zinc	200	14,000	25	50,000	250
Tributyltin (reported as Sn)	0.005	0.07	0.05	0.7	0.5
Aldrin + Dieldrin	2	20	0.003	50	0.03
DDT + DDD + DDE	2	200	0.2	1,000	2
Benzo(a)pyrene	0.08	2	0.0005	20	0.005
Phenols	25	500	14	2,000	50
C_6-C_9 petroleum hydrocarbons	65	650	NA	1,000	NA
C_{10}-C_{36} petroleum hydrocarbons	1,000	5,000	NA	10,000	NA
Polycyclic aromatic hydrocarbons (total)	20	40	0.0005 TEQ**	200	NA
Polychlorinated biphenyls (PCBs)	2	20	0.001	50	0.002
Benzene	1	5	0.05	50	0.5
Toluene	1	100	1.4	1,000	14
Ethylbenzene	3	100	3	1,080	30
Xylene (total)	14	180	5	1,800	50
Cyanide (total)	32	1,000	1	2,500	10
Fluoride	300	3,000	15	10,000	150

*NA – a leachable concentration has not been prescribed (refer Table 1 above)
** For guidance refer to http://epa.tas.gov.au/Documents/Advisory_Note_for_classification_of_PAHs.pdf

2.1 Controlled waste

Contaminated soil may or may not be a controlled waste as defined in the *National Environment Protection Measure for the Movement of Controlled Waste between States and Territories* (NEPC, 1998) and the *Environmental Management and Pollution Control Act 1994* (EMPCA) and as further prescribed in the Regulations.

Soil and other material reasonably suspected to be a controlled waste must be sampled and analysed to determine whether it is a controlled waste before that waste can be removed from the site (R.6(3) of the Regulations). This generally includes, but is not limited to soil that is from a site that is used, or has been used, for an activity listed in Table 3 and is likely to be contaminated.

Special provisions apply to the management of controlled waste, as detailed in section 3 of this bulletin. As a general rule all *Low Level Contaminated Soil*, *Contaminated Soil* and *Contaminated Soil for Remediation* that is intended for treatment, re-use or disposal should be managed as controlled waste unless sampling proves otherwise.

2.2 Sampling and analysis

The waste producer is responsible for organising the sampling and analysis of potentially contaminated soil. It is recommended that a suitably qualified person perform all sampling. Additionally, all soil sampling should be conducted in accordance with the relevant Australian Standards, which include:

- AS 4482.1-2005 Guide to the investigation and sampling of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds (and any subsequent editions)
- AS 4482.2-1999 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances (and any subsequent editions)
- In the case of potentially Acid Sulfate Soils, the *Tasmanian Acid Sulfate Soil Management Guidelines* published by Department of Primary Industries, Parks, Water and Environment should be consulted.

In-situ sampling is generally not recommended for classification of soils that are to be excavated later for disposal. However, if this method of classification is unavoidable, then the Australian Standards listed above should be adhered to in order to obtain a representative number of samples.

All sample analyses must be conducted by a laboratory registered with the National Association of Testing Authorities, accredited for the testing procedures undertaken ('NATA accredited'), or by a laboratory approved by the Director for the test.

2.2.1 Sampling density

The number of samples required for adequate classification of soil is dependent on the volume of material, the estimated standard deviation of contamination concentrations, and the estimated average concentration. However, as a general rule for homogeneous stockpiled soil one sample should be taken every 25 m^3.

2.2.2 Composite sampling

Generally, composite samples are not recommended for classification of soil for disposal. However, composite sampling may assist an environmental program by reducing sampling costs that could be spent elsewhere in the program. Composite sampling is only acceptable for stockpiled soil containing non-volatile contaminants

and is **not** an acceptable method for sampling of volatiles such as some hydrocarbon-contaminated soil.

All composite sampling should be undertaken by a suitably qualified person and in accordance with the Australian Standards AS 4482.1-2005 and the National Environmental Health Forum Monograph, Soil Series No. 3 – *Composite Sampling*, 1996.

2.2.3 Sampling materials other than soil

For materials such as contaminated construction materials there are no guidelines available for determining the representative number of samples for testing. Surface scrapings or bored samples may be required to classify the material. The person undertaking the sampling, preferably an environmental consultant should develop a sampling strategy and density that adequately classifies the material.

2.2.4 Leachable fraction

In order to classify soil for disposal, the leachable concentrations of metals and some organics should be undertaken. Where a leachable concentration is prescribed in Table 2, generally that value will take precedence over the total concentration value and will be used as the sole determinant of final classification for disposal.

The most appropriate procedure for determining the leachable fraction should be determined in consultation with an environmental consultant, the EPA and the analytical laboratory performing the procedures and with consideration of the waste management goals that are to be achieved. Accepted methods for determining leachable fractions are detailed below:

The Toxicity Characteristic Leaching Procedure (TCLP), in accordance with USEPA Method 1311 – SW 846, is used to simulate the leaching of contaminants into groundwater under conditions found in solid waste landfills.

The Multiple Extraction Procedure (MEP), in accordance with USEPA MEP Method 1320 – SW 846, is used to simulate leaching from repetitive acid washings and is a more rigorous test of the buffering capacity of the soil than the TCLP. In some circumstances (*e.g.* for remediation technologies that involve solidification with lime based agents), the MEP would be a more suitable test to determine the long-term stability of soil.

There is also an Australian Standard for the preparation of leachates: AS 4439-1997 (parts 1 to 3), *Wastes, Sediments and Contaminated Soils: Preparation of Leachates.*

2.2.5 *Acid sulfate soils*

Potentially Acid Sulfate Soils (PASS) underlie parts of Tasmania's coastline and may also underlie inland areas such as peat bogs, salt lakes and wetlands. They are natural soils that contain sulfides (mostly iron sulfides). In an undisturbed and waterlogged state these soils are harmless, but when disturbed (such as dredging estuaries etc), a process of oxidation can produce sulfuric acid in large quantities. As the acid moves through the soil profile it may 'mobilise' or cause the release of metals and other toxins from the soil, which eventually flow into surrounding waterways. Acid Sulfate Soil (ASS) runoff therefore has significant environmental, economic and social impacts. The *Tasmanian Acid Sulfate Soil Management Guidelines* provide guidance on the level of management required to minimise the risk associated with ASS. The *Guidelines* also provide criteria to characterise acid sulfate soils. The criteria in Table 2 of this Bulletin do not apply to any soils classified as PASS. Such soils should be managed as potentially acid sulfate soils. Acid Sulfate Soil predictive mapping is available for Tasmania at www.thelist.tas.gov.au. For further information regarding ASS, instructions on how to utilise the predictive mapping, or obtain a copy of the *Guidelines*, refer to:

http://www.dpiw.tas.gov.au/inter/nsf/WebPages/SWEN-83NVBG?open

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2.2.6 Per and poly – fluoroalkyl substances (PFAS)

PFAS are a group of chemicals that have been used in applications such as fire-fighting foams, textile treatments for upholstery and clothing, paper products and electroplating. There are many types of PFAS, with the best known being Perfluorooctane sulfonate (PFOS), Perfluorooctane acid (PFOA) and perfluorohexane sulfonate (PFHxS). Some PFAS have been globally identified as chemicals of high concern, particularly due to their environmental persistence and bioaccumulation. Therefore, in addition to classifying soils using Table 2 of EPA Bulletin 105, the EPA has adopted the PFAS National Environmental Management Plan 2018 (NEMP). Section 14.6 of the NEMP is applicable to PFAS in soils and guides classification and determination of risk associated with disposal to landfill. Both total and leachable PFAS concentrations should be analysed.

Disposal of soils contaminated with PFAS requires the Director's approval. Applications for approval are assessed on a case by case basis in line with the NEMP (2018). To use or obtain a copy of the *NEMP*, refer to:

https://www.epa.vic.gov.au/your-environment/land-and-groundwater/pfas-in-victoria/pfas-national-environmental-management-plan

3. Re-use or disposal - waste management plan

A Waste Management Plan should be developed following the classification of soil to determine whether the soil can be remediated or re-used instead of, or prior to, disposal (see Figure 1, which summaries this process, and section 5 which details the information required).

It should be noted that a controlled waste will not be suitable for re-use in sensitive environments such as wetlands, agricultural areas or residential sites.

4. Disposal of contaminated material

Classification of soil (as defined in Table 2) will determine the category of landfill to which the soil can be disposed of in accordance with the landfill operator's permit conditions.

If disposal is the only viable management option, all possible efforts should be made to reduce the volume of material requiring disposal by minimising excavated volumes and segregating and sorting of wastes prior to disposal.

Waste Type	Category A landfill - **Solid Inert Landfill**	Category B landfill - **Putrescible Landfill**	Category C landfill - **Secure landfill**
Level 1 – *Fill Material*	✔	✔	✔
Level 2 – *Low Level Contaminated Soil*	✘	✔ (refer to Section 4.2.2)	✔
Level 3 - *Contaminated Soil*	✘	✘	✔
Level 4 - *Contaminated Soil for Remediation*	✘	✘	✘

See the *Landfill Sustainability Guide 2004* (DPIWE, 2004) for further details.

4.1 Disposal of fill material (Level 1)

4.1.1 The off-site disposal of *Fill Material* is not restricted and may be used as cover in landfills.

4.1.2 The definition of *Fill Material* includes inert construction material, soils and rocks, which have not been contaminated with any substance, and stable asphalt or bituminous pavement material, all of which are generally considered inert for use as 'fill'. However, soil and other material classified as *Fill Material* can still be a 'pollutant' under EMPCA and must be responsibly managed.

Re-use of fill material

4.1.3 The re-use of *Fill Material* must not result in environmental harm. *Fill Material* might contain contaminants above background levels and therefore may not be suitable for all uses, *e.g.* for sensitive uses such as child play areas, residential uses, or in protected nature reserves

4.1.4 In some cases, unwanted 'waste' soils or rock imported from another site to be used as fill may naturally contain contaminants at levels that are higher than *Fill Material* criteria due to regional geological characteristics. This material would be regarded as unsuitable for re-use if it posed a risk to human health or the environment in its new location.

The risk posed by importation of materials with naturally elevated levels of certain contaminants should be assessed by an environmental consultant and the evaluation and supporting information submitted to the Director for approval.

4.2 Disposal of low level contaminated soil (Level 2)*Low Level Contaminated Soil* may, in some cases, be suitable for disposal as intermediate landfill cover at nominated municipal landfills. Please note that the landfill operator should refuse soil that has not been classified and approved if there is likelihood that acceptance of the material may result in a breach of the landfill operator's permit conditions.

4.2.2 Approval for the disposal of *Low Level Contaminated Soil* must be sought from the landfill operator and the EPA. The information detailed in section 5 of this bulletin must be supplied to the EPA when making an application for approval to dispose of a waste.

Landfills at which *Low Level Contaminated Soil* (Level 2) may be accepted:	
Council / Authority	Landfill
Circular Head Council	Port Latta Waste Depot
Dulverton Regional Waste Management Authority (DRWMA)	Dulverton Regional Waste Depot
Launceston City Council	Remount Rd Waste Depot
Copping Refuse Disposal Site Joint Authority	Copping Waste Depot

Re-use of low level contaminated soil

4.2.3 *Low Level Contaminated Soil* might be suitable for re-use as fill or levelling material on an industrial or commercial site, but will be judged on a case by case basis. In determining whether *Low Level Contaminated Soil* may be used as fill, an assessment of the environmental and human health hazards associated with the disposal option must be conducted by a suitably qualified environmental consultant. If the soil is classified as a controlled waste, approval must be sought from the Director as detailed in section 5.

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4.3 Disposal of contaminated soil (Level 3) *Contaminated Soil* can only be disposed of at landfills that have the appropriate permit conditions and within a separate lined and contained cell.

4.3.2 Approval for the disposal of *Contaminated Soil* must be sought from the landfill operator and the EPA. The information detailed in section 5 of this bulletin must be supplied to the EPA in making an application for approval.

4.3.3 Only permitted landfills are allowed to accept Level 3 waste. Furthermore, it is at the landfill operator's discretion as to whether or not they will accept the waste. At the date of publication, no Tasmanian landfill is receiving level 3 waste for disposal.

4.4 Contaminated soil for remediation (Level 4)

4.4.1 *Contaminated Soil for Remediation* requires remediation or treatment prior to disposal to reduce total concentrations and/or leachable concentrations to levels acceptable for landfill disposal or re-use.

4.4.2 The producer (defined in the Regulations) of the *Contaminated Soil for Remediation* is responsible for identification of the treatment options, which will depend on the waste and pollutant type, waste volumes and the availability of suitable facilities in which to manage the remediation. Typical forms of treatment currently being used for remediation of contaminated soil include bioremediation, thermal treatment/desorption, soil washing, soil vapour extraction, red mud, chemical treatments and stabilisation. Specific treatment of hydrocarbon contaminated soil by bioremediation is encouraged under appropriate circumstances, as detailed in the EPA's *Information Bulletin 108: Landfarming of Petroleum Contaminated Soils.*

4.4.3 The suitable technologies for waste treatment may not be available in Tasmania and thus treatment may require transport to an interstate facility. Advice on interstate treatment options should be sought from the Controlled Waste Management Officer.

4.4.4 If the soil is to be disposed of after treatment, the EPA encourages treatment methods that minimise soil volumes prior to disposal to conserve landfill space.

4.4.5 If the remediation method has the potential to cause environmental harm, as defined in EMPCA, advice from the Director should be sought.

4.4.6 *Regulation 6 - General Responsibilities* of the Regulations requires that a person must not remove, receive, store, reuse, recycle, reprocess, salvage, incinerate, treat or use for energy recovery a controlled waste as defined within the Regulations unless approved to do so.

5. Approvals

5.1 Approval process

The waste producer, or consultant/contractor acting on behalf of the waste producer, is responsible for applying for approval for soil disposal, re-use options or remediation.

Applications are to be sent to the Director, EPA. Please allow up to ten working days for the Director to respond to an application. Please note that where it is intended to dispose of material to a landfill, an 'in principle' agreement from the landfill should be gained by the applicant prior to disposal.

Upon approval of the application, the Director, or a person authorised by the Director will provide written notification to the applicant of the approved classification of the waste where appropriate. The landfill authority will also be forwarded a copy of the

approval, along with a copy of the analytical results and any other relevant information so that they can monitor waste entering the landfill.

5.2 Information required

An application for approval to dispose of, re-use, treat, remediate, *etc*, soil must contain the following information:

Introduction:

- Details of the site(s) from which the soil is to be removed, including a brief site history and why the soil is thought to be contaminated, or likely to cause environmental harm;
- Description of the soil;
- Estimate of the volume of soil to be managed.

Sampling details:

- Sampling density and analytical suite to classify the soil;
- Sampling protocols followed;
- Scaled sampling plan showing, for example, soil stockpiles and sample locations and contamination sources;
- NATA endorsed laboratory reports.

Waste management plan:

- Proposal for the management of the soil that is in accordance with relevant guidelines and standards;
- If the soil is to be disposed of, provide justification for why re-use, on-site treatment, *etc* is not proposed;
- Details of the proposed management method, for example the name of the landfill facility that you wish to dispose of the soil at, or details of the treatment or re-use *etc*;
- The name of the waste transporter that you will be utilising (see Section 6 for further details); and
- If the soil is to be re-used, recycled, treated, *etc*, and is a controlled waste, the waste producer must apply for an environmental approval from the Director (R.12 of the Regulations). Relevant information required by the EPA to consider an application for an environmental approval is detailed in R.12(3) of the Regulations. A R12 application form can be accessed at:
- http://epa.tas.gov.au/regulation/required-approvals-and-authorisations

In situations where a site investigation report has already been lodged with the EPA, duplication of information provided in that report is not required. However, in all cases, the application will need to make reference to the specific sample numbers used for soil classification.

6. Transport of contaminated material

If a controlled waste is to be transported, a waste transport business holding a current relevant approval for that particular waste type and issued under EMPCA is required. For information regarding currently approved Waste Transporters, either contact the Controlled Waste Transport Officer (see below) or a list can be accessed at:

http://epa.tas.gov.au/regulation/document?docid=1063

Caution should be taken when transporting any material to ensure its safe transportation and prevention of secondary impacts (*e.g.* dust).

7. Further information

For further information relating to this bulletin or to make a contaminated soil or controlled waste disposal application contact:

Waste Management Section
GPO Box 1550
HOBART TASMANIA 7001

Controlled Waste Management Officer.....
Contaminated Sites Officer.....
Controlled Waste Transport Officer .....
Landfill Officer.....

EPA Division
Telephone: (03) 6165 4599

Legislation may be viewed on the Internet at http://www.thelaw.tas.gov.au.
General information can be viewed either on the EPA's website at http://www.epa.tas.gov.au

8. Currency of this bulletin

This bulletin may be subject to amendment and persons relying on this bulletin should check with an officer of the Waste Management Section or on the above EPA Division and EPA websites to ensure that it is current at any given time.

Disclaimer
The Crown gives no warranty, express or implied, as to the accuracy or completeness of the information provided in this Bulletin. The contents are based on the best information available to the Environment Protection Authority (EPA) at the time of publication and are subject to revision based upon further advice received by the EPA.

Please note that other national or state agencies may have additional requirements relating to the import/export and/or disposal of controlled wastes.

Table 3. Potentially Contaminating Activities

Potentially Contaminating Activities	
Acid / alkali plant and formulation	Landfill sites, including on-site waste disposal and refuse pits
Ammunition manufacture and usage (e.g. shooting ranges)	Lime burner
Asbestos production, handling or disposal	Metal treatments (e.g. electroplating) and abrasive blasting
Asphalt/bitumen manufacturing	Metal smelting, refining or finishing
Battery manufacturing or recycling	Mining and extractive industries
Boat/ship building, marinas, slip ways and associated boat yards	Oil or gas production or refining
Boiler or kiln usage	Paint formulation and manufacture

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Chemical manufacture and formulation (e.g. fertilisers, paints, pesticides, photography, plastics, solvents)	Pesticide manufacture and formulation sites
Dewatering of sediments	Petroleum product or oil storage
Disturbance of potential acid sulfate soils	Pharmaceutical manufacture and formulation
Drum conditioning works	Power stations
Dry cleaning establishments	Printing
Electrical transformers	Radio-active material usage (e.g. hospitals)
Ethanol production plant	Railway yards
Engine works	Scrap yards and recycling facilities
Explosives industries and usage sites	Sewage treatment plant
Fertiliser manufacturing plants	Sheep and cattle dips
Fill material imported onto a site from a potentially contaminated source (includes dredge spoil)	Sites of fires involving hazardous materials, including fire fighting foam use
Foundry Operations	Spray mixing sites (e.g. for orchards)
Gas works	Spray painting industries
Herbicide manufacture	Tanning and associated trades
Hospitals	Textile operations
Sites of incidents involving release of hazardous materials	Tyre manufacturing and retreading works
Industrial activities involving chemicals that may have spilt	Wood preservation and storage or cutting of treated timber
Iron and steel works	Wool scouring
Laboratories	

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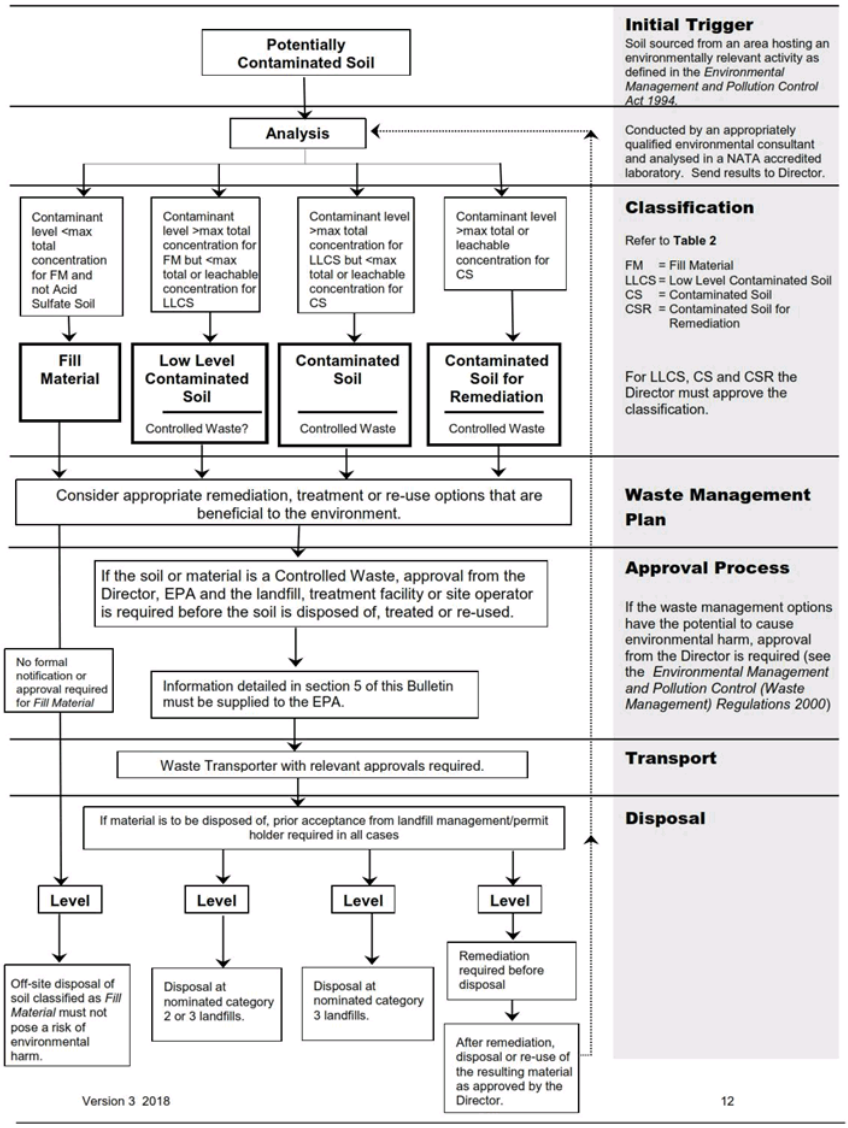
Figure 1 **Summary of Waste Management for Contaminated Soil.**



Appendix 3 Soil Bore Logs

GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road			Log of BH01
CLIENT: POW			EASTING (GDA94): 527283
LOCATION: Battery Point			NORTHING (GDA94): 5251394
SAMPLING METHOD: Rotary Drilling	AZIMUTH: -90 INCLINATION:		ELEVATION (m ~AHD): 26.8 TOTAL DEPTH (m): 6
CONTRACTOR:	Tasmanian Drilling Services	Tasmanian Drilling Services	WATER TABLE (m BGS): Not Encountered
DRILL RIG:	Drillmac 500 Explorer	Drillmac 500 Explorer	LOGGED BY: M. Temlett NATURAL GROUND (m): 2.05
METHOD/INTERVAL:	Auger to 0.5 m	HQ Rotary Coring >0.5 m	DATE STARTED: 30.05.18 DATE FINISHED: 30.05.18

STRENGTH INDEX (SOIL: V LOOSE / V SOFT, LOOSE / SOFT, M DENSE / FIRM, DENSE / STIFF, V DENSE / V STIFF, HARD; ROCK: EXTREMELY LOW, VERY LOW, LOW, MEDIUM, HIGH, VERY HIGH, EXTREMELY HIGH)

DEPTH (m)	SPT BLOWS (N)	DCP Bearing Cap. (FS 2)	Point Load Is(50)	SHEAR VANE Cu (FS 2)	Undrained Shear Strength (kPa)	UCS (kPa)	WEATHERING	USCS / JOINT SET #	% CORE RECOVERY	% RQD	FRACTURES SPACING (cM)	# DEFECTS	DEFECT TYPE	ROUGHNESS	ALTERATION	APPETURE (MM)	ALPHA°	BETA°	INFILL TYPE	INFILL THICKNESS (MM)	DESCRIPTION	DEPTH (m)	GEOLOGICAL UNIT	STAND PIPE DETAILS	ELEVATION (m AHD)
0.0																						ASPHALT	0.0			26.8
								GW	100													FILL - Sandy GRAVEL with silt : Pale brown, fine to coarse grained, sub-angular to sub-rounded, medium dense, dry, non plastic. Gravel comprises predominantly dolerite.				
								CH	100													FILL - Silty CLAY with sand : Black, fine grained, moist, high plasticity, firm to stiff. Contains occasional fragments of fine brick.	0.5			26.4
1.0								GP	0													CORE LOSS: Inferred as sandy Gravel - likely to comprise fill				26.0
								SW	100													FILL: Boulder of Sandstone - pale orange, fine to medium grained, medium strength, slightly weathered.	1.0			25.6
									76													FILL: Silty SAND: Brown, fine to medium grained, sub-angular, medium dense, moist, non-plastic.	1.5			25.2
2.0																							2.0			24.8
																						DOLERITE: Brown and cream, fine to coarse grained, crystalline, low strength, highly weathered. Highly fractured with 40-60 mm spaced sub-horizontal bedding fractures and 20 degree joints infilled with cream clayey silt.				24.4
			0.10									10	BD	UR	D	2.0	80		CY	2.0			2.5			24.0
3.0			0.19					HW	100	0													3.0			23.6
									R			7	JT	PR	D	2.0	10		CY	2.0			3.5			23.2
												3	BD	PR	C	1.0	75		FE	1.0						22.8
4.0			0.80									1	JT	PR	C	1.0	25		CY	2.0		DOLERITE: Pale grey and white, fine to coarse grained, crystalline, medium to high strength strength, slightly weathered, bedding and joint spacing 80 - 120 mm, sub-horizontal to sub-vertical.	4.0	Jd		22.8
												3	BD	PR	C	1.0	15		FE	1.0						
												1	jt	PR	c	1.0	25		fe	1.0			4.5			22.4

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Soil Bore Logs

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road		**Log of BH01**
CLIENT: **POW**		EASTING (GDA94): **527283**
LOCATION: **Battery Point**		NORTHING (GDA94): **5251394**
SAMPLING METHOD: **Rotary Drilling**	AZIMUTH: **-90** INCLINATION:	ELEVATION (m ~AHD): **26.8** TOTAL DEPTH (m): **6**
CONTRACTOR: **Tasmanian Drilling Services**	**Tasmanian Drilling Services**	WATER TABLE (m BGS): **Not Encountered**
DRILL RIG: **Drillmac 500 Explorer**	**Drillmac 500 Explorer**	LOGGED BY: **M. Temlett** NATURAL GROUND (m): **2.05**
METHOD/INTERVAL: **Auger to 0.5 m**	**HQ Rotary Coring >0.5 m**	DATE STARTED: **30.05.18** DATE FINISHED: **30.05.18**

DEPTH (m)	STRENGTH INDEX (SOIL: V LOOSE / V SOFT, LOOSE / SOFT, M DENSE / FIRM, DENSE / STIFF, V DENSE / V STIFF; ROCK: HARD; EXTREMELY LOW, VERY LOW, LOW, MEDIUM, HIGH, VERY HIGH, EXTREMELY HIGH)	SPT BLOWS (N)	DCP Bearing Cap. (FS 2)	Point Load Is(50)	SHEAR VANE Cu (FS 2)	HAND PENOTROM Undrained Shear Strength (kPa)	UCS (kPa)	WEATHERING	USCS / JOINT SET #	% CORE RECOVERY	% RQD	FRACTURES SPACING (CM)	DEFECTS #	DEFECT TYPE	ROUGHNESS	ALTERATION	APPETURE (MM)	ALPHA°	BETA°	INFILL TYPE	INFILL THICKNESS (MM)	DESCRIPTION	DEPTH (m)	GEOLOGICAL UNIT	STAND PIPE DETAILS	ELEVATION (m AHD)
5.0				0.22				SW		100	27		10	BD	PR	C	1.0	80		FE	1.0					22.0
				0.15									1	JT	PR	C	1.0	15		FE	1.0	DOLERITE: Pale grey and white, fine to coarse grained, crystalline, low to medium strength, moderately weathered, locally highly weathered, bedding and joint spacing 60 - 90 mm, sub-horizontal to 30 degrees. EOH at 6.0 m				21.6
													3	BD	UR	C	1.0	75		CY	2.0					
								MW		100	0															21.2
6.0				0.26									2	BD	UR	C	1.0	80		FE	1.0		6.0			

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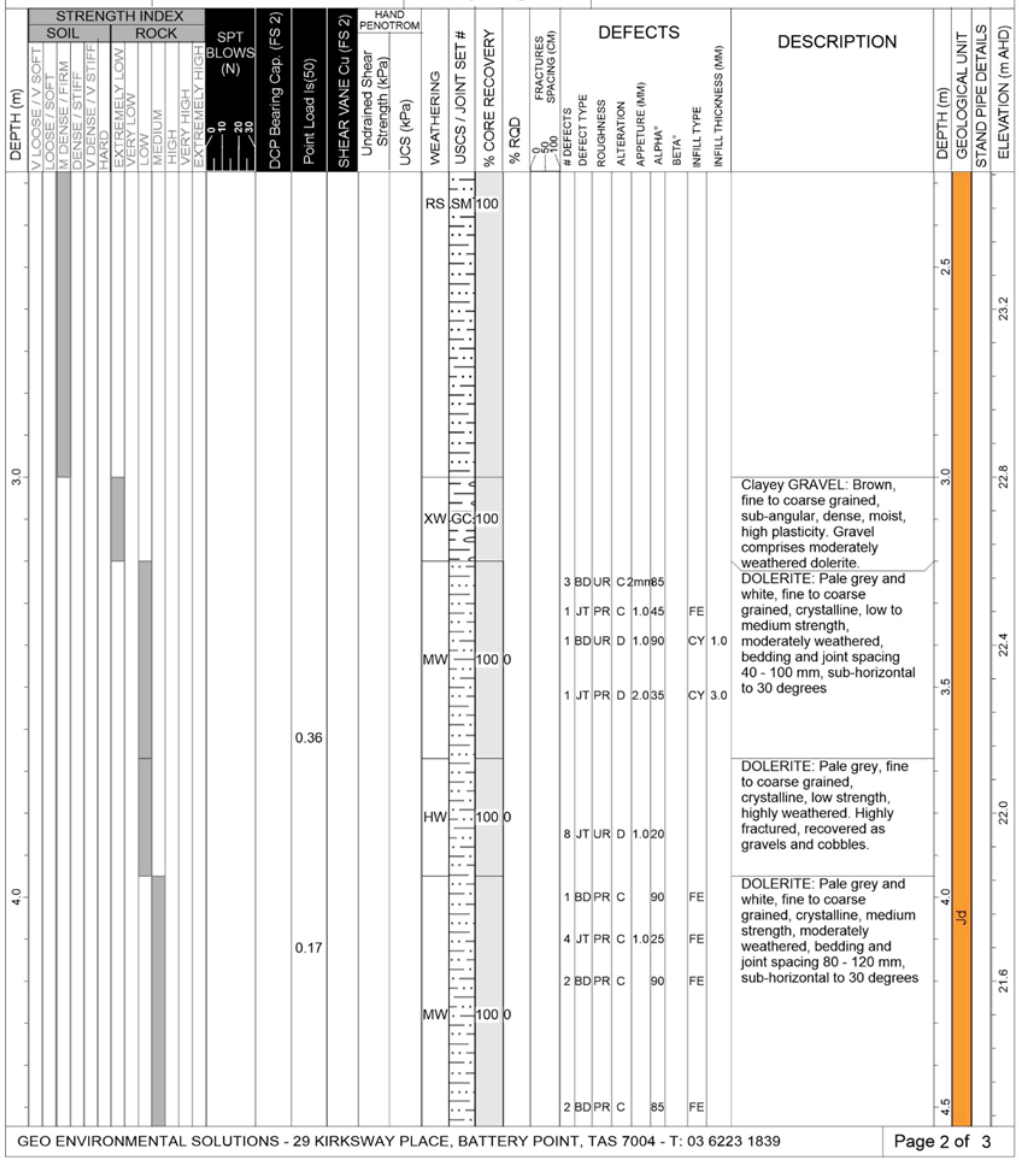
Soil Bore Logs

Soil Bore Logs

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road		Log of BH02
CLIENT: POW		EASTING (GDA94): 527273
LOCATION: Battery Point		NORTHING (GDA94): 5251433
SAMPLING METHOD: Rotary Drilling	AZIMUTH: -90 INCLINATION:	ELEVATION (m ~AHD): 25.8 TOTAL DEPTH (m): 6.4
CONTRACTOR: Tasmanian Drilling Services	Tasmanian Drilling Services	WATER TABLE (m BGS): Not Encountered
DRILL RIG: Drillmac 500 Explorer	Drillmac 500 Explorer	LOGGED BY: M. Temlett NATURAL GROUND (m): 1.7
METHOD/INTERVAL: Auger to 1.7 m	HQ Rotary Coring >1.7 m	DATE STARTED: 30.05.18 DATE FINISHED: 30.05.18



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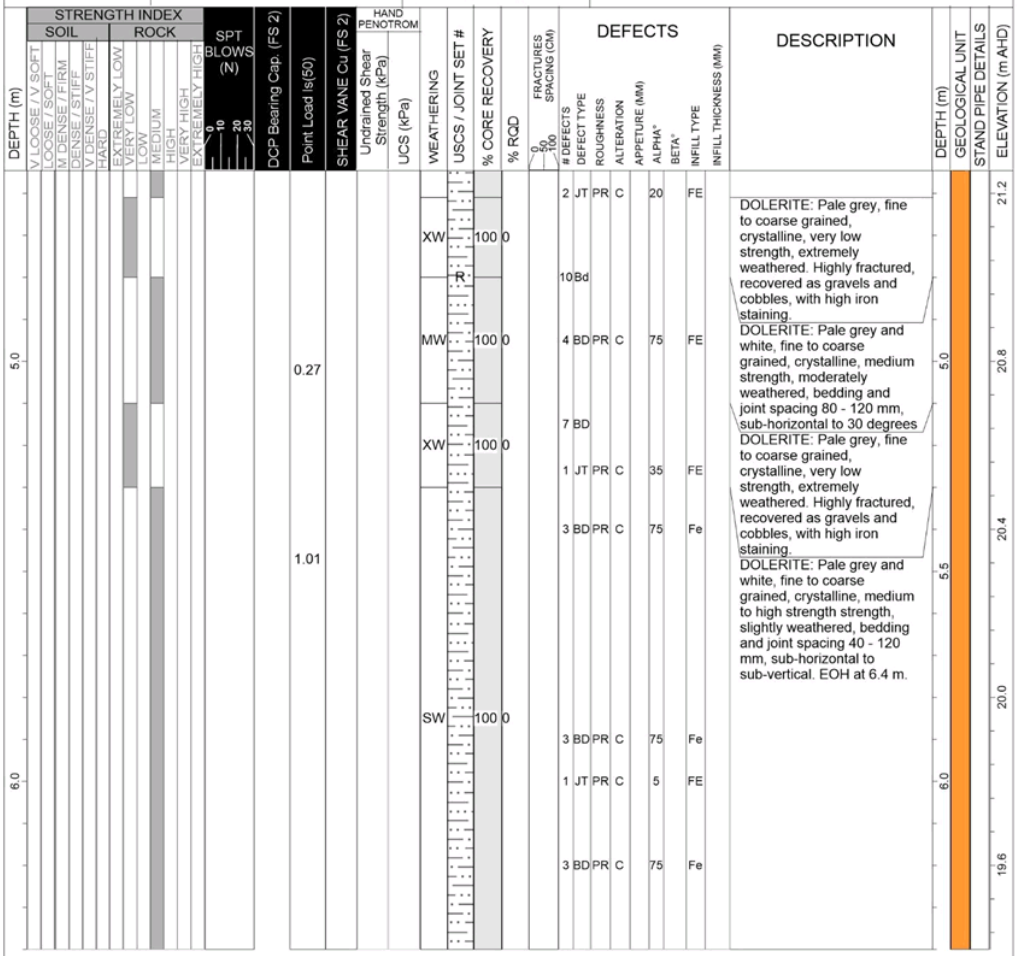
Soil and Water Management Guideline Fact Sheets

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road			**Log of BH02**
CLIENT: **POW**		EASTING (GDA94):	**527273**
LOCATION: **Battery Point**		NORTHING (GDA94):	**5251433**
SAMPLING METHOD: **Rotary Drilling**	AZIMUTH: **-90** INCLINATION:	ELEVATION (m ~AHD): **25.8**	TOTAL DEPTH (m): **6.4**
CONTRACTOR:	**Tasmanian Drilling Services** / **Tasmanian Drilling Services**	WATER TABLE (m BGS): **Not Encountered**	
DRILL RIG:	**Drillmac 500 Explorer** / **Drillmac 500 Explorer**	LOGGED BY: **M. Temlett**	NATURAL GROUND (m): **1.7**
METHOD/INTERVAL:	**Auger to 1.7 m** / **HQ Rotary Coring >1.7 m**	DATE STARTED: **30.05.18**	DATE FINISHED: **30.05.18**



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Appendix 4 Soil and Water Management Guideline Fact Sheets

Soil & Water Management on Large Building & Construction Sites

What is this?

Sediment and erosion control measures are typically required for subdivisions and larger sites. The construction of subdivisions involves breaking land into smaller lots and installation of related services (roads, water, sewerage, power etc.). Due to the scale of land clearance and excavation, subdivision construction activities can cause excessive erosion and sediment loads in runoff, compared with the disturbance of building single house lots.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion and control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 1

WHAT DO I NEED TO DO?

All works undertaken during subdivision construction are normally 'controlled' through the principle contractor and site manager. This means the risks of erosion can be readily managed through appropriate guidance and supervision. Compared with the allotment building phase where there are different building contractors and subcontractors present on any given allotment it is easier to manage erosion and prevent sediment runoff at the subdivision construction phase.

Submit a Soil and Water Management Plan:

Subdivisions or activities that create greater than 250 m^2 of ground disturbance may need to submit a drawn Soil and Water Management Plan (SWMP) to council as a requirement of their planning permit **(see Fact Sheet 3).**

On the SWMP clearly define and document who is responsible for maintaining the sediment and erosion control measures (installed during the subdivision phase) that will be used in the allotment building phase.

When designing subdivision works:

1) Ensure that the subdivision conforms to the natural limitations presented by the topography and the soil so as to reduce the potential for soil erosion.
2) Make sure that land clearing is only being undertaken in conjunction with the development of each stage.
3) Develop the site in increments of workable size such that adequate sediment and erosion control measures can be provided as the subdivision progresses. The smallest practical area of land should be exposed at any one period of time.
4) Coordinate the sediment and erosion control measures with the different subdivision construction phases.
5) Limit soil exposure to the shortest feasible period of time.
6) Keep removed topsoil for respreading over the developed area.
7) Retain and protect natural vegetation wherever practical.
8) Install larger sediment controls i.e. sediment basins if site conditions are suitable.
9) Manage wind-borne erosion.

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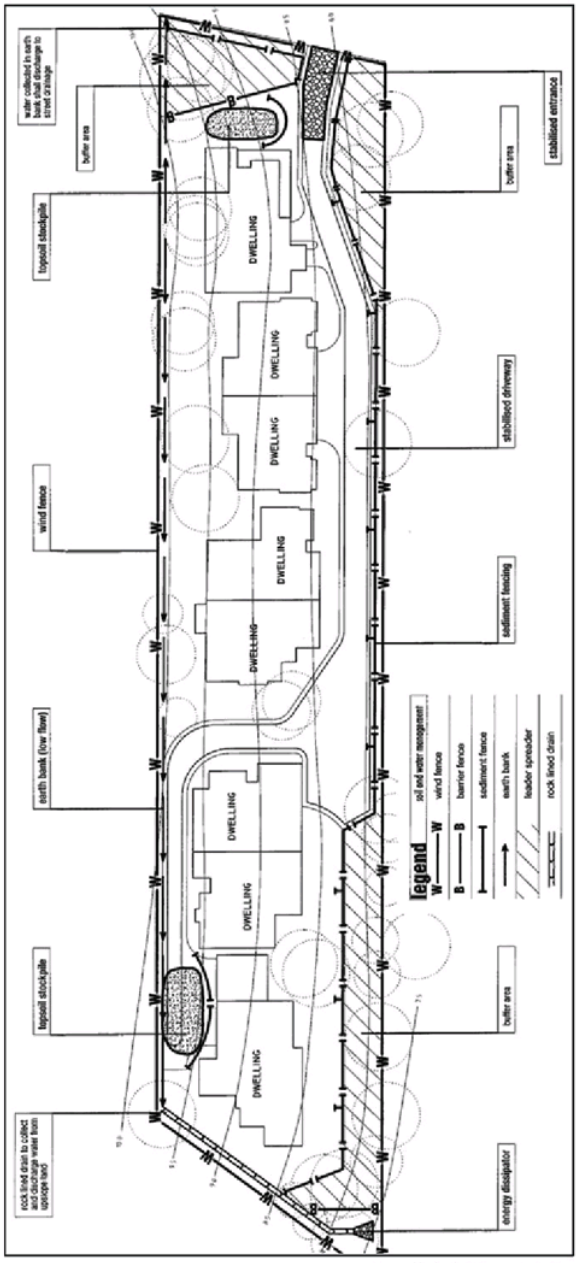

Figure 1A: SWMP for a subdivision.

List of fact sheets

1. **Soil & Water Management on Large Building & Construction Sites**
2. Soil & Water Management on Standard Building & Construction Sites
3. Soil & Water Management Plans
4. Dispersive Soils – High Risk of Tunnel Erosion
5. Minimise Soil Disturbance
6. Preserve Vegetation
7. Divert Up-slope Water
8. Erosion Control Mats & Blankets
9. Protect Service Trenches & Stockpiles
10. Early Roof Drainage Connection
11. Scour Protection – Stormwater Pipe Outfalls & Check Dams
12. Stabilised Site Access
13. Wheel Wash
14. Sediment Fences & Fibre Rolls
15. Protection of Stormwater Pits
16. Manage Concrete, Brick & Tile Cutting
17. Sediment Basins
18. Dust Control
19. Site Revegetation

Remember:

Everyone working on building and construction sites has a responsibility to prevent pollution. If you do have an accident and pollution occurs you are required by law to notify the site supervisor. If the site supervisor cannot be contacted, workers should immediately notify the local council so they can work with you to minimise any harm to the environment.

Acknowledgement:

Figure 1A after Landcom 2004 *"Soils & Construction Volume 1 Managing Urban Stormwater (4th edition)"*. Some of the text in this brochure has been obtained and modified from the Brisbane City Council 2008 *"Subdivision and Development Guidelines"*.

Date of Issue: December 2008

Soil & Water Management on Standard Building & Construction Sites

What is this?

A general overview of sediment and erosion control measures that are typically required for single residential building lots including when certain control measures should be installed. Useful for planning and for determining what practices might be suitable for your site. For further details about each of the control measures mentioned go to the relevant fact sheet in the series.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion and control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 2

WHAT DO I NEED TO DO?

The timing of works and installation of control measures has a major influence on how effective soil and water management is in reducing on-site erosion and the amount of sediment that is carried off-site.

Before starting site works plan to:

1) Schedule earthworks in phases throughout the project so that the ground is disturbed for the shortest time possible **(see Fact Sheet 5).**
2) Avoid stripping and excavating until all necessary permits, licences and approvals have been obtained and you are ready to start work.
3) Install erosion and sediment control measures in accordance with an approved Soil and Water Management Plan (if required) **(see Fact Sheet 3).**

Install erosion and sediment control measures in sequence:

1) Choose a single, stabilised site access point **(see Fact Sheet 12).**
2) Install sediment fences or fibre rolls at the low end of the site to trap sediment **(see Fact Sheet 14).**
3) Divert up-slope catchment runoff around the site by installing a diversion drain and level spreader **(see Fact Sheet 7).**
4) Keep as much vegetation as possible to minimise soil erosion and reduce rainwater running across the site **(see Fact Sheet 6).**
5) Designate a location where topsoil and other excavation material will be stockpiled during building and construction. Provide suitable controls to prevent erosion **(see Fact Sheet 9).**
6) Stabilise areas of exposed soil with vegetation or erosion control blankets and mats **(see Fact Sheet 8).**
7) Protect the nearby stormwater system including any stormwater pits on and below the site from blocking up with sediment **(see Fact Sheet 15).**
8) Designate an appropriate location within the site where sediment-generating activities can be managed (e.g. wheel wash, brick cutting) **(see Fact Sheet 16).**

Once site works have commenced:

1) Monitor sediment and erosion control measures at least once a week and after each rainfall event.
2) Construct service trenches away from where water is likely to concentrate. Try not to have service trenches open any longer than necessary **(see Fact Sheet 9).**
3) Prevent clean rainwater running across the site by connecting downpipes to the stormwater system as soon as the roof is on the building frame **(see Fact Sheet 10).**

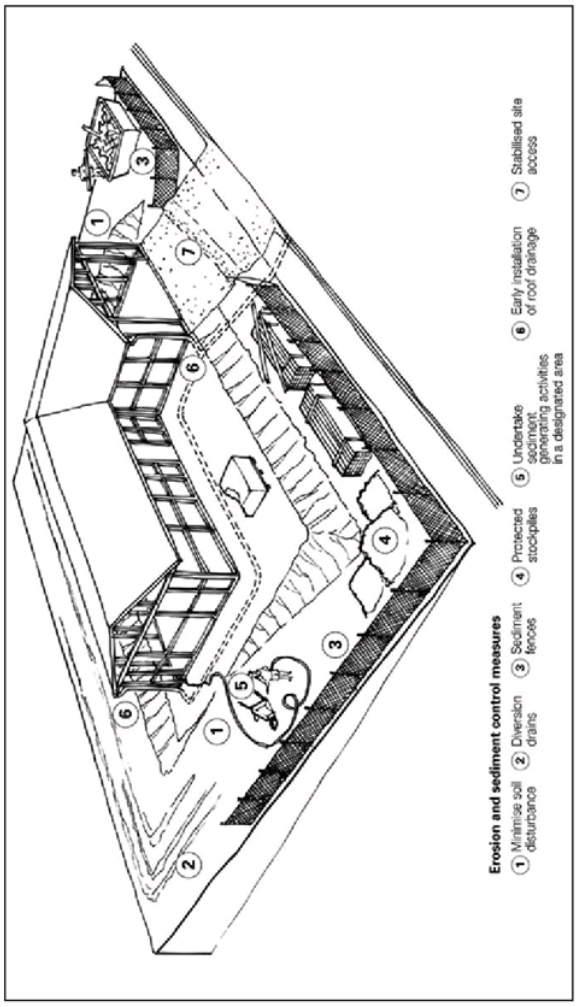

Figure 2A: Appropriate sediment and erosion control measures for single residential building lots.

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Remember:

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Acknowledgement:

Figure 2A was kindly provided by South East Queensland Healthy Waterways Partnership and Brisbane City Council. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Soil & Water Management Plans

What are these?

Soil and water management plans are specific site plans or drawings that detail sediment and erosion control measures on building and construction sites. The Soil and Water Management Plan (SWMP) shows the type, location, design, installation and maintenance schedule for all these measures and should be considered as the blueprint for controlling all anticipated erosion and for preventing sediment from leaving a site.

Subdivisions or activities that create greater than 250 m^2 of ground disturbance typically need to submit a SWMP to council with their building or development proposals prior to any site disturbance. Once approved by council, all building and construction works need to be conducted in accordance with the SWMP.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion and control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 3

WHAT DO I NEED TO DO?

Prepare a SWMP (see Figure 3A):

A SWMP can easily be developed by overlaying information on a copy of the engineering site drawings. The plan must detail the site development and all the systems intended to minimise erosion and trap sediment. On the SWMP show the following:

1) Date and author.
2) North point and scale.
3) Property boundaries.
4) General soil description.
5) Location and amount of ground disturbance.
6) Initial and final contours, location of watercourses, surface drainage and existing stormwater infrastructure.
7) Stormwater discharge point, if proposed.
8) Location of all proposed temporary drainage control measures.
9) Construction details (e.g. building or subdivision layout).
10) Location of vegetation to be retained and removed.
11) Location of stabilised site access.
12) Location of soil, sand or other material stockpiles.
13) Location and details of all proposed erosion control measures.
14) Location and details of all proposed sediment control measures.
15) A statement of who is responsible for establishing and maintaining all erosion and sediment control measures.
16) The installation sequence of the different sediment and erosion controls.
17) The maintenance program of the sediment and erosion controls.
18) The revegetation and rehabilitation program.

Note: Other details may be required depending on the specific requirements of the site, scale of the development and level of ground disturbance. Contact your local council for what information you are required to submit on your SWMP.

Submit the SWMP to council for approval:

A SWMP may be a requirement of your planning or building permit. Ensure that the council has approved your SWMP; otherwise you may be in breach of your permit.

Implement the SWMP and update as needed:

1) Keep a copy of the council-approved SWMP at the site at all times.
2) Ensure that all on-ground workers understand the SWMP.
3) Implement, update and maintain the control measures shown in the SWMP.

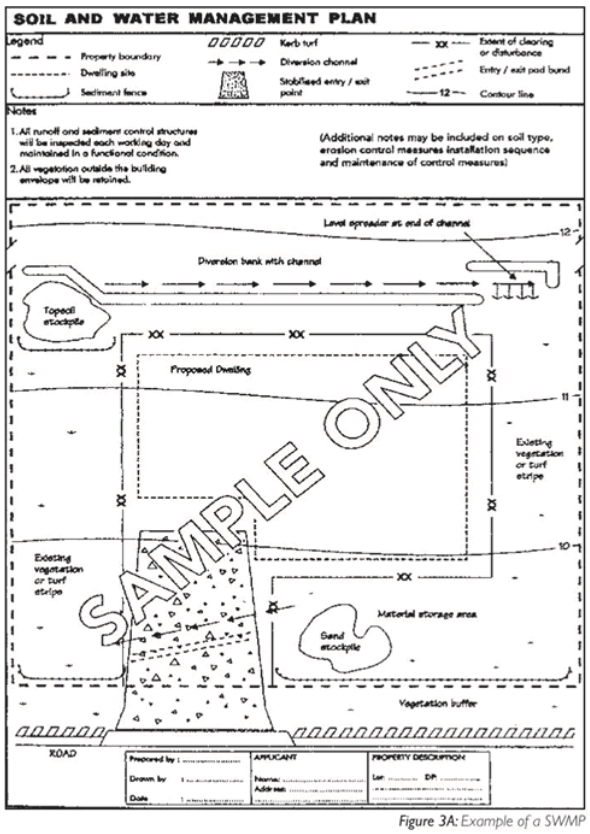

Figure 3A: Example of a SWMP

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Acknowledgement:

Figure 3A from Gold Coast City Council *"Best Practice Guidelines for the Control of Stormwater Pollution from Building Sites"*. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Dispersive Soils – High Risk of Tunnel Erosion

What is it?

Dispersive soils, or **sodic soils,** collapse or disperse to form dissolved slurry when in contact with fresh water (rain). These soils are highly prone to erosion often leading to **tunnel** and **gully erosion**. Unlike other forms of erosion, dispersion and tunnel erosion result from an imbalance in soil chemistry.

1) Tunnel erosion occurs in all municipalities in Southern Tasmania.
2) Tunnel erosion results from a combination of both chemical dispersion and physical transport of dispersed clay particles.
3) Soils with greater than 6% exchangeable sodium are prone to dispersion.

Dispersion and tunnel erosion usually occurs in subsoils making early detection difficult. Building activities such as excavation, topsoil removal and ponding of rainwater all increase the risk of initiating tunnel erosion. Whilst wind, rain and water runoff are the typical causes of soil erosion on construction sites, the soil chemistry can also determine how prone it is to erosion. Chemistry of the soil determines how well it stays bound together when fresh water is added. Dispersive soils can be caused by high sodium content (i.e. >6% exchangeable sodium); hence they are sometimes called sodic soils. Typically dispersive soils are found in the subsoil as the topsoil is usually non-dispersive. All southern municipalities have dispersive soil risks and tunnel erosion is not uncommon. Dispersive soil can be very patchy in distribution with soil types changing over a few metres in distance, thus it is **very important** to look and test for signs of dispersive soil!

Fact Sheet 4

Why is it important?

Building and construction activities may increase the risk of soil dispersion and can result in the formation of tunnel erosion. Tunnel erosion initially results from the dispersion of clay soils in rainwater, but once the tunnels have formed they can quickly enlarge to form underground drainage paths. When the tunnels collapse they create gullies. Development of tunnel erosion in residential areas has resulted in damage to buildings, roads and septic systems leading to increased public health risks and major impacts on the environment.

During building and construction the runoff from areas of disturbed dispersive soils will contain large amounts of clay and will appear very cloudy. It is very difficult to remove this clay from freshwater without the addition of chemicals (e.g. gypsum). If this runoff enters local waterways it will reduce light levels and decrease water quality. Follow the practices discussed in this fact sheet and you will prevent erosion of dispersive soils from your site, meet your legal requirements and help protect our waterways.

WHAT DO I NEED TO DO?

Before starting site works:

Always ask if there has been soil testing for dispersive or sodic soils, especially in the subsoils where they are more prevalent. An appropriate soil specialist can do this.

Installing the control measures:

1) Minimise disturbance to topsoil and vegetation.
2) Choose building and construction methods that minimise the need for excavation and subsoil exposure.
3) Avoid concentrating water flow over areas that have dispersive topsoil or subsoils. If possible divert water to areas where the soil is not dispersive (***Note:*** dispersive soils can be very patchy in distribution).

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4) When diverting water, create diversion berms/banks by pushing the soil to create banks up hill, this maintains grass in the channel and reduces infiltration directly to the subsoil and the potential for tunnel erosion.
5) **Do not** create soakage pits in dispersive soils.
6) Immediately infill any trenches or holes to prevent collection and ponding of water on subsoil surfaces.
7) **Always** compact dispersive subsoils that have been disturbed or excavated. Dispersive soils require above average compaction. Consider using a 'whacker packer' for small areas or a sheeps foot roller for large areas. Apply gypsum or lime according to soil test recommendations during infilling and cover with topsoil and revegetate.
8) **Always** bury any exposed subsoils with topsoil and revegetate.
9) Top dress the surface of potentially dispersive soils with gypsum (if soil pH > 6.5) or lime (if soil pH <5) or a mixture of both (if soil pH is within the range of 5 to 6.5) according to soil test recommendations to reduce dispersion.
10) Cover dispersive soils with a minimum 100 mm layer of non-dispersive soil prior to revegetation, or the placement of rock gabions, or concrete.

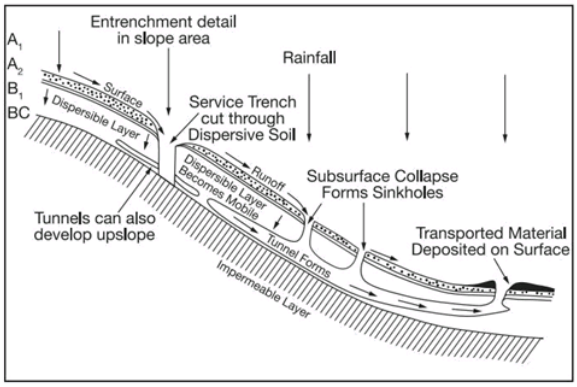

Figure 4A Tunnel erosion development in dispersive soils

Note: You can seek further information and advice on the issue of dispersive soils and tunnel erosion from several sources including: your local council, a soil surveyor, civil engineer or soil specialist, NRM South and the Land Conservation Branch of the Department of Primary Industries and Water (DPIW).

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Remember:

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Acknowledgement:

Figure 4A after Department of Construction and Environment, Land Protection Division, Victoria *"Field Erosion its Characteristics and Amelioration".*

Date of Issue: December 2008

Minimise Soil Disturbance

What is it?

Minimise soil disturbance to the greatest extent practicable. Earthworks should be kept to a minimum and should be closely linked with the commencement of building and construction work. To minimise risks, preserve native topsoil and natural vegetation and implement suitable sediment and erosion control measures (see other fact sheets in this series). Areas of soil disturbance on slopes should be roughened and terraced to reduce erosion.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 5

WHAT DO I NEED TO DO?

Design considerations:

1) Avoid the need for earthworks by working with the natural contours of the site. Limit building or construction on steep inclines. On slopes choose a subfloor method that will minimise excavation.
2) Limit the area of soil disturbance (the excavation envelope) to the minimum required, i.e. the house only.
3) Identify suitable sediment and erosion control measures for the excavation envelope.
4) Staging works. Consider scheduling earthworks in phases throughout the project to reduce erosion potential and rehabilitate exposed areas quickly to reduce the amount of soil exposed at one time.
5) Retain as much stripped topsoil as possible for reuse during landscaping and site rehabilitation.

Before starting site works:

1) Ensure approval has been granted by council.
2) Identify vegetation, including grass buffers, around the construction site to preserve throughout the development. Mark this as a **No Go Area (see Fact Sheet 6)** on all work plans, including the Soil and Water Management Plan (if required) **(see Fact Sheet 3)**.
3) Install sediment and erosion control measures.
4) Ensure the operators of earthmoving equipment are aware of the excavation envelope and where stockpiles will be located.

Once site works have commenced:

1) Ensure vegetation buffers are protected.
2) Carry out staged excavation and stabilisation (if applicable).
3) Maintain sediment and erosion control measures.
4) Stabilise soil stockpiles by placing sediment fences around their lower edges, cover with fabric, plastic or vegetation.
5) Restrict vehicles and equipment to designated areas.

Soil roughening: when using heavy machinery (i.e. non-wheeled vehicles) on exposed slopes.

Don't smoothly grade slopes with compacted soils. This will increase runoff, is hard to revegetate and is highly susceptible to soil erosion.

Don't track heavy machinery across the slope. The track marks will create furrows that water will flow down when it rains.

Do track machinery (e.g. excavators) up and down the slope to create grooves from the wheels/or tracks that will catch seeds, fertilizer, and rainfall. The grooves will roughen the surface in a way that will slow runoff over the slope ***(see Figure 5A)***.

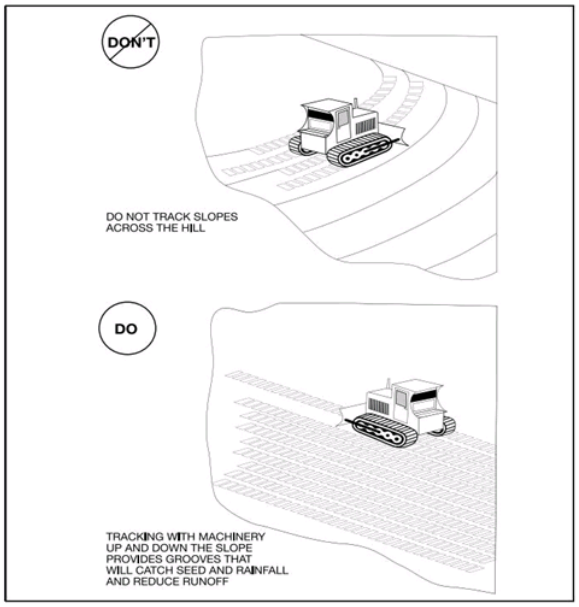

Figure 5A: *Avoid moving tracked vehicles across the slope, unless the final pass involves tracking up and down the slope.*

Maintaining control measures:

If topsoil has been removed it will need to be replaced ***(see Figure 5B)***.

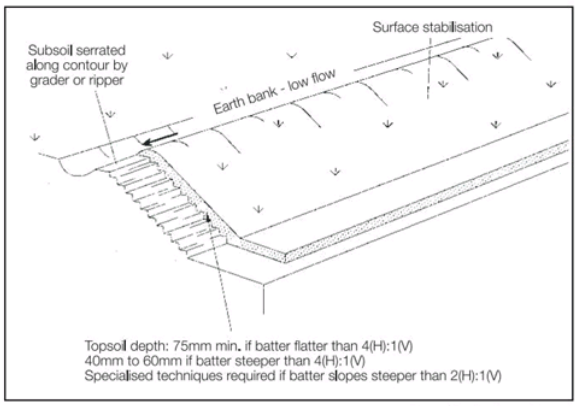

Figure 5B: *Replacing Topsoil.*

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Acknowledgement:

Figure 5A after California Regional Water Quality Control Board 1999 *"Erosion & Sediment Control Field Manual"*. Figure 5B from Landcom 2004 *"Soils & Construction Volume I Managing Urban Stormwater (4th edition)"*. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Preserve Vegetation

What is it?

Keep as much of the original vegetation (grass, trees, etc.) on the site by establishing **No Go Areas** for the building and construction phase as well as vegetated filter strips down-slope of the work site. Preserving grassed areas, trees and shrubs protects the soil from erosion and provides an effective filter for sediment runoff.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 6

WHAT DO I NEED TO DO?

Before starting site works:

Identify vegetation (trees, shrubs and grassed areas) on site which can be kept throughout the entire building and construction phase and mark this as a **No Go Area.** Include this information on the Soil and Water Management Plan if required **(see Fact Sheet 3).**

Vegetation is the most effective soil stabiliser available on building and construction sites. Keep groundcover along surface drainage areas and on steeper slopes. Retain significant areas of healthy grass down-slope of the worksite, these strips can be highly effective for filtering out coarse sediment. The flatter and wider the strips are, the more effective they become. Native vegetation along streams and waterways should be retained and protected from sediment by installing additional sediment control measures up-slope e.g. fibre rolls and sediment fences **(see Fact Sheet 14).** On exposed sites a 400 mm wide planted turf strip between the kerb and the footpath is a good last resort sediment control, filtering the runoff before it enters the stormwater system **(see Figure 6A).**

Where vegetation needs to be removed, leave it in place for as long as possible and stage earthworks to minimise the amount of site cleared at any time.

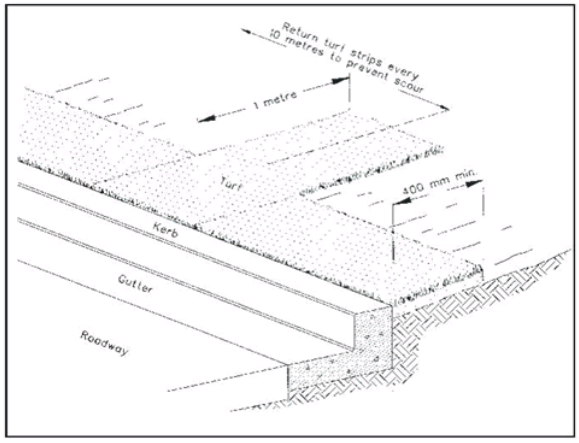

Figure 6A: Planted turf strip.

Installing the control measures:

Fence off the **No Go Area**. Place red tape or other bright materials around the trees, shrubs and grassed areas to be kept. Ensure staff and subcontractors know not to enter these areas or damage marked trees. Where practicable, maintain the planted turf strip in a healthy state during the building and construction process and ensure it is fenced-off to prevent traffic-induced damage.

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Acknowledgement:

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Divert Up-slope Water

What is it?

Design surface drainage up-slope of building and construction sites to divert runoff away from the site. Where practical and particularly where stormwater runoff from more than 0.5 hectares feeds into the work site, divert up-slope water around the disturbed or active work area.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 7

WHAT DO I NEED TO DO?

Before starting site works:

Look at the site plans to identify site areas where stormwater can be diverted around the disturbed or active work area. Stormwater can be diverted with the use of small diversion drains. Note that the stormwater must not be diverted onto adjacent properties; instead it must discharge the work site at a legal point of discharge. Diversion drains need to be properly designed to ensure that they can convey water without overflowing or accumulating sediment. Document the diversion drains on your Soil and Water Management Plan (if required) **(see Fact Sheet 3).** Ensure workers on-site are aware of the need to maintain the diversion drains. Do not dig diversion drains on dispersive soils **(see Fact Sheet 4)**, instead build soil berms.

Installing the control measures:

Diversion drains: A diversion drain is a channel constructed on the high side of a site to divert surface runoff from rainwater that would otherwise flow down onto the disturbed or active work area.

1) The channel should be about 150 mm deep with a curved shape.
2) Place the excavated soil from the channel on the down-slope side to increase the diversion drain's capacity.

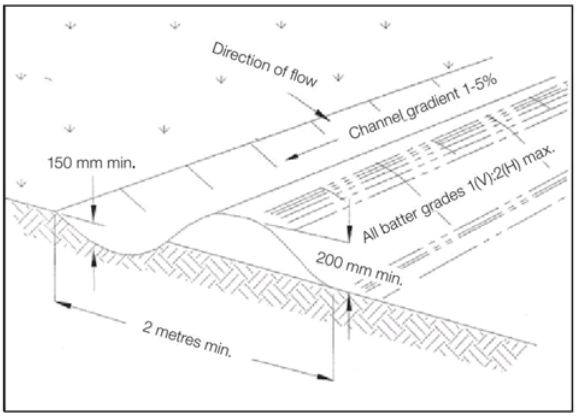

Figure 7A: Example of a diversion drain.

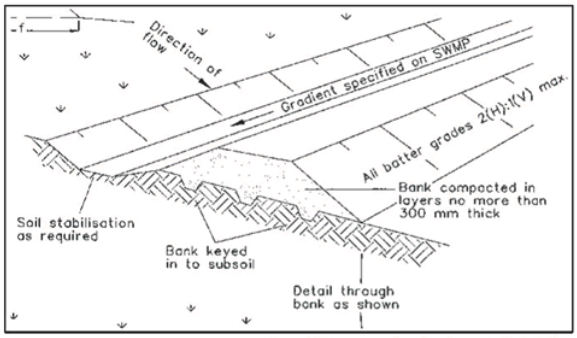

Figure 7B: Example of a diversion drain for high flow.

3) The diversion drain should divert flows to a stable drainage line to ensure that the channel does not itself cause erosion where it discharges.
4) The diversion drain should be kept clean and free of plantings and mulch as this will lead to the deposition of sediment that obstructs water flow and causes water to breach the channel and create unwanted erosion.

Level spreader: Level spreaders are generally used at the outlet of diversion channels. A level spreader is a wide, level overflow sill built across a slope. It allows even spread of water flow so velocities are reduced and soil erosion is avoided. This should only be constructed to release water to areas where the:

1) Water flow will not become concentrated.
2) Soil is stabilised and the site is not within the path of construction activities.
3) Ground remains well-vegetated.
4) Discharged water flow will be slow moving.

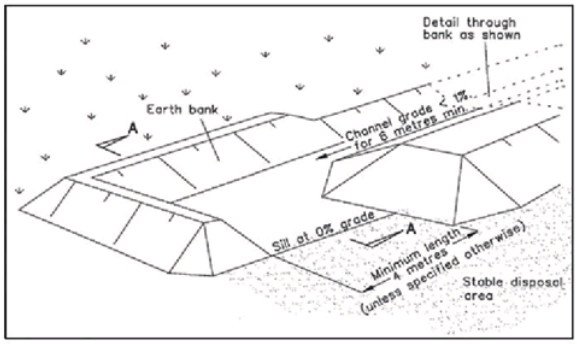

Figure 7C: Example of a level spreader used to release minor concentrated flows as sheet flow.

In some cases such as on steep slopes or where there are high flow velocities, a grass or geotextile fabric lined channel may be required to return the diverted flow to the stormwater system or a stable drainage line.

Maintaining the control measures:

Check diversion drains, level spreaders and discharge areas for signs of erosion.

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Date of Issue: December 2008

Erosion Control Mats & Blankets

What are these?

Erosion mats and blankets are used as a soil cover and a protective barrier for vegetation establishment. They are applied on soils with a high erosion risk, on steep sites or for site rehabilitation. When applied correctly, they are one of the most effective and practical means of controlling runoff and erosion on disturbed land prior to vegetation establishment.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 8

WHAT DO I NEED TO DO?

Before starting site works:

Identify where erosion is likely to occur i.e. areas of bare soil, especially on slopes steeper than 3:1 or when there is a delay in building and construction work or site rehabilitation. Select erosion control mats or erosion control blankets.

Erosion control mats: are heavier, synthetic and non-degradable, they are designed to add stability to soils and are often filled with topsoil, and vegetated when installed. Erosion control mats are suitable on slopes and in channel-lining applications.

Erosion control blankets: are light-weight and open-weave made from mulch, straw and wood fibre and held together by natural or synthetic netting. They are used for establishing and reinforcing vegetation. Their application depends on the blanket materials. Synthetic netting and wood fibre is stronger and can be used on steeper slopes compared to jute and straw blankets, which rapidly degrade and are more suitable for flatter areas. Check with suppliers of erosion control blankets about the applications of their different products.

Erosion control blankets can be used in conjunction with soil seeding, preventing the seed washing away and erosion of the prepared seedbed. Once established, the vegetation provides permanent erosion control.

Document erosion control mats and blankets on your Soil and Water Management Plan (if required) **(see Fact Sheet 3).**

Installing the control measures:

Erosion control mats should be installed immediately on exposed soils, while erosion control blankets should be fitted on newly seeded or landscaped areas. **See Figures 8A and 8B** for their installation guidelines.

Maintaining the control measures:

Close inspection after rainfall events and major runoff occurrences is essential. Check for damage due to water running under the mat or blanket or if it has been displaced by wind. Restabilise with anchor pins or wooden spikes. If significant erosion has occurred repair the fabric. Grading and reseeding may also be necessary. Continue inspections until vegetation is firmly established.

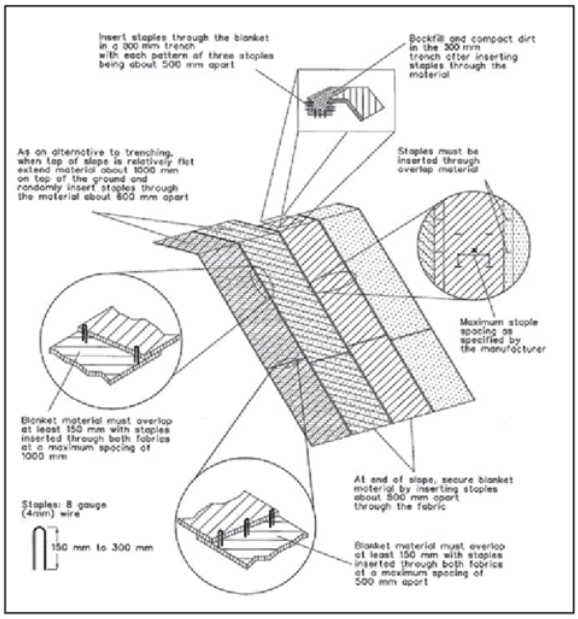

Figure 8A: Installation of an erosion control blanket on a hillside.

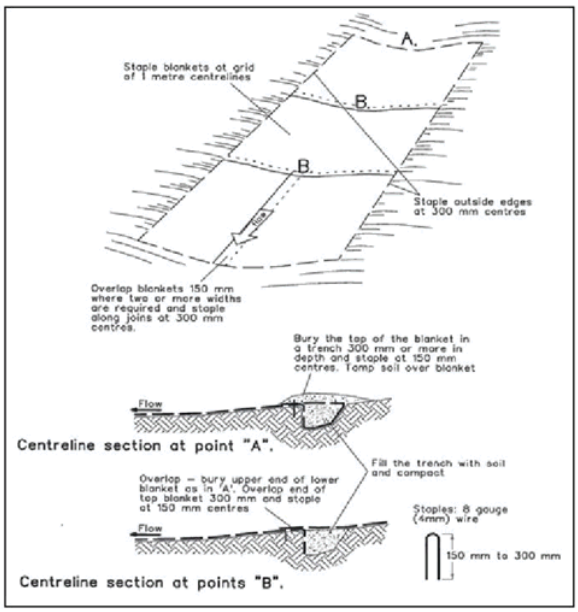

Figure 8B: Erosion control mat used to line a channel.

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Figures 8A & 8B from Landcom 2004 *"Soils & Construction Volume I Managing Urban Stormwater (4th edition)".*

Date of Issue: December 2008

Protect Service Trenches & Stockpiles

What is it?

When excavated, service trenches can concentrate runoff and cause rapid soil erosion. This fact sheet discusses methods to install service trenches in a manner that does not cause soil erosion.

Temporary stockpiles are at risk of being washed or blown away. This fact sheet discusses proper on-site storage of materials such as sand, gravel, topsoil, mulch and woodchips.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 9

WHAT DO I NEED TO DO?

Before starting site works:

Service trenches: if your site has fine soil, protection measures may be needed. Decide where the service trenches will need to go and document them on your Soil and Water Management Plan (if required) **(see Fact Sheet 3)**. Ideally they should be away from areas where water flow is likely to concentrate. Where possible coordinate the various service connections so a single trench can be used and quickly backfilled. Also try scheduling the work when rainfall is low. Be aware if you have dispersive soil **(see Fact Sheet 4)**.

Stockpiles: avoid stockpile loss and stormwater pollution by limiting the amount of material on-site and remove all materials when work is complete.

Identify a protected storage area for building material stockpiles away from on-site drainage or stormwater flow paths. Place control measures such as diversion drains up-slope or sediment fences down-slope. Cover the stockpiles with fabric, plastic or a temporary grass cover. Drivers delivering stockpile material should always use the protected storage area as the drop-off. Document your storage area on the Soil and Water Management Plan (if required) **(see Fact Sheet 3)** and ensure staff are aware of its importance.

Note: Don't stockpile sediment or building materials (sand, gravel, mulch) on roadways or within drainage areas.

Installing the control measures:

Service trenches:

1) Remove and store vegetated topsoil so it can be replaced after works to provide immediate erosion protection.
2) Place the soil on the uphill side of trenches to divert water flow away from the trench line. Temporary bunds can be used.
3) The trench should be open for the shortest time practicable and avoid opening them when the risk of rainfall is high.
4) Once completed, backfill trench with subsoil and compact.
5) Replace top soil, level and top up to account for soil settling.
6) If trenches are on steep slopes, install earthbanks along the backfill surface at 6 metre intervals to divert flows and prevent erosion.
7) Excess soil should be used or disposed of in such a way that it does not create a wind or water erosion hazard.

Stockpiles:

1) Locate stockpiles at least 5 metres from stormwater flow paths, roads and hazard areas.
2) Place on gently sloping ground (not level areas which tend to be overland low paths) as a low, flat, elongated mound.

3) Stockpiles should preferably be less than 1.5 metres high.
4) Construct an earth bank on the up-slope side to divert runoff around the stockpile and install a sediment fence 1–2 metres down-slope of the stockpile. The height of the sediment fence should be equal to the stockpile height and the length equal to the stockpile length at the base.
5) Stockpiled materials should be covered during windy conditions, rain or unattended periods. Topsoil stockpiles left for extended periods should be revegetated.

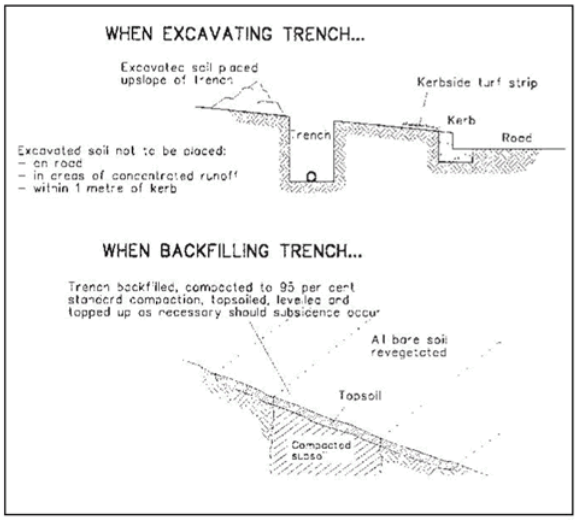

Figure 9A: Example of a service trench.

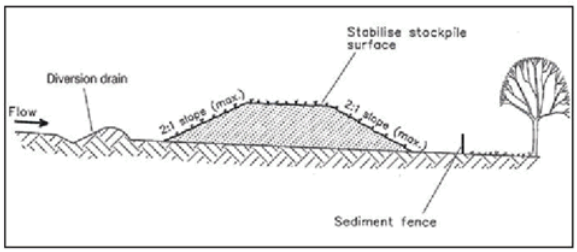

Figure 9B: Keep building materials in protected stockpiles.

Maintaining the control measures:

Service trenches: if they fill with water, pump water evenly over a stabilised vegetated area that will filter out the suspended clays. If this is not possible, add a small amount of gypsum to the water and allow the suspended clays to settle before pumping the water out.

Stockpiles: should be covered and checked regularly. Sediment and erosion controls (diversion drains and sediment fences) associated with stockpiles also need to be monitored and maintained.

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Date of Issue: December 2008

Early Roof Drainage Connection

What is it?

Connect the downpipes to the stormwater system as soon as the roof is on the building frame. This control measure prevents 'clean' rainwater running through the disturbed or active work area.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 10

WHAT DO I NEED TO DO?

Before starting site works:

Aim to have the roof and downpipes in place as soon as possible.

Document this on your Soil and Water Management Plan (if required) **(see Fact Sheet 3)** and ensure all on-ground staff are aware of its importance.

Installing the control measures:

Connect the permanent downpipe or temporary ones such as flexible tubing. If pipes to the road can not be installed, pipe the water to a turfed area, or infiltration trench, where it can soak into the ground.

Maintaining the control measures:

Check that the pipes are still connected whenever rain is forecast.

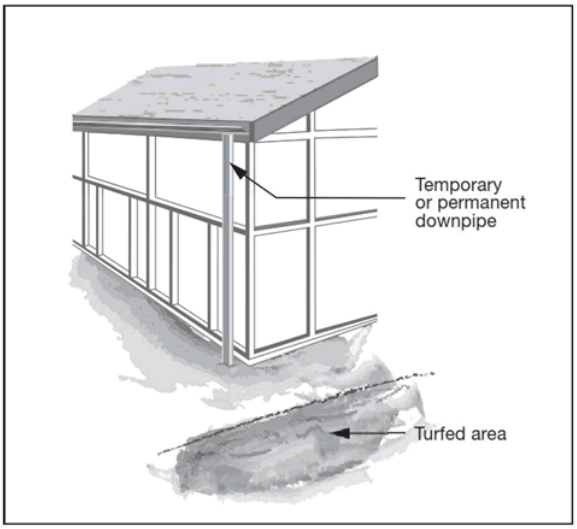

Figure 10A: *Early installation of roof drainage.*

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Scour Protection – Stormwater Pipe Outfalls & Check Dams

What is this?

At stormwater pipe outfalls or along open drainage channels use rocks, vegetation, or other materials to break up concentrated flows, reduce the velocity of flows to non-erosive rates and to stabilise the outflow point.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 11

WHAT DO I NEED TO DO?

Before starting site works:

Stormwater pipe outfalls: should be located in areas where there is a low potential for soil erosion (e.g. areas of naturally occurring rock). If this is not possible, create a hard rock scour protector **(see Figure 11A).** If the pipe is highly visible (e.g. along a creek-side walking trail), natural rock and vegetation placement can conceal the outfall. If the outfall becomes council infrastructure, appropriate design approvals are required.

Check dams: are semi-pervious (typically loose rock) dam constructions that are placed in a series along open drainage channels to detain and reduce the velocity of stormwater runoff. They are particularly useful on gently sloping channels up to 10% (10:1) grade, but only effective for draining small areas of land (less than 4 hectares). If high flows are anticipated it may be necessary to line the entire base of the drainage channel with rocks.

Check dams can be temporarily used until a drainage channel has become revegetated. Alternatively, check dams can be a permanent feature if water detention is required. However, the drainage channel must still be able to effectively convey water.

Don't place check dams in channels that are already grass-lined, unless erosion is expected.

Don't construct check dams using sediment fences or straw bales.

Installing the control measures:

Stormwater pipe outfalls:

1) Fill material needs to be compacted to the density of the surrounding undisturbed material.
2) Place geotextile fabric over fill material.
3) Ensure that the rock work used for scour protection conforms to the required limits for water flow energy dissipation. (Ensure that the underlying geotextile does not sustain serious damage during the rock work phase.)
4) Repair any damage to geotextile areas with patches of geotextile (ensuring a 300 mm overlap with surrounding intact fabric).

Note: If low water flow has been determined for the stormwater pipe outfall, leave gaps in the rock work and plant into cuts in the geotextile.

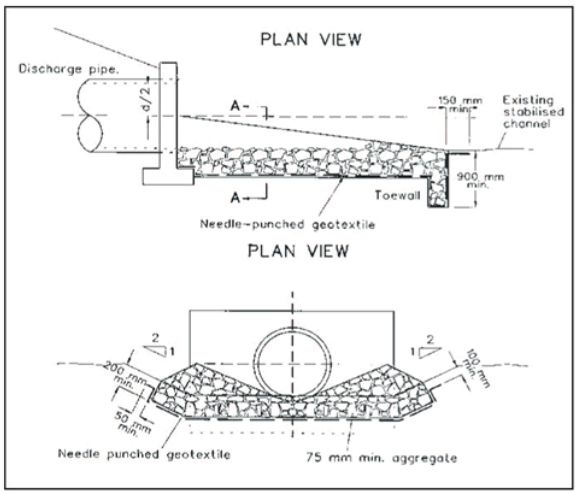

Figure 11A: Hard rock scour protector.

Check dams: these are appropriate for small channels with low flows that are susceptible to erosion (for larger channels or higher flows, specialist design may be required). A number of check dams will probably need to be built.

1) Excavate a shallow (200 mm) trench perpendicular to the drainage channel.
2) Construct the dam from aggregate (washed sand/gravel), placed in sandbags (for easy deconstruction). Place bags within the trench and build up the dam wall.
3) Ensure that the height of the dam spillway is less than 1 metre above the base of the drainage channel.
4) Ensure the dam height and spillway height does not dramatically impede water conveyance.
5) Space individual check dams so the toe of the upstream dam is level with the spillway of the next downstream dam. Otherwise extend downstream toe to provide erosion protection.
6) Check dams require regular maintenance as accumulated sediment needs to be removed, to prevent it becoming resuspended during subsequent storms.

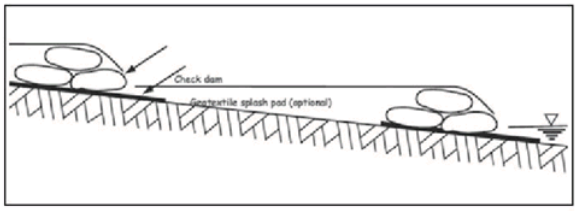

Figure 11B: Example of a check dam.

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Acknowledgement:

Figure 11A from Landcom 2004 *"Soils and Construction Volume 1 Managing Urban Stormwater (4th edition)"*. Figure 11B from South East Queensland Healthy Waterways partnership 2006 *"Best Practice Guidelines for the Control of Stormwater Pollution from Building Sites"*. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Stabilised Site Access

What is it?

A stabilised site access is a single entry/exit point for building and construction sites that is designed to reduce the tracking of sediment off-site. It provides a clean, dry surface for vehicles to enter and unload during all weather conditions without destroying vegetation or carrying large amounts of sediment onto paved road surfaces.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 12

WHAT DO I NEED TO DO?

Before starting site works:

Identify the best location to place the stabilised site access – ideally it should be in an elevated position with little or no water flowing to it from up-slope and away from any down-slope stormwater pits. All deliveries should be able to be made through this point. Document it on your Soil and Water Management Plan (if required) **(see Fact Sheet 3)** and ensure on-site staff are aware of its importance.

Installing the control measures:

The recommended construction method for the stabilised site access is laying down 200 mm of aggregate or recycled concrete greater than 40 mm in size (crushed sandstone is not suitable). Where the site access slopes toward the road, a diversion hump should be installed across the stabilised area to direct stormwater runoff to the side where it can be filtered by a sediment fence. If the construction process enables it, a permanent driveway can be laid and used as the access point.

Stabilised site access:

1) Strip at least 150 mm of topsoil, level area and stockpile in the space available.
2) Compact infill.
3) Cover the area with geotextile.
4) Construct a 200 mm thick pad over geotextile using aggregate at least 40 mm in size, ideally from kerb to building.
5) Construct a trafficable diversion hump immediately within the boundary to divert water to a sediment fence or other sediment control measure.

Note: On larger sites cattle grids or shaker grids can also be installed at the access point. These allow the wheels to turn a couple of times and shake off excess sediment. If sediment is still being tracked off-site then a wheel wash should be installed **(see Fact Sheet 13)**.

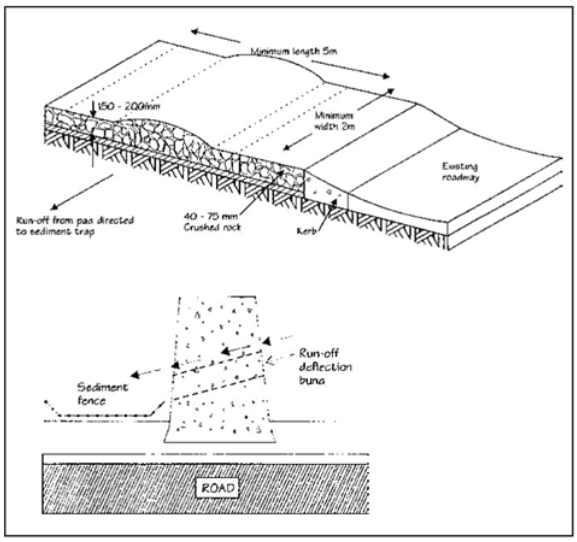

Figure 12A: Stabilised site access for building sites only.

Maintaining the control measures:

As vehicles use the stabilised site access they will slowly compact the gravel or rock. When it becomes too compacted the voids between the rock and gravel disappear and the stabilised site access will no longer trap mud and dirt.

Monitor the surface of the stabilised site access and ensure that it drains to the sediment fence or other sediment control measures. Add new gravel or rock as needed. Roads should be inspected for any sediment that has escaped the site at the end of each day and swept up if necessary. This should also be done whenever rain looks likely.

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Remember:

Everyone working on building and construction sites has a responsibility to prevent pollution. If you do have an accident and pollution occurs you are required by law to notify the site supervisor. If the site supervisor cannot be contacted, workers should immediately notify the local council so they can work with you to minimise any harm to the environment.

Acknowledgement:

Figure 12A and text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Wheel Wash

What is it?

A wheel wash reduces the amount of sediment transported onto paved roads by vehicles.

They should be installed on larger building and construction sites or when the stabilised site access is not preventing sediment from being tracked off the site.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 13

WHAT DO I NEED TO DO?

Installing the control measures:

1) Identify the best location to place the wheel wash. It should be incorporated with the stabilised site access **(see Fact Sheet 12).**
2) Construct a pad by evenly spreading a 200 mm layer of coarse aggregate or recycled concrete greater than 40 mm in size (crushed sandstone is not suitable) at a minimum depth of 300 mm.
3) Install a wash rack that is suitable for the anticipated traffic and weight loads.
4) The water used to wash the wheels of the vehicles shall not be discharged into stormwater system at any time. Provide a drainage channel that will convey the runoff from the wash area to a suitable on-site sediment control measure i.e. sediment basin **(see Fact Sheet 17)**, sediment settling tank, or a flat vegetated area.
5) Ensure that the drainage channel used to transport the sediment to the sediment control measure is of adequate size and proper gradient to carry the wash runoff.
6) Makesure that the sediment control measure is also of adequate size.
7) Use hoses with automatic shutoff nozzles to prevent hoses from being left on.
8) Require all employees, subcontractors and others that leave the site with mud or dirt caked tyres and undercarriages to use the wash facilities.
9) If weeds and plant disease are an issue for your site refer to *"Tasmanian Washdown Guidelines for Weed and Disease Control 2004"* from the Tasmanian Department of Primary Industries and Water, Forestry Tasmania and the Agricultural Contractors Association of Tasmania.

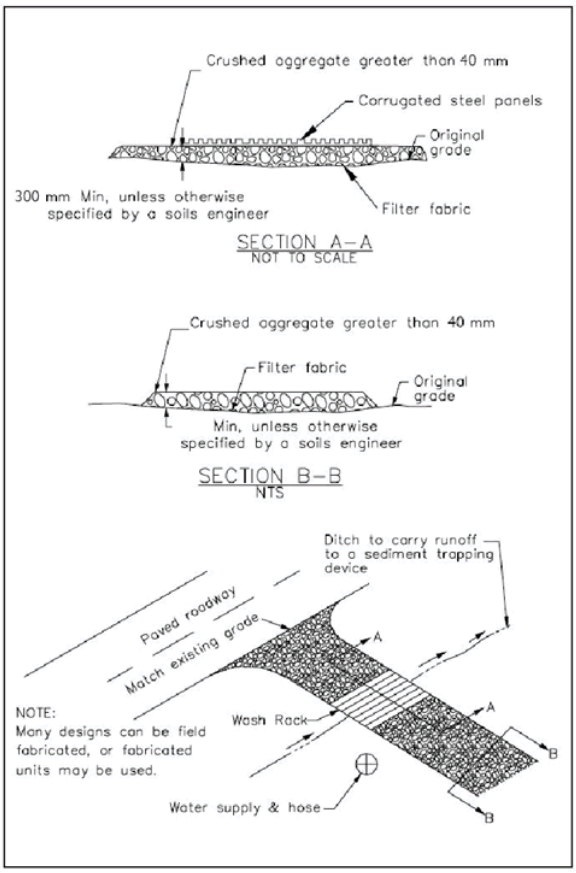

Figure 13 A: Wheel wash design.

Maintaining the control measures:

The wheel wash should be inspected weekly and after a major rainfall event. Remove accumulated sediment from the wash rack to maintain system performance. This sediment should be collected and may need to be disposed to landfill.

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Acknowledgement:

Figure 13A after California Stormwater Quality Association 2003 *"California Stormwater BMP Handbook Construction"*.

Date of Issue: December 2008

Sediment Fences & Fibre Rolls

What are these?

Sediment fences and fibre rolls are sediment control measures installed across slopes or along the parameter of building and construction sites. Fibre rolls are a range of organic products (coconut fibre, straw, flax) that are rolled into large diameter logs. Sediment fences are vertical barriers made from woven geotextile that are held in place by star pickets and a backfilled trench.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 14

WHAT DO I NEED TO DO?

Fibre Rolls: are log-like products commonly consisting of biodegradable fibres. They vary from biodegradable rolled coir (coconut fibre) and hessian socks filled with straw or mulch, to non-biodegradable geotextile tubes filled with mulch or straw. Biodegradable fibre rolls can be left permanently onsite to assist stabilisation and will support vegetative growth if left in place.

Sediment fences: are a commonly used sediment control measure constructed from heavy-duty geotextile. Although a sediment fence looks like shade cloth it is very different (shade cloth is not appropriate because it cannot slow water flow enough to adequately pond water up-slope of the fence and allow sediment to settle under gravity).

Before starting site works:

Identify drainage flow pathways that will intercept runoff from the site. Decide whether to use fibre rolls or sediment fences. Use fibre rolls at the base of an embankment, on slopes that are exposed, or on vegetated slopes where vegetation is failing to control erosion. Sediment fences should be used on small drainage areas and placed down-slope of potential areas of erosion. Document these measures on your Soil and Water Management Plan (if required) **(see Fact Sheet 3)**.

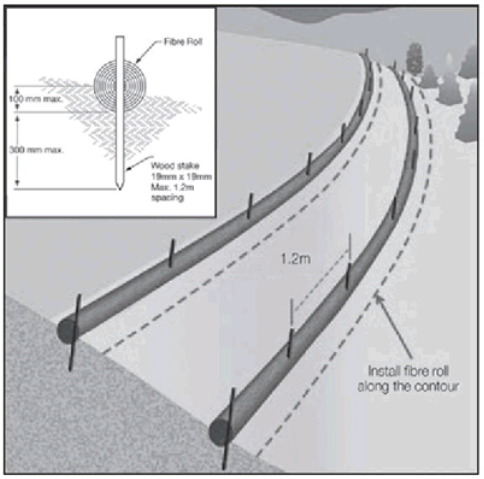


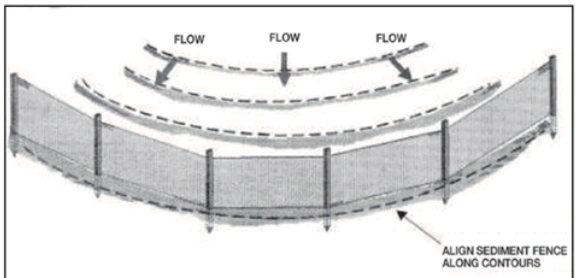
Figure 14A: *Installation of fibre rolls*

Installing the control measures:

Sediment control measures need to be in place prior to the start of site works. They can be altered after ground disturbance activities and if the site's drainage patterns change.

Installing fibre rolls:

1) Find a suitable installation site (if on a slope, place parallel to contours).
2) Remove large rocks and debris, and prepare a shallow concave trench (50–100 mm deep) to inset the fibre roll. (***Note:*** Place excavated material on the upside of the fibre roll to prevent undercutting.)
3) Place the fibre roll in a shallow trench and stake through the fibre roll every 30 cm.
4) Place further stakes on both sides of the fibre roll to within 2 m from the end of the roll.



SEDIMENT FENCE

Installing sediment fences:

1) Survey and mark out location of sediment fence, ensure it is parallel to the contours of the site.
2) Dig a 150 mm trench immediately above the proposed fence line.
3) Place the bottom of the fabric to the base of the trench and run fabric up the down-slope side of the trench.
4) Backfill the trench and compact to secure anchorage of the fabric.
5) Drive 1.5 m star pickets into ground, 2 m apart to support the sediment fence fabric. Tension and fasten fabric to pickets using UV stabilised zip ties or wire ties.
6) Join sections of fabric at a support post with a 2 m overlap.
7) Angle the ends of the sediment fence upslope to reduce scouring.

Don't place sediment fences across creeks or major drainage lines.

Maintaining the control measures:

Fibre rolls and sediment fences should be checked regularly, especially after every rain event and cleaned or repaired. For sediment fences check that all the pickets and the bottom of the fence are secure and that there are no tears in the fabric.

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Acknowledgement:

Figures 14A and 14B after California Regional Water Quality Control Board 1999 *"Erosion & Sediment Control Field Manual"*.

Date of Issue: December 2008

Protection of Stormwater Pits

What is it?

Protect the stormwater system from blocking with sediment and building materials by placing control measures around or inside any stormwater pits on and below the site. Stormwater pit protection is an important last resort sediment control measure that should be used in conjunction with other on-site practices.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 15

WHAT DO I NEED TO DO?

Before starting site works:

Identify any stormwater pits and drains on and below the site. Plan the layout of the work site so that any wash-down areas and tile or brick cutting areas are not near them. Clearly mark all the stormwater pits and drains on the site plan and choose appropriate methods that will protect them. Install these sediment control measures before site work commences. Document them on your Soil and Water Management Plan (if required) **(see Fact Sheet 3)** and ensure staff are aware of its importance.

Note: the placement of sediment control measures on road reserves (i.e. off the work site) will normally require approval from the owner of the road, i.e. council or the Department of Infrastructure, Energy and Resources (DIER).

Installing the control measures:

There are a range of sediment control measures to protect stormwater pits including, sediment fence traps, filter socks and stormwater pit traps. Those that collect sediment above the stormwater pit are easier to clean but have low storage capacity compared to controls that are installed inside the stormwater pits. Place cones around controls in the gutters or on roads to prevent vehicles damaging them.

Sediment fence trap: these are sediment fences staked around the stormwater pit to trap sediment. Fabric must be partially buried so that water and sediment does not just flow underneath. The more space between the fence and the pit, the more chance of sediment settling and the greater the capacity of the trap **(see Figure 15A).**

Filter socks: are woven tubes filled with compost or bioremediation media that separate sediment, hydrocarbons, nutrients and heavy metals from site runoff. Filter socks are more effective than sandbags or geotextile sausages filled with gravel. Filter socks are able to treat runoff at higher flow rates with significantly less ponding.

Filter socks can be installed in the kerb and gutter below the work site, while longer socks can be used as a barrier around the stormwater pit **(see Figure 15B).**

Stormwater pit traps: are baskets, trays, bags or screens placed just below the entrance of the stormwater pit. They prevent sediment from entering the stormwater system. Fine mesh or fabric filters should be used to capture sediment **(see Figure 15C).**

Maintaining the control measures:

All sediment control measures should be inspected, especially after rainfall events and cleaned regularly to maintain effectiveness and prevent bypass. The built up material can be re-stockpiled and used on-site (if it is not contaminated), or otherwise disposed to landfill.

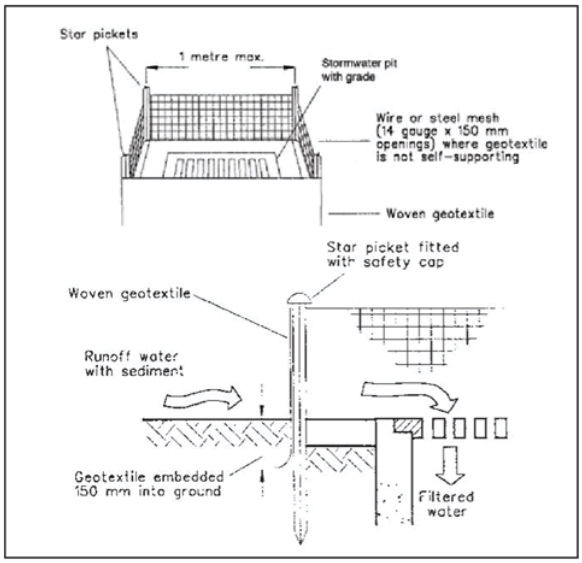

Figure 15A: A sediment fence trap.

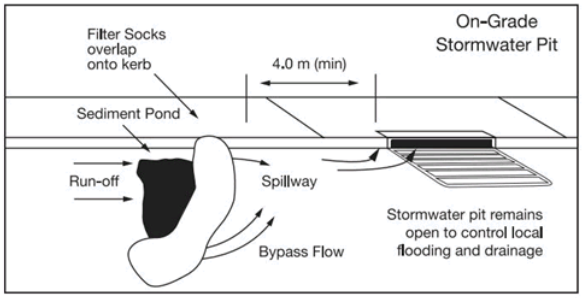

Figure 15B: A filter sock.

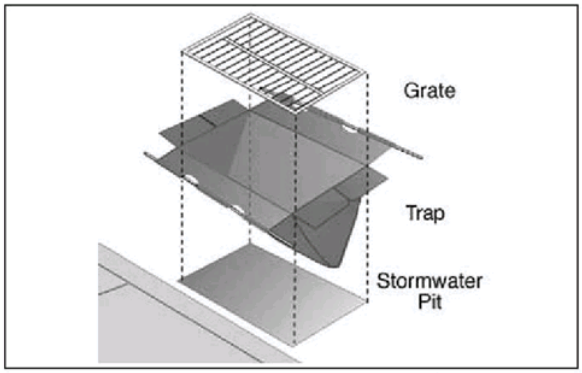

Figure 15C: Stormwater pit trap.

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Remember:

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Acknowledgement:

Figure 15A from Landcom 2004 *"Soils & Construction Volume 1 Managing Urban Stormwater (4th edition)"*. Figure 15B after South East Queensland Healthy Waterways Partnership 2006 *"Best Practice Guidelines for the Control of Stormwater Pollution from Building Sites"*. Figure 15C after California Regional Water Quality Board 1999 *"Erosion & Sediment Control Field Manual"*. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Protected Concrete, Brick & Tile Cutting

What is this?

Concreting, bricklaying, brick and tile cutting must be conducted in such a way that ensures no waste products enter the stormwater system. If washed into the stormwater system, brick and tile cutting, concrete and mortar slurries will harden and block stormwater pipes and potentially cause flooding. Cement also raises the pH of waterways making it alkaline which is deadly to aquatic animals.

Why is it important?

Sediment generated from building and construction activities can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 16

WHAT DO I NEED TO DO?

Before starting site works:

Find a location on the site away from stormwater pits and drains to undertake these activities, including mixing cement and mortar. This area should be large enough to contain all excess water, residues and waste.

Designate where associated building materials should be stockpiled, as this typically determines where this activity will occur. If the nature of the job requires cutting in a location close to stormwater pits or drains such as cutting a footpath then controls need to be put in place to ensure that no material enters the stormwater system. Identify site requirements and list them on the Soil and Water Management Plan (if required) **(see Fact Sheet 3)** before starting site works.

Installing the control measures:

The designated brick or tile cutting area should have a diversion channel up-slope and sediment collection devices such as a sediment fence below it. If cutting in an area near a stormwater pit, use temporary collection devices such as filter socks, bunding or skirts suitably installed to direct the slurry onto a land area where it can soak into the earth. If this is not possible and the slurry is likely to flow to the stormwater system, filtering will be required. There are filtration systems available that work in the brick cutting machine with built in slurry containment systems, while for the kerb and gutter there are filter socks and for stormwater pits insert traps can be used **(see Fact Sheet 15)**. The filtered water must not be cloudy when discharged to the stormwater system. Install a series of filtration systems for best results.

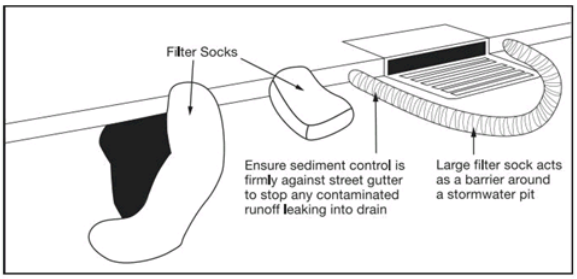

Figure 16A: Installing a series of filtration systems.

When equipment is washed down, use a designated wash-down area on-site e.g. wheel wash **(see Fact Sheet 13)**. Waste concrete slurry can be safely disposed of by tipping small amounts into plastic or geotextile-lined ditches **(see Figure 16C)**. This will enable the water to evaporate or soak in to the earth and the solids can then be disposed to landfill or reused as clean fill in construction or as road base.

Maintaining the control measures:

All sediment control measures will require regular cleaning to maintain effectiveness and over time may need to be replaced. Remove the built up sediment and check for holes, other breaks, clogging and blockages in the control measures.

Shovel or vacuum concrete, brick or tile cutting slurry to an area well away from the stormwater system. **Do not** hose down. If there is no designated disposal area, place slurry into a 40 gallon drum that is half full of water. Solid materials will settle to the bottom of the drum for later disposal and the water can be reused when concreting.

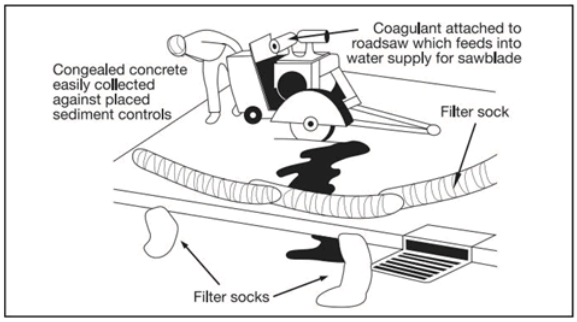

Figure 16B: Acceptable concrete slurry disposal method.

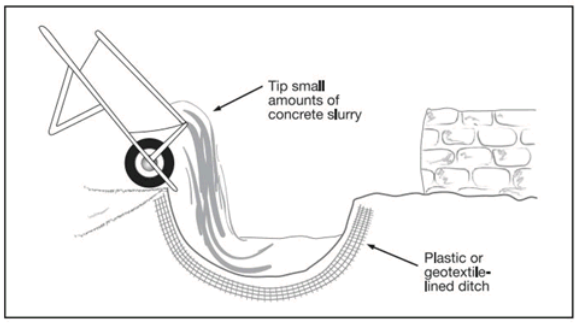

Figure 16C: Disposing concrete slurry into a lined ditch.

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Acknowledgement:

Figures 16A, 16B and 16C after NSW Department of Conservation 2004 *"Environmental Best Management Practice Guideline for Concrete Contractors"*. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Sediment Basins

What is it?

Sediment basins are dams or ponds that capture sediment runoff from building and construction sites. They allow sediment to settle out and sink rather than be transported away with the runoff.
Sediment basins are formed by constructing an embankment of compacted soil at the lowest downstream point on the site and installing an outlet structure and overflow spillway. They are one of the most useful and cost-effective measures for treating sediment-laden runoff.

Why is it important?

Sediment generated from building and construction activities can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 17

WHAT DO I NEED TO DO?

Before starting site works:

Sediment basins are typically required on large construction sites and subdivisions, or in areas of high seasonal rainfall. Sediment basins by no means trap all the sediment from a site. Therefore, sediment basins should be used in conjunction with other sediment and erosion control measures. Sediment basins should be constructed as a first step in any land disturbing activity and remain functional for as long as possible, ideally until the area contributing sediment is stabilised. Document the sediment basin on the Soil and Water Management Plan (if required) **(see Fact Sheet 3)**. Detail on the plan how the basin will be maintained and decommissioned (if it is not a permanent on-site feature). Ensure that on-ground staff are aware of the need to maintain the sediment basin.

Design considerations:

Sediment basins require a considerable area to be effective. The two major factors determining the size of the basin are the settling velocity of the sediment and design flows in regards to rainfall. Sediment basins should be designed to cater for peak flow runoff from a design storm having an average reoccurrence interval of 10 years.

Sediment basins need to be positioned so if failure occurs they will not cause damage or nuisance to property, people or the environment. **Do not** install sediment basins on major drainage pathways. Locate sediment basins off-line and up-stream of the stormwater system, natural and constructed water bodies.

Preferably construct basins at the lowest downstream point to intercept most of the runoff from the site. Access for machinery to remove sediment is crucial, as is an area designated for stockpiling the removed sediment so it can dry out (preferably with this water seeping back into the basin). The dried sediment can eventually be reused or disposed to landfill.

Installing the control measures:

For suitable sediment basin design refer to the procedures in Chapter 4 of the *Water Sensitive Urban Design – Engineering Procedures for Stormwater Management in Southern Tasmania,* available from the Derwent Estuary Program web page:
http://www.derwentestuary.org.au/file.php?id=145

Note: For larger sediment basins a civil engineer can be used. They can provide detailed drawings to follow construction. It is essential that the engineer review/check the specifications of the proposed sediment basin to ensure it is correctly sized and down-stream risks are addressed in the event of basin failure. Sediment basins over one megalitre may require a dams permit.

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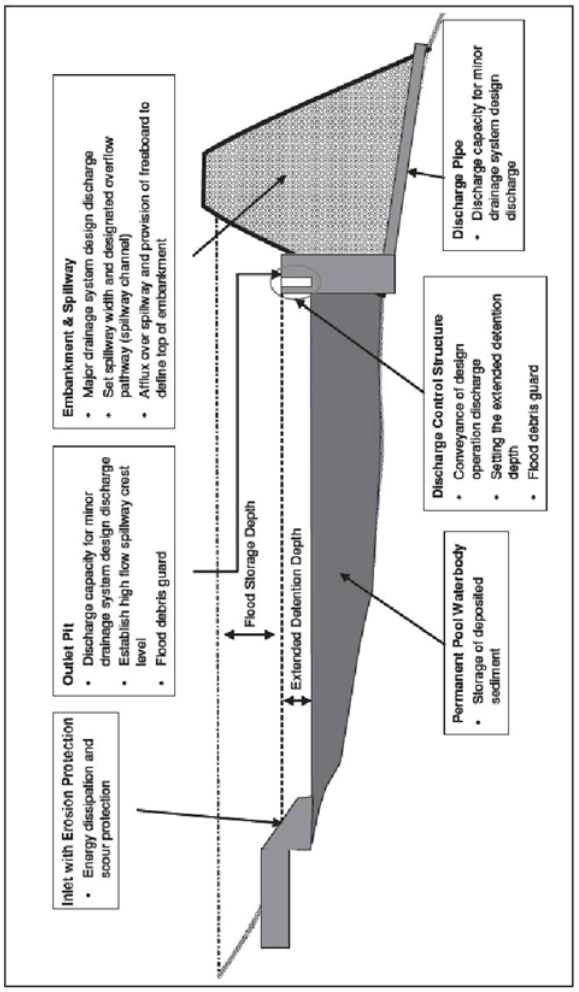

Figure 17A: Sediment basin.

Maintaining the control measures:

Sediment basins require regular inspection, especially after rain events and should be cleaned when more than half full of sediment. Litter and debris should be removed whenever observed in the sediment basin. If the water within the basin is cloudy and never clears, apply gypsum to allow the sediment to settle out.

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Acknowledgement:

Figure 17A from Derwent Estuary Program 2006 *"Water Sensitive Urban Design – Engineering Procedures for Stormwater Management in Southern Tasmania "*.

Date of Issue: December 2008

Dust Control

What is it?

Minimise the amount of dust (soil, building materials and residues) generated by wind erosion on building and construction sites. Research shows that average dust emission rates of over 2.5 tonnes per hectare per month occur on sites which have no dust control measures in place. The control measures discussed can be used on any building or construction site where dust may be generated and where dust may cause on or off-site damage.

Why is it important?

Sediment generated from wind erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise wind erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 18

WHAT DO I NEED TO DO?

Before starting site works:

Good site planning can eliminate dust being a problem.

1) Assess the dust potential of your site. Dust generating activities include major soil disturbances or heavy construction activity, such as clearing, excavation, demolition, cutting concrete or excessive vehicle traffic.
2) Decide upon dust control measures. A number of methods can be used to control dust from a site. The developer or builder will have to determine which practices are suitable based on specific site and weather conditions.
3) Document dust control measures on your Soil and Water Management Plan (if required) **(see Fact Sheet 3)** and ensure everyone working on the site understands them.

Installing the control measures:

These control measures will help to reduce the amount of soil and building materials loose on the site and therefore the dust that can be generated.

1) Stage works and disturb only small areas of the site at a time.
2) Maintain as much vegetation as possible. Existing trees and shrubs act as wind breaks, slowing wind velocities and provide coverage to surface soils.
3) Install constructed wind barriers if there is high risk of dust generation. Wind fences divert the wind up and over the site. Ensure that it is semi-permeable otherwise down-wind turbulence can make erosion worse.
4) Dampen the site slightly with a light application of water during excavation or when dust is being raised (be careful to only moisten ground surface, do not wet it to the point of creating mud).
5) Apply mulch to recently disturbed areas. Mulch can reduce wind erosion by 80%.
6) Where vegetative cover and mulching cannot be used (i.e. on site roads and entrances) apply rocks and stones.
7) For large open areas deep ploughing (tillage) brings soil clods to the surface where they rest on top of the dust, preventing it from becoming airborne.
8) Install a wheel wash where vehicles and/or equipment exit the site. Alternatively, a stabilised site access can be used **(see Fact Sheet 12)**.

9) Cover sand and soil stockpiles with fabric, plastic or vegetation.
10) Ensure that relevant equipment and machinery have dust suppressors fitted.

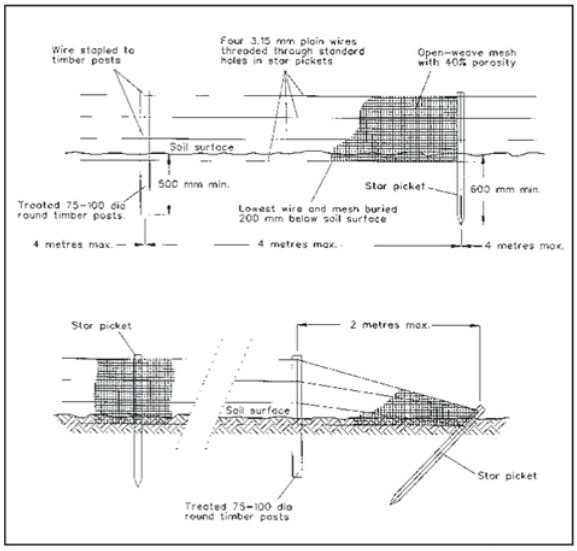

Figure 18A: Installation of a wind fence.

Maintaining the control measures:

Dust control measures involving the application of water require more monitoring than structural or vegetative controls to remain effective. If structural controls are used, they should be inspected for deterioration on a regular basis to ensure that they are still achieving their intended purpose.

List of fact sheets

1. Soil & Water Management on Large Building & Construction Sites
2. Soil & Water Management on Standard Building & Construction Sites
3. Soil & Water Management Plans
4. Dispersive Soils – High Risk of Tunnel Erosion
5. Minimise Soil Disturbance
6. Preserve Vegetation
7. Divert Up-slope Water
8. Erosion Control Mats & Blankets
9. Protect Service Trenches & Stockpiles
10. Early Roof Drainage Connection
11. Scour Protection – Stormwater Pipe Outfalls & Check Dams
12. Stabilised Site Access
13. Wheel Wash
14. Sediment Fences & Fibre Rolls
15. Protection of Stormwater Pits
16. Manage Concrete, Brick & Tile Cutting
17. Sediment Basins
18. **Dust Control**
19. Site Revegetation

Remember:

Everyone working on building and construction sites has a responsibility to prevent pollution. If you do have an accident and pollution occurs you are required by law to notify the site supervisor. If the site supervisor cannot be contacted, workers should immediately notify the local council so they can work with you to minimise any harm to the environment.

Acknowledgement:

Figure 18A from Landcom 2004 *"Soils & Construction Volume 1 Managing Urban Stormwater (4th edition)"*. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Site Revegetation

What is it?

All areas disturbed by building and construction activities should be promptly and progressively stabilised through revegetation and landscaping to reduce the potential for erosion.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the management practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 19

WHAT DO I NEED TO DO?

Installing the control measures:

As you finish works in one part of the site, revegetate it. Vegetation is an ideal and usually inexpensive method of stabilisation because it reduces soil erosion by:

1) Absorbing the impact of raindrops.
2) Reducing the volume and velocity of runoff.
3) Binding the soil with the roots.
4) Protecting the soil from the erosive effects of the wind.

Note: Revegetation should not be expected to provide all the soil erosion protection required on your site. Other erosion control measures will be required if the soil is not stable due to its composition or slope. Erosion control mats and blankets should be used on steep slopes to provide temporary protection until the vegetation is fully established **(see Fact Sheet 8).**

Temporary revegetation: annual grass species (e.g. rye) are effective temporary ground cover because they are fast growing and can quickly establish a root system. They can be planted to prevent erosion where:

1) Exposed soil needs to be stabilised until permanent revegetation grows.
2) Temporary protection (between 6-8 months) is required until landscaping occurs.
3) A disturbed area will be left and then be re-disturbed as part of the site works (e.g. topsoil stockpiles).

Note: These annual grasses do not provide effective erosion control during their early growth phase (first few weeks) unless the soil is prepared with a mulch layer. Annual grasses die within one season providing limited soil coverage after about 6-8 months. They require watering until established, and may need mowing (without the collection of the cut grass) at least once before they can provide adequate soil coverage.

Permanent revegetation: options include seeding with perennial grasses (that will over time succeed the annual species), installing turf strips, and planting of native plants from seed, tube stock or invasion from surrounding bushland. If local seed stock is to be used for propagation it needs to be collected in advance. Advice on native plants and/or sources of seed stock can be obtained from your local council.

Seed the exposed topsoil, not the subsoil as the biological, physical and chemical characteristics of many subsoil materials inhibit the establishment of plants. Where practical to do so, a seedbed should be cultivated and

moistened before sowing seed **(see Figure 19A).** This may require deep ripping to 300 mm where there is a compacted layer.

Include native species endemic to the region to enhance the ecological values and create an aesthetically pleasing environment. Native species have evolved to local environment and can establish themselves more quickly and vigorously than exotic species.

Some revegetation options may require mulching. Planting trees and shrubs tends to be more successful if combined with weed suppressing mulching and installation of tree guards and stakes. Apply mulch at a depth between 75-100 mm.

Note: Seeding, turf strips and native plants require sufficient irrigation for germination and to sustain plant growth if rainfall is poor. If the plants are slow growing other erosion control measures may be required until the vegetation is established and is able to prevent erosion.

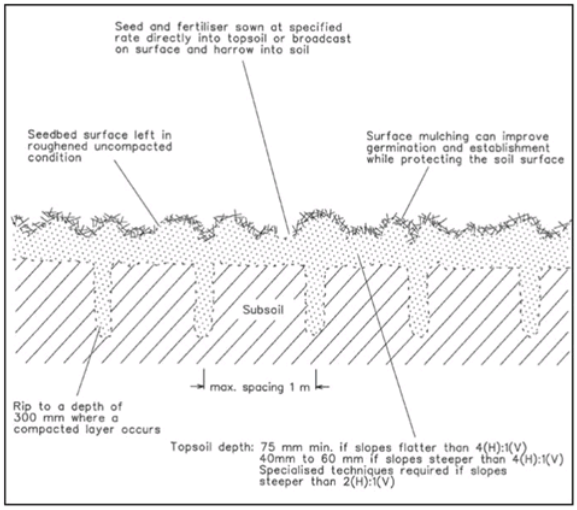

Figure 19A: Seedbed preparation.

Maintaining the control measures:

A monitoring and maintenance program for site revegetation should be developed and implemented. It needs to include irrigation, mowing, weeding and appropriate remedial action such as replacing any lost topsoil and re-sowing the site. Once the site has been revegetated and is established to the satisfaction of the council it can be handed over to the new homeowner.

List of fact sheets

1. Soil & Water Management on Large Building & Construction Sites
2. Soil & Water Management on Standard Building & Construction Sites
3. Soil & Water Management Plans
4. Dispersive Soils – High Risk of Tunnel Erosion
5. Minimise Soil Disturbance
6. Preserve Vegetation
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16. Manage Concrete, Brick & Tile Cutting
17. Sediment Basins
18. Dust Control
19. **Site Revegetation**

Remember:

Everyone working on building and construction sites has a responsibility to prevent pollution. If you do have an accident and pollution occurs you are required by law to notify the site supervisor. If the site supervisor cannot be contacted, workers should immediately notify the local council so they can work with you to minimise any harm to the environment.

Acknowledgement:

Figure 19A from Landcom 2004 *"Soils & Construction Volume I Managing Urban Stormwater (4th edition)"*. Text in this brochure has been obtained and modified from the *"Do It Right On Site"* brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Appendix 5 Soil Tracking From

55 Hampden Road, Battery Point, Tasmania

Date excavated	Soil origin (grid block)	Stockpile ID	Stockpile location (grid block)	Soil description (colour, texture, moisture, odour, staining)	Samples collected	Laboratory analysis (list lab tests)	Final soil classification Fill, Level 1, Level 2, Level 3, Level 4	Final destination	Notes	Logged by

Appendix 6 Site Induction Form

55 Hampden Road, Battery Point,
Tasmania

I ..... of ..... have been inducted to 55 Hampden Road, Battery Point, Hobart, Tasmania and have been informed of the CMP and its contents on .....(date)

I have been informed of the contents of the CMP and the responsibilities I have in ensuring that the CMP is adhered to relating to the following issues:

- Understanding the site contamination status
- Understanding the potential health impacts for site workers associated with site contamination
- Understanding the potential environmental impacts associated with site contamination
- Understanding how to reduce the risks to human health and the environment
- Maintaining documentation related to upholding the CMP

SOIL MANAGEMENT

- Excavation and stockpiling of soil at the site
- Movement of soil around the site
- Off-site disposal of soil
- Import of fill to the site
- Dust and sediment control

WATER MANAGEMENT

- Stormwater management and sediment control as outlined in the SWMP

I HEREBY ACCEPT THESE RESPONSIBILITIES.

NAME: .....COMPANY:.....

SIGNED .....DATE .....

INDUCTED BY: .....DATE .....

GES

GEO-ENVIRONMENTAL

SOLUTIONS

ENVIRONMENTAL SITE ASSESSMENT

55 Hampden Road, Battery Point

Version 3

July 2025

For MRRC Pty Ltd

Geo-Environmental Solutions P/L 29 Kirksway Place, Battery Point, 7004. Ph 6223 1839 E: Office@geosolutions.net.au

DOCUMENT CONTROL

Title	Version	Date	Author	Reviewed By
Environmental Site Assessment: 55 Hampden Road, Battery Point	Version 1	6th February 2020	Mark Downie	JP Cumming
Environmental Site Assessment: 55 Hampden Road, Battery Point	Version 2	17th May 2023	Mark Downie	JP Cumming
Environmental Site Assessment: 55 Hampden Road, Battery Point	Version 3	15th July 2025	Sarah Joyce	M Downie

EXECUTIVE SUMMARY

This report presents the findings of an Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at 55 Hampden Road, Battery Point, Tasmania - hereby referred to as 'The Site'. GES was commissioned by Neil Shephard and Associates on behalf of their client MRRC Pty Ltd, to conduct the site assessment in 2019. Catherine Williams of Jaws Architects requested a revision to the report in 2023, in light of changes to the proposed designs. Patrick Caroll requested a revision to this report in 2025 in light of changes to the proposed designs.

This ESA has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in National Environmental Protection Measure [Assessment of Site Contamination] (NEPM ASC; 2013).

The objective of this ESA was to investigate the site for potential contamination, we have done this by addressing E2.6.2 performance criteria under the *Hobart Council Interim Planning scheme 2015* for excavation. To assess the suitability and safety of the soil for excavation at various depths for deep foundation excavation, and any human or environmental risks of the soil present on site.

The following information was gathered during the desktop investigation:

- The majority of the site is zoned Urban Mixed Use, with the title of 43 South Street zoned Inner Residential under the Hobart Council Interim Planning Scheme of 2015. The proposal is for a new three storey apartment complex building, which includes 13 units, two town houses, commercial spaces on the ground floor, plus an underground basement carpark with 36 parking spaces plus an existing historic house.
- The geology of the site features Jurassic dolerite.
- The Hobart Council records note that the site is nearby to potentially contaminated sites at 47 Hampden Road and 57-59 Hampden Road. Previous findings from a Preliminary Geotechnical Investigation (GES 2018) suggest that the site contains uncontrolled fill, likely from on-site demolitions in 1967.
- Historical Aerial photographs since 1948 show no obvious signs of potentially contaminating activities, aside from the demolition of the site in 1967 and rebuilding of the new Prince Of Wales Hotel and surrounding car parking area.
- Contaminants Of Potential Concern (COPC) at the site include the following: Total Petroleum/Recoverable Hydrocarbons (TPH/TRH); Mono Aromatic Hydrocarbons including; Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene (BTEXN); Polycyclic Aromatic Hydrocarbons (PAH); Heavy Metals.

From the soil assessment, it is concluded that:

- Environment: Benzo(a)pyrene was detected at levels that exceeded Ecological Screening Levels in three of the twelve samples. Zinc was detected at levels that exceeded Ecological Investigation Levels in three of the twelve samples, and Lead in one of the twelve samples. The contaminants are not found at depth and are likely attributed to fill.
- Human Health and Vapour Risk: There were no human health guideline exceedances for risk to human receptors for dermal contact, or any vapour risk for either indoor or trench worker criteria. There was one dust inhalation and soil ingestion risk at HIL Class D in association with Lead in BH04 0.5-0.6. The natural soil has no human health risks, and this is likely attributed to fill.
- Excavated Soil Management: According to *IB105*, two samples are considered Level 3 (Contaminated Soil) due to cadmium and lead, four samples are considered Level 2 (Low Level Contaminated Soil) and six samples as tested are considered Level 1 – Clean Fill.

GES recommends the following:

- There was a soil ingestion and dust inhalation risk identified for Lead in one sample (BH04 0.5-0.6). There were exceedances for Ecological Screening Levels (Benzo(a)pyrene in three samples), and Ecological Investigation levels, (Zinc in three samples and Lead in one sample), therefore a Contamination Management Plan (CMP) prepared by a suitably qualified environmental consultant will be required prior to any works on site to manage the risk to human health receptors, and a Soil

Water Management Plan (SWMP) will be required prior to any works on site to manage the risk of soil or sediment effecting any off-site ecological receptors.

- According to *IB105* for soil disposal, two samples are considered Level 3 (Contaminated Soil), four samples are considered Level 2 (Low Level Contaminated Soil), and six samples as tested are considered Level 1 (Clean Fill). Soil on site will be removed during the construction phase, the excavated soil identified as contaminated will require disposal at a Level 3 waste facility (Copping) and a permit to transport the waste (obtained through the EPA) will be required.

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ABREVIATIONS

AEC	Areas of Environmental Concern
AHD	Australian Height Datum
ALS	Analytical Laboratory Services
ANZECC	Australia and New Zealand Environment and Conservation Council
BGS	Below Ground Surface
BH	Borehole
BTEXN	Benzene Toluene Ethylbenzene Xylene Naphthalene
COA	Certificate of Analysis
COC	Chain of Custody
COPC	Contaminant of Potential Concern
CRC CARE	Corporative Research Centre for Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
DQO	Data Quality Objectives
EOH	End Of Hole
EIL	Ecological Investigation Levels
ESL	Ecological Screening Levels
EPA	Environmental Protection Authority
ESA	Environmental Site Assessment
GDA94	Geocentric Datum of Australia 1994
GES	Geo-Environmental Solutions Pty. Ltd.
HIL	Health Investigation Levels
HSL	Health Screening Levels
IL	Investigation Levels
LOR	Limits of Reporting
MDL	Mean Detection Limit
NATA	National Association of Testing Authorities
NEPM ASC	National Environmental Protection (Assessment of Site Contamination) Measure
NHMRC	National Health and Medical Research Council
NL	Non Limiting
NRMMC	Natural Resource Management Ministerial Council
PAH	Polynuclear Aromatic Hydrocarbons
PCP	Physico-Chemical Parameters
PHC	Petroleum Hydrocarbons
PID	Photo-Ionisation Detector
PPA	Preferential (PVI) Pathways Assessment
PVI	Petroleum Vapour Intrusion
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
USCS	Unified Soil Classification System

1 INTRODUCTION

1.1 General

This report presents the findings of an Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at 55 Hampden Road, Battery Point, Tasmania - hereby referred to as 'The Site'. The site location is presented in Figure 1, and the aerial photograph is presented in Figure 2. GES was commissioned by Neil Shephard and Associates on behalf of their client MRRC Pty Ltd, to conduct the site assessment in 2019. Catherine Williams of Jaws Architects requested a revision to the report in 2023, in light of changes to the proposed designs. Patrick Caroll requested a revision to this report in 2025 in light of changes to the proposed designs.

The objective of the report is to prove or disprove the presence or absence of any contamination at the site. The ESA will compare contamination against E2.6.2 Excavation code of the Potentially Contaminated Land Code which will account for any future potential contact or excavation of earth which may occur during proposed developments in the area.

This ESA has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in National Environmental Protection Measure [Assessment of Site Contamination] (NEPM ASC; 2013) guidelines and key regulations and policies identified in the References section of this document. Personnel engaged in preparing this ESA are listed in Appendix 1 along with their relevant qualifications and years of experience.

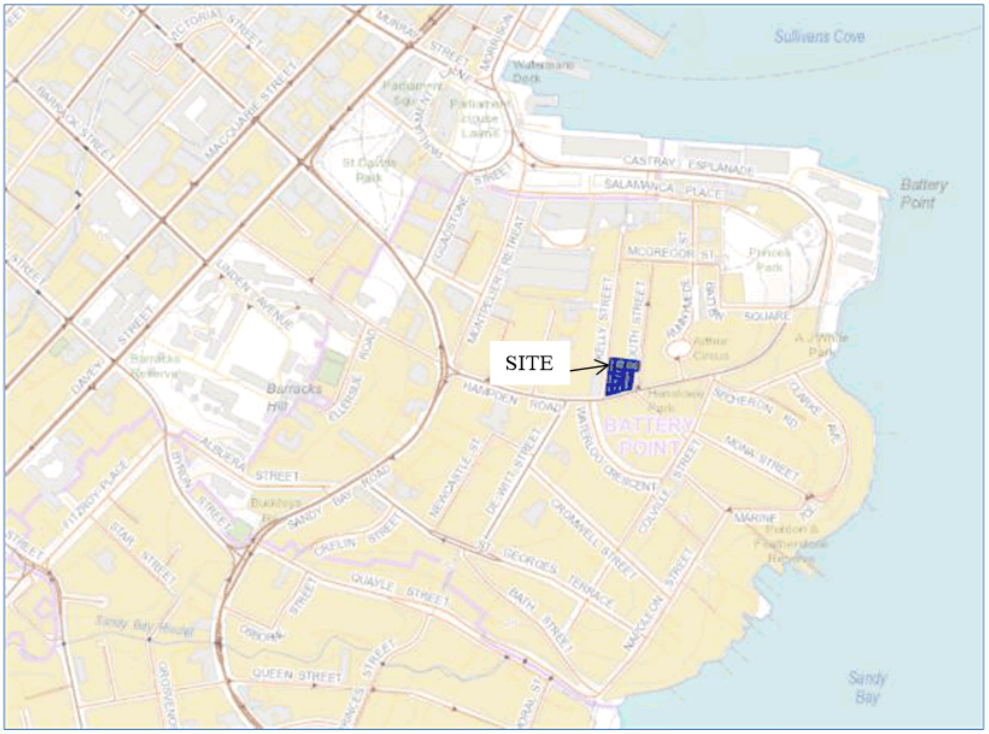

Figure 1 Site Location (Image C/O the LIST)

1.2 Site Layout

An aerial image of the existing site layout is presented in Figure 2.

Figure 2 Existing Site Layout (Image C/O Google Earth)

1.3 Site Details

Site details are presented in Table 1.

Table 1 Site Details

SITE LOCATION: Prince of Wales Hotel at 55 Hampden Road, and incorporating 43 South Street, Battery Point, Tasmania
INVESTIGATION AREA The footprint of all fourteen titles, as indicated in Figure 2.
SITE ELEVATION & GRADIENT Approximately 25-28 m AHD, with 5% fall to the north east
SITE SURFACING The site is covered by a sealed surface of asphalt
TITLE REFERENCES and SITE OWNER CT 48/6744 & 48/6745 – Local Government Authority (western edge between hotel and Kelly Street). CT 40041/1 & 40041/2 & 40041/3 & 40041/4 & 40041/5 & 40041/6 & 40041/7 & 40041/8 40041/9 & 40046/1 & 90423/1 PID 5577044 – MRRC PTY LTD (location of hotel and hotel car parking) CT 229127/1, PID 5593888 – MRRC PTY LTD (location of 43 Short Street)
PREVIOUS LANDUSE The area has been a hotel and car parking area for at least fifty years. The site contained several buildings prior to demolition in 1967, with at least one of the buildings demolished being the original Prince Of Wales Hotel built in c.1843.
SITE SURROUNDING LAND ZONING *Tasmanian Interim Planning Scheme 2015 – Urban Mixed Use* (for hotel and carparking, and *Inner Residential* (for 43 Short Street)
SITE LAND USE Hotel and car parking
PROPOSED LAND USE Three storey apartment complex, with car parking basement and commercial operations on the ground floor.

1.4 Investigation Objectives

The objective of this ESA was to investigate the site for contamination, we have done this by addressing E2.6.2 performance criteria under the *Hobart Council Interim Planning scheme 2015* for excavation. To assess the suitability and safety of the soil for excavation at various depths for deep foundation excavation, and any human or environmental risks of the soil present on site.

1.5 Scope of Works

The scope of work for this ESA was to:

- Conduct a desktop and an invasive soil investigation at the site.
- Drill six soil bores and collect twelve primary samples; the primary samples were sent for analysis of Total Recoverable Hydrocarbons (TRH) Benzene Toluene Ethylbenzene Xylene Naphthalene (BTEXN), Polynuclear Aromatic Hydrocarbons (PAH), and a suit of fifteen (15) metals to a National Association of Testing Authorities (NATA) accredited laboratory.
- Samples were sent with quality assurance/ quality control (QA/QC) samples including one duplicate sample.
- Determine the absence or presence and if present the level of site contamination and compare soil results against the relevant guidelines.
- Conduct a risk assessment, known as a Conceptual Site Model; and
- Report findings in an Environmental Site Assessment report, detailing specific onsite human health or environmental risk which may source from potentially detected contamination.

2 PLANNING

2.1 Overview

The client initially requested an Environmental Site Assessment in due diligence prior to lodging plans for a development on the site in 2019 (Version 1). Then requested an amendment to the report when the plans were updated in 2023 (Version 2) in line with changes to the proposed development designs. This report in 2025 is Version 3 which has incorporated small alterations to the design with updated plans from the client. The latest plans were finalised on the 18 June 2025.

The site is nearby to potentially contaminated sites at 47 Hampden Road and 57-59 Hampden Road, and the site contains fill which is likely to be uncontrolled fill from the 1967 demolition of the original Prince Of Wales Hotel. The proposal is a new three storey apartment complex, with commercial operations on the ground floor, and underground basement for car parking.

2.1.1 Acceptable Solutions

As the history of the site suggests that potentially contaminating activities may have taken place on the site, for any future potential ***excavation*** at the site, there are no acceptable solutions to proposed works, and therefore E2.6.2 P1 performance criteria are to be addressed.

2.1.2 Excavation Works E2.6.2 P1

As there is proposed excavation works at the site, there are no acceptable solutions to proposed works, E2.6.2 P1 performance criteria are to be addressed. The performance criteria identify that the excavation works must not adversely impact on health and the environment, having regard to:

(a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or

(b) a plan to manage contamination and associated risk to human health and the environment that includes:

i. an environmental site assessment;

ii. any specific remediation and protection measures required to be implemented before excavation commences; and

iii. a statement that the excavation does not adversely impact on human health or the environment.

2.1.3 Statement of Suitability

A statement based on the results of the Environmental Site Assessment that the excavation as part of the planned works will not adversely impact on human health or the environment is to be provided (subject to implementation of any identified remediation and/or protection measures as required).

3 DESKTOP STUDY

3.1 Site Zoning

The majority of the site (hotel and car parking area) is zoned *Urban Mixed Use*, and the area of 43 South Street is zoned *Inner Residential* under Hobart Councils Interim Planning Scheme of 2015. The land use surrounding to the site is *Urban Mixed* Use and Inner *Residential*, nearby to the site are areas zoned *Open Space* (50m to ENE), and *Sullivans Cove Mixed Use* (>100m to NW) – see Figure 3.

The proposed site use is a three-story Apartment complex made up of 13 apartments, two townhouses, an existing house, commercial spaces on the ground floor including a café and a retail space plus an underground basement carpark with capacity for 36 parking spaces. The majority of the site is to be assessed against land use Class D commercial / industrial land use, to account for a car parking basement acting a physical barrier between the soil and the residential apartments. The proposed finished floor level of the basement is 23.4m above sea level (asl) and the Ground Floor finished floor level is 27.3m asl.

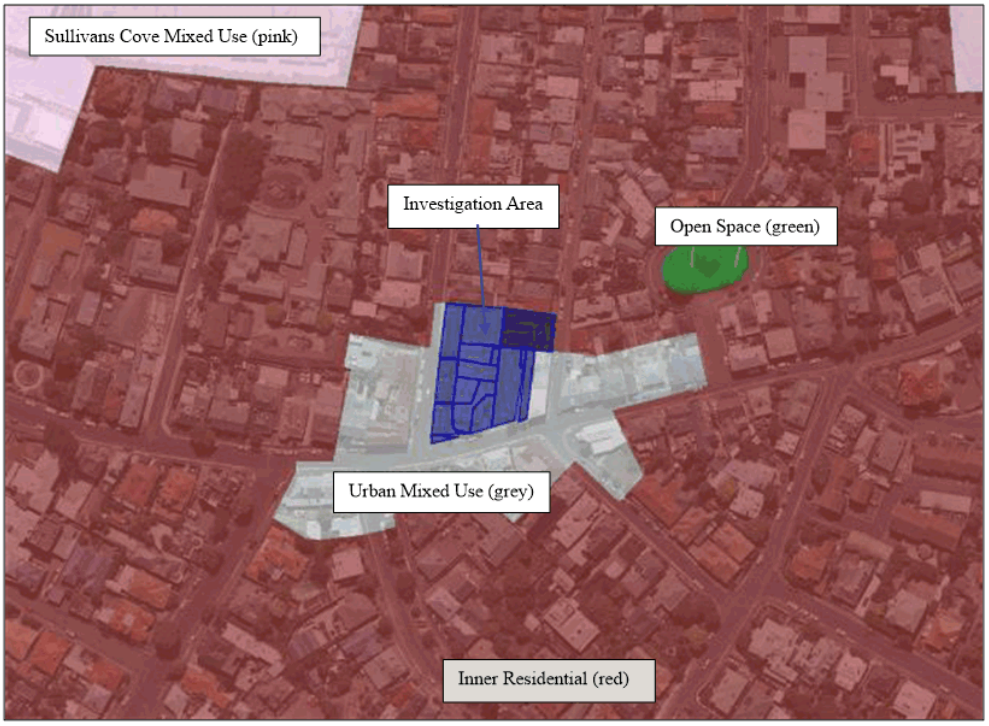

Figure 3 Hobart Councils Interim Planning Scheme Zones (2015)

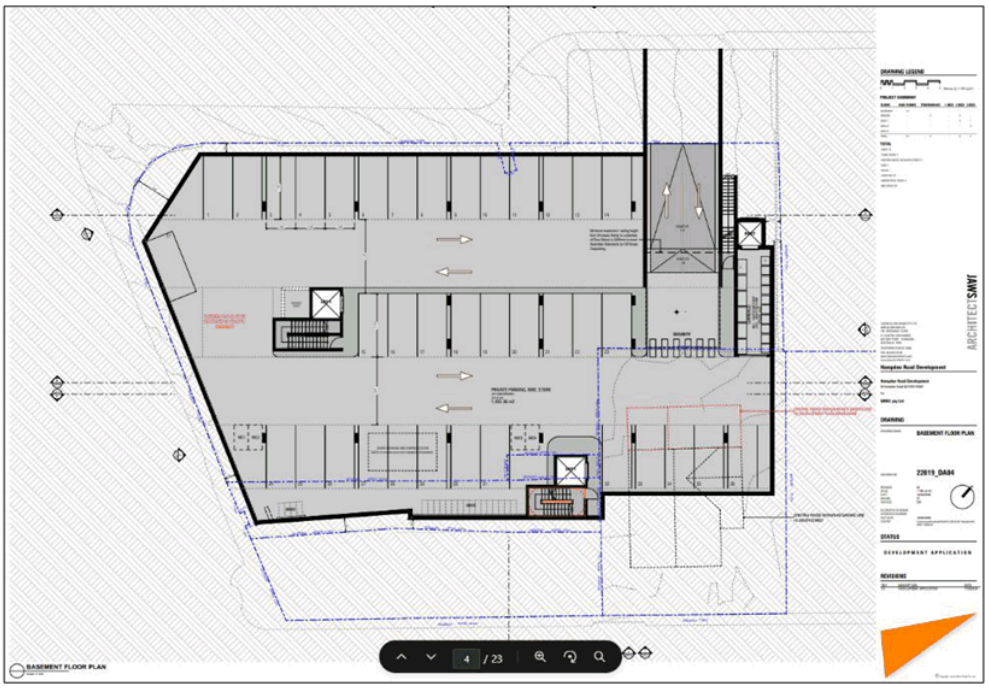

Figure 4 Basement Floor Plans – source Jaws Architect (18 June 2025)

Figure 5 Ground Floor Plans – source Jaws Architect (18 June 2025)

3.2 Site Walkover

A site investigation was completed by GES staff on the 14th November 2019. There were no observed odour, staining, or any other signs of contamination or contaminating activities. Photos are presented in Appendix 2.

3.3 MRT Geology Mapping

The 1:25,000 scale geology map of the Greater Hobart area (see excerpt in Figure 6) indicates that the investigation area is underlain by Jurassic dolerite, with Quaternary deposits 300m away to the north and to the east, and Triassic sandstone 350m away to the north west. The geological units illustrated in Figure 6 are described below:

Jd – Jurassic igneous rocks – Dolerite and related rocks

Qhmm – Undifferentiated Quaternary sediments – Man made deposits.

Qa – Undifferentiated Quaternary sediments – Alluvial gravel, sand and clay.

Rqph - Late Carboniferous to Triassic sedimentary sequences - Freshwater predominantly cross-bedded quartzose to feldspathic sandstone commonly with overturned cross-bedding, subordinate siltstone with sparse plant and vertebrate fossils (Knocklofty Formation).

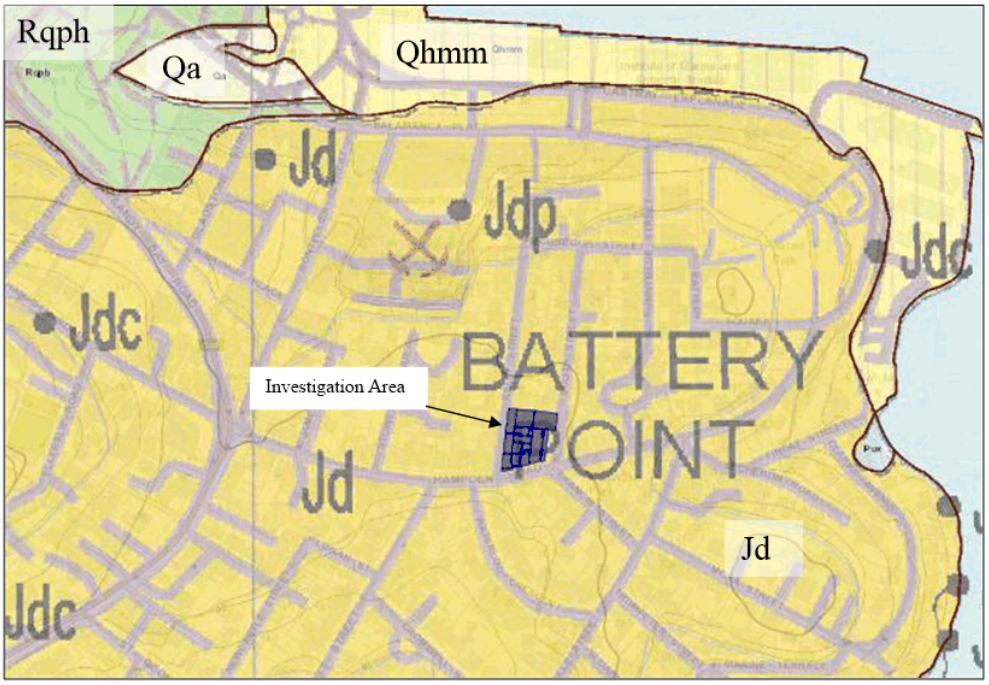

Figure 6 Mineral Resources Tasmania 1:25.000 Scale Mapping.

3.4 Historical Aerial Photography Interpretation

The 2019, 2003, 1969, 1958 and 1946 historical aerial photographs were viewed as part of this ESA. The photographs are presented in Appendix 3.

In summary the following observations can be made from the photographs:

- The investigation area has numerous buildings from prior to 1946 (review of available literature suggests that the original Prince Of Wales Hotel was built in 1843 and demolished in 1967).
- The 1958 photograph shows minimal changes to buildings and surroundings, in area of the site.
- The 1969 photograph shows the new Prince Of Wales hotel at 55 Hampden Road, after the area was demolished in 1967. Many buildings demolished are in the area now used as car parking surrounding the Price Of Wales Hotel. The buildings at 43 South Street and 47 Hampden Road were not subject to demolition and appear unchanged.
- The 2003 photograph shows a small extension to 43 South Street. No obvious changes to any other buildings in the area.
- The 2019 photograph shows a small shed on the eastern side of 55 Hampden Road has been removed. No obvious changes to any other buildings in the area.

3.5 Previous Site Investigations

GES undertook and Preliminary Geotechnical Assessment of the site in August 2018.

3.6 Council Environmental Records

Mark Downie (GES) undertook a series of phone conversations and email correspondence with Hobart City Council (HCC) Senior Environmental Health Officer Andrew Choveaux. Andrew confirmed in phone conversations that there are nearby sites listed on the Hobart City Councils potentially contaminated land overlay, where there may have been potentially contaminating activates operating. The following properties were listed:

- 47 Hampden Road – Gas Cylinder
- 57-59 Hampden Road 'Terrys Bakery' – Hydrocarbon storage 1974

In review of the available information including historical aerial photography (Section 3.4);

47 Hampden Road is currently Da Angelo restaurant. Gas is likely to be used in the kitchen. The likelihood of a gas cylinder causing soil contamination of a neighbouring property is considered negligible.

57-59 Hampden Road is currently operating as Jackman & McRoss Bakery, it is unknown why hydrocarbons would have been stored at this address, an assumption could be for heating oil in a heating system that has since been removed. We consider the likelihood of contamination from this activity to affect a neighbouring property to be negligible.

A more likely cause of contamination is uncontrolled fill created from the demolition (in 1967) of the original buildings on site. The Preliminary Geotechnical Investigation (GES 2018) notes fill in the borehole logs, and a sandstone boulder in borehole BH02 at a depth of 1.1-1.5m (Appendix 4) – this boulder could have been part of one of the demolished original buildings from the site. Fill appears be present to depths of 0.7m and 1.5m in the boreholes of the 2018 Preliminary Geotechnical Investigation (Appendix 4), and to depths of 0.3m in the boreholes of the November 2019 sampling event (Appendix 5). There is likely to be high variation of fill depth across the site, especially if fill from on-site demolitions in 1967 was placed into depressions and/or basements.

3.7 Site Topography, Drainage & Hydrogeology

The investigation area has a slight fall to the North East at around 5%. The site elevation is approximately 25-28m AHD. The groundwater from the site is expected to follow the surface topography and drain towards the North and the East to the Derwent River, which is approximately 310m away to the East and 370m away to the North. The surface water is likely to enter culverts and drain either East (Hampden Road area) or North (Kelly Street and South Street Area), to the Derwent River. It should be noted that there is a ridge and high point to the North East of the site (South West corner of Princes Park) which is causing the surface water flow to tend either North or East.

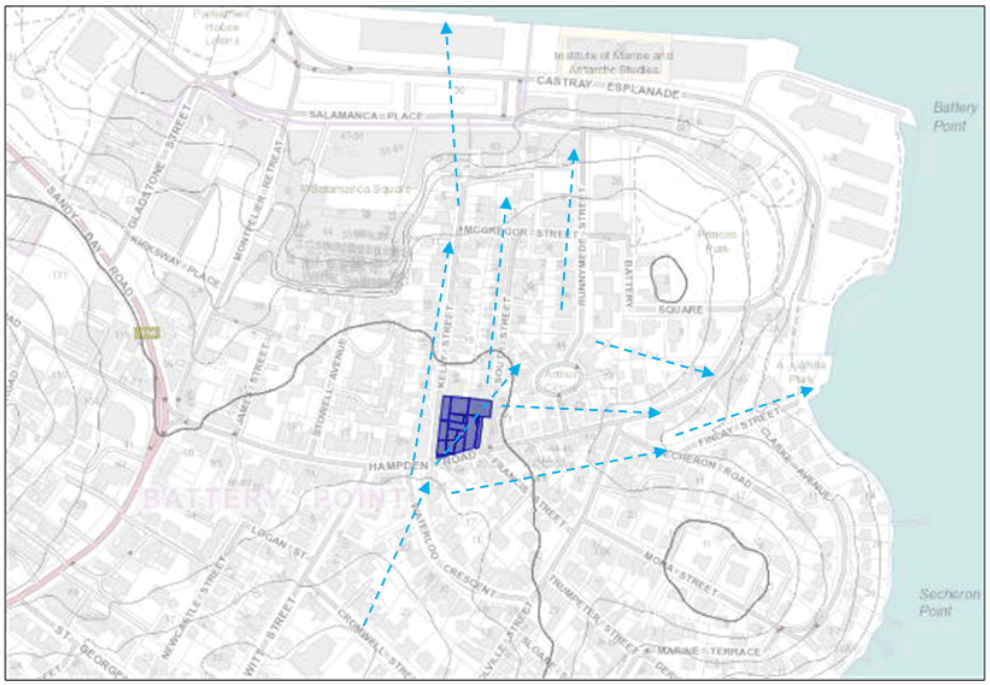

Figure 7 Contour Elevations and Inferred Surface and Groundwater Flow Direction

3.8 Groundwater

3.8.1 Potential Up-Gradient Contamination Sources

General up gradient road use and car parking – potential for contamination is negligible.

An Underground Storage Tank (UST) was removed from 68 Hampden Road in 2015, (fuel supply for former fire station in the early 1900s) and was found to have not contaminated the surrounding land – potential for contamination is negligible.

3.8.2 Downgradient Ecosystem Receptors

The closest downgradient ecosystem receptor is the River Derwent approximately 310m to the East and 370m to the North.

3.8.3 Registered Water Bores

There are no Mineral Resources Tasmania Registered water bores downgradient of the site (DPIPWE Groundwater Information Access Portal).

3.9 Potential Contamination Issues

3.9.1 Areas of Potential Concern

No specific areas of potential concern have been identified on the site. We have addressed potential contaminants (Section 3.9.2) across the site.

3.9.2 Contaminants of Potential Concern

Potential contaminants of potential concern (COPC) that have been considered are a suite of common urban contaminants, and include the following:

- Total Petroleum/Recoverable Hydrocarbons (TPH/TRH);
- Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene (BTEXN);
- Polynuclear Aromatic Hydrocarbons (PAHs); and
- A suite of 15 Metals.

4 FIELD INVESTIGATION PROCEDURES

4.1 Works Summary

Site investigation works comprised of soil bore drilling which is summarised in Table 2 and Figure 8.

Table 2 Summary of Site Investigation Work Dates

Scope	Data	Lab Report	Details
Drilling/ Sample collection	14th November 2019	EM1920186 Primary Lab	12 Primary Samples were collected from 6 soil bore locations. 1 Duplicate Sample.

Figure 8 Borehole Plan

4.2 Soil Investigation

4.2.1 Borehole Drilling

A total of six 65 mm diameter soil bores were drilled for assessing site geology and sampling for contamination impact. The bores were drilled by GES using a hand auger and the industry recognised Geoprobe direct push drilling system. The selected drilling method involved using a Geoprobe dual tube to retain wall integrity and eliminates risk of profile collapse whilst allowing extraction of 1.0 m length sample cores and allows for deployment of pre packed well systems.

Soil sampling was conducted per the National Environmental Protection Measure (NEPM ASC 2013) and AS4482 sampling guidelines. Table 3 presents a summary of the soil assessment methodology adopted at the site.

Table 3 Summary of Soil Sampling Methods

Activity	Details / Comments
Drilling Method	Soil bores were drilled: • Hand auger over the first meter to clear for services, and grab sampling; and • Direct push (Geoprobe) drilling (except BH06 - hand auger to 1.6m)
Soil Logging	Logging the soil was conducted in accordance with the unified soil classification system (USCS) as detailed in AS1726 (1993).
Decontamination of Sampling Equipment	Quantum Clean Laboratory Detergent (R213) was used to decontaminate reusable sampling equipment between each borehole sampling event. Fresh liners were used in the Geoprobe direct push sampling system.
Soil Screening	No discernible hydrocarbon odour or staining was observed, and screening for volatile fractions using a Photoionisation Detector (PID) was deemed not necessary.
Laboratory Soil Sample Collection	In accordance with AS4482.2. All samples were collected using disposable nitrile gloves. Samples were selected for laboratory analysis: • at 0.5-0.6m below ground surface (bgs) • at 1.5-1.6m below ground surface (bgs) or 0.9-1.0m bgs in BH5 where rock was encountered at 1.0m. A minimum number of samples were carefully selected which would provide enough information to delineate soil contamination.
Sample preservation	Samples were placed into a jar for laboratory analysis. Soil jars were placed in a pre-chilled cool box with ice bricks.
Sample holding times	Sample holding times were within acceptable range (based on NEPM ASC B3-2013) from collection to extraction.

4.2.2 Soil Analysis

Primary and QC samples were submitted to Analytical Laboratory Services (ALS), Springvale, Melbourne for analysis. A total of twelve (12) samples were selected for analysis. Chain of Custody (COC) documentation was completed and is provided in Appendix 6 along with the Sample Receipt Notification (SRN). Table 4 presents a summary of the laboratory analyses undertaken.

Table 4 Overview of Soil Analysis and Quality Control

Analytes	Primary Samples	Duplicate[a]	Rinse Blank[b]
TPH	12	1	0
BTEX	12	1	0
PAH	12	1	0
Suite 15 Metals	12	1	0

Sampling Quality Control Standards (AS4482):
a – Duplicate one (1) in twenty (20) primary samples
b – Single rinse sample per piece of equipment per day

Given metals were analysed, there was requirement to assess the following soil physical properties to determine soil threshold investigation levels: Soil grain class (sand/silt or clay); % Clay content; Cation exchange capacity (CEC); and Soil pH. The soil physical properties were based on knowledge of similar soil types encountered around the greater Hobart area.

5 QUALITY CONTROL

All Field and laboratory Quality Assurance and Quality Control (QA/QC) details and outputs are presented in Appendix 5.

5.1 Field

It is standard to expect up to 10% error in field duplication and up to 10% laboratory error. Therefore, in theory up to 20% error can be assumed on duplicate analysis. Some variation may exist in soil and groundwater because even though all efforts are made to split samples homogeneously, fragments of materials may bias samples in certain elements.

Relative Percentage Differences (RPDs) for the duplicate and triplicate samples where applicable are calculated using the method outlined below.

The acceptance criteria used for the RPDs depend on the levels of contaminants detected and the laboratory's Method Detection Limits. The closer the levels detected are to the MDL the greater the acceptable RPD. RPDs are calculated as follows:

- RPD <50% for low level results (<20 * MDL)
- RPD <30% for medium level results (20-100 * MDL)
- RPD <15% for high level results (>100 * MDL)
- No limit applies at <2 * MDL (Method Detection Limit)

Field QA/QC procedures and compliance are summarised in Table 5

Table 5 Soil Field QA/QC procedures and Compliance

QA/QC Requirement	Compliance	Comments
Appropriate sampling strategy used and representative samples collected	Yes	Sampling program was undertaken in accordance with AS4482.1-2005
Appropriate and well documented sample collection, handling, logging and transportation procedures.	Yes	Appropriate and well documented
Decontamination	Yes	Appropriate decontamination such as cleaning tools before sampling and between sample locations was undertaken
Chain-of-custody documentation completed	Yes	COC were completed in accordance with NEPM ASC Schedule B2, Section 5.4.5 and transported under strict COC procedures. The signed COC documents are included in this report, which includes the condition report on arrival of samples to the Laboratory, cross checking of sample identification and paperwork and preservation method.
Required number of splits: Duplicate & inter-lab splits: 1 per 20 primary samples	No	1 duplicate sample was collected and tested, for 12 primary samples as per AS4482.1-2005. An inter-lab split sample was not collected.
QA/QC samples reported RPD's within indicated MDL guidelines.	No	For DUPLICATE and BH03 0.5-0.6 pairs, 89% of analytes complied. Non compliances include: an RPD of 80% for Arsenic where <50% was expected; an RPD of 42% for Cadmium where <30% was expected; an RPD of 37% for Copper where <30% was expected; an RPD of 40% for Lead where <15% was expected; an RPD of 37% for Zinc where <15% was expected; an RPD of 33% for Mercury where <30% was expected.
Required numbers of rinse blank samples collected with no laboratory detections?	No	A rinse blank sample was not collected
Trip blanks collected with no laboratory detections?	NA	According to AS4482.2-1999, soil trip blanks are not required where volatile hydrocarbons are not discernible.
Field blanks collected with no laboratory detections?	NA	According to Australian Standards, there is no requirement to collect field blanks, unless there is concern with cross contamination risks.
Samples delivered to the laboratory within sample holding times and with correct preservative	Yes	All samples were sent to the laboratory within holding times and correct preservative.

5.2 Laboratory

Soil laboratory QA/QC procedures and compliance are summarised in Table 6.

Table 6 Soil Laboratory QA/QC Procedures and Compliance

QA/QC Requirement	Compliance	Comments
All analyses NATA accredited	Yes	ALS Laboratories is NATA Accredited. Appropriate analytical methods used, in accordance with Schedule B(3) of the NEPM ASC 2013. Acceptable laboratory limits of reporting (LORs) adopted.
Method Blanks: zero to <Practical Quantitation Limit (PQL)	Yes	There were no method blank value outliers in the QC1 report.
Laboratory Control Samples: 70% to 130% recovery for soil.	Yes	There were no laboratory control outliers in the QC1 report.
Matrix spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics	No	MS recovery not determined, background level greater than or equal to 4x spike level for; Barium, Lead, Manganese and Zinc in sample ID EM1919451-005 (BH03 0.5-0.6), and for Manganese in sample ID EM1919425-003 (Anonymous).
Duplicate Samples: 0% to <20% RPD.	Yes	There were no duplicate sample outliers in the QC1 report.
Surrogates: 70% to 130% recovery	Yes	There were no surrogate recovery outliers in any of the QCI reports.
Analysis holding time outliers	Yes	No hold-time outliers exist in the QCI report.
Quality Control Sample Frequency Outliers	Yes	There were no quality control sample frequency outliers in the QCI report.

6 FIELD INVESTIGATION FINDINGS

6.1 Soil Bores

6.1.1 Geological Interpretation

The geology of the site has been found to be Jurassic dolerite in a previous geotechnical investigation. The previous geotechnical investigation found fill to 0.7-1.5m depths and solid bedrock from 2.0-3.2m depth with natural soil between fill and bedrock (Appendix 4), some of our test holes for this ESA found fill to 0.3m depth and weathered bedrock from 1.0- >1.6m depth, with natural soil between fill and bedrock (Appendix 5) – with the exception of BH06 where fill was not present. The depth of fill and the depth to bedrock are both likely to be highly variable.

6.1.2 Grain & Depth Class Interpretation

Grain size classifications are applied to all soils at the site to determine threshold screening level concentrations for hydrocarbons (and chromium) to assess soil ecological and human health risks.

Grain class threshold values are determined based on either the:

- sample grain size (in the case of ecological screening levels or chromium limits); or
- average grain class overlying the sample point (when assessing petroleum vapour screening levels) relative to the proposed finished floor level.

Table 7 provides a summary of the grain class averages for material overlying the sample. Given 3-4m of soil will be excavated in most parts of the site for the car parking basement, most samples do not have material overlying that will remain on site, with the exception of BH06 where the basement will not be present.

Table 7 Summary of Grain Class Based on USCS Classification

Sample	Footing Excavation Depth^ -Red Fill Thickness^ -Green	Sample PVI Depth (m) Relative to Slab/Cut Depth	Soil Grain Size Class Averaging Above Soil Sample																	Attenuation			Petroleum Vapour Intrusion HSL Grain Class*	SAMPLE USCS
			GW	GP	GM	GC	SW	SP	SM	SC	ML	CL	OL	MH	CH	OH	CI	Rock (R)	Existing Pavement (P)	Crawl Space Thickness (m)	Proposed CONCRETE (CH)	Crawl Space	Biodegradation	
BH01 0.5-0.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	GP
BH01 1.5-1.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	CH
BH02 0.5-0.6	3.8	<																		NA	0.1	1.0	1.0	CLAY	GP
BH02 1.5-1.6	3.8	<																		NA	0.1	1.0	1.0	CLAY	CH
BH03 0.5-0.6	3.7	<																		NA	0.1	1.0	1.0	CLAY	GP
BH03 1.5-1.6	3.7	<																		NA	0.1	1.0	1.0	CLAY	CH
BH04 0.5-0.6	4.3	<																		NA	0.1	1.0	1.0	CLAY	GP
BH04 1.5-1.6	4.3	<																		NA	0.1	1.0	1.0	CLAY	SC
BH05 0.5-0.6	4.3	<																		NA	0.1	1.0	1.0	CLAY	GP
BH05 0.9-1.0	4.3	<																		NA	0.1	1.0	1.0	CLAY	GP
BH06 0.5-0.6		0.6		0.5																NA	0.1	1.0	1.0	SAND	GP
BH06 1.5-1.6		1.6		0.8											0.8					NA	0.1	1.0	1.0	CLAY	CH

Footnotes:
* Grain class is modified based on proposed building construction: concrete is interpreted to have similar vapour intrusion properties to clay and is therefore designated as CLAY within the grain size averaging assessment; backfill is inferred to comprise of gravel (GW)
< Sample has been collected from above the proposed excavation (base of slab or proposed ground level) and is not relevant in PVI risk assessment
^ Excavation depths are approximate and may vary due to change in services depths or overall building/footing construction design

6.1.3 Soil Contamination Observations

No staining or odour consistent with hydrocarbon contamination were observed during the site visit.

7 SOIL ECOLOGICAL IMPACT ASSESSMENT

7.1 Protected Environmental Values

The requirement for protecting soil from contaminated activities in Tasmania is managed under the Environmental Management and Pollution Control Act 1994 (EMPCA) which states in Part 5A:

(2) An area of land is a contaminated site if –

(a) there is in, on or under that area of land a pollutant in a concentration that –

(i) is above the background concentration; and

(ii) is causing or is likely to be causing serious or material environmental harm or environmental nuisance, or is likely to cause serious or material environmental harm or environmental nuisance in the future if not appropriately managed;

Potential soil impact at the site is assessed through application of the following environmental investigation guidelines.

7.2 NEPM ASC (2013) Guidelines

The following ecological investigation guidelines are to be addressed in order to assess acceptable levels of risk to terrestrial ecosystems:

- NEPM ASC (2013) Ecological Investigation Levels (EIL's) – have been developed for selected metal and organic substances. EIL's depend on specific soil and physicochemical properties and land use scenarios and generally apply to the top two (2) metres of the soil profile (NEPM ASC 2013);
- NEPM ASC (2013) Ecological Screening Levels (ESL's) – have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon fractions. ESL's broadly apply to coarse- and fine-grained soils and various land use scenarios within the top two (2) metres of the soil profile (NEPM ASC 2013).

Soil analytical results are compared against Ecological Screening Levels (ESL's) and EIL's limits presented in Table 8.

Table 8 Summary of Soil Contaminates Considered as part of this investigation, based on NEPM (2013) ASC

Investigation Levels (IL)	Analytes Investigated						
	Hydrocarbons				Metals		DDT
	BTEX	TRH (F1 to F4)	Benzo(a) pyrene (PAH)	Naphthalene (PAH)	Zn, Cu, Cr(III), Ni & As	Lead	
ESL's	Analysed	Analysed	Analysed				
EIL's				Analysed	Analysed	Analysed	Not Analysed

7.3 Guidelines

7.3.1 Ecological Screening Levels

The following compounds were compared against NEPM ASC (2013) Ecological Screening Levels (ESL's):

- BTEX;
- F1 to F4 TRH; and
- Benzo(a)pyrene (PAH)

Selection of ESL threshold investigation limits are set out in the NEPM ASC (2013) guidelines and require classification of the soil according to:

- Land use sensitivity:
    - Areas of ecological significance
    - Urban residential and public open space; and
    - Commercial and industrial.

- Dominant particle size passing through a 2 mm sieve into:
    - Coarse – sand sizes and greater; and
    - Fine – clay and silt sizes.

Adopted NEPM ASC (2013) soil and land use classifications are presented below.

7.3.2 Ecological Investigation Levels

The following compounds were compared against Environmental Investigation Levels:

- Lead;
- Nickel;
- Chromium;
- Zinc;
- Copper;
- Arsenic; and
- Naphthalene.

There was a requirement to classify the soil according to physicochemical properties given that the above listed compounds. Adopted physicochemical parameters are presented in the results tables.

Selection of EIL threshold investigation limits are set out in the NEPM ASC (2013) guidelines and require classification of the soil per specific soil and physicochemical properties which are presented in the results tables. The adopted land use scenarios presented in Table 9.

The basement car park will cover the majority of the site, with small areas of ground not excavated to be retained as open space in the northern corner of the site (corresponds with BH02) and in the South Street frontage (corresponds with BH06).

Table 9 Adopted Land Use Scenario for the Soil Bores

Land Use Scenario	Applicable Soil Bores
Areas of Ecological Significance	
Urban Residential & Public Open Space	*BH02 & BH06*
Commercial & Industrial	*All soil bores*

Based on a preliminary assessment of site soil conditions, the following physicochemical properties are applied to assess guideline EIL's:

- Clay content consistent with field observations;
- A soil pH and cation exchange capacity (CEC) consistent with Table 10.

Table 10 Cation Exchange and Clay content, Adopted For the Site

Soil Physicochemical Properties Adopted for The Site			
USCS	Clay %	CEC	pH
R	100	10	6.5
GW	0	10	6.5
GP	0	10	6.5
GM	10	15	6.5
GC	30	20	6.5
SW	0	10	6.5
SP	0	10	6.5
SM	10	15	6.5
SC	20	20	6.5
ML	30	20	6.5
CL	100	35	6.5
OL	50	35	6.5
MH	30	35	6.5
CH	100	45	6.5
OH	100	60	6.5
PT	100	80	6.5
P	0	0	6.5
CL	100	35	6.5
CI	100	35	6.5
Rock	0	10	6.5

7.4 Findings

7.4.1 Ecological Screening Levels

Laboratory analytical results are presented in Appendix 8. Table 11 compares soil analytical results against relevant NEPM ASC (2013) ESL's. Concentrations which exceeded laboratory limit of reporting (LOR) are highlighted in bold, ESL exceedances are be highlighted with a coloured cell, and samples within the proposed excavation zone would be marked with an X. Benzo(a)pyrene was detected at levels that exceed ESL guideline limits in three of the twelve samples. There were no hydrocarbons detected at depth (>0.6m), nor at BH06 (natural soil).

Table 11 Summary of Soil Analytical Results Compared with ESL's for commercial/ industrial land use.

NEPM Ecological Screening Levels for Soil				BTEX				PAH	TRH			
Bold - Indicates LOR Exceedances X - Indicates Sample has been Excavated				Benzene	Toluene	Ethylbenzene	Xylenes	Benzo(a)pyrene	F1 (C6 - C10)	F2 (>C10 - C16)	F3 (>C16 - C34)	F4 (>C34 - C40)
Colour Shading - Indicates ESL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x												
Sample ID	Sample Date	Soil Texture Class (fine /coarse)	Land Use	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 0.5	LOR 10	LOR 50	LOR 100	LOR 100
BH01 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	**1.1**	<10	<50	**240**	**110**
BH01 1.5-1.6 X	14/11/19	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH02 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	**1.3**	<10	<50	<100	<100
BH02 1.5-1.6 X	14/11/19	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH03 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	**0.8**	<10	<50	<100	<100
BH03 1.5-1.6 X	14/11/19	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH04 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH04 1.5-1.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH05 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH05 0.9-1.0 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH06 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH06 1.5-1.6 X	14/11/19	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100

Table 12 Summary of Soil Analytical Results Compared with ESL's for residential/ open space land use.

NEPM Ecological Screening Levels for Soil				BTEX				PAH	TRH			
Bold - Indicates LOR Exceedances X - Indicates Sample has been Excavated				Benzene	Toluene	Ethylbenzene	Xylenes	Benzo(a)pyrene	F1 (C6 - C10)	F2 (>C10 - C16)	F3 (>C16 - C34)	F4 (>C34 - C40)
Colour Shading - Indicates ESL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x												
Sample ID	Sample Date	Soil Texture Class (fine /coarse)	Land Use	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 0.5	LOR 10	LOR 50	LOR 100	LOR 100
BH02 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	**1.3**	<10	<50	<100	<100
BH02 1.5-1.6 X	14/11/19	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH06 0.5-0.6 X	14/11/19	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH06 1.5-1.6 X	14/11/19	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100

7.4.2 Ecological Investigation Levels

Table 13 compares soil analytical results against relevant EIL's. Concentrations which exceeded laboratory LOR are reported in the table, EIL exceedances are highlighted with a coloured cell. There were exceedances of the EILs in three samples for Zinc, and one sample for Lead.

Table 13 Soil Analytical Results Compared Against Ecological Investigation Levels (commercial/industrial)

NEPM Ecological Investigation Levels for Soil **Bold - Indicates LOR Exceedances** X - Indicates Sample Withiin Inferred Excavation Colour Shading - Indicates ESL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x													
Sample ID	Sample Date	EIL Land Use Sensitivity Class	Soil CEC (cmolc/kg)	Soil pH	Soil Texture Class (fine /coarse)	Copper (CEC)	Copper (pH)	Nickel	Zinc	Chromium III	Lead	Arsenic	Naphthalene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BH01 0.5-0.6 X	14/11/19	COM/IND	10	6 (3)	C	50	50	10	229	12	210	<5	<1
BH01 1.5-1.6 X	14/11/19	COM/IND	45	6 (3)	F	38	38	16	10	17	<5	<5	<1
BH02 0.5-0.6 X	14/11/19	COM/IND	10	6 (3)	C	54	54	10	318	12	580	<5	<1
BH02 1.5-1.6 X	14/11/19	COM/IND	45	6 (3)	F	32	32	20	9	17	5	<5	<1
BH03 0.5-0.6 X	14/11/19	COM/IND	10	6 (3)	C	94	94	20	7850**	18	717	12	<1
BH03 1.5-1.6 X	14/11/19	COM/IND	45	6 (3)	F	23	23	5	30	8	36	<5	<1
BH04 0.5-0.6 X	14/11/19	COM/IND	10	6 (3)	C	162	162	15	3170**	12	1920	<5	<1
BH04 1.5-1.6 X	14/11/19	COM/IND	20	6 (3)	C	81	81	25	12	15	<5	<5	<1
BH05 0.5-0.6 X	14/11/19	COM/IND	10	6 (3)	C	32	32	10	1290*	15	52	<5	<1
BH05 0.9-1.0 X	14/11/19	COM/IND	10	6 (3)	C	51	51	18	34	15	<5	<5	<1
BH06 0.5-0.6 X	14/11/19	COM/IND	10	6 (3)	C	19	19	6	9	7	10	<5	<1
BH06 1.5-1.6 X	14/11/19	COM/IND	45	6 (3)	F	33	33	24	11	12	<5	<5	<1

Table 14 Soil Analytical Results Compared Against Ecological Investigation Levels (urban)

NEPM Ecological Investigation Levels for Soil **Bold - Indicates LOR Exceedances** X - Indicates Sample Withiin Inferred Excavation Colour Shading - Indicates ESL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x													
Sample ID	Sample Date	EIL Land Use Sensitivity Class	Soil CEC (cmolc/kg)	Soil pH	Soil Texture Class (fine /coarse)	Copper (CEC)	Copper (pH)	Nickel	Zinc	Chromium III	Lead	Arsenic	Naphthalene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BH02 0.5-0.6 X	14/11/19	URBAN	10	6 (3)	C	54	54	10	318	12	580	<5	<1
BH02 1.5-1.6 X	14/11/19	URBAN	45	6 (3)	F	32	32	20	9	17	5	<5	<1
BH06 0.5-0.6 X	14/11/19	URBAN	10	6 (3)	C	19	19	6	9	7	10	<5	<1
BH06 1.5-1.6 X	14/11/19	URBAN	45	6 (3)	F	33	33	24	11	12	<5	<5	<1

pH Designation:
(1) Using 0.01M CaCl2 extract. Rayment, G.E. and Lyons, D.J. (2011). "Soil Chemical Methods – Australasia". 495+20 pp. CSIRO Publishing, Melbourne.
(2) pHF (1:5). Adjusted by subtracting 0.75 with +/- 0.25 error to calibrate to the CaCl2 method (per comm. ALS Brisbane Acid Sulphate Soils Laboartory). Methods in accordance with Ahern, C.R., Stone Y., and Blunden B. (1998b). 'Acid Sulfate Soils Assessment Guidelines'. Acid Sulfate Soils Management Advisory Committee, Wollongbar, NSW, Australia.
(3) Classified in accordance with parent material typical soil pH as per the Tasmanian soils database

8 SOIL HUMAN HEALTH DIRECT CONTACT ASSESSMENT

8.1 Guidelines

Guidelines presented herein are based on potential exposure of human receptors to soil impact which may include:

- Trench workers repairing or building services (typically to 1 m bgs). This classification is not dependent on the land use class, and
- Onsite inhabitants which may be exposed to potential shallow soil impact in non-paved areas of the site.

8.1.1 Land Use Classification

The NEPM ASC (2013) guidelines have been referenced to ensure that the correct land use and density category has been adopted for the site and the surrounding properties (where applicable). As per NEPM ASC 2013 guidelines, the adopted land use class is dependent on the building density and the opportunity for soil access by site occupants (exposure to potentially impacted soil). Aspects needing to be considered include:

- Whether the site is of sensitive land use such as a childcare centre, preschool, primary school or aged care facility in which case land use Class A is applicable;
- The percentage of paved area to determine direct contact exposure risk and therefore classification as low or high density; and
- Classification based on residential, recreational or commercial/industrial setting.

8.1.2 Adopted Land Use Classification

The adopted land use class is presented in Table 15. Land use class is based on the opportunity for soil access as per NEPM ASC 2013 guidelines. Soil access is anticipated to include workers involved with construction plus future public space users and future trenchworks on site.

Table 15 Summary of Land Use Setting and Density for Determining Exposure Risk

Soil Bores	Construction Phase	Location	Land Use	Pathway	Land Use Class
All soil	During	Site	Construction worker and trench workers	ALL	D and trench worker specific
		Offsite	Public space land users (footpaths etc)	ALL	C
	Post	Site	Future trench workers	ALL	D and trench worker specific
		Site	Future public space (basement car park) land users	ALL	D
		BH06, BH02	Open space for future unit and townhouse site occupants. Recreational land use and medium/high density residential land users	ALL	C & B

DC – Dermal Contact - Trench Worker Guidelines (CRC CARE 2013)
DI – Dust Inhalation - HIL Guidelines (NEPM ASC 2013)
SI – Soil Ingestion - HIL Guidelines (NEPM ASC 2013)
ALL – All of above

8.1.3 Health Investigation & Screening Levels

The main exposure pathways and methods for assessing heath risk from contaminated soils are presented in Table 16.

Table 16 Summary of Exposure Pathways and Preliminary (Tier 1) Methods for Assessing Human Exposure Risk

Exposure Scenario	Contaminant Type	Tier 1 Assessment Method	Reference
Vapour Inhalation – Indoor (PVI)	Petroleum Hydrocarbons	HSL's (addressed in PVI sections)	NEPM ASC (2013)
Vapour Inhalation – Trench (PVI)			CRC CARE (Friebel & Nadebaum, 2011)
Dermal Contact		HSL's	
Dust Inhalation	Metals PAH's	Health Investigation Levels (HIL's)	NEPM ASC (2013)
Soil Ingestion			

PVI – Petroleum Vapour Intrusion

8.2 Findings

8.2.1 Dermal Contact - Petroleum Hydrocarbons

Laboratory analytical results are presented in Appendix 8. Table 17 presents soil hydrocarbon analytical results compared against CRC CARE (Friebel & Nadebaum, 2011) HSL guidelines for assessing dermal contact risk. Concentrations which exceeded laboratory LOR are highlighted in bold, HSL exceedances would be highlighted with a coloured cell indicating the highest HSL land used class which is exceeded.

There no guideline exceedances for dermal contact and no dermal contact risk identified.

Table 17 Soil Analytical Results Compared Against CRC CARE (Friebel & Nadebaum, 2011) Guidelines for Dermal Contact

CRC CARE Health Screening Level Dermal Contact Hazard from Soil Hydrocarbons'		EP080: BTEXN					EP080/071: TRH			
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		0.2	0.5	0.5	0.5	1	10	50	100	100
HSL B High Density Residential		140	21000	5900	17000	2200	5600	4200	5800	8100
HSL C Recreational		120	18000	5300	15000	1900	5100	3800	5300	7400
HSL D Commercial/Industrial		430	99000	27000	81000	11000	26000	20000	27000	38000
Intrusive Maintenance Worker		1100	120000	85000	130000	29000	82000	62000	85000	120000
Date	Sample									
14/11/2019	BH01 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	**240**	**110**
14/11/2019	BH01 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH02 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH02 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH03 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH03 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH04 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH04 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH05 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH05 0.9-1.0 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH06 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
14/11/2019	BH06 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100

8.2.2 Dust Inhalation & Soil Ingestion

Laboratory analytical results are presented in Appendix 8. Soil analytical results are compared against combined dust inhalation and soil ingestion risk is assessed through the application of NEPM ASC (2013) Health Investigation Levels (HILs) for exposure to soil contaminants and are presented in Table 18. Concentrations which exceeded laboratory LOR are highlight in bold (except for the metals), and HIL exceedances are highlighted with a coloured cell indicating the highest HIL land used class which is exceeded.

There was one HIL C guideline exceedance and one HIL D guideline exceedance, both for lead. There were no guideline exceedances in the areas of BH02 or BH06 (open space areas). For the area where the basement/carpark will be constructed the soil will be excavated and removed, and one sample exceeds HIL D guideline for lead in this area, being sample BH04 0.5-0.6.

Environmental Site Assessment: 55 Hampden Road, Battery Point, Version 3. July 2025.

Table 18 Soil Analytical Results Compared Against NEPM ASC (2013) Health Investigation Levels Guidelines

Bold - Indicates LOR Exceedance in Non Metalic Compounds		EA055: Moisture Content	EG005T: Total Metals by ICP-AES														EG035T: Total Recoverable Mercury by FIMS	EP075(SIM)B: Polynuclear Aromatic Hydrocarbons																			
NEPM Health Investigation Levels (HIL's) Dust Inhalation and Soil Ingestion Assessment X - Indicates Sample Within Proposed Excavation Zone		Moisture Content	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium Total	Cobalt	Copper	Lead	Manganese	Nickel	Selenium	Vanadium	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3.cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	PAHs	Benzo(a)pyrene TEQ (WHO)
Units		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		1	5	10	1	50	1	2	2	5	5	5	2	5	5	5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HIL B Medium/High Density Resider	☑ HIL B		500		90	40000	150		600	30000	1200	14000	1200	1400		60000	120																	400	4
HIL C Recreational	☑ HIL C		300		90	20000	90		300	17000	600	19000	1200	700		30000	80																	300	3
HIL D Commerial/Industrial	☑ HIL D		3000		500	300000	900		4000	240000	1500	60000	6000	10000		400000	730																	4000	40
HIDE ROW	D		3000		500	300000	900		4000	240000	1500	60000	6000	10000		400000	730																	4000	40
Sample date:	Sample ID																																		
14/11/2019	BH01 0.5-0.6 X	13.2	<5	190	<1	<50	<1	12	11	50	210	267	10	<5	52	229	0.2	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	2.3	2.4	1.1	1.1	1.2	0.6	1.1	<0.5	<0.5	0.6	**12**	**1.4**
14/11/2019	BH01 1.5-1.6 X	24.1	<5	100	<1	<50	<1	17	16	38	<5	166	16	<5	93	10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14/11/2019	BH02 0.5-0.6 X	16.1	<5	260	<1	<50	<1	12	11	54	580	268	10	<5	53	318	0.3	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	2.4	2.6	1.1	1.2	1.5	0.6	1.3	0.6	<0.5	0.8	**13**	**1.7**
14/11/2019	BH02 1.5-1.6 X	27	<5	110	<1	<50	<1	17	21	32	5	176	20	<5	72	9	<0.1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1**	<0.5
14/11/2019	BH03 0.5-0.6 X	14.2	12	290	<1	<50	43	18	16	94	717	500	20	<5	58	7850	1.8	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.4	1.5	0.8	0.8	0.9	<0.5	0.8	<0.5	<0.5	<0.5	**7**	**1**
14/11/2019	BH03 1.5-1.6 X	19	<5	40	<1	<50	<1	8	7	23	36	36	5	<5	53	30	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14/11/2019	BH04 0.5-0.6 X	21.1	<5	140	<1	<50	16	12	13	162	1920	210	15	<5	81	3170	1.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14/11/2019	BH04 1.5-1.6 X	16.5	<5	50	<1	<50	<1	15	25	81	<5	254	25	<5	120	12	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14/11/2019	BH05 0.5-0.6 X	14.5	<5	90	<1	<50	3	15	16	32	52	329	10	<5	69	1290	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14/11/2019	BH05 0.9-1.0 X	10.5	<5	60	<1	<50	<1	15	11	51	<5	98	18	<5	67	34	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14/11/2019	BH06 0.5-0.6 X	18.2	<5	80	<1	<50	<1	7	9	19	10	229	6	<5	66	9	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
14/11/2019	BH06 1.5-1.6 X	24.6	<5	340	<1	<50	<1	12	26	33	<5	287	24	<5	63	11	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

9 INDOOR INHABITANT PVI ASSESSMENT – HSL's

This PVI assessment has been conducted in accordance with relevant CRC CARE Technical Documentation and NEPM 2013 guidelines presented in references section of this report. The HSL assessment approach is generally the first (Tier 1) investigation phase adopted for assessing PVI risk at petroleum hydrocarbon (PHC) impacted sites. HSL guidelines have been applied for samples collected from the site to account for risks that may be associated with volatile hydrocarbon vapour intrusion into confined spaces where there may be an inhalation risk through longer term exposure. This does not constitute a full vapour risk assessment but provides additional information from which to further quantify any risk.

A detailed investigation (Tier 2 to 3) is recommended over an HSL assessment where an acute risk has been identified at the site (CRC CARE 2013) because of:

- Migrating product on surface soils beneath buildings;
- Strong PHC odours;
- Flammable risk in confined spaces; and/or
- Health complaints from occupants.

Based on the site visits, none of the above conditions have been identified at the site. If the outcome of this Tier 1 assessment reveals HSL exceedances for hydrocarbon vapour intrusion, a more detailed (Tier 2) assessment will be required to further evaluate the human health risk.

PVI risk is initially interpreted through the development of HSL threshold limits from the following classifications:

- The geology and or hydrogeology of the investigation point; and
- Land use sensitivity:

The resulting HSL threshold limits are compared with laboratory analytical results.

9.1 Selected Media for Assessing PVI Risk

Table 19 presents a summary of the preferred HSL approach to assessing PVI risk. In this case, all soil was investigated, whether it was from the excavation zone or below, to give an indication of PVI risk.

Table 19 Preferred Methods for Determining Site PVI Risk

Media Analysed	Method	Limitations	Order of Preference
Soil Gas	Concentrations of a soil gas through a soil vapor probe	This approach provides the most reliable data in interpreting PVI risk, although direct modelling should be applied if concentrations exceed HSL threshold limits.	Primary
Groundwater	Concentrations of PHC in groundwater through deployment of monitoring wells	More robust and reliable that soil in determining onsite and in particular, offsite risks. Determining PVI risk based on groundwater is inherently conservative when interpreting vapour risk to account for not readily discernible preferential pathways. Reference may be drawn to alternative assessment approaches: 1) Application of site-specific conditions to the CRC CARE model for assessing PVI risk 2) Soil gas interpretation for areas where a PVI risk is identified from groundwater analysis.	Secondary
Soil	Concentrations of PHC in soil	Concentrations in soil may be subject variability due to soil moisture, organic content and oxygen ingress all which create significant bias in threshold values. Reliance is place on utilizing groundwater analysis over soil. Soil results provide localised information.	Tertiary

9.2 Land Use Class

For surrounding properties, the potential PVI risk is characterized through application of CRC CARE HSL's for each individual property based on their existing land use (NEPM 2013; Friebel & Nadebaum 2010). The CRC CARE guidelines have been referenced to ensure that the correct land use and density category has been adopted for surrounding land use to ensure health risks are consistent with the HSL models. Aspects considered include the:

- Sensitivity of the existing or potential land use;
- Percentage of paved area for defining potential vapour migration risk;
- Type of basement garage which may influence the confinement of PHC vapours;
- Presence of a slab or cavity for discerning vapour intrusion risk.

If hydrocarbon impacted soil is discerned at the site, consideration is given to downgradient receptors. Where applicable, land use class therefore considers:

- Downgradient receptors where onsite HSL exceedances have been identified in soil; and
- Variations in land use for different parts of the proposed development.

The following land use classes are applied:

- *HSL D for commercial/industrial spaces (applicable to basement car park)*
- *HSL B for medium/high density residential (applicable to BH02 and BH06)*

9.3 Soil Assessment

Laboratory analytical results are presented in Appendix 6. Table 20 presents the results against a potential indoor vapour risk. Concentrations which exceeded laboratory LOR would be highlighted in bold. HSL exceedances would be highlighted with a coloured cell.

There no detection of hydrocarbons, and consequently no indoor vapour risk.

Table 20 Soil Analytical Results Compared Against HSL B/D for Indoor Vapour Risk

Soil Hydrocarbon HSL's for Assessing Indoor Vapour Intrusion (NEPM 2013) Soil Sample Analysis					EP080: BTEXN					EP080/071: TRH	
Bold - Indicates LOR Exceedances					Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	F1	F2
Colour Shading - Indicates HSL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x											
Sample ID	Sample Date	Depth Class	Grain Class	HSL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 1	LOR 10	LOR 50
BH01 0.5-0.6	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH01 1.5-1.6	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH02 0.5-0.6	14/11/2019	>SLAB/CUT RL	CLAY	B	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH02 1.5-1.6	14/11/2019	>SLAB/CUT RL	CLAY	B	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH03 0.5-0.6	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH03 1.5-1.6	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH04 0.5-0.6	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH04 1.5-1.6	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH05 0.5-0.6	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH05 0.9-1.0	14/11/2019	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH06 0.5-0.6	14/11/2019	0 - 1	SAND	B	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH06 1.5-1.6	14/11/2019	1 - 2	CLAY	B	<0.2	<0.5	<0.5	<0.5	<1	<10	<50

10 TRENCH WORKER PVI ASSESSMENT – HSL's

10.1 Classification

The following Health Screening Assessment is based on hydrocarbon vapour intrusion risk to subsurface excavation workers within excavations. This is assessed through analysis of vapours from soil and soil vapours. Groundwater is generally not used to assess risk as threshold limits for all depth and grain classes are non-limiting. Land use classes are not applicable when assessing vapour intrusion into trenches.

Soil and soil vapour HSL's for assessing hydrocarbon risk to maintenance workers are based on CRC CARE Technical Report 10 guidelines (Friebel & Nadebaum 2011) and the following variables:

- Dominant grain size class of material at the soil sample depth or based on the dominant grain class of the backfill material based on US Agriculture Soil Classification System (SCS) and partitioning into either sand, silt or clay; and
- Classifying soil according to depth ranges: 0 to 2 m; 2 to 4 m; 4 to 8 m; and greater than 8 m;

10.2 Findings

Laboratory analytical results are presented in Appendix 6. Summary of soil analytical results compared against HSL's for Assessing PVI Risk to Trench Workers are presented in Table 21. Concentrations that exceeded laboratory LOR would be highlighted in bold, and if there were any HSL exceedances they would be highlighted with a coloured cell.

There were no exceedances of the CRC CARE HSL guidelines for Assessing PVI Risk to Trench Workers and no risk identified. Zinc, Lead, Cadmium and Benzo(a)pyrene are all noticeably higher in areas of fill material.

Table 21 Summary of Soil Analytical Results Compared against HSL's for Assessing PVI Risk to Trench Workers

CRC CARE Health Screening Level Assessment for PHC Inhalation Risk To Trench Workers From Soil Sample Analysis				EP080: BTEXN					EP080/071: TRH	
Bold - Indicates LOR Exceedances										
Dark Grey Shading - Indicates HSL Exceedances: >1 x, * 2-5 x, ** 5-20 x, * 20-50 x, **** >50 x**				Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction
Sample ID	Sample Date	Depth Class	Grain Class	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 1	LOR 10	LOR 50
BH01 0.5-0.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH01 1.5-1.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH02 0.5-0.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH02 1.5-1.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH03 0.5-0.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH03 1.5-1.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH04 0.5-0.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH04 1.5-1.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH05 0.5-0.6	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH05 0.9-1.0	14/11/2019	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH06 0.5-0.6	14/11/2019	0 to 2m	SAND	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH06 1.5-1.6	14/11/2019	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50

11 SOIL DISPOSAL ASSESSSMENT

11.1 Guidelines

Soil which is excavated from the site for landfill disposal is to be assessed against Information Bulletin 105 (IB105) for Classification and Management of Contaminated Soil for Disposal. The EPA uses four categories to classify contaminated soil as per Table 22:

- (Level 1) Fill Material;
- (Level 2) Low Level Contaminated Soil;
- (Level 3) Contaminated Soil; and
- (Level 4) Contaminated Soil for Remediation.

Fixed numerical values are presented for soil concentrations and leachable fraction concentrations.

Table 22 Summary of IB105 Classification Guidelines

	Classification (with reference to Table 2)	Controlled Waste[1]	Comments
Fill Material[2] (Level 1)	Soil that exhibits levels of contaminants below the limits defined under *Fill Material* in Table 2.	Unlikely	Soil classified as *Fill Material* can still be a 'pollutant' under the *Environmental Management and Pollution Control Act 1994* and needs to be responsibly managed.
Low Level Contaminated Soil (Level 2)	Soil that exhibits levels of contaminants above the limits defined under *Fill Material* but below the limits defined under *Low Level Contaminated Soil* in Table 2.	Likely	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil (Level 3)	Soil that exhibits levels of contaminants above the limits defined under *Low Level Contaminated Soil* but below the limits defined under *Contaminated Soil* in Table 2.	Yes	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil for Remediation (Level 4)	Soil that exhibits levels of contaminants above the limits defined under *Contaminated Soil* in Table 2 (regardless of the maximum total concentrations) is generally ***not*** considered acceptable for off-site disposal without prior treatment.	Yes	Soil that contains contaminants that do not have criteria for leachable concentrations (*e.g.* petroleum hydrocarbons), and the levels of contaminants exceed the maximum total concentrations listed in *Contaminated Soil*, are generally classified as *Contaminated Soil for Remediation*.

[1] Controlled Waste is defined in the *Environmental Management and Pollution Control Act 1994*.
[2] Criteria for *Fill Material* are the limits set by the Director for the purposes of R.9(2)(a)(ii) in the *Regulations*.

11.2 Findings

The soil samples have been compared against IB105 guidelines for potential future soil disposal, see Table 23. According to IB105, two samples are considered Level 3 (contaminated soil) due to cadmium and lead, four samples are considered Level 2 (Low Level Contaminated Soil), and six samples as tested are considered Level 1 – Clean Fill.

Table 23 Soil Analytical Results Compared Against IB105 Investigation Limits for soil Disposal

Information Bulletin 105 Classification and Management of Contaminated Soil For Disposal		Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Copper	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Zinc	Benzo(a)pyrene	C6 - C9 Fraction	C10 - C36 Fraction (sum)	Sum of polycyclic aromatic hydrocarbons	Benzene	Toluene	Ethylbenzene	Total Xylenes
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		5	10	1	1	2	5	2	5	5	0.1	2	5	5	0.5	10	50	0.5	0.2	0.5	0.5	0.5
Investigation Level Selected																						
IB105 Level 1		<20	<300	<2	<3	<50	<100	<100	<300	<500	<1	<60	<10	<200	<0.08	<65	<1000	<20	<1	<1	<3	<14
IB105 Level 2		20	300	2	3	50	100	100	300	500	1	60	10	200	0.08	65	1000	20	1	1	3	14
IB105 Level 3		200	3000	40	40	500	2000	200	1200	5000	30	600	50	14000	2	650	5000	40	5	100	100	180
IB105 Level 4		750	30000	400	400	5000	7500	1000	3000	25000	110	3000	200	50000	20	1000	10000	200	50	1000	1080	1800
14/11/2019	BH01 0.5-0.6 X	<5	190	<1	<1	12	50	11	210	267	0.2	10	<5	229	1.1	<10	290	11.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH01 1.5-1.6 X	<5	100	<1	<1	17	38	16	<5	166	<0.1	16	<5	10	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH02 0.5-0.6 X	<5	260	<1	<1	12	54	11	580	268	0.3	10	<5	318	1.3	<10	<50	13	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH02 1.5-1.6 X	<5	110	<1	<1	17	32	21	5	176	<0.1	20	<5	9	<0.5	<10	<50	0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH03 0.5-0.6 X	12	290	<1	43	18	94	16	717	500	1.8	20	<5	7850	0.8	<10	<50	6.8	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH03 1.5-1.6 X	<5	40	<1	<1	8	23	7	36	36	<0.1	5	<5	30	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH04 0.5-0.6 X	<5	140	<1	16	12	162	13	1920	210	1.9	15	<5	3170	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH04 1.5-1.6 X	<5	50	<1	<1	15	81	25	<5	254	<0.1	25	<5	12	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH05 0.5-0.6 X	<5	90	<1	3	15	32	16	52	329	0.2	10	<5	1290	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH05 0.9-1.0 X	<5	60	<1	<1	15	51	11	<5	98	<0.1	18	<5	34	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH06 0.5-0.6 X	<5	80	<1	<1	7	19	9	10	229	<0.1	6	<5	9	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
14/11/2019	BH06 1.5-1.6 X	<5	340	<1	<1	12	33	26	<5	287	0.1	24	<5	11	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5

12 CONCEPTUAL SITE MODEL

12.1 Primary Sources of Contamination

12.1.1 Confirmed Primary Source

Through the desktop assessment and onsite invasive soil investigation the primary source of contamination on site is considered to be uncontrolled fill from the demolition of the previous hotel and associated buildings in 1967.

12.1.2 Potential Primary Sources

There are no known potential primary sources.

There may be unknown potential sources of onsite or offsite impact (outside of the sampling areas) which GES are unaware of and therefore have not been investigated within this assessment.

12.2 Potential Secondary Sources of Contamination

Two potential secondary sources of contamination were identified and ruled out;

- A UST was removed from 68 Hampden Road in 2015, this UST was believed to have been used by a local fire brigade in the early 1900s, and had not been used since a purchase in 1956. UST decommissioning found no contamination.
- General vehicle use on roads and car parks in the Battery Point area.

Given the long and varied use of land in the Battery Point area, other sources of contamination may be present, but were not identified within the scope of this report.

12.3 Potential Receptors

The following presents a summary of all potential receptors considered in the assessment.

12.3.1 Potential Future Onsite Users

Potential future onsite receptors include site commercial, construction and trench workers during the development phase, and future onsite car park users (area of the proposed basement carpark) and future onsite residents (small areas of open space where basement carpark will not be present).

12.3.2 Potential Ecological Receptors

The closest ecological receptor is the River Derwent approximately 310m away. On site stormwater has the potential to migrate through stormwater networks if contaminated soil erosion is insufficiently managed.

12.3.3 Potential Offsite Human Receptors

Potential offsite human receptors include residents in the nearby area, as the area directly downslope of the site is zoned inner residential.

12.4 Transport Mechanisms and Exposure Routes

12.4.1 Incomplete Contaminant Exposure Pathways

Contaminants entering groundwater have been dismissed due to the low likelihood of leaching.

- Previous investigations by GES have found Benzo(a)pyrene has low leaching potential.
- Contaminated soil containing Zinc, Lead and Benzo(a)pyrene will be removed promptly during construction work and hence there will be a limited scope of time for leaching events to impact groundwater.

12.4.2 Potential Pathways

A dust inhalation and soil ingestion potential pathway, of soil and dust migration entering nearby residential properties.

12.4.3 Plausible Contaminant Exposure Pathway Details

Plausible exposure pathways have been identified at the site;

Commercial workers during construction phase (Lead exceeds HIL D in sample BH04 0.5-0.6). Ecosystem impact of contaminants entering stormwater through soil/sediment erosion during construction phase.

Environmental Site Assessment: 55 Hampden Road, Battery Point, Version 3. July 2025.

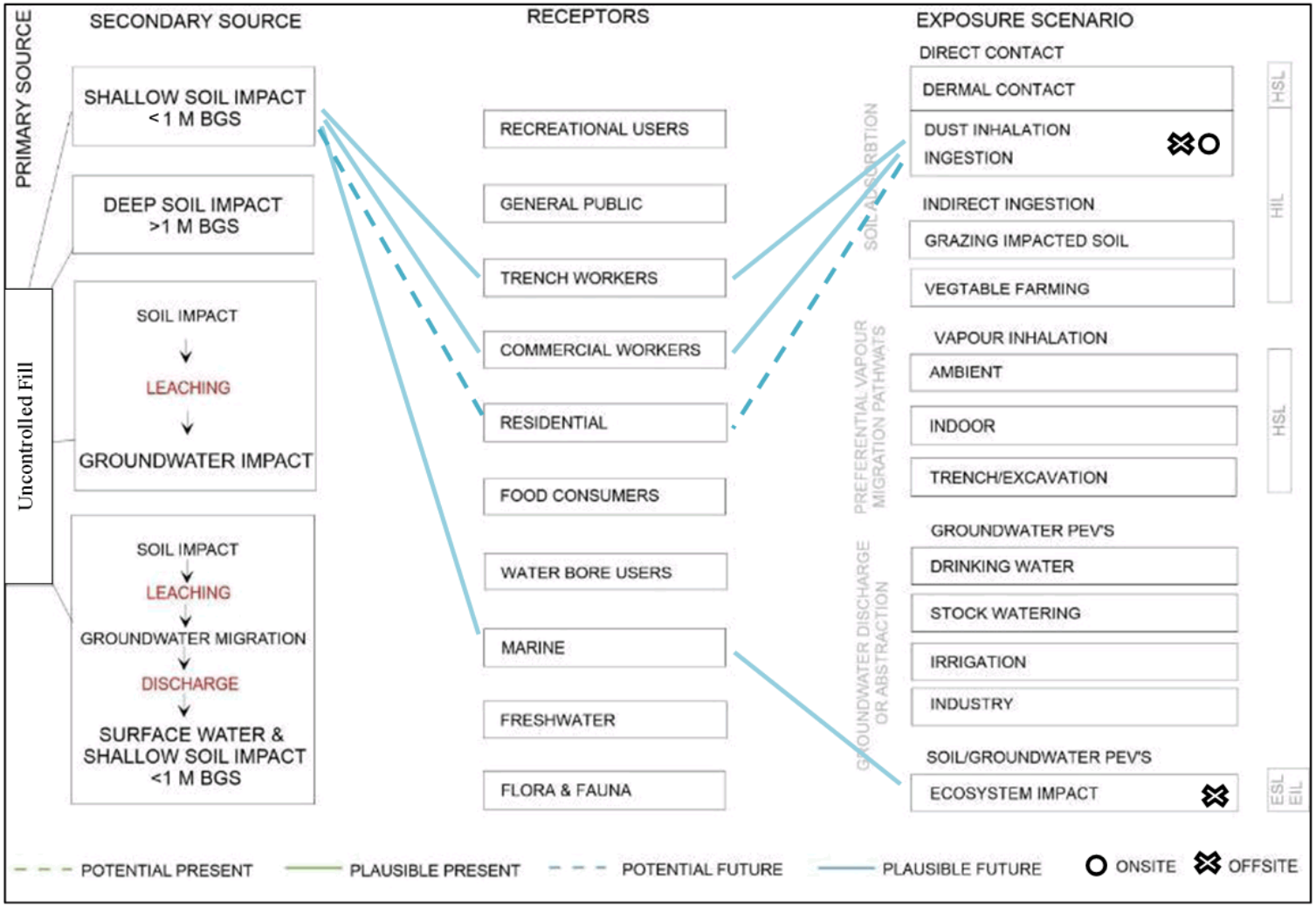

Figure 9 Conceptual Site Model

13 CONCLUSIONS & RECOMMENDIATIONS

13.1 Desktop Assessment

The following information was gathered during the desktop investigation:

- The majority of the site (currently hotel and car parking area) is zoned *Urban Mixed Use*, and the area of 43 South Street is zoned *Inner Residential* under the *Hobart Council Interim Planning Scheme of 2015*. The proposal is for a new three storey apartment complex building, which includes 13 units, two town houses, commercial spaces on the ground floor, plus an underground basement carpark with 36 parking spaces plus an existing historic house.
- The geology of the site features Jurassic dolerite.
- The Hobart Council records note that the area is adjacent to a potentially contaminated site at 47 Hampden Road (gas cylinder at Da Angelos restaurant) and separated by Kelly street from 57-59 Hampden Road (record of hydrocarbon storage at Terrys Bakery in 1974). We consider the likelihood of contamination from these sources to be negligible, and a more likely source of contamination to be uncontrolled fill, as the area of 55 Hampden Road with several buildings was demolished in 1967, and the Prince Of Wales Hotel and surrounding car parking areas built on top of fill (fill observed in GES Preliminary Geotechnical Investigation August 2018).
- Historical Aerial photographs since 1948 show no obvious signs of potentially contaminating activities, aside from the demolition of several buildings on the site.
- Contaminants Of Potential Concern (COPC) at the site include the following: TPH/TRH; Mono Aromatic hydrocarbons: (BTEXN); PAH; Heavy Metals.

13.2 Adopted Guideline Settings

The following investigation limits were adopted for the site:

- Ecosystem receptor
  - Urban Residential land use and ecosystem River Derwent (300-350m offsite) ESL and EILs
- Human Receptor
  - HIL B/ HIL D for soil direct contact risk to future medium to high density residential land user in areas without basement that may have access to soil (unit open space) / Future construction workers users.
  - HIL B/ HIL C/ HIL D for soil ingestion and dust inhalation risk to future medium to high density residential land user in areas without basement that may have access to soil (unit open space) / nearby public land users / future construction workers soil direct contact risk
  - HSL C/ HSL D vapour risk to future open space site users / vapour risk in basement car park, and to trench workers

13.3 Soil Assessment

From the soil assessment, it is concluded that:

- Environment: Benzo(a)pyrene was detected at levels that exceeded Ecological Screening Levels for commercial/industrial use in three of the six boreholes at 0.5-0.6m depth, it was not detected in the samples taken from lower depths in these test holes, and is likely to be associated with fill. Heavy metals were detected at levels that exceeded Ecological Investigation Levels for commercial/industrial use in three of the six boreholes at 0.5-0.6m depth, it was not detected in the samples taken from lower depths in these test holes, and is likely to be associated with fill, the heavy metals detected were as follows; BH03 0.5-0.6, Zinc at 5-20 times EIL, BH04 0.5-0.6, Zinc at 5-20 times EIL and Lead at 1-2 times EIL, BH05 0.5-0.6 Zinc at 2-5 times EIL.

- Human Health and Vapour Risk: There were no human health guideline exceedances for risk to human receptors for dermal contact, or any vapour risk for either indoor or trench worker criteria. There was one dust inhalation and soil ingestion risk in association with Lead in BH04 0.5-0.6 exceeding HIL Class D (commercial/industrial use). A detection exceeding HIL Class C in BH03 0.5-0.6 is not applicable as that area is considered Class D. The area of natural soil (BH06) featured only very low trace levels of Lead, and hence Lead is only of concern in the areas of fill, and not in the areas of natural soil.
- Excavated Soil Management: According to *IB105*, two samples are considered Level 3 (Contaminated Soil) – Cadmium in BH03 0.5-0.6 and Lead in BH04 0.5-0.6, four samples are considered Level 2 (Low Level Contaminated Soil) – BH01 0.5-0.6, BH02 0.5-0.6, BH05 0.5-0.6 and BH06 1.5-1.6, and six samples as tested are considered Level 1 – Clean Fill. Contaminants include Lead, Cadmium, Zinc, Benzo(a)pyrene, Mercury, Barium, Copper and Manganese.
- For the boreholes in the area of 55 Hampden Road (area with fill, and area of proposed basement) contamination was present at the 0.5-0.6m depth of each sample, and not at the lower depth (0.9-1.0 or 1.5-1.6m) – this suggests that the contaminants are linked to the fill present on site, as the proportion of fill to natural soil decreases with depth until natural soil and weathered rock is predominant around 1.5-1.7m depth.

13.4 Conclusion Summary

GES recommends the following:

- There were no dermal contact or vapour risk exceedances for the soil on site.
- A soil ingestion and dust inhalation risk was identified for Lead in one sample (BH04 0.5-0.6), this is a plausible risk to construction workers in contact with the soil during development, and a potential risk for neighbouring residents if soil migration is not managed. A Contamination Management Plan (CMP) will be required prior to the commencement of works to manage this risk to human health receptors.
- There were exceedances for Ecological Screening Levels (Benzo(a)pyrene in three samples), and Ecological Investigation levels, (Zinc in three samples and Lead in one sample), therefore the soil on site could be considered an environmental risk, and a Soil and Water Management Plan (SWMP) will be required to address environmental risks prior to commencement of works.
- According to *IB105*, two samples are considered Level 3 (Contaminated Soil), four samples are considered Level 2 (Low Level Contaminated Soil), and six samples as tested are considered Level 1 (Clean Fill). Contaminants include Lead, Cadmium, Zinc, Benzo(a)pyrene, Mercury, Barium, Copper and Manganese. The contaminated soil on site will be removed during the construction phase, the excavated soil will require disposal at a Level 3 waste facility (Copping). A permit to transport the waste (obtained through the EPA) will be required. Given most contamination was observed at 0.5-0.6m depth, the client may wish to engage in further investigations to delineate the extent of contaminated material, as material considered Level 1 could be disposed of as Clean Fill.
- We advise that a Contamination Management Plan (CMP) accounting for human health risks, and a Soil and Water Management Plan (SWMP) to manage soil and sediment movement, prepared by a suitably qualified environmental consultant, will be required prior to any works on site.

13.4.1 *Statement of Suitability*

Based on the results of the Environmental Site Assessment, the excavation as part of the planned works will require the implementation of a Contamination Management Plan (CMP) and Soil and Water Management Plan (SWMP) to mitigate the risks to human health and the environment.

With the implementation of a suitable CMP and SWMP, the site will be suitable for the proposed use, without adversely impacting on human health or the environment.

Yours faithfully,

Sarah Joyce BSc (Hons)

Senior Environmental Scientist

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LIMITATIONS STATEMENT

This *Environmental Site Assessment* Report has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and MRRC Pty Ltd. To the best of GES's knowledge, the information presented herein represents the Client's requirements at the time of printing of the Report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in findings differing from that described in this Report. In preparing this Report, GES has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations referenced herein. Except as otherwise stated in this Report, GES has not verified the accuracy or completeness of such data, surveys, analyses, designs, plans and other information.

The scope of this study does not allow for the review of every possible soil and groundwater contaminant over the whole area of the site. Samples collected from the investigation area are assumed to be representative of the areas from where they were collected and indicative of the contamination status of the site at that point in time. The conclusions described within this report are based on these samples, the results of their analysis and an assessment of their contamination status.

This report does not purport to provide legal advice. Readers of the report should engage professional legal practitioners for this purpose as required.

No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third party.

Appendix 1 GES Staff

Geo-Environmental Solutions (GES) is a specialist geotechnical and environmental consultancy providing advice on all aspects of soils, geology, hydrology, and soil and groundwater contamination across a diverse range of industries.

Geo Environmental Solutions Pty Ltd:

- ACN – 115 004 834
- ABN – 24 115 004 834

GES STAFF - ENGAGED IN SITE INVESTIGATION WORKS

Dr John Paul Cumming B.Agr.Sc (Hons) Phd CPSS GAICD

- Principle Author and Principle Environmental Consultant
- PhD in Environmental Soil Chemistry from the University of Tasmania in 2007
- 20 years' experience in environmental contamination assessment and site remediation.

Mr Mark Downie B.Agr.Sc

- Soil Scientist
- 10 Year experience in contamination assessment and reporting of soils and groundwater.

Mr Aaron Plummer (Cert. IV)

- Soil Technician
- 10 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

Ms Sarah Joyce BSc (Hons)

- Senior Environmental Scientist
- Honours in Geography and Environmental Science at the University of Tasmania in 2003
- 20 years professional work experience and 12 years contaminated site assessment.

GES STAFF – CONTAMINATED SITES EXPERIENCE

Dr Sam Rees B.Agr.Sc (Phd)

- Soil & Environmental Scientist
- 6 years' experience in hydrocarbon and heavy metal contamination assessment and reporting of soils and groundwater.

Mr Grant McDonald (Adv. cert. hort.)

- Soil Technician
- 10 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.
- (May 2018); Vapour Intrusion Workshop (Part A) – Petroleum Hydrocarbons (July 2017)

Appendix 2 Site Photographs 14/11/2019

Borehole 1

Borehole 2

Borehole 3

Borehole 4

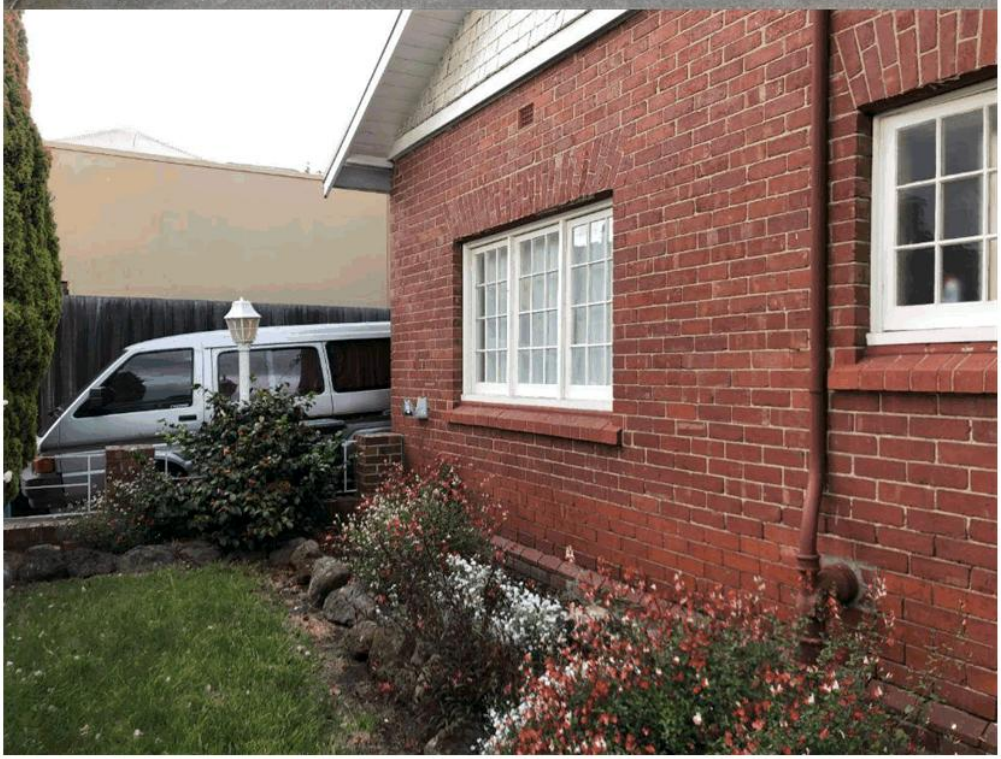
Borehole 5

Borehole 6

GES

FL 9799

FL 9799



43

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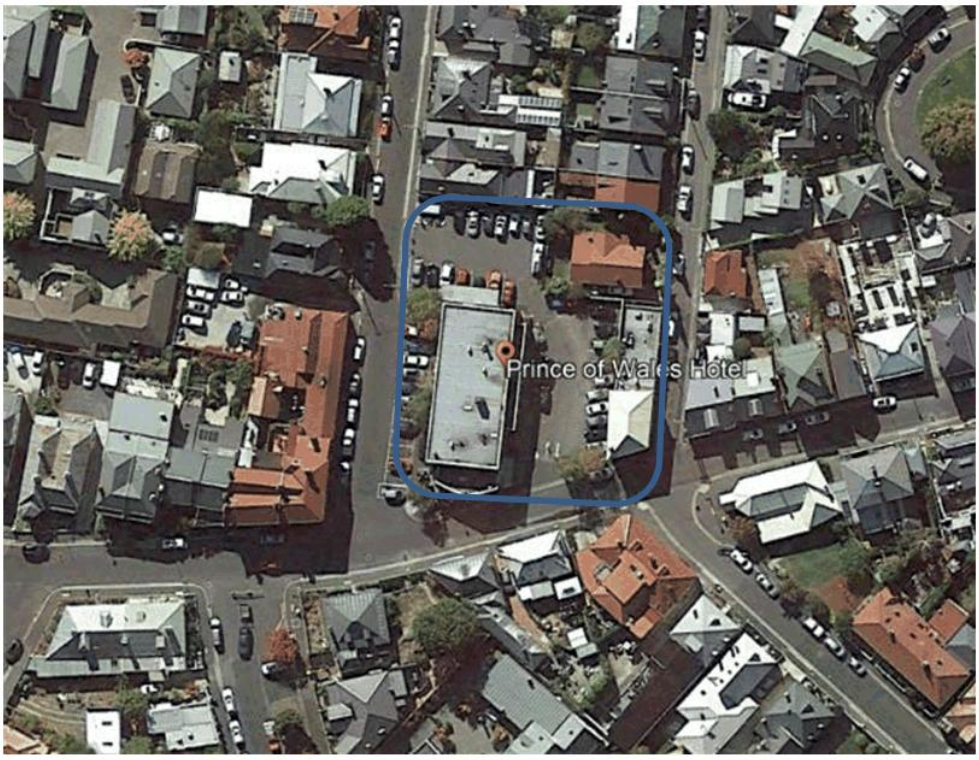
Appendix 3 Historical Aerial Photographs

April 2019 – Source Google Earth



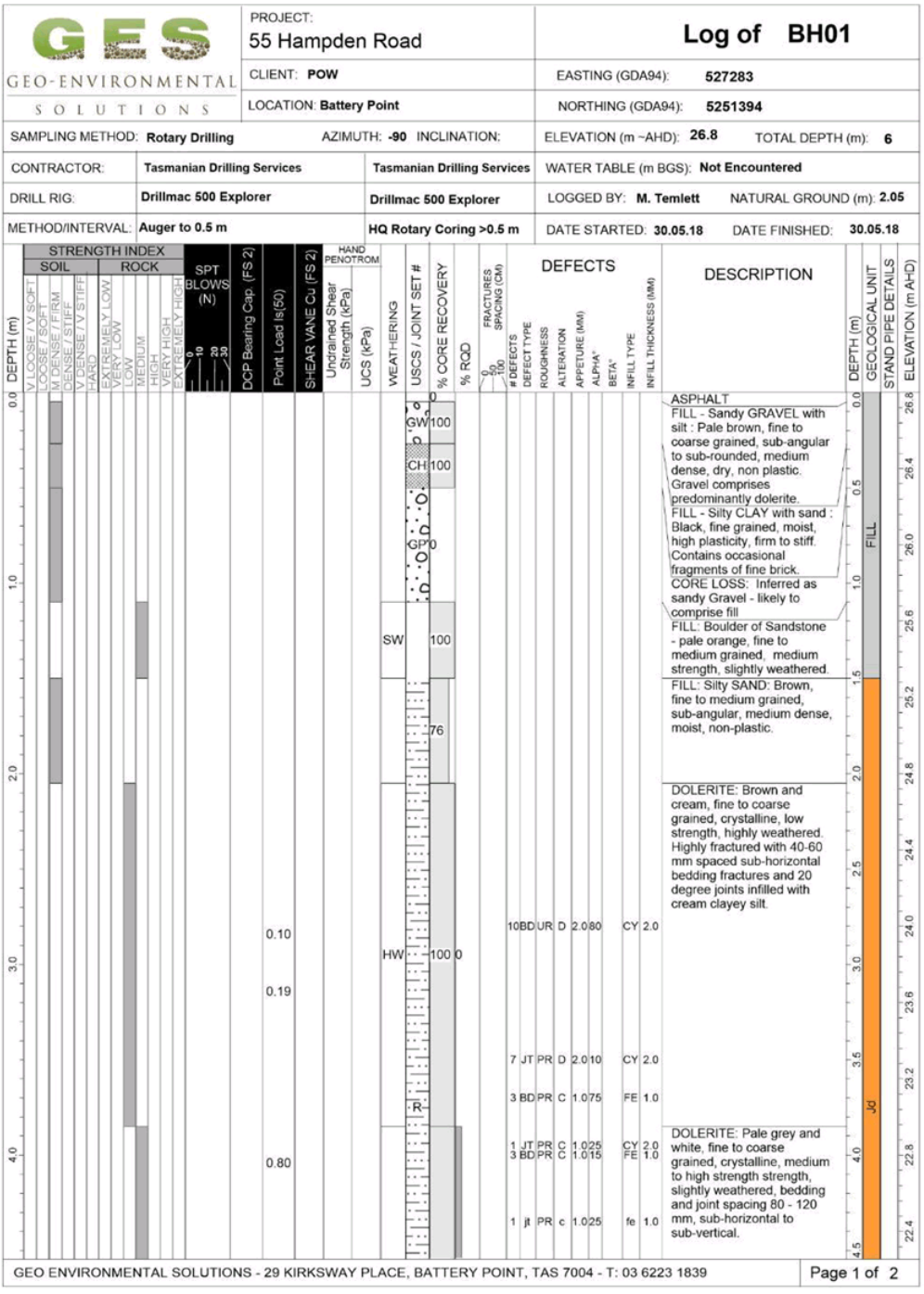
October 2003 – Source Google Earth

1969 – Source DPIPWE

1958 – Source DPIPWE

1946 – Source DPIPWE

Appendix 4 Borehole Logs from Preliminary Geotechnical Investigation 2018



Environmental Site Assessment: 55 Hampden Road, Battery Point, Version 3. July 2025.

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road		**Log of BH01**
CLIENT: **POW**		EASTING (GDA94): **527283**
LOCATION: **Battery Point**		NORTHING (GDA94): **5251394**
SAMPLING METHOD: **Rotary Drilling**	AZIMUTH: **-90** INCLINATION:	ELEVATION (m ~AHD): **26.8** TOTAL DEPTH (m): **6**
CONTRACTOR: **Tasmanian Drilling Services**	**Tasmanian Drilling Services**	WATER TABLE (m BGS): **Not Encountered**
DRILL RIG: **Drillmac 500 Explorer**	**Drillmac 500 Explorer**	LOGGED BY: **M. Temlett** NATURAL GROUND (m): **2.05**
METHOD/INTERVAL: **Auger to 0.5 m**	**HQ Rotary Coring >0.5 m**	DATE STARTED: **30.05.18** DATE FINISHED: **30.05.18**

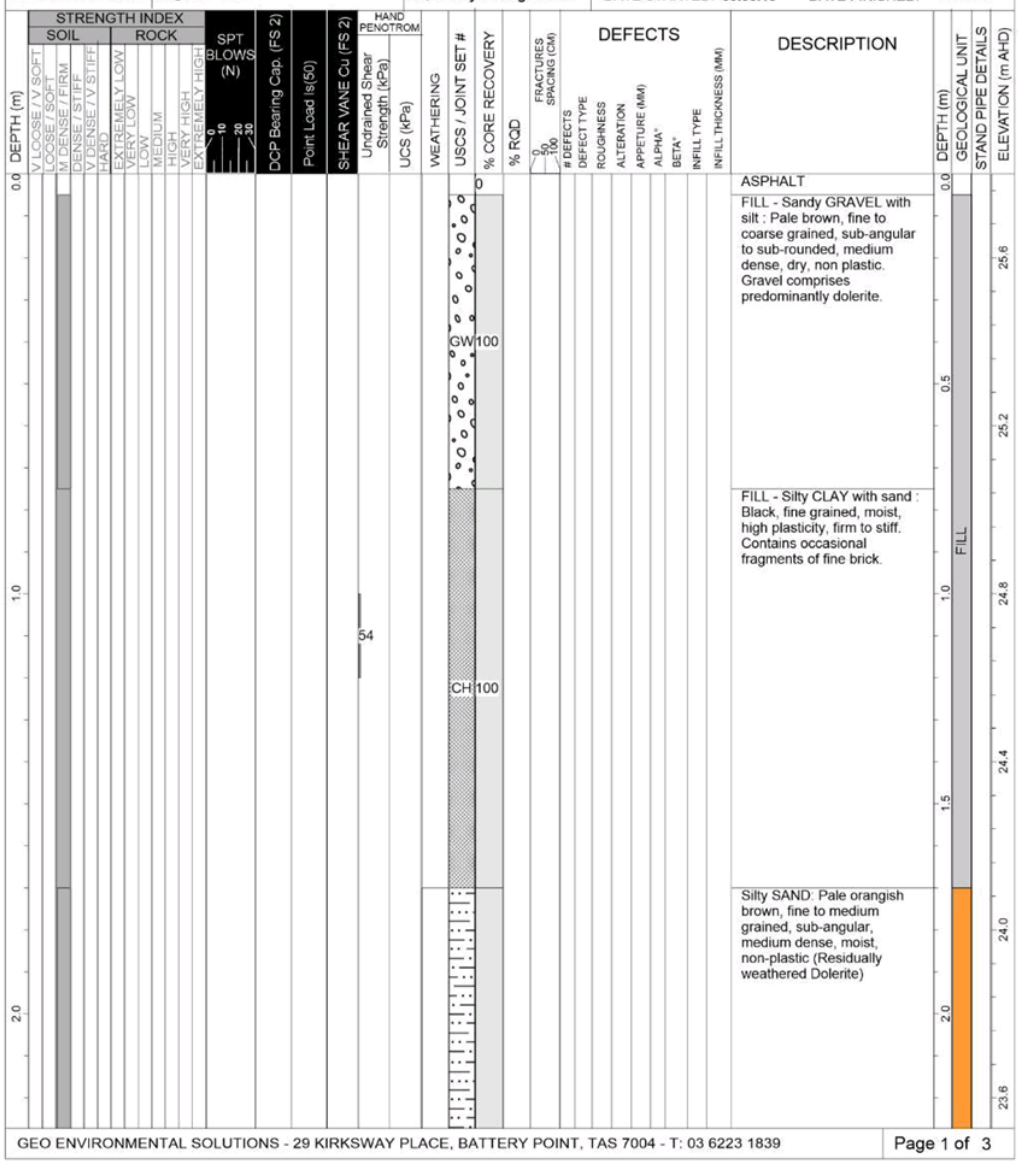
DEPTH (m)	STRENGTH INDEX (SOIL: V LOOSE / V SOFT, LOOSE / SOFT, M DENSE / FIRM, DENSE / STIFF, V DENSE / V STIFF, HARD; ROCK: EXTREMELY LOW, VERY LOW, LOW, MEDIUM, HIGH, VERY HIGH, EXTREMELY HIGH)	SPT BLOWS (N)	DCP Bearing Cap. (FS 2)	Point Load Is(50)	SHEAR VANE Cu (FS 2)	HAND PENOTROM Undrained Shear Strength (kPa)	UCS (kPa)	WEATHERING	USCS / JOINT SET #	% CORE RECOVERY	% RQD	FRACTURES SPACING (CM)	DEFECTS #	DEFECT TYPE	ROUGHNESS	ALTERATION	APPETURE (MM)	ALPHA°	BETA°	INFILL TYPE	INFILL THICKNESS (MM)	DESCRIPTION	DEPTH (m)	GEOLOGICAL UNIT	STAND PIPE DETAILS	ELEVATION (m AHD)
5.0				0.22				SW		100	27		10	BD	PR	C	1.0	80		FE	1.0					22.0
				0.15									1	JT	PR	C	1.0	15		FE	1.0	DOLERITE: Pale grey and white, fine to coarse grained, crystalline, low to medium strength, moderately weathered, locally highly weathered, bedding and joint spacing 60 - 90 mm, sub-horizontal to 30 degrees. EOH at 6.0 m				21.6
													3	BD	UR	C	1.0	75		CY	2.0					21.2
								MW		100	0															
6.0				0.26									2	BD	UR	C	1.0	80		FE	1.0		6.0			

GEO ENVIRONMENTAL SOLUTIONS - 29 KIRKSWAY PLACE, BATTERY POINT, TAS 7004 - T: 03 6223 1839 Page 2 of 2

Environmental Site Assessment: 55 Hampden Road, Battery Point, Version 3. July 2025.

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road		**Log of BH02**
CLIENT: **POW**		EASTING (GDA94): **527273**
LOCATION: **Battery Point**		NORTHING (GDA94): **5251433**
SAMPLING METHOD: **Rotary Drilling**	AZIMUTH: **-90** INCLINATION:	ELEVATION (m ~AHD): **25.8** TOTAL DEPTH (m): **6.4**
CONTRACTOR: **Tasmanian Drilling Services**	**Tasmanian Drilling Services**	WATER TABLE (m BGS): **Not Encountered**
DRILL RIG: **Drillmac 500 Explorer**	**Drillmac 500 Explorer**	LOGGED BY: **M. Temlett** NATURAL GROUND (m): **1.7**
METHOD/INTERVAL: **Auger to 1.7 m**	**HQ Rotary Coring >1.7 m**	DATE STARTED: **30.05.18** DATE FINISHED: **30.05.18**



Environmental Site Assessment: 55 Hampden Road, Battery Point, Version 3. July 2025.

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road			**Log of BH02**
CLIENT: **POW**		EASTING (GDA94): **527273**	
LOCATION: **Battery Point**		NORTHING (GDA94): **5251433**	
SAMPLING METHOD: **Rotary Drilling**	AZIMUTH: **-90** INCLINATION:	ELEVATION (m ~AHD): **25.8**	TOTAL DEPTH (m): **6.4**
CONTRACTOR: **Tasmanian Drilling Services**	**Tasmanian Drilling Services**	WATER TABLE (m BGS): **Not Encountered**	
DRILL RIG: **Drillmac 500 Explorer**	**Drillmac 500 Explorer**	LOGGED BY: **M. Temlett**	NATURAL GROUND (m): **1.7**
METHOD/INTERVAL: **Auger to 1.7 m**	**HQ Rotary Coring >1.7 m**	DATE STARTED: **30.05.18**	DATE FINISHED: **30.05.18**

DEPTH (m)	WEATHERING	USCS / JOINT SET #	% CORE RECOVERY	% RQD	DEFECTS	DESCRIPTION	DEPTH (m)	GEOLOGICAL UNIT	ELEVATION (m AHD)
3.0	RS	SM	100				2.5		23.2
	XW	GC	100			Clayey GRAVEL: Brown, fine to coarse grained, sub-angular, dense, moist, high plasticity. Gravel comprises moderately weathered dolerite.	3.0		22.8
	MW		100	0	3 BD UR C 2mm 85 1 JT PR C 1.0 45 FE 1 BD UR D 1.0 90 CY 1.0 1 JT PR D 2.0 35 CY 3.0	DOLERITE: Pale grey and white, fine to coarse grained, crystalline, low to medium strength, moderately weathered, bedding and joint spacing 40 - 100 mm, sub-horizontal to 30 degrees	3.5		22.4
	HW		100	0	8 JT UR D 1.0 20	DOLERITE: Pale grey, fine to coarse grained, crystalline, low strength, highly weathered. Highly fractured, recovered as gravels and cobbles.			22.0
4.0	MW		100	0	1 BD PR C 90 FE 4 JT PR C 1.0 25 FE 2 BD PR C 90 FE 2 BD PR C 85 FE	DOLERITE: Pale grey and white, fine to coarse grained, crystalline, medium strength, moderately weathered, bedding and joint spacing 80 - 120 mm, sub-horizontal to 30 degrees	4.0	Jd	21.6
							4.5		

DCP Bearing Cap. (FS 2): 0.36 (Point Load Is(50)) at 3.0; 0.17 at 4.0

SHEAR VANE Cu (FS 2) / Undrained Shear Strength (kPa) / UCS (kPa): not recorded

STRENGTH INDEX: SOIL (V LOOSE / V SOFT, LOOSE / SOFT, M DENSE / FIRM, DENSE / STIFF, V DENSE / V STIFF, HARD) ROCK (EXTREMELY LOW, VERY LOW, LOW, MEDIUM, HIGH, VERY HIGH, EXTREMELY HIGH)

SPT BLOWS (N): 0, 10, 20, 30

FRACTURES SPACING (CM): 0, 50, 100

DEFECTS: # DEFECTS; DEFECT TYPE; ROUGHNESS; ALTERATION; APPERTURE (MM); ALPHA°; BETA°; INFILL TYPE; INFILL THICKNESS (MM)

STAND PIPE DETAILS

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road

Log of BH02

CLIENT: **POW** EASTING (GDA94): **527273**

LOCATION: **Battery Point** NORTHING (GDA94): **5251433**

SAMPLING METHOD: **Rotary Drilling** AZIMUTH: **-90** INCLINATION: ELEVATION (m ~AHD): **25.8** TOTAL DEPTH (m): **6.4**

CONTRACTOR: **Tasmanian Drilling Services** **Tasmanian Drilling Services** WATER TABLE (m BGS): **Not Encountered**

DRILL RIG: **Drillmac 500 Explorer** **Drillmac 500 Explorer** LOGGED BY: **M. Temlett** NATURAL GROUND (m): **1.7**

METHOD/INTERVAL: **Auger to 1.7 m** **HQ Rotary Coring >1.7 m** DATE STARTED: **30.05.18** DATE FINISHED: **30.05.18**

DEPTH (m)	STRENGTH INDEX (SOIL / ROCK)	SPT BLOWS (N)	DCP Bearing Cap. (FS 2)	Point Load Is(50)	SHEAR VANE Cu (FS 2)	HAND PENOTROM Undrained Shear Strength (kPa)	UCS (kPa)	WEATHERING	USCS / JOINT SET #	% CORE RECOVERY	% RQD	FRACTURES SPACING (CM)	DEFECTS	DEFECT TYPE	ROUGHNESS	ALTERATION	APPETURE (MM)	ALPHA°	BETA°	INFILL TYPE	INFILL THICKNESS (MM)	DESCRIPTION	DEPTH (m)	GEOLOGICAL UNIT	STAND PIPE DETAILS	ELEVATION (m AHD)
5.0				0.27				XW	R	100	0		2	JT	PR	C	20			FE		DOLERITE: Pale grey, fine to coarse grained, crystalline, very low strength, extremely weathered. Highly fractured, recovered as gravels and cobbles, with high iron staining.	5.0			21.2
													10	Bd												
								MW		100	0		4	BD	PR	C	75			FE		DOLERITE: Pale grey and white, fine to coarse grained, crystalline, medium strength, moderately weathered, bedding and joint spacing 80 - 120 mm, sub-horizontal to 30 degrees				20.8
													7	BD												
				1.01				XW		100	0		1	JT	PR	C	35			FE		DOLERITE: Pale grey, fine to coarse grained, crystalline, very low strength, extremely weathered. Highly fractured, recovered as gravels and cobbles, with high iron staining.				
													3	BD	PR	C	75			Fe						20.4
																						DOLERITE: Pale grey and white, fine to coarse grained, crystalline, medium to high strength strength, slightly weathered, bedding and joint spacing 40 - 120 mm, sub-horizontal to sub-vertical. EOH at 6.4 m.				
6.0								SW		100	0		3	BD	PR	C	75			Fe			5.5			20.0
													1	JT	PR	C	5			FE						
													3	BD	PR	C	75			Fe			6.0			19.6

Appendix 5 Borehole Logs from November 2019 sampling

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road ESA
CLIENT: Neil Shephard & Associates

Log of BH1

EASTING:	GDA94
NORTHING:	GDA94
BORING LOCATION: Battery Point	ELEVATION AND DATUM: m AHD
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L	TOTAL DEPTH (m): 1.6
EQUIPMENT/METHOD: AMS 9110Ag Probe LOGGED BY: A. Plummer	NATURAL (m): WATER TABLE (m):
SAMPLING: Direct Push DATE: 14/11/2019	

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0	FILL: Bitumen	FILL	P					
0.1	FILL: GRAVELLY CLAY; dark brown, moist, stiff, high plasticity		CH					
0.3	SILTY CLAY: dark brown, moist, firm, medium to high plasticity	Q	CH					
1.0	SILTY CLAY: pale brown, moist, stiff, high plasticity, some fine to coarse gravel. EOH		CH					

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road ESA
CLIENT: Neil Shephard & Associates

Log of BH2

EASTING: GDA94
NORTHING: GDA94
ELEVATION AND DATUM: m AHD
TOTAL DEPTH (m): 1.6
NATURAL (m): WATER TABLE (m):

BORING LOCATION: Battery Point
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: AMS 9110Ag Probe LOGGED BY: A. Plummer
SAMPLING: Direct Push DATE: 14/11/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0	FILL: Bitumen	FILL	P					
0.1	FILL: GRAVELLY CLAY; dark brown, moist, stiff, high plasticity		CH					
0.3	SILTY CLAY: dark brown, moist, firm, medium to high plasticity	Q	CH					
0.8	SILTY CLAY: pale brown, moist, stiff, high plasticity, some fine to coarse gravel. EOH		CH					
1.5								

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road ESA
CLIENT: Neil Shephard & Associates

Log of BH3

EASTING: GDA94
NORTHING: GDA94
BORING LOCATION: Battery Point
ELEVATION AND DATUM: m AHD
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
TOTAL DEPTH (m): 1.6
EQUIPMENT/METHOD: AMS 9110Ag Probe LOGGED BY: A. Plummer
NATURAL (m): WATER TABLE (m):
SAMPLING: Direct Push DATE: 14/11/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0	FILL: Bitumen		P					
0.1	FILL: GRAVELLY CLAY; dark brown, moist, stiff, high plasticity	FILL	CH					
0.3	SILTY CLAY: dark brown, moist, firm, medium to high plasticity. EOH	Q	CH					

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road ESA
CLIENT: Neil Shephard & Associates

Log of BH4

EASTING: GDA94
NORTHING: GDA94
BORING LOCATION: Battery Point
ELEVATION AND DATUM: m AHD
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
TOTAL DEPTH (m): 1.6
EQUIPMENT/METHOD: AMS 9110Ag Probe LOGGED BY: A. Plummer
NATURAL (m): WATER TABLE (m):
SAMPLING: Direct Push DATE: 14/11/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0	FILL: Bitumen		P					
0.1 – 0.3	FILL: CLAYEY GRAVEL; yellow-brown, dry, dense	FILL	GC					
0.3 – 1.3	SILTY CLAY: dark brown, moist, firm, medium to high plasticity	Q	CH					
1.3 – 1.5	Extremely Weathered DOLERITE recovered as CLAYEY SAND: yellow, dry, very dense to Refusal	Jd	GC					

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road ESA
CLIENT: Neil Shephard & Associates

Log of BH5

EASTING: GDA94
NORTHING: GDA94
ELEVATION AND DATUM: m AHD
TOTAL DEPTH (m): 1
NATURAL (m): WATER TABLE (m):

BORING LOCATION: Battery Point
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: AMS 9110Ag Probe LOGGED BY: A. Plummer
SAMPLING: Direct Push DATE: 14/11/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0	FILL: Bitumen	FILL	P					
0.1	FILL: CLAYEY GRAVEL; yellow-brown, dry, dense		GC					
0.2								
0.3		Q	CH					
0.4	SILTY CLAY: dark brown, moist, firm, medium to high plasticity							
0.5								
0.6								
0.7								
0.8								
0.9								
1.0								

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 55 Hampden Road ESA
CLIENT: Neil Shephard & Associates

Log of BH6

EASTING: GDA94
NORTHING: GDA94
BORING LOCATION: Battery Point
ELEVATION AND DATUM: m AHD
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
TOTAL DEPTH (m): 1.6
EQUIPMENT/METHOD: AMS 9110Ag Probe LOGGED BY: A. Plummer
NATURAL (m): WATER TABLE (m):
SAMPLING: Direct Push DATE: 14/11/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0 – 0.1	CLAYEY SAND: dark brown/black, slightly moist, dense	Q	SC					
0.1 – 1.0	SILTY CLAY: dark brown/black, moist, stiff, high plasticity		CH					
1.0 – 1.5	SILTY CLAY: brown, moist, stiff, high plasticity. EOH		CH					

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

Appendix 6 Chain of Custody (COC) and Sample Receipt Notification (SRN)

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM1919451**		
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: jcumming@geosolutions.net.au	E-mail	: shirley.lecornu@Alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: POWH	Page	: 1 of 3
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: AP		

Dates

Date Samples Received	: 15-Nov-2019 09:45	Issue Date	: 15-Nov-2019
Client Requested Due Date	: 22-Nov-2019	Scheduled Reporting Date	: **22-Nov-2019**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 12.2°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 13 / 13

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

RIGHT SOLUTIONS | RIGHT PARTNER

Issue Date	: 15-Nov-2019
Page	: 2 of 3
Work Order	: EM1919451 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEX/PAH (SIM)
EM1919451-001	14-Nov-2019 00:00	BH01 0.5-0.6	✓	✓	✓
EM1919451-002	14-Nov-2019 00:00	BH01 1.5-1.6	✓	✓	✓
EM1919451-003	14-Nov-2019 00:00	BH02 0.5-0.6	✓	✓	✓
EM1919451-004	14-Nov-2019 00:00	BH02 1.5-1.6	✓	✓	✓
EM1919451-005	14-Nov-2019 00:00	BH03 0.5-0.6	✓	✓	✓
EM1919451-006	14-Nov-2019 00:00	BH03 1.5-1.6	✓	✓	✓
EM1919451-007	14-Nov-2019 00:00	BH04 0.5-0.6	✓	✓	✓
EM1919451-008	14-Nov-2019 00:00	BH04 1.5-1.6	✓	✓	✓
EM1919451-009	14-Nov-2019 00:00	BH05 0.5-0.6	✓	✓	✓
EM1919451-010	14-Nov-2019 00:00	BH05 0.9-1.0	✓	✓	✓
EM1919451-011	14-Nov-2019 00:00	BH06 0.5-0.6	✓	✓	✓
EM1919451-012	14-Nov-2019 00:00	BH06 1.5-1.6	✓	✓	✓
EM1919451-013	14-Nov-2019 00:00	DUPLICATE	✓	✓	✓

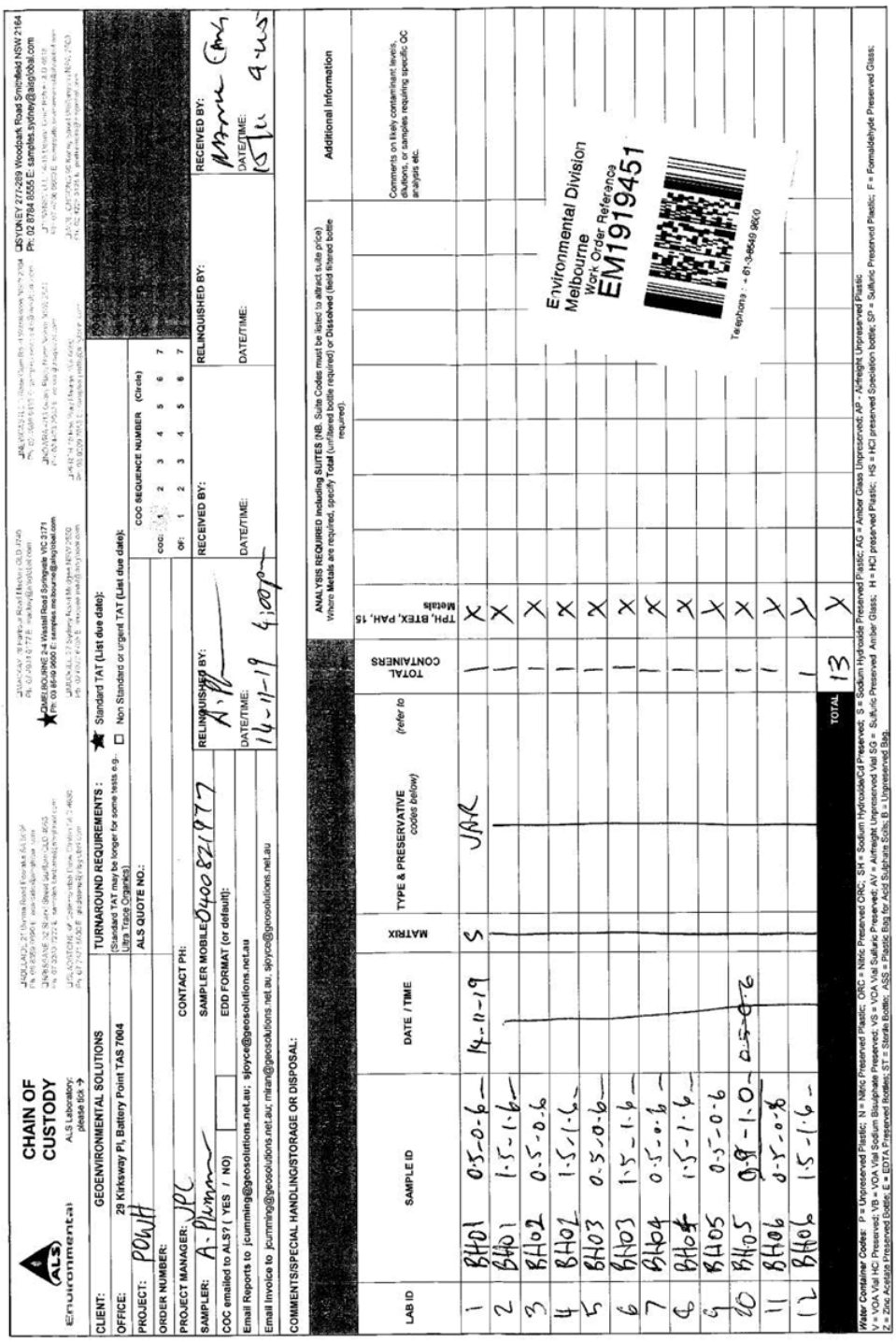
Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Issue Date	: 15-Nov-2019
Page	: 3 of 3
Work Order	: EM1919451 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Requested Deliverables

JOHN PAUL CUMMING		
- *AU Certificate of Analysis - NATA (COA)	Email	jcumming@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jcumming@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jcumming@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jcumming@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	jcumming@geosolutions.net.au
- Attachment - Report (SUBCO)	Email	jcumming@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	jcumming@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	jcumming@geosolutions.net.au
- EDI Format - XTab (XTAB)	Email	jcumming@geosolutions.net.au
M IRAN		
- A4 - AU Tax Invoice (INV)	Email	miran@geosolutions.net.au
SARAH JOYCE		
- *AU Certificate of Analysis - NATA (COA)	Email	sjoyce@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sjoyce@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sjoyce@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sjoyce@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	sjoyce@geosolutions.net.au
- Attachment - Report (SUBCO)	Email	sjoyce@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	sjoyce@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	sjoyce@geosolutions.net.au
- EDI Format - XTab (XTAB)	Email	sjoyce@geosolutions.net.au



CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: GEOENVIRONMENTAL SOLUTIONS
OFFICE: 29 Kirksway Pl, Battery Point TAS 7004
PROJECT: POWH
ORDER NUMBER:
PROJECT MANAGER: JPC
CONTACT PH:
SAMPLER: A. Plumm
SAMPLER MOBILE: 0400 827 877
COC emailed to ALS? (YES / NO)
EDD FORMAT (or default):
Email Reports to: jcumming@geosolutions.net.au; sjoyce@geosolutions.net.au
Email Invoice to: jcumming@geosolutions.net.au; mlarn@geosolutions.net.au, sjoyce@geosolutions.net.au

TURNAROUND REQUIREMENTS: ★ Standard TAT (List due date):
(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):
ALS QUOTE NO.:
COC SEQUENCE NUMBER (Circle): COC: 1 2 3 4 5 6 7; OF: 1 2 3 4 5 6 7
RELINQUISHED BY: A. Plumm DATE/TIME: 14-11-19 4:00pm
RECEIVED BY: DATE/TIME:
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: Maree Carey DATE/TIME: 15/11 9:45

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price). Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required). TPH, BTEX, PAH, 15 Metals	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.	Additional Information
1	BH01 0.5-0.6	14.11.19	S	JAR	1	X		
2	BH01 1.5-1.6				1	X		
3	BH02 0.5-0.6				1	X		
4	BH02 1.5-1.6				1	X		
5	BH03 0.5-0.6				1	X		
6	BH03 1.5-1.6				1	X		
7	BH04 0.5-0.6				1	X		
8	BH04 1.5-1.6				1	X		
9	BH05 0.5-0.6				1	X		
10	BH05 0.9-1.0	2.5-0.6			1	X		
11	BH06 0.5-0.6				1	X		
12	BH06 1.5-1.6				1	X		
				TOTAL	13	X		

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

Environmental Division Melbourne Work Order Reference EM1919451

Telephone : +61-3-8549 9600

Appendix 7 Quality Assurance and Quality Control

Duplicate Comparrison	Sample	Moisture Content (dried @ 103°	Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Cobalt	Copper	Lead	Manganese	Nickel	Vanadium	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Sum of polycyclic aromatic hydr	Benzo(a)pyrene TEQ (WHO)
Unit		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		1	5	10	1	1	2	2	5	5	5	2	5	5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
14/11/2019	DUPLICATE	14.7	28	310	<1	28	18	12	137	1080	415	20	69	#####	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	1.3	0.9	0.9	1	<0.5	0.8	<0.5	<0.5	0.5	6.6	1
14/11/2019	BH03 0.5-0.6	14.2	12	290	<1	43	18	16	94	717	500	20	58	7850	1.8	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.4	1.5	0.8	0.8	0.9	<0.5	0.8	<0.5	<0.5	<0.5	6.8	1
Relative Percentage Difference (RPD) %		3.5	80.0	6.7	NA	42.3	0.0	28.6	37.2	40.4	18.6	0.0	17.3	36.9	32.6	NA	NA	NA	NA	NA	NA	15.4	14.3	11.8	11.8	10.5	NA	0.0	NA	NA	NA	3.0	0.0
RPD Compliance Limit %			50	30	NA	30	50	50	30	15	30	50	50	15	30	NA	NA	NA	NA	NA	NA	50	50	NA	NA	NA	NA	NA	NA	NA	NA	50	50
Method Detection Limit (MDL)		20	100	1000	NA	100	40	40	500	>500	500	40	100	>500	10	NA	NA	NA	NA	NA	NA	10	10	NA	NA	NA	NA	NA	NA	NA	NA	10	10
MDL Class		LOW	LOW	MED	NONE	MED	LOW	LOW	MED	HIGH	MED	LOW	LOW	HIGH	MED	NONE	NONE	NONE	NONE	NONE	NONE	LOW	LOW	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	LOW	LOW
RPD Compliance With MDL?	50/56 (89%)	YES	NO	YES	YES	NO	YES	YES	NO	NO	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Duplicate Comparrison	Sample	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Total Xylenes	Naphthalene	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	F1	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	F2	Selenium	Boron	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		0.2	0.5	0.5	0.5	0.5	0.2	0.5	1	10	50	100	100	50	10	10	50	100	100	50	50	5	50	0.5	0.5
14/11/2019	DUPLICATE	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<1	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<5	<50	1.3	1.6
14/11/2019	BH03 0.5-0.6	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<1	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<5	<50	1.3	1.6
Relative Percentage Difference (RPD) %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
RPD Compliance Limit %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	50
Method Detection Limit (MDL)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10	10
MDL Class		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	LOW	LOW
RPD Compliance With MDL?	50/56 (89%)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

***Footnote: For DUPLICATE and BH03 0.5-0.6 pairs, 89% of analytes complied. Non compliances include: an RPD of 80% for Arsenic where <50% was expected; an RPD of 42% for Cadmium where <30% was expected; an RPD of 37% for Copper where <30% was expected; an RPD of 40% for Lead where <15% was expected; an RPD of 37% for Zinc where <15% was expected; an RPD of 33% for Mercury where <30% was expected;**

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: EM1919451	Page	: 1 of 9
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeComu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: POWH	Date Samples Received	: 15-Nov-2019
Order number	: ----	Date Analysis Commenced	: 19-Nov-2019
C-O-C number	: ----	Issue Date	: 22-Nov-2019
Sampler	: AP		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

RIGHT SOLUTIONS | RIGHT PARTNER

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

						Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2712608)									
EM1919425-002	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	100	80	20.6	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	24	22	9.01	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	22	20	11.5	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	74	70	4.99	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	25	23	9.29	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	421	406	3.79	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	25	22	10.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	38	36	4.65	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EM1919429-003	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	180	190	0.00	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	20	19	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	2	2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	7	7	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	26	28	8.26	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	15	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	236	257	8.60	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit

Page : 3 of 9
Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2712608) - continued									
EM1919429-003	Anonymous	EG005T: Vanadium	7440-62-2	5	mg/kg	6	6	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	210	208	0.753	0% - 20%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2712611)									
EM1919451-013	DUPLICATE	EG005T: Zinc	7440-66-6	5	mg/kg	11400	9360	19.4	0% - 20%
EM1919451-004	BH02 1.5-1.6	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	110	110	0.00	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	17	18	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	21	22	5.97	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	20	21	0.00	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	32	32	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	5	<5	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	176	180	2.60	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	72	74	3.28	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	9	10	0.00	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EM1919451-013	DUPLICATE	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	28	26	7.36	0% - 20%
		EG005T: Barium	7440-39-3	10	mg/kg	310	270	14.0	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	18	18	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	12	17	30.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	20	21	6.08	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	28	26	10.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	137	137	0.00	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	1080	1050	2.76	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	415	427	2.73	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	69	69	0.00	0% - 50%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2710141)									
EM1919308-001	Anonymous	EA055: Moisture Content	---	0.1	%	16.7	16.6	0.00	0% - 50%
EM1919425-006	Anonymous	EA055: Moisture Content	---	0.1	%	9.2	8.8	5.31	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2710142)									
EM1919451-007	BH04 0.5-0.6	EA055: Moisture Content	---	0.1	%	21.1	20.6	2.26	0% - 20%
EM1919472-004	Anonymous	EA055: Moisture Content	---	0.1	%	22.2	21.9	1.28	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2712609)									

Page : 4 of 9
Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2712609) - continued									
EM1919425-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1919429-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2712610)									
EM1919451-004	BH02 1.5-1.6	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1919451-013	DUPLICATE	EG035T: Mercury	7439-97-6	0.1	mg/kg	2.5	3.0	19.2	0% - 20%
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2712962)									
EM1919451-001	BH01 0.5-0.6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.1	1.0	9.18	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	2.3	2.4	6.17	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.4	2.6	7.10	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.1	1.3	15.3	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.1	1.3	16.8	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.2	1.4	19.5	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.6	0.7	18.7	No Limit
		EP075(SIM): Benzo(e)pyrene	50-32-8	0.5	mg/kg	1.1	1.3	18.2	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.6	0.7	0.00	No Limit
EM1919451-011	BH06 0.5-0.6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(e)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

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Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2709899)									
EM1919451-001	BH01 0.5-0.6	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
EM1919451-010	BH05 0.9-1.0	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2712963)									
EM1919451-001	BH01 0.5-0.6	EP071: C15 - C28 Fraction	---	100	mg/kg	110	120	14.4	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	180	190	0.00	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	---	50	mg/kg	290	310	6.67	No Limit
EM1919451-011	BH06 0.5-0.6	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	---	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2709899)									
EM1919451-001	BH01 0.5-0.6	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EM1919451-010	BH05 0.9-1.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2712963)									
EM1919451-001	BH01 0.5-0.6	EP071: >C16 - C34 Fraction	---	100	mg/kg	240	260	8.44	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	110	120	0.00	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	350	380	8.22	No Limit
EM1919451-011	BH06 0.5-0.6	EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 2709899)									
EM1919451-001	BH01 0.5-0.6	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM1919451-010	BH05 0.9-1.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

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Project : POWH

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2712608)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.0	78.5	107
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	92.2	76.4	110
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	103	85.4	114
EG005T: Boron	7440-42-8	50	mg/kg	<50	33.2 mg/kg	116	84.4	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	90.7	76.2	108
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	86.3	77.7	110
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	91.3	78.1	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	90.7	78.1	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	91.1	78.4	106
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	96.5	80.6	110
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	93.9	79.9	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	103	92.0	110
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	92.3	78.5	106
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	94.4	79.1	110
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2712611)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.2	78.5	107
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	92.6	76.4	110
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	104	85.4	114
EG005T: Boron	7440-42-8	50	mg/kg	<50	33.2 mg/kg	115	84.4	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	90.9	76.2	108
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	86.7	77.7	110
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	92.1	78.1	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	90.9	78.1	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	91.3	78.4	106
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	96.9	80.6	110
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	94.4	79.9	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	102	92.0	110
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	92.6	78.5	106
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	95.5	79.1	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2712609)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	102	76.9	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2712610)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	102	76.9	110
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2712962)								

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2712962) - continued								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	120	84.6	128
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	126	76.9	127
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	128	85.3	128
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	124	82.1	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	118	85.4	133
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	125	88.7	136
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	120	83.4	136
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	120	85.1	140
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	116	80.7	130
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	125	85.2	141
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	104	68.5	120
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	125	80.1	132
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	106	67.4	120
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	98.7	66.0	126
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	99.7	65.4	127
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	95.2	67.8	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2709899)								
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	36 mg/kg	103	61.2	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2712963)								
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	750 mg/kg	113	71.8	129
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	3040 mg/kg	114	83.9	125
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	1450 mg/kg	113	77.9	119
EP071: C10 - C36 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2709899)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	97.6	59.5	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2712963)								
EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	1090 mg/kg	119	72.2	128
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	3930 mg/kg	112	82.1	122
EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	268 mg/kg	118	55.1	131
EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---
EP080: BTEXN (QCLot: 2709899)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	93.5	62.7	119
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	103	66.6	126
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	100.0	66.3	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	110	67.5	128
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	108	73.0	128

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Project : POWH

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	Recovery Limits (%) High
EP080: BTEXN (QCLot: 2709899) - continued								
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	88.1	61.2	123

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%) Low	Recovery Limits (%) High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2712608)							
EM1919425-003	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.2	78.0	124
		EG005T: Barium	7440-39-3	50 mg/kg	106	71.0	135
		EG005T: Beryllium	7440-41-7	50 mg/kg	102	85.0	125
		EG005T: Cadmium	7440-43-9	50 mg/kg	90.3	84.0	116
		EG005T: Chromium	7440-47-3	50 mg/kg	87.4	79.0	121
		EG005T: Copper	7440-50-8	50 mg/kg	96.0	82.0	124
		EG005T: Lead	7439-92-1	50 mg/kg	90.4	76.0	124
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	68.0	136
		EG005T: Nickel	7440-02-0	50 mg/kg	85.7	78.0	120
		EG005T: Selenium	7782-49-2	50 mg/kg	87.7	71.0	125
		EG005T: Vanadium	7440-62-2	50 mg/kg	85.5	76.0	124
		EG005T: Zinc	7440-66-6	50 mg/kg	81.8	74.0	128
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2712611)							
EM1919451-005	BH03 0.5-0.6	EG005T: Zinc	7440-66-6	50 mg/kg	# Not Determined	74.0	128
EM1919451-005	BH03 0.5-0.6	EG005T: Arsenic	7440-38-2	50 mg/kg	97.7	78.0	124
		EG005T: Barium	7440-39-3	50 mg/kg	# Not Determined	71.0	135
		EG005T: Beryllium	7440-41-7	50 mg/kg	99.2	85.0	125
		EG005T: Cadmium	7440-43-9	50 mg/kg	87.5	84.0	116
		EG005T: Chromium	7440-47-3	50 mg/kg	89.9	79.0	121
		EG005T: Copper	7440-50-8	50 mg/kg	103	82.0	124
		EG005T: Lead	7439-92-1	50 mg/kg	# Not Determined	76.0	124
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	68.0	136
		EG005T: Nickel	7440-02-0	50 mg/kg	87.0	78.0	120
		EG005T: Selenium	7782-49-2	50 mg/kg	85.7	71.0	125

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Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2712611) - continued							
EM1919451-005	BH03 0.5-0.6	EG005T: Vanadium	7440-62-2	50 mg/kg	91.7	76.0	124
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2712609)							
EM1919426-003	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	104	76.0	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2712610)							
EM1919451-005	BH03 0.5-0.6	EG035T: Mercury	7439-97-6	0.5 mg/kg	85.9	76.0	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2712962)							
EM1919451-003	BH02 0.5-0.6	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	114	67.0	117
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	133	52.0	148
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2709899)							
EM1919451-001	BH01 0.5-0.6	EP080: C6 - C9 Fraction	----	28 mg/kg	80.7	42.0	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2712963)							
EM1919451-002	BH01 1.5-1.6	EP071: C10 - C14 Fraction	----	750 mg/kg	123	53.0	123
		EP071: C15 - C28 Fraction	----	3040 mg/kg	116	70.0	124
		EP071: C29 - C36 Fraction	----	1450 mg/kg	116	64.0	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2709899)							
EM1919451-001	BH01 0.5-0.6	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	75.2	39.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2712963)							
EM1919451-002	BH01 1.5-1.6	EP071: >C10 - C16 Fraction	----	1090 mg/kg	123	65.0	123
		EP071: >C16 - C34 Fraction	----	3930 mg/kg	113	67.0	121
		EP071: >C34 - C40 Fraction	----	268 mg/kg	108	44.0	126
EP080: BTEXN (QCLot: 2709899)							
EM1919451-001	BH01 0.5-0.6	EP080: Benzene	71-43-2	2 mg/kg	84.3	50.0	136
		EP080: Toluene	108-88-3	2 mg/kg	88.5	56.0	139

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM1919451**	Page	: 1 of 6
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Telephone	: +61138549 9630
Project	: POWH	Date Samples Received	: 15-Nov-2019
Site	: ----	Issue Date	: 22-Nov-2019
Sampler	: AP	No. of samples received	: 13
Order number	: ----	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

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Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005(ED093)T: Total Metals by ICP-AES	EM1919451-005	BH03 0.5-0.6	**Barium**	7440-39-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005(ED093)T: Total Metals by ICP-AES	EM1919451-005	BH03 0.5-0.6	**Lead**	7439-92-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005(ED093)T: Total Metals by ICP-AES	EM1919425-003	Anonymous	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005(ED093)T: Total Metals by ICP-AES	EM1919451-005	BH03 0.5-0.6	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005(ED093)T: Total Metals by ICP-AES	EM1919451-005	BH03 0.5-0.6	**Zinc**	7440-66-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive re Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
BH01 0.5-0.6,	BH01 1.5-1.6,	**14-Nov-2019**	----	----	----	**19-Nov-2019**	28-Nov-2019	✓
BH02 0.5-0.6,	BH02 1.5-1.6,							
BH03 0.5-0.6,	BH03 1.5-1.6,							
BH04 0.5-0.6,	BH04 1.5-1.6,							
BH05 0.5-0.6,	BH05 0.9-1.0,							
BH06 0.5-0.6,	BH06 1.5-1.6,							
DUPLICATE								

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Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
BH01 0.5-0.6,	BH01 1.5-1.6,	**14-Nov-2019**	**20-Nov-2019**	12-May-2020	✓	**20-Nov-2019**	12-May-2020	✓
BH02 0.5-0.6,	BH02 1.5-1.6,							
BH03 0.5-0.6,	BH03 1.5-1.6,							
BH04 0.5-0.6,	BH04 1.5-1.6,							
BH05 0.5-0.6,	BH05 0.9-1.0,							
BH06 0.5-0.6,	BH06 1.5-1.6,							
DUPLICATE								
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
BH01 0.5-0.6,	BH01 1.5-1.6,	**14-Nov-2019**	**20-Nov-2019**	12-Dec-2019	✓	**21-Nov-2019**	12-Dec-2019	✓
BH02 0.5-0.6,	BH02 1.5-1.6,							
BH03 0.5-0.6,	BH03 1.5-1.6,							
BH04 0.5-0.6,	BH04 1.5-1.6,							
BH05 0.5-0.6,	BH05 0.9-1.0,							
BH06 0.5-0.6,	BH06 1.5-1.6,							
DUPLICATE								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
BH01 0.5-0.6,	BH01 1.5-1.6,	**14-Nov-2019**	**20-Nov-2019**	28-Nov-2019	✓	**20-Nov-2019**	30-Dec-2019	✓
BH02 0.5-0.6,	BH02 1.5-1.6,							
BH03 0.5-0.6,	BH03 1.5-1.6,							
BH04 0.5-0.6,	BH04 1.5-1.6,							
BH05 0.5-0.6,	BH05 0.9-1.0,							
BH06 0.5-0.6,	BH06 1.5-1.6,							
DUPLICATE								

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Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BH01 0.5-0.6, BH01 1.5-1.6,	**14-Nov-2019**	**19-Nov-2019**	28-Nov-2019	✓	**20-Nov-2019**	28-Nov-2019	✓
BH02 0.5-0.6, BH02 1.5-1.6,							
BH03 0.5-0.6, BH03 1.5-1.6,							
BH04 0.5-0.6, BH04 1.5-1.6,							
BH05 0.5-0.6, BH05 0.9-1.0,							
BH06 0.5-0.6, BH06 1.5-1.6,							
DUPLICATE							
Soil Glass Jar - Unpreserved (EP071)							
BH01 0.5-0.6, BH01 1.5-1.6,	**14-Nov-2019**	**20-Nov-2019**	28-Nov-2019	✓	**20-Nov-2019**	30-Dec-2019	✓
BH02 0.5-0.6, BH02 1.5-1.6,							
BH03 0.5-0.6, BH03 1.5-1.6,							
BH04 0.5-0.6, BH04 1.5-1.6,							
BH05 0.5-0.6, BH05 0.9-1.0,							
BH06 0.5-0.6, BH06 1.5-1.6,							
DUPLICATE							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH01 0.5-0.6, BH01 1.5-1.6,	**14-Nov-2019**	**19-Nov-2019**	28-Nov-2019	✓	**20-Nov-2019**	28-Nov-2019	✓
BH02 0.5-0.6, BH02 1.5-1.6,							
BH03 0.5-0.6, BH03 1.5-1.6,							
BH04 0.5-0.6, BH04 1.5-1.6,							
BH05 0.5-0.6, BH05 0.9-1.0,							
BH06 0.5-0.6, BH06 1.5-1.6,							
DUPLICATE							
Soil Glass Jar - Unpreserved (EP071)							
BH01 0.5-0.6, BH01 1.5-1.6,	**14-Nov-2019**	**20-Nov-2019**	28-Nov-2019	✓	**20-Nov-2019**	30-Dec-2019	✓
BH02 0.5-0.6, BH02 1.5-1.6,							
BH03 0.5-0.6, BH03 1.5-1.6,							
BH04 0.5-0.6, BH04 1.5-1.6,							
BH05 0.5-0.6, BH05 0.9-1.0,							
BH06 0.5-0.6, BH06 1.5-1.6,							
DUPLICATE							
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH01 0.5-0.6, BH01 1.5-1.6,	**14-Nov-2019**	**19-Nov-2019**	28-Nov-2019	✓	**20-Nov-2019**	28-Nov-2019	✓
BH02 0.5-0.6, BH02 1.5-1.6,							
BH03 0.5-0.6, BH03 1.5-1.6,							
BH04 0.5-0.6, BH04 1.5-1.6,							
BH05 0.5-0.6, BH05 0.9-1.0,							
BH06 0.5-0.6, BH06 1.5-1.6,							
DUPLICATE							

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Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL** Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type / Analytical Methods	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	38	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	38	**13.16**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	38	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

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Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 6.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Appendix 8 Certificate of Analysis

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM1919451	Page	: 1 of 12
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: POWH	Date Samples Received	: 15-Nov-2019 09:45
Order number	: ----	Date Analysis Commenced	: 19-Nov-2019
C-O-C number	: ----	Issue Date	: 22-Nov-2019 13:22
Sampler	: AP		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

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General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
e = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01 0.5-0.6	BH01 1.5-1.6	BH02 0.5-0.6	BH02 1.5-1.6	BH03 0.5-0.6
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EM1919451-001	EM1919451-002	EM1919451-003	EM1919451-004	EM1919451-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		13.2	24.1	16.1	27.0	14.2
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	12
Barium	7440-39-3	10	mg/kg		190	100	260	110	290
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	43
Chromium	7440-47-3	2	mg/kg		12	17	12	17	18
Cobalt	7440-48-4	2	mg/kg		11	16	11	21	16
Copper	7440-50-8	5	mg/kg		50	38	54	32	94
Lead	7439-92-1	5	mg/kg		210	<5	580	5	717
Manganese	7439-96-5	5	mg/kg		267	166	268	176	500
Nickel	7440-02-0	2	mg/kg		10	16	10	20	20
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		52	93	53	72	58
Zinc	7440-66-6	5	mg/kg		229	10	318	9	7850
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		0.2	<0.1	0.3	<0.1	1.8
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		1.1	<0.5	0.9	<0.5	0.6
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		2.3	<0.5	2.4	<0.5	1.4
Pyrene	129-00-0	0.5	mg/kg		2.4	<0.5	2.6	<0.5	1.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		1.1	<0.5	1.1	<0.5	0.8
Chrysene	218-01-9	0.5	mg/kg		1.1	<0.5	1.2	<0.5	0.8
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		1.2	<0.5	1.5	<0.5	0.9
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		0.6	<0.5	0.6	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		1.1	<0.5	1.3	<0.5	0.8
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	0.6	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01 0.5-0.6	BH01 1.5-1.6	BH02 0.5-0.6	BH02 1.5-1.6	BH03 0.5-0.6
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EM1919451-001	EM1919451-002	EM1919451-003	EM1919451-004	EM1919451-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		0.6	<0.5	0.8	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		11.5	<0.5	13.0	0.5	6.8
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		1.4	<0.5	1.7	<0.5	1.0
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		1.7	0.6	2.0	0.6	1.3
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		2.0	1.2	2.2	1.2	1.6
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		110	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		180	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		290	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		240	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		110	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		350	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		108	117	105	112	107
2-Chlorophenol-D4	93951-73-6	0.5	%		97.0	106	95.1	109	96.5
2.4.6-Tribromophenol	118-79-6	0.5	%		75.5	84.3	77.8	75.8	85.5

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Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01 0.5-0.6	BH01 1.5-1.6	BH02 0.5-0.6	BH02 1.5-1.6	BH03 0.5-0.6
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EM1919451-001	EM1919451-002	EM1919451-003	EM1919451-004	EM1919451-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		119	125	117	122	120
Anthracene-d10	1719-06-8	0.5	%		121	130	122	124	120
4-Terphenyl-d14	1718-51-0	0.5	%		119	124	118	118	118
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		79.4	80.8	77.7	74.1	72.0
Toluene-D8	2037-26-5	0.2	%		84.2	88.2	83.8	80.4	77.6
4-Bromofluorobenzene	460-00-4	0.2	%		115	119	98.9	105	103

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Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH03 1.5-1.6	BH04 0.5-0.6	BH04 1.5-1.6	BH05 0.5-0.6	BH05 0.9-1.0
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EM1919451-006	EM1919451-007	EM1919451-008	EM1919451-009	EM1919451-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		19.0	21.1	16.5	14.5	10.5
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg		40	140	50	90	60
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	16	<1	3	<1
Chromium	7440-47-3	2	mg/kg		8	12	15	15	15
Cobalt	7440-48-4	2	mg/kg		7	13	25	16	11
Copper	7440-50-8	5	mg/kg		23	162	81	32	51
Lead	7439-92-1	5	mg/kg		36	1920	<5	52	<5
Manganese	7439-96-5	5	mg/kg		36	210	254	329	98
Nickel	7440-02-0	2	mg/kg		5	15	25	10	18
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		53	81	120	69	67
Zinc	7440-66-6	5	mg/kg		30	3170	12	1290	34
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	1.9	<0.1	0.2	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH03 1.5-1.6	BH04 0.5-0.6	BH04 1.5-1.6	BH05 0.5-0.6	BH05 0.9-1.0
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EM1919451-006	EM1919451-007	EM1919451-008	EM1919451-009	EM1919451-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		107	106	116	105	106
2-Chlorophenol-D4	93951-73-6	0.5	%		96.4	95.9	105	95.4	96.5
2.4.6-Tribromophenol	118-79-6	0.5	%		80.4	82.1	82.9	79.0	77.8

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH03 1.5-1.6	BH04 0.5-0.6	BH04 1.5-1.6	BH05 0.5-0.6	BH05 0.9-1.0
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00
Compound	CAS Number	LOR	Unit		EM1919451-006	EM1919451-007	EM1919451-008	EM1919451-009	EM1919451-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		118	120	124	119	120
Anthracene-d10	1719-06-8	0.5	%		118	119	129	114	119
4-Terphenyl-d14	1718-51-0	0.5	%		113	115	123	113	114
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		78.9	80.9	76.2	84.2	110
Toluene-D8	2037-26-5	0.2	%		85.6	85.4	81.9	85.6	112
4-Bromofluorobenzene	460-00-4	0.2	%		117	116	110	118	120

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06 0.5-0.6	BH06 1.5-1.6	DUPLICATE	----	----
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1919451-011	EM1919451-012	EM1919451-013	----------	----------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		18.2	24.6	14.7	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	28	----	----
Barium	7440-39-3	10	mg/kg		80	340	310	----	----
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	----	----
Boron	7440-42-8	50	mg/kg		<50	<50	<50	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	28	----	----
Chromium	7440-47-3	2	mg/kg		7	12	18	----	----
Cobalt	7440-48-4	2	mg/kg		9	26	12	----	----
Copper	7440-50-8	5	mg/kg		19	33	137	----	----
Lead	7439-92-1	5	mg/kg		10	<5	1080	----	----
Manganese	7439-96-5	5	mg/kg		229	287	415	----	----
Nickel	7440-02-0	2	mg/kg		6	24	20	----	----
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	----	----
Vanadium	7440-62-2	5	mg/kg		66	63	69	----	----
Zinc	7440-66-6	5	mg/kg		9	11	11400	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.1	2.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	1.2	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	1.3	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	0.9	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	0.9	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	1.0	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	0.8	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

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Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06 0.5-0.6	BH06 1.5-1.6	DUPLICATE	----	----
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1919451-011	EM1919451-012	EM1919451-013	----------	----------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	6.6	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	1.0	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	1.3	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.6	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		104	104	103	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		94.6	92.8	93.3	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		75.0	73.3	81.5	----	----

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Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH06 0.5-0.6	BH06 1.5-1.6	DUPLICATE	----	----
				Client sampling date / time	14-Nov-2019 00:00	14-Nov-2019 00:00	14-Nov-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		EM1919451-011	EM1919451-012	EM1919451-013	----------	----------
					Result	Result	Result	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		119	118	116	----	----
Anthracene-d10	1719-06-8	0.5	%		117	118	117	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		111	112	114	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		90.3	94.5	95.2	----	----
Toluene-D8	2037-26-5	0.2	%		91.8	97.6	95.8	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		102	108	108	----	----

Page : 12 of 12
Work Order : EM1919451
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : POWH

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124

NVC
NOISE VIBRATION CONSULTING

ERA Advisory
125a Elizabeth Street
Hobart, TAS 7000

1 August 2025

Ref: 1663-3 55 Hampden Road Noise Assessment

Attention: Patrick Carroll

55 Hampden Road — Noise Assessment

A development is proposed at 55 Hampden Road and 45 South Street, Battery Point. The development comprises residential and commercial uses, with a cafe and retail offering on the ground floor fronting Hampden Road, and residential apartments on the remainder of the ground floor, as well as on levels 1 and 2. The site is within an Urban Mixed Use zone under the Hobart Interim Planning Scheme (the Scheme), which requires that non-residential use must not unreasonably impact residential amenity, with the criteria defined in the section 15.3.1 of the Scheme. As a result, the proponent has requested a noise assessment to determine likely compliance with these criteria. NVC initially conducted such an assessment in October/December 2022 with revisions conducted in August 2023. This letter presents a subsequent updated assessment including a revised site layout, conducted by NVC in August 2025.

1. Background

1.1.Site and Surrounding Area

The site is located at 55 Hampden Road, and is shown outlined in orange in Figure 1.

FIGURE 1.1: SITE AND SURROUNDING AREA

The site is located within an Urban Mixed Use Zone (grey overlay in Figure 1.1), with other uses within this zone to the east, south and west. Directly to the north is an Inner Residential Zone (red overlay). More Inner Residential area is also located to the south, beyond the extends of the Urban Mixed Use Zone.

To the south, east and west of the site are predominantly cafes and restaurants, with the site being by bounded by roads to the south and west. Directly north and north-east of the site are residential dwellings. Currently the site is a hotel and restaurant/ bar, the Prince of Wales Hotel, as well as a townhouse located at 45 South Street, north east corner of site, these buildings are set to be demolished for the proposed development. It is noted that the proposal only includes partial demolition of the townhouse located at 45 South Street.

1.2. Proposed Development

The proposed building is a three story building comprising residential and commercial uses, with a cafe and retail offering on the ground floor fronting Hampden Road. A basement for car parking and waste removal is proposed beneath the building, with the entrance at the north-eastern corner of site, off Kelly Street. Residential apartments are proposed on the remainder of the ground floor, as well as on levels 1 and 2. Figure 1.2 below shows the proposed ground floor site plan.

There will be no external amplified music from the proposed building.

Operating hours for the cafe and retail spaces are proposed to be:

7:00AM to 9:00PM Monday to Friday,

8:00AM to 6:00PM Saturday,

9:00AM to 5:00PM Sunday and Public Holidays

Commercial vehicle movements on the site will only occur within the hours of:

7:00AM to 5:00PM Mondays to Fridays inclusive,

8:00AM to 5:00PM Saturdays,

9:00AM to 12:00 Noon Sundays and Public Holidays.

FIGURE 1.2: PROPOSED GROUND FLOOR SITE PLAN

2. CRITERIA

Section 15 of the *Hobart Interim Planning Scheme 2015* (the Scheme) contains criteria for an Urban Mixed Use Zone. In particular, clause *15.3.1* details criteria specific to noise emissions for non-residential use within an Urban Mixed Use Zone. This is reproduced below.

15.3.1 Non-Residential Use

Objective:	
To ensure that non-residential use does not unreasonably impact residential amenity.	
Acceptable Solutions	**Performance Criteria**
A1 Hours of operation must be within: (a) 7.00 am to 9.00 pm Mondays to Fridays inclusive; (b) 8.00 am to 6.00 pm Saturdays; (c) 9.00 am to 5.00 pm Sundays and Public Holidays; except for office and administrative tasks or visitor accommodation.	**P1** Hours of operation must not have an unreasonable impact upon the residential amenity through commercial vehicle movements, noise or other emissions that are unreasonable in their timing, duration or extent.
A2 Noise emissions measured at the boundary of the site must not exceed the following: (a) 55 dB(A) (LAeq) between the hours of 8.00 am to 6.00 pm; (b) 5dB(A) above the background (LA90) level or 40dB(A) (LAeq), whichever is the lower, between the hours of 6.00 pm to 8.00 am; (c) 65dB(A) (LAmax) at any time. Measurement of noise levels must be in accordance with the methods in the Tasmanian Noise Measurement Procedures Manual, issued by the Director of Environmental Management, including adjustment of noise levels for tonality and impulsiveness. Noise levels are to be averaged over a 15 minute time interval.	**P2** Noise emissions measured at the boundary of the site must not cause environmental harm.
A4 Commercial vehicle movements, (including loading and unloading and garbage removal) to or from a site must be limited to within the hours of: (a) 7.00 am to 5.00 pm Mondays to Fridays inclusive; (b) 8.00 am to 5.00 pm Saturdays; (c) 9.00 am to 12 noon Sundays and Public Holidays.	**P4** Commercial vehicle movements, (including loading and unloading and garbage removal) must not result in unreasonable adverse impact upon residential amenity having regard to all of the following: (a) the time and duration of commercial vehicle movements; (b) the number and frequency of commercial vehicle movements; (c) the size of commercial vehicles involved; (d) the ability of the site to accommodate commercial vehicle turning movements, including the amount of reversing (including associated warning noise); (e) noise reducing structures between vehicle movement areas and dwellings; (f) the level of traffic on the road; (g) the potential for conflicts with other traffic.

In relation to noise, EMPCA[1] defines material environmental harm if:

> " (i) *it consists of an environmental nuisance of a high impact or on a wide scale; or …*"

Environmental nuisance is further considered under EMPCA to occur if:

> "*…the emission is to be taken to unreasonably interfere with a person's enjoyment of the environment if it is unreasonable having regard to –*

[1] Environmental Management and Pollution Control Act (EMPCA), 1994

(a) its volume, intensity or duration; and

(b) *the time, place and other circumstances in which it is emitted; and …*"

In Table 1 of the Noise EPP[2], a list of Acoustic Environmental Indicator levels are given for which the environmental values specified in the Noise EPP "*…will be protected for the majority of the human population where the acoustic environment indicator levels are not exceeded…*" A section of that table is reproduced here in Table 2.1.

Additionally, relevant to mechanical plant noise, the *Tasmanian Environmental Management and Pollution Control (Noise) Regulations 2016* detail the following criteria for the operation of fixed equipment, under section 7.1:

"(1) *A person must not operate fixed equipment on any premises -*

a. *from 7:00AM until 10:00PM, if the fixed equipment, when so operated, emits noise that is greater than 45 dBA; or*

b. *from 10:00PM until 7:00AM, if the fixed equipment, when so operated, emits noise that is greater than 40 dBA."*

It is noted that the Noise Regulations criteria apply 1m from the residential building facade, rather than at the boundary of the site.

TABLE 2.1: ACOUSTIC ENVIRONMENTAL INDICATOR LEVELS - TAS NOISE EPP

Specific Environment	Critical Health Effect	LAeq dBA	Time hrs	LAmax dBA
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
	Moderate annoyance, daytime and evening	50	16	-
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45	8	60

Based on measurements conducted by NVC, shown in Table 3.1 below, to satisfy the Acceptable Solutions clause 15.3.2-A2, noise levels at the nearest residential boundaries must be less than or equal to:

Day time	8:00AM - 6:00PM	55 dBA
Night time	6:00PM - 8:00AM	40 dBA

[2] Tasmanian Environmental Protection Policy (Noise) 2009 (the Noise EPP)

3. Noise Measurements & Predictions

3.1. Noise Measurements

Unattended noise measurements were made on site between the 7th and the 14th October 2022 to quantify the existing noise levels in the area. Measurements used a Svan Type 1 sound level meter, logging in A-weighted decibels with a *Fast* response time. The data set comprised overall levels, one-third octave spectra and full statistical data at 10 minute intervals, with spectra and overall level data also recorded at 100ms intervals. The measurements were made at location 1 (see Figure 1.1), which was chosen as it is on the boundary to the nearest residential zone. This location is relatively distant from Kelly Street and Hampden Road, and thus is deemed to be representative of the quietest noise levels likely to be experienced in the area.

The measurements are summarised in Table 3.1, with Figure 3.1 showing the noise trend and spectrogram..

TABLE 3.1: SUMMARY OF MEASURED NOISE LEVELS

Time Period	Sound Pressure Level, dBA		
	L10	L90	LEQ
Day Time (7:00AM - 6:00PM)	55	49	56
Evening Time (6:00PM - 12:00AM)	50	47	51
Night Time (12:00AM - 7:00AM)	52	45	55

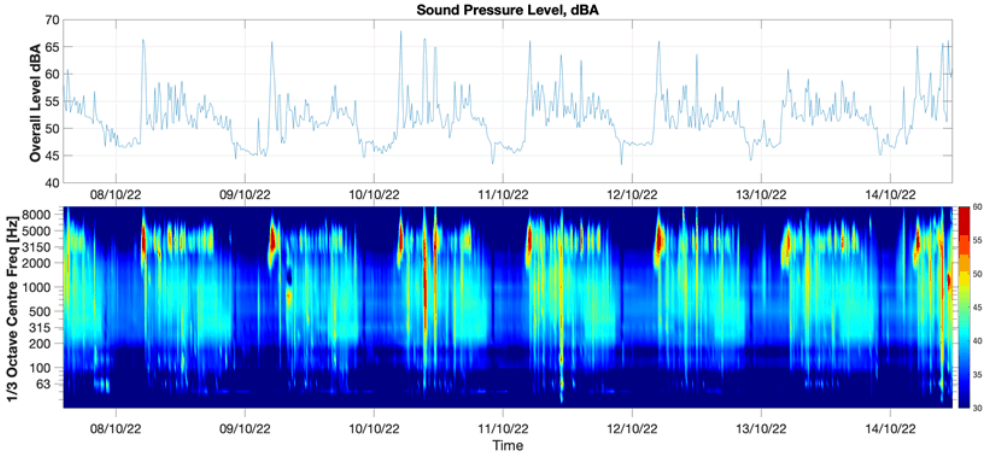


FIGURE 3.1: NOISE TREND & SPECTROGRAM

The following comments are relevant to the noise measurements:

- During NVC's attendance on site, the dominant noise source was the traffic on Hampden Road and traffic through the associated car park.
- The ambient noise levels during attendance were relatively low, and deemed typical of an inner-suburban area.
- It is noted that the L10 and Leq during the night time period is high compared to the background (L90). This is due to a consistent, loud noise occurring at around 5AM each day.
  - The source of this noise is unknown, however, it is consistently strong within the 2000 to 3150 Hz one-third octave frequency bands, and thus may be from siren/ alarm or similar.

- It was noted the noise logger was set up close to a garbage disposal area which is expected to be a dominant source of noise when garbage is being disposed of/ collected. The current garbage collection schedule is not known to NVC.

3.1. Noise Predictions

Noise emissions from the site have been predicted using an iNoise software model, which implements the ISO9613 algorithms for environmental noise. The predictions account for geometric divergence, barrier attenuation, atmospheric absorption, reflections and screening from buildings, and ground absorption. The following assumptions have been made in the predictions:

- 1m topographical contours (from LIDAR data) have been used for the site and surrounding area.
  - The ground has been assumed to have a ground factor of 0 (100% reflective). Much of the surrounding area is concrete, but many surfaces within residential properties in particular will have some absorption. This assumption is thus worst-case, and conservative.
- The building structure and location of equipment has been modelled as per the preliminary design drawings[3].
- The building facades are modelled with a reflection factor 0.8 (80% reflective).
- The property fencing on the northern and north-eastern boundary of the property is 2.1 m high, with a reflection factor of 0.8 (80% reflective). It is assumed the fence is solid (no gaps) and constructed from 20mm ship lapped timber, or an alternative material with a surface mass of minimum 15kg/m^2. The fence on the northern boundary is existing at the time of this report.
- As per the Tasmanian Noise Measurement Procedures Manual, noise levels are predicted at a height of 1.2m above the ground level.
- Modelled noise emissions from within the building include patrons and background music in the cafe and retail spaces.
  - Internally, patron noise is modelled assuming full capacity, based on one person per 1.5m^2, where 90% of the patrons are using a normal speaking voice and 10% are using a raised voice, with voice sound power levels as per the AAAC Guidelines[4].
  - Transmission loss of the facades has been calculated assuming worst-case (the entire facade being glazing). For these calculations it is assumed that windows are double glazed, using 4mm float glass, 12mm air gap, 4mm float glass.
- Traffic for the basement car park has been modelled for peak-hour flow of 36 vehicles per hour. Assuming worst-case scenario of all cars assessing the car park over a one-hour period.
- Mechanical plant details have been assumed to be typical of this style of building, with the modelled sources comprising of 19 air conditioning units, two kitchen exhaust fans, one carpark exhaust fan and one garbage room exhaust fan, with the details as follows.
  - The kitchen exhaust fans are modelled with a sound power level of 89 dBA, located on the rooftop of the proposed building (directly above the cafe).
  - The garbage room exhaust fan is modelled with a sound power level of 66 dBA, located directly above the garbage room.
  - The car park exhaust fan is modelled with a sound power level of 97 dBA, located on the roof of the building directly south of Lift 1. (Above service riser to the left of lift 1 in Figure 1.2).

[3] *Hampden Road Development - Development Application*, JAWS Architects, 17th June 2025

[4] *Licensed Premises Noise Assessment Technical Guideline V2*, Association of Australasian Acoustic Consultants, November 2020

- The AC units have been modelled with a sound power level of 69 dBA each, located around the building outside each proposed tenancy, based on preliminary mechanical plant drawings provided by the architect.

The noise sources modelled are listed in Table 3.2, along with their sound power levels when they are operating. The following is noted:

- The sound power levels are per item.
- Music noise is modelled with an internal reverberant sound pressure level of 75 dBA. This level is taken from the AAAC guidelines and allows for conversation at normal vocal effort at 600 mm separation. This is typical of 'background' music.

TABLE 3.2: SOURCE SOUND POWER LEVEL DATA

Source	Sound Power Level, SWL, dBA
Patrons - Internal Cafe	90
Patrons - Internal Retail	88
Internal Music	75 (SPL)*
Light Vehicle (per vehicle)	77
Carpark Exhaust Fan	97
Garbage Room Exhaust Fan	66
AC (per unit)	69
Kitchen Exhaust Fan	89

*Note that the source data for the music is specified as an internal reverberant sound pressure level, rather than a sound power level as for the other sources.

The modelled results are summarised in Table 3.3.

TABLE 3.3: PREDICTED NOISE LEVELS WITHIN THE RESIDENTIAL ZONE

Noise Source	Sound Pressure Level, SPL, dBA			
	A	B	C	D
Internal Patrons & Music - Cafe	26	< 20	< 20	32
Internal Patrons & Music - Retail	< 20	22	28	22
Light Vehicle Movements	33	< 20	< 20	30
Carpark Exhaust Fan	32	35	36	36
Garbage Room Exhaust Fan	31	< 20	< 20	23
Kitchen Exhaust Fan	32	30	29	34
Apartment AC Units	37	39	40	34
Total - Day Time	41	41	42	41

The following comments are relevant to the predicted results:

- See Figure 1.1, above, for the location of receivers A, B, C and D.

- The internal noise is dominated by the patrons in the cafe and retail spaces. Noise emissions from uses internal to the building are predicted to be minimal, with other sources being dominant.
- Light vehicle traffic - assuming a worst-case scenario of peak hour for general traffic and traffic accessing the underground car park, the predicted sound pressure level is 33 dBA at the worst affected receiver.
- Mechanical plant noise, assuming all plant equipment operating at full capacity simultaneously, is predicted to be 40 dBA at the worst affected receiver from the AC units surrounding the building.
- It is noted that the worst-case scenario for the Cafe and Retail spaces do not significantly impact upon the overall noise emissions, with emissions being dominated by the mechanical plant noise; primarily the carpark exhaust fan and AC units surrounding the building.

Note that heavy vehicles are not proposed to access the site, and thus have not been included in the noise model. It is assumed that any heavy vehicles which carry deliveries to site or remove garbage form site will do so within the acceptable hours under the Scheme, and as such noise emissions from heavy vehicles is not further considered.

4. ASSESSMENT

Noise emissions from the proposed development at 55 Hampden Road, Battery Point, have been predicted using a software noise model. The modelled sources including the buildings mechanical plant, patrons and background music inside the cafe and retail spaces, and light vehicle movement associated with the development.

The predicted worst-case noise levels are 42 dBA at the worst affected receivers. These levels are above the Scheme Acceptable Solutions and Noise Regulations criterion of 40 dBA during night time, and thus require assessment under the Performance Criteria.

The exisiting background noise level in the area in the evening and night being 47 dBA and 45 dBA respectively. As such, a noise level from the proposed development of less than 45 dBA would be beneath the existing background noise level, and thus unlikely to cause environmental harm to the nearby residents. As the predicted noise level at the worst-affected receiver is beneath the existing background noise level, noise emissions from the proposed development are unlikely to cause nuisance, and therefore the proposal is deemed to comply with the Performance Criteria under clause 15.3.1-P2 of the Hobart Interim Planning Scheme 2015.

It is noted that several assumptions have been made in defining the likely noise emissions from the proposed development, and as such, the following is recommended to ensure likely compliance with clause 15.3.1-P2:

- Hours of operations for the non-residential tenancies on the ground floor are within the 'Acceptable Solutions' hours under 15.3.1-A1 of the Scheme.
- Heavy vehicle movements on site occur should occur only within the 'Acceptable Solutions' hours under clause 15.3.1-A4 of the Scheme.
- It should be ensured that a barrier/fence is in place along the northern boundary of site. This barrier should have no gaps, and a minimum surface mass of 15 kg/m^2. 20mm ship-lapped timber, 12mm cement sheet, or commercial noise wall products are examples of appropriate construction.
- Residential AC units should be located where it does not have direct line of sight to residents where possible, and noise control requires consideration where this is not possible (see final dot point below).
- Rooftop mechanical plant is likely to require some noise control, i.e. screening to remove line of sight between the plant and any surrounding noise sensitive premises. These requirements to be defined in the detail design phase - see below.
- During the detail design phase for the building mechanical plant, an acoustic engineer should be engaged to ensure noise emissions from the proposed mechanical plant do not exceed 40 dBA, as per the requirements of the Scheme and the Noise Regulations.

Should you have any queries, please do not hesitate to contact me directly.

Kind regards,

Samuel Williamson

NOISE VIBRATION CONSULTING

Tasmanian Government

PlanBuild TASMANIA

PLANNING APPLICATION

Status

Reference
PLN-HOB-2025-0290

Address
55 HAMPDEN RD BATTERY POINT TAS 7004

Titles
79546/1, 40041/1, 90423/1, 40041/5, 40041/3, 40041/6, 40041/4, 40041/9, 40041/8, 40041/7, 40041/2

Before you start

Before you start your application, you will need to know if you require planning approval or not.

If you are unsure if you require a permit, use the PlanBuild Tasmania Enquiry Service to lodge a request for advice from the relevant Council.

Once your application has been submitted the Council will review your application. If payment has not been made, you will be sent a request for the payment of application fees via PlanBuild Tasmania.

Once the fees have been paid and the Council is satisfied with the information provided, the application will be assessed and you will be notified of the outcome.

If further action is required to assess your application you will receive an email notification containing a task to complete.

Pre-Application Advice

Have you spoken with anyone at Council about this application?

- [x] Yes - enter details below
- [ ] No - continue to the next section

If yes, provide the name of the person you contacted
Karen Abey, Michael Stretton, Dan Burke

Applicant

Personal Information Removed

Owners

Personal Information Removed

Certificate(s) of Title

Selected Titles Total Area: 0m^2

79546/1	40041/1	90423/1	40041/5	40041/3	40041/6
40041/4	40041/9	40041/8	40041/7	40041/2	229127/1

Owner Notification

Are you the sole owner of the land?

- [ ] Yes - continue to the next section
- [x] No - answer question below

If no, have you notified all owners, joint or part owners of your intention to submit this application?

- [x] Yes - enter owner details below
- [ ] No - you must notify all owners before proceeding with this application

List all owners, joint or part owners as recorded on the Title documents notified:
MRRC Pty Ltd (Michael Cooper, Robert Wilkins, Richard Fader, Craig Clifford)

Enter the date that the last owner, joint or part owner was notified
18/06/2025

Declaration

- [x] I declare that all land owners, joint or part owners have been notified of this planning application.

Crown Land Consent

Is Crown Land involved in the proposed use or development?

- [ ] Yes - complete question below
- [x] No - continue to the next section - see further information below
- [ ] Unsure

If yes, has written Crown Land consent been obtained?

- [ ] Yes - upload written consent
- [ ] No - application will not be progressed until consent has been provided

General Manager Consent

Is Council-owned or administered land involved in the proposed use or development?

- [x] Yes - complete question below
- [ ] No - continue to the next section
- [ ] Unsure

If yes, has written consent been obtained from the Council General Manager?

- [ ] Yes - upload written consent
- [x] No - application will not be progressed until consent has been provided

Proposed Use or Development

What is the reason for your planning application?

- [x] I want to change how the property is used
- [x] I want to use the property for visitor accommodation
- [ ] I want to subdivide
- [x] I want to undertake a new development or alteration
- [ ] I want to do a minor boundary adjustment
- [ ] I want to put up a sign(s)
- [x] I want to demolish
- [ ] I want to do works only
- [ ] Other

If your application is to subdivide, please enter the number of proposed lots.
0

If your application is for signage, please enter the number of signs.

Is the property a Tasmanian Heritage Listed Property?

- [ ] Yes
- [x] No

Is the application for an EPA Activity under the Environmental Management and Pollution Control Act 1994?

- [ ] Yes
- [x] No
- [ ] Unsure

Is the proposed use or development permitted or discretionary?

- [ ] Permitted
- [x] Discretionary
- [ ] Unsure if permitted or discretionary

Provide a full description of the proposed use or development
See attached planning report

Will the proposed use or development involve a road reserve?

- [x] Yes - complete the section below
- [ ] No - continue to the next section
- [ ] Unsure

If yes, enter the address(es) or locations below:
Hampden Road road reserve, Kelly Street road reserve, South Street road reserve

If yes, how will the road reserve be affected?
Alterations to crossovers, kerb and gutter. New vehicle access

Value of Works

What is the estimated value of the works?
15300000

Supporting Documents

Version	Document Date	Document Type	Description	Prepared By
1	18 June 2025	Property Title Document	Appendix A Title documentation.pdf	ERA Planning and Environment
1	18 June 2025	Planning Scheme Response	Supporting planning report	ERA Planning and Environment
1	18 June 2025	Plans	Plans	JAWS
1	4 Feb 2025	Other	Statutory declaration	Craig Clifford, owner

Next steps

When you have completed all the necessary fields and attached all required documents to support your application, click on the green 'Save & Submit' button at the top right of this form.

Once submitted, the Council will review your application. A request for the payment of application fees will be sent to you via PlanBuild Tasmania.

Once the fees have been paid and the Council is satisfied with the information provided, the application will be assessed and you will be notified of the outcome.

If further action is required to assess your application you will receive an email notification from PlanBuild which will tell you what you need to provide to continue the application.

Form published: 14/05/2025 15:58

Tasmania

Department of Justice

STATUTORY DECLARATION

OATHS ACT 2001

I (full name) Craig Robert Clifford

Of (residential address) 16 Clarke Avenue, Battery Point, Hobart, Tasmania, 7004

Occupation Company Director

Do solemnly and sincerely declare that:

1. I am a Director of MRRC Pty Ltd (hereinafter referred to as 'MRRC').
2. MRRC is the current owner and operator of the Prince of Wales Hotel, located at 55 Hampden Road, Battery Point in the State of Tasmania.
3. MRRC has submitted a Development Application (hereinafter referred to as a 'DA') to the Hobart City Council in relation to proposed Works to the Hotel and its surrounds.
4. In assessing the DA, ownership of land titles for the site and its surrounds have been searched and examined. Specifically, the land forming the road reserve of Kelly Street, and the land encroaching into the Kelly Street frontage of the site, have been meticulously searched and examined.
5. In particular, searches indicate that the land Right of Way between Lots 1 and 2 on Deed 48-6744 was held in the mid 1850's by a gentleman named William Burgess.
6. William Burgess died on the 2nd April 1889.
7. With respect to the land Right of Way between Lots 1 and 2 on Deed 48-6744, extensive searches indicate that this currently rests with the Estate of the late William Henry Burgess, being at the relevant time the surviving appointed personal representative of the late William Burgess, the owner of that land at the time of his death.
8. William Henry Burgess died on 1st May 1917.
9. Extensive searches have failed to reveal how or if the Executors of the Estate of William Henry Burgess dealt with the said Right of Way land. All such Executors have long since deceased, and searches have been unable to identify the current beneficiaries of that Estate.
10. It is my view that all reasonable attempts have been made to identify and notify the current owners of all land the subject of the DA. I am satisfied that the land currently rests with the Estate of William Henry Burgess, and that further identification can not reasonably be taken any further.

I make this solemn declaration under the *Oaths Act 2001*.

Declared at (place) HOBART

On (date) 4 FEBRUARY 2025

Signature

Before me Joel Reid Scarr
An Australian Legal Practitioner within the
~~meaning of the Legal Profession Act 2007 (Tas)~~

(Justice, Commissioner for Declarations or authorised person)

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
90423	1
EDITION	DATE OF ISSUE
7	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.15 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 90423 (formerly being 15-39HOB)
Derivation : Part of 2A-0R-11Ps Gtd to C McLachlan
Prior CT 2059/65

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BENEFITING EASEMENT: TOGETHER WITH a right of way or passage and right of privilege of way and passage over the Roadway passing through Lot 2 on Diagram No. 90423
BURDENING EASEMENT: SUBJECT TO a way or passage and right and privilege of way and passage for David Henderson his heirs and assigns owners of the land conveyed by an Indenture of Conveyance dated the 1st day of September 1851 (registered No. 3/6214) fromng to the said David Henderson and his and their tenants servants and workmen and others in through over and along a passage or piece of ground shown as right of way and passing through Lot 1 on Diagram No. 90423
B18555 LEASE to THE HYDRO ELECTRIC COMMISSION of a leasehold estate for the term of 50 years from 1-Apr-1985 of Lot 2 on Diagram No. 27104 Registered 04-Apr-1986 at noon
Leasehold Title(s) issued: 27104/2
C618215 MORTGAGE to Commonwealth Bank of Australia Registered 11-Apr-2005 at 12.01 PM

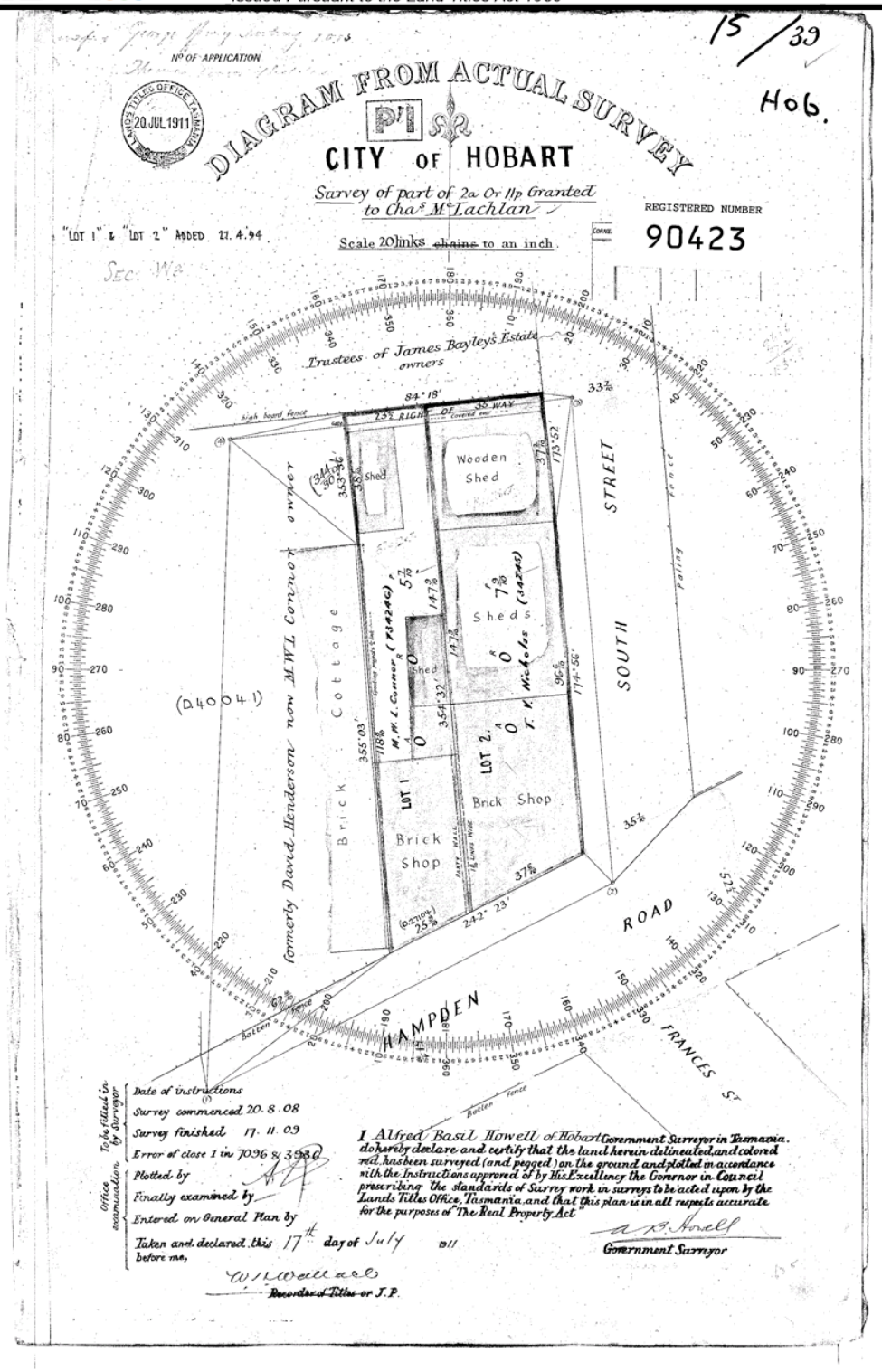
UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
229127	1
EDITION	DATE OF ISSUE
6	13-Jun-2006

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.08 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 229127
Derivation : Part of 2A-0R-11P Gtd to C McLachlan
Prior CT 2971/14

SCHEDULE 1

C701985 TRANSFER to MRRC PTY LTD Registered 13-Jun-2006 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C715002 MORTGAGE to Commonwealth Bank of Australia Registered 13-Jun-2006 at 12.02 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

ORIGINAL – NOT TO BE REMOVED FROM TITLES OFFICE

R.P. 1469
TASMANIA
REAL PROPERTY ACT, 1862, as amended
NOTE – REGISTERED FOR OFFICE CONVENIENCE TO REPLACE

CERTIFICATE OF TITLE

Register Book
Vol. 2971 Fol. 14

Cert. of Title Vol. 362 Fol. 56.

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple in the land within described together with such interests and subject to such encumbrances and interests as are shown in the Second Schedule. In witness whereof I have hereunto signed my name and affixed my seal.

Recorder of Titles.

DESCRIPTION OF LAND

CITY OF HOBART
FOURTEEN PERCHES on the Plan hereon

FIRST SCHEDULE (continued overleaf)

LOIS EILEEN HILL of Hobart, Married Woman.

SECOND SCHEDULE (continued overleaf)

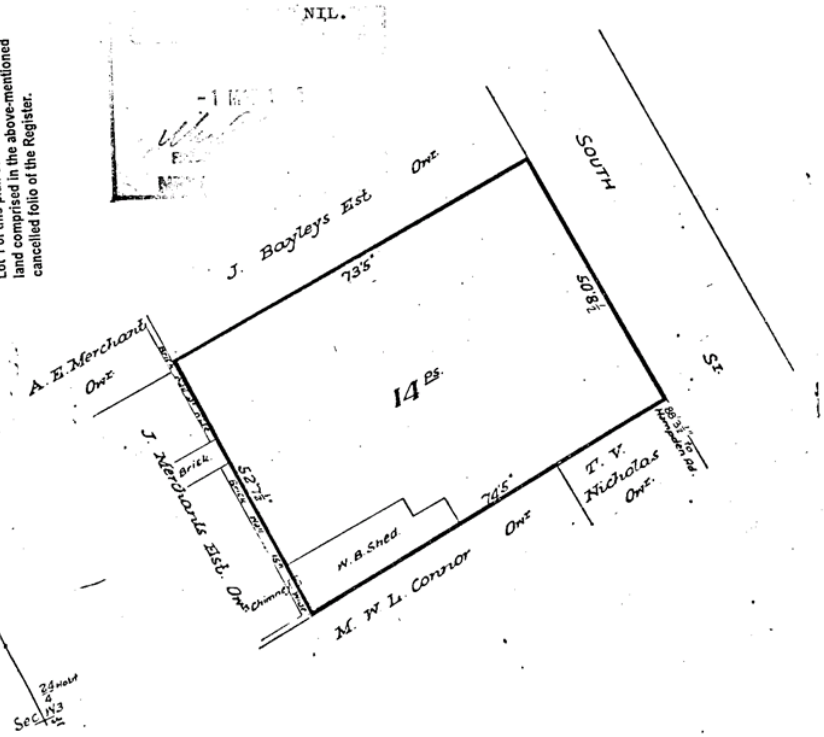
NIL.

REGISTERED NUMBER 229127

RECORDER OF TITLES ARE NO LONGER SUBSISTING.

Lot 1 of this plan consists of all the land comprised in the above-mentioned cancelled folio of the Register.

NOTE – ENTRIES CANC



Part of 2A-0R-11Ps. - Gtd. to C. McLachlan - Meas. in ft. & ins. 24/4H.

FIRST Edition. Registered

Derived from C.T. Vol.362.Fol.56. Transfer 86925 E.F. Henry & Anr.

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	1
EDITION	DATE OF ISSUE
9	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.09 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 40041
Being part of the land described in Conveyance No. 64/5311
Excepting thereout Lot 1 on D.O. 100/77, Conveyance No. 48/6744
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/10

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia
Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

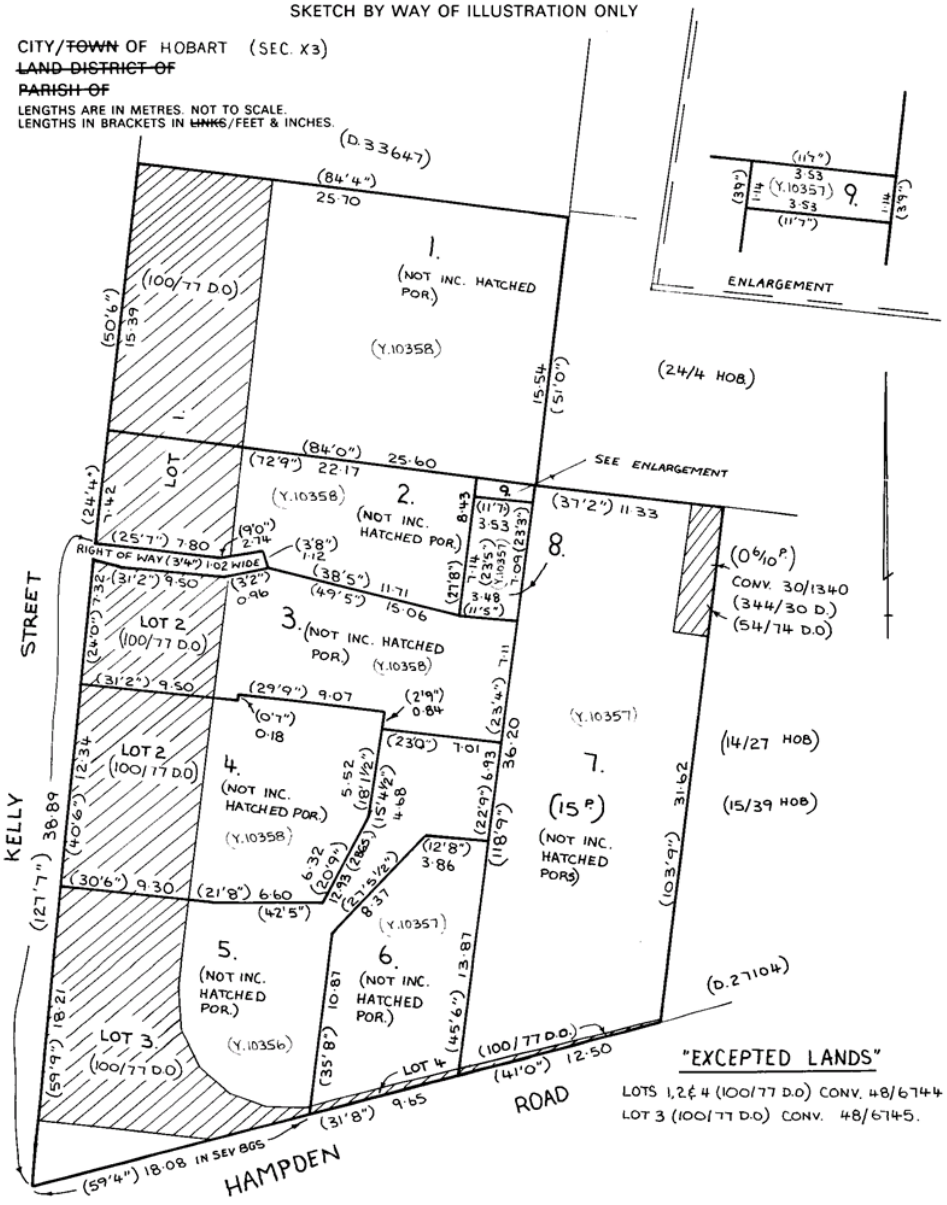
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y.10356 Y.10357 Y.10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
~~PARISH OF~~
LENGTHS ARE IN METRES. NOT TO SCALE.
LENGTHS IN BRACKETS IN ~~LINKS~~/FEET & INCHES.



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	2
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.09 AM

DESCRIPTION OF LAND

City of HOBART
Lot 2 on Diagram 40041
Being part of the land described in Conveyance No. 64/5311
Excepting thereout Lot 1 on D.O. 100/77, Conveyance No. 48/6744
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. Mclachlan
Prior CT 4627/10

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
64/5311 BENEFITING EASEMENT: Right of Carriageway over the Right of Way shown on the said Diagram.
C618215 MORTGAGE to Commonwealth Bank of Australia Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y.10356 Y.10357 Y.10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
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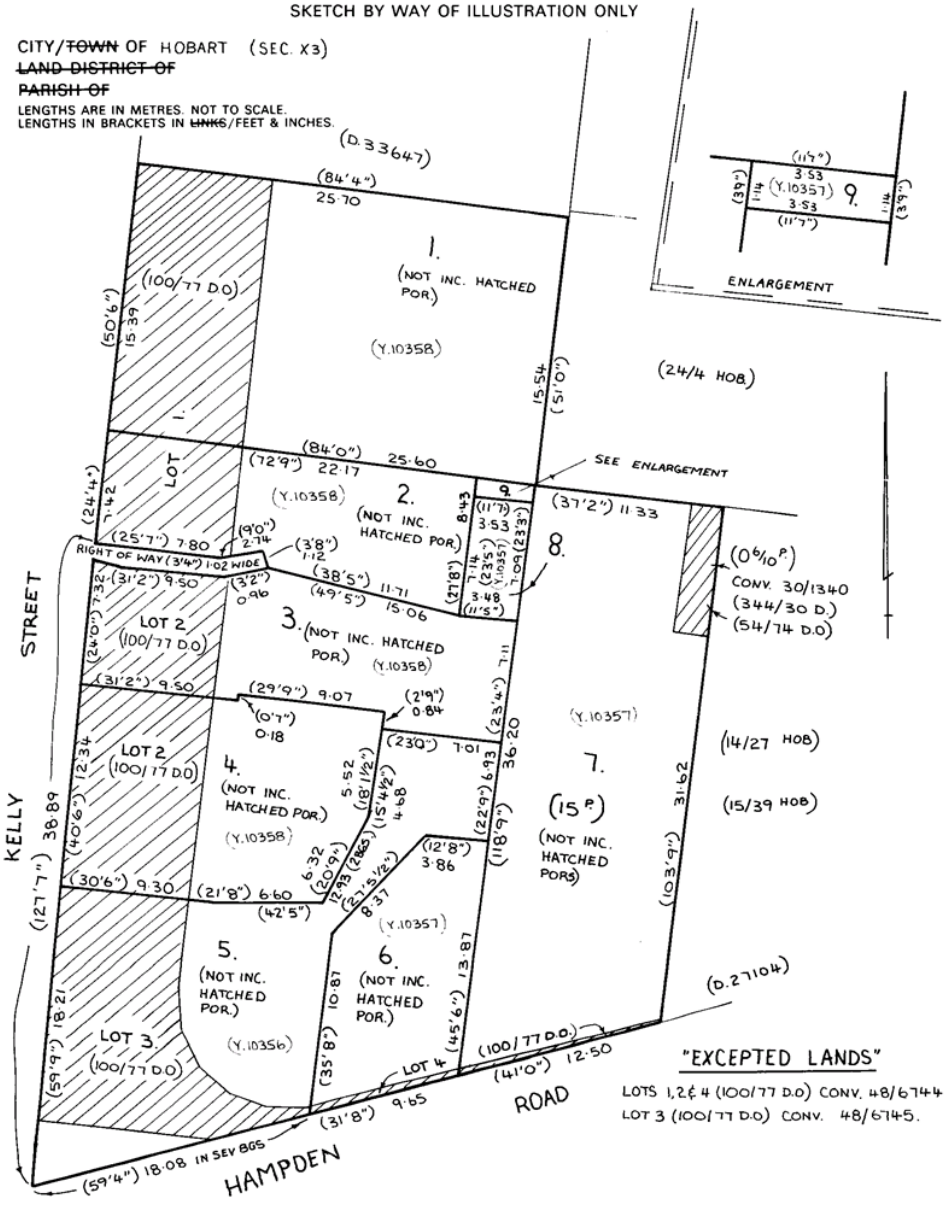


RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	3
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.12 AM

DESCRIPTION OF LAND

City of HOBART
Lot 3 on Diagram 40041
Being part of the land described in Conveyance No. 64/5311
Excepting thereout Lot 2 on D.O. 100/77 Conveyance No. 48/6745
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/10

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

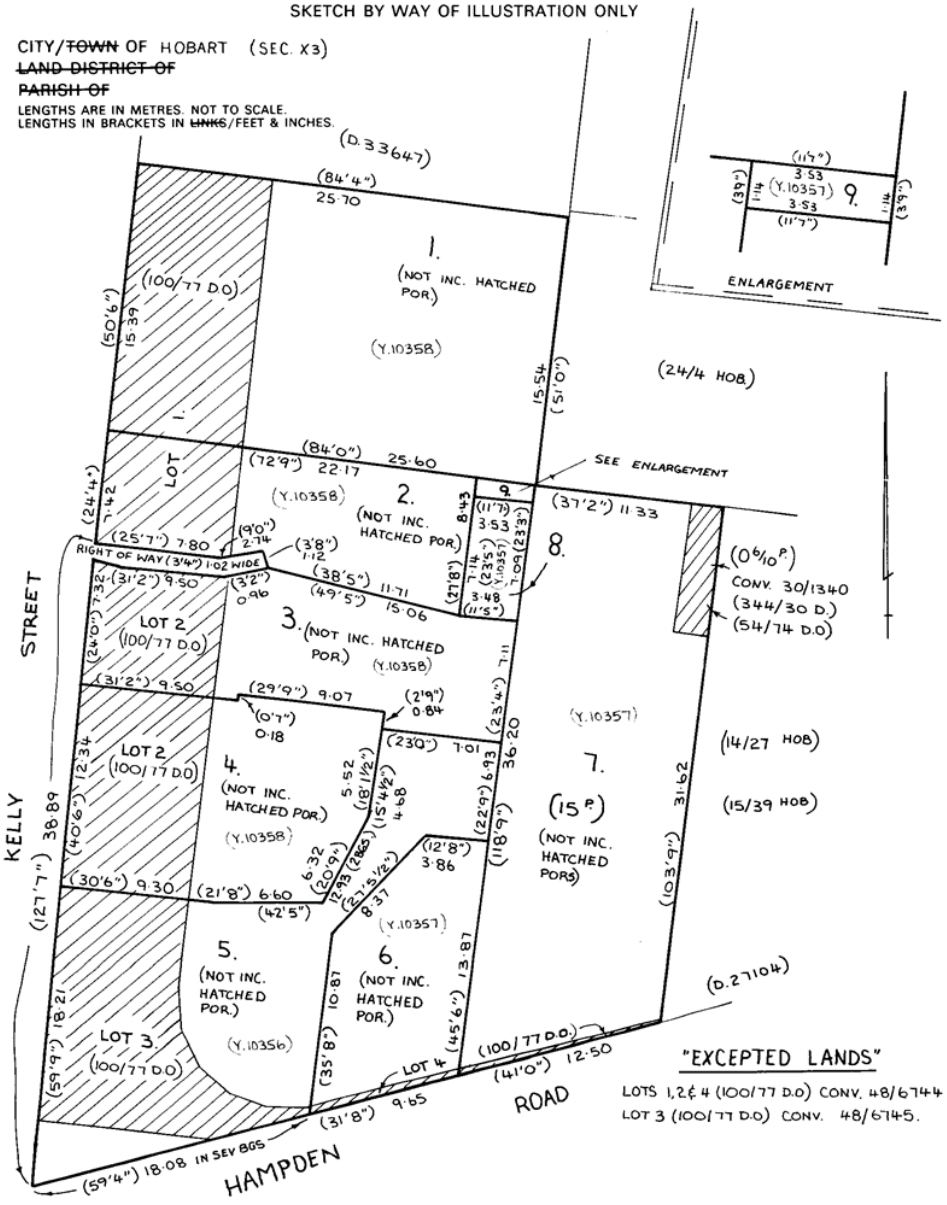
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED ... 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y. 10356 Y. 10357 Y. 10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
~~PARISH OF~~
LENGTHS ARE IN METRES. NOT TO SCALE.
LENGTHS IN BRACKETS IN ~~LINKS~~/FEET & INCHES.



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	4
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.13 AM

DESCRIPTION OF LAND

City of HOBART
Lot 4 on Diagram 40041
Being part of the land described in Conveyance No. 64/5311
Excepting thereout Lot 2 on D.O. 100/77 Conveyance No. 48/6744
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/10

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia
Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

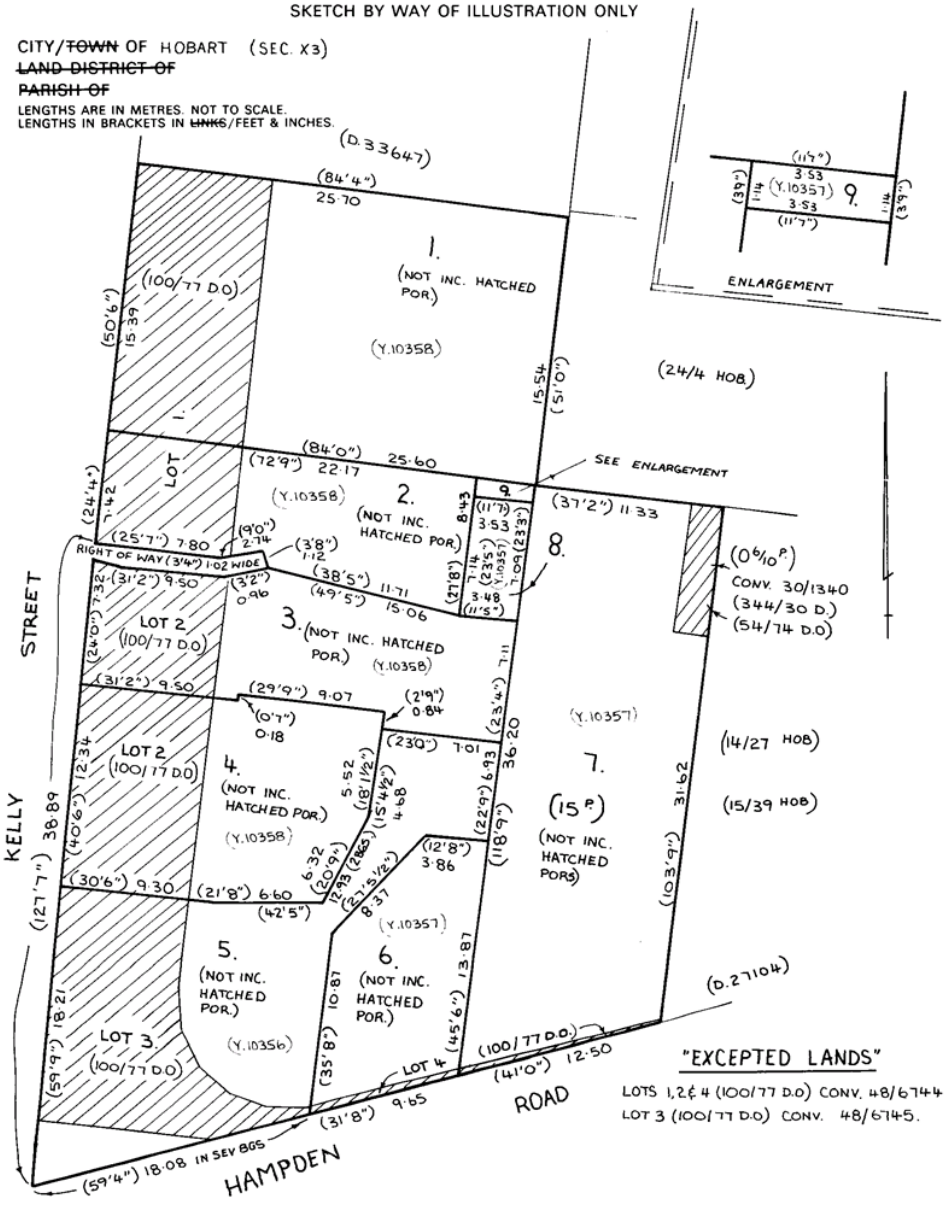
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y.10356 Y.10357 Y.10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
~~PARISH OF~~
LENGTHS ARE IN METRES. NOT TO SCALE.
LENGTHS IN BRACKETS IN ~~LINKS~~/FEET & INCHES.



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	5
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.14 AM

DESCRIPTION OF LAND

City of HOBART
Lot 5 on Diagram 40041
Being the land described in conveyance No. 64/5309
Excepting thereout Lot 3 on Conveyance No. 48/6745
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/8

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

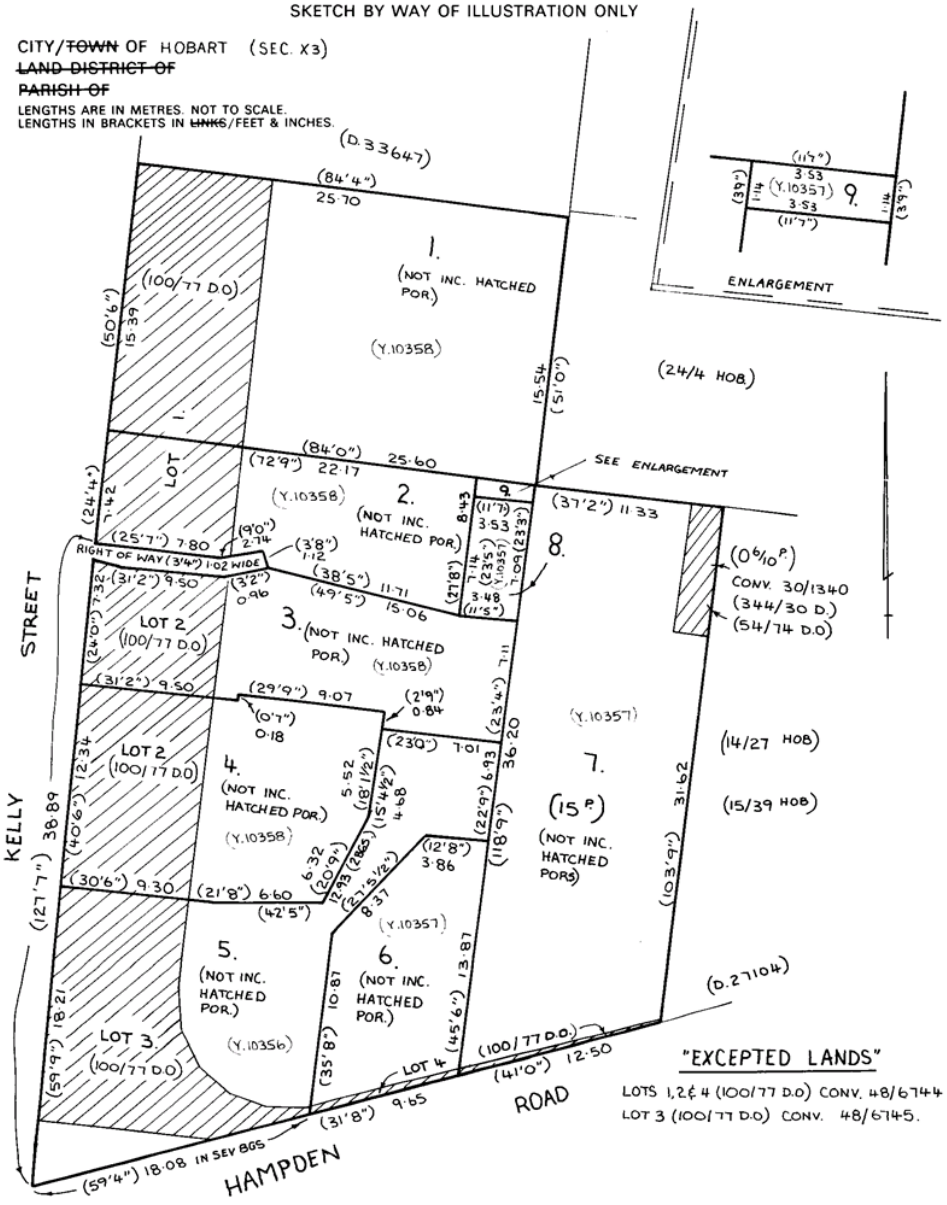
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y.10356 Y.10357 Y.10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
~~PARISH OF~~
LENGTHS ARE IN METRES. NOT TO SCALE.
LENGTHS IN BRACKETS IN ~~LINKS~~/FEET & INCHES.



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	6
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.14 AM

DESCRIPTION OF LAND

City of HOBART
Lot 6 on Diagram 40041
Being part of the land described in Conveyance No. 64/5310
Excepting thereout Lot 4 on D.O. 100/77 Conveyance No. 48/6744
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/9

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia
Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y. 10356 Y. 10357 Y. 10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
~~PARISH OF~~
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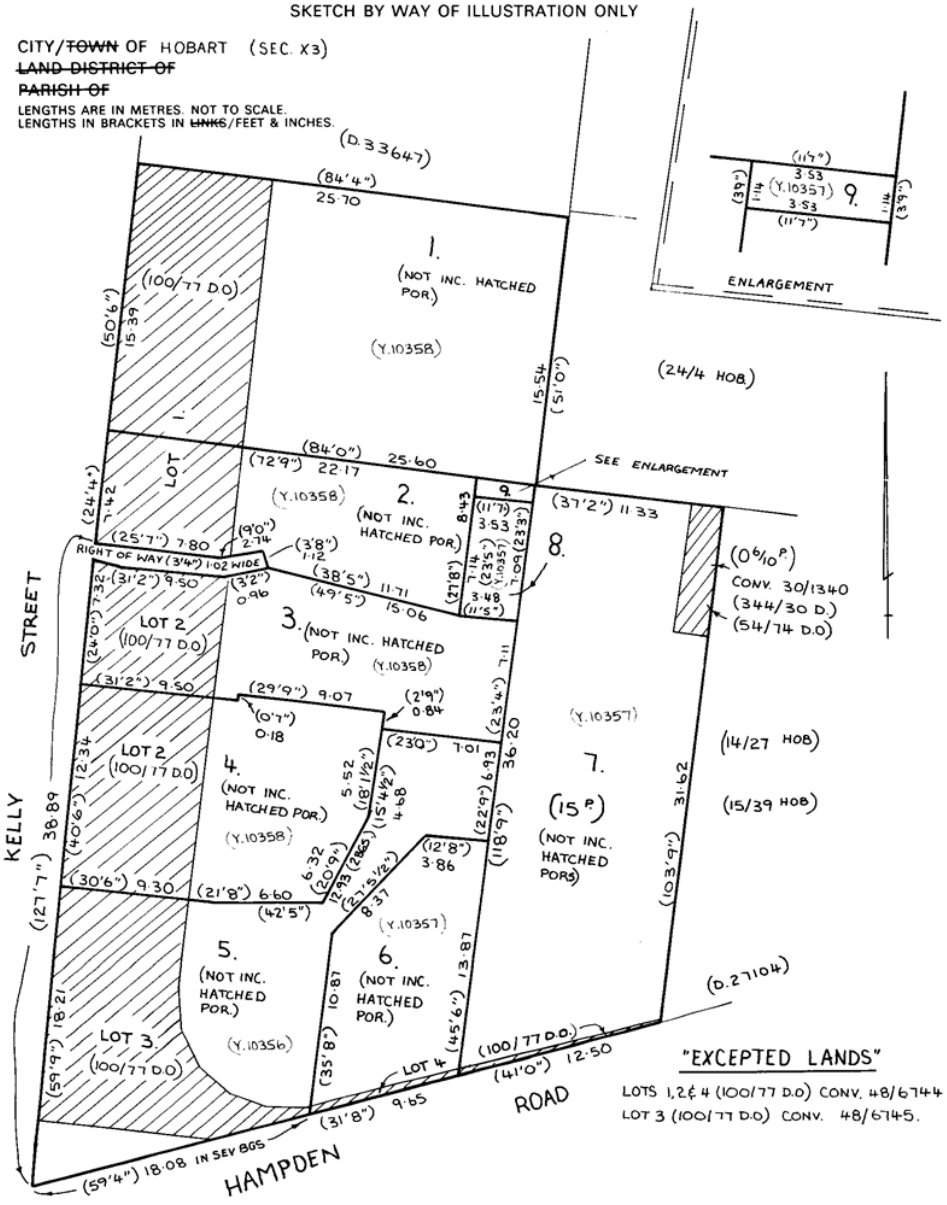


"EXCEPTED LANDS"
LOTS 1, 2 & 4 (100/77 D.O) CONV. 48/6744
LOT 3 (100/77 D.O) CONV. 48/6745.

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	7
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.14 AM

DESCRIPTION OF LAND

City of HOBART
Lot 7 on Diagram 40041
Being part of the land described in Conveyance No. 64/5310
Excepting thereout Lot 4 on D.O. 100/77 Conveyance No. 48/6744
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/9

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia
Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

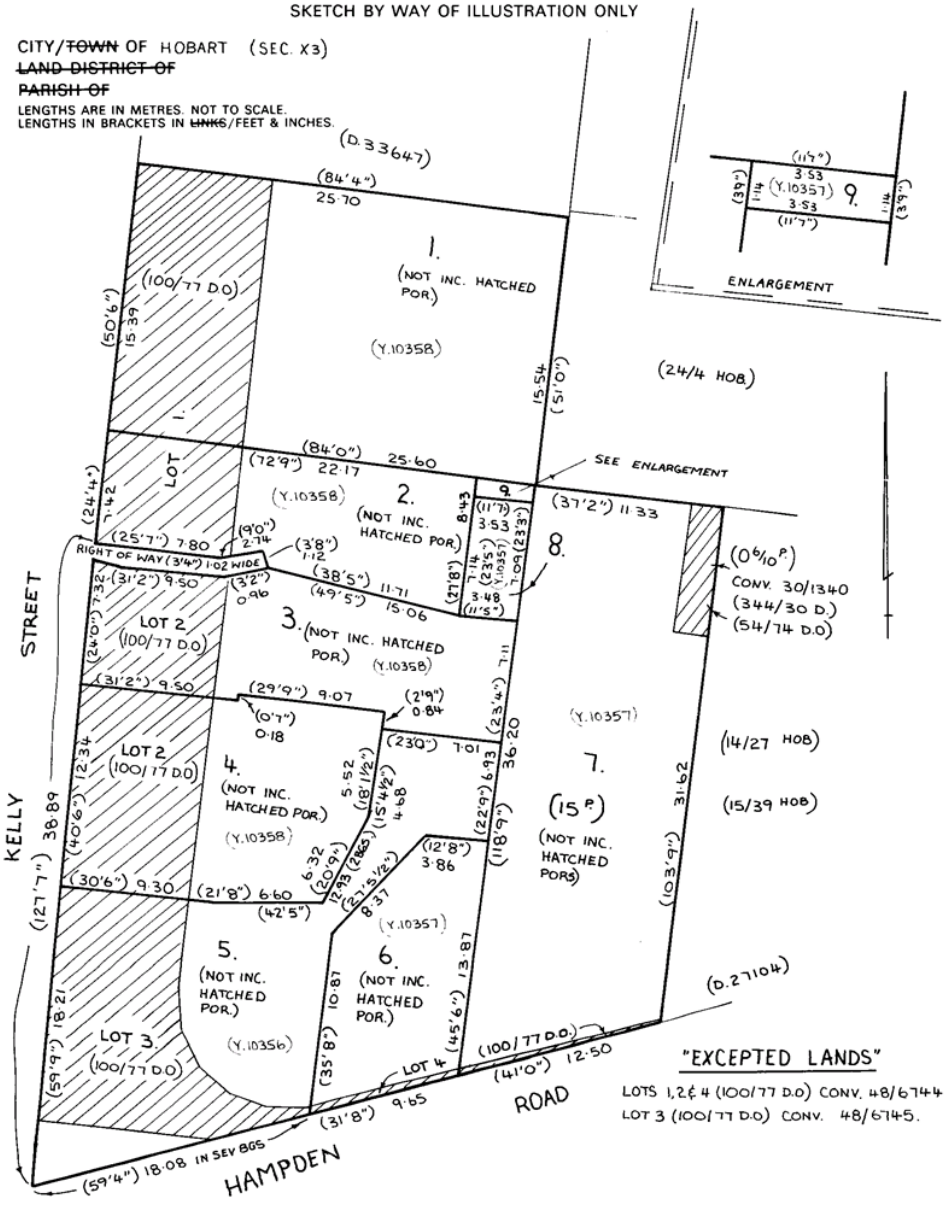
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y.10356 Y.10357 Y.10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
~~PARISH OF~~
LENGTHS ARE IN METRES. NOT TO SCALE.
LENGTHS IN BRACKETS IN ~~LINKS~~/FEET & INCHES.



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	8
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.10 AM

DESCRIPTION OF LAND

City of HOBART
Lot 8 on Diagram 40041
Being part of the land described in Conveyance No. 64/5310
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/9

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y.10356 Y.10357 Y.10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
~~PARISH OF~~
LENGTHS ARE IN METRES. NOT TO SCALE.
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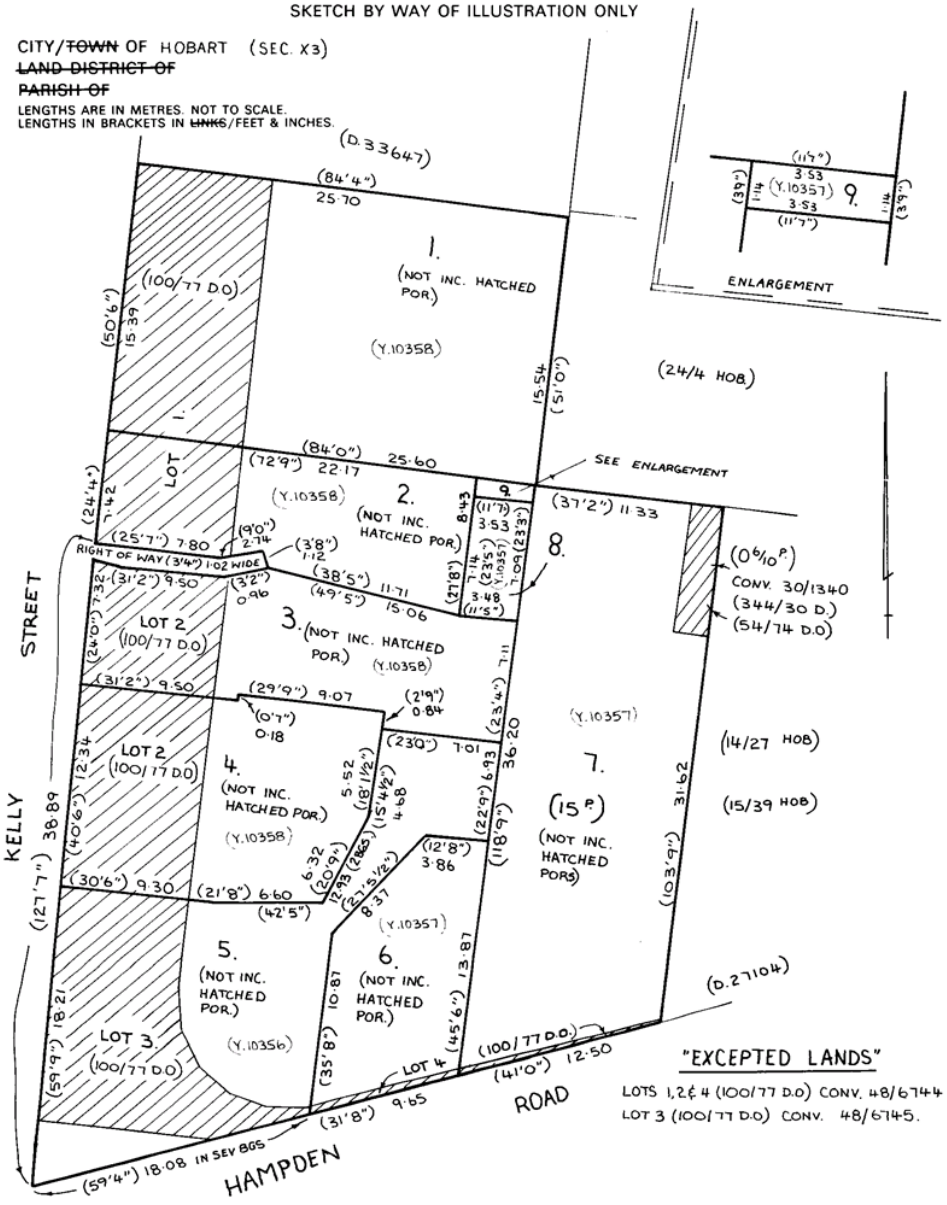

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40041	9
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.11 AM

DESCRIPTION OF LAND

City of HOBART
Lot 9 on Diagram 40041
Being part of the land described in Conveyance No. 64/5310
Derivation : Part of 4A-1R-0Ps. Gtd. to J. Kelly and Part of 2A-0R-11Ps. Gtd. to C. McLachlan
Prior CT 4627/9

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

APPROVED 1900 RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 64/5309 64/5310 64/5311	REGISTERED NUMBER D.40041
FILE NUMBER Y.10356 Y.10357 Y.10358	GRANTEE: PART OF 4-1-0 GTD. TO JAMES KELLY. & PART OF 2-0-11 GTD. TO CHARLES McLACHLAN.	DRAWN A. HORSEY 1-6-89.

SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. X3)
~~LAND DISTRICT OF~~
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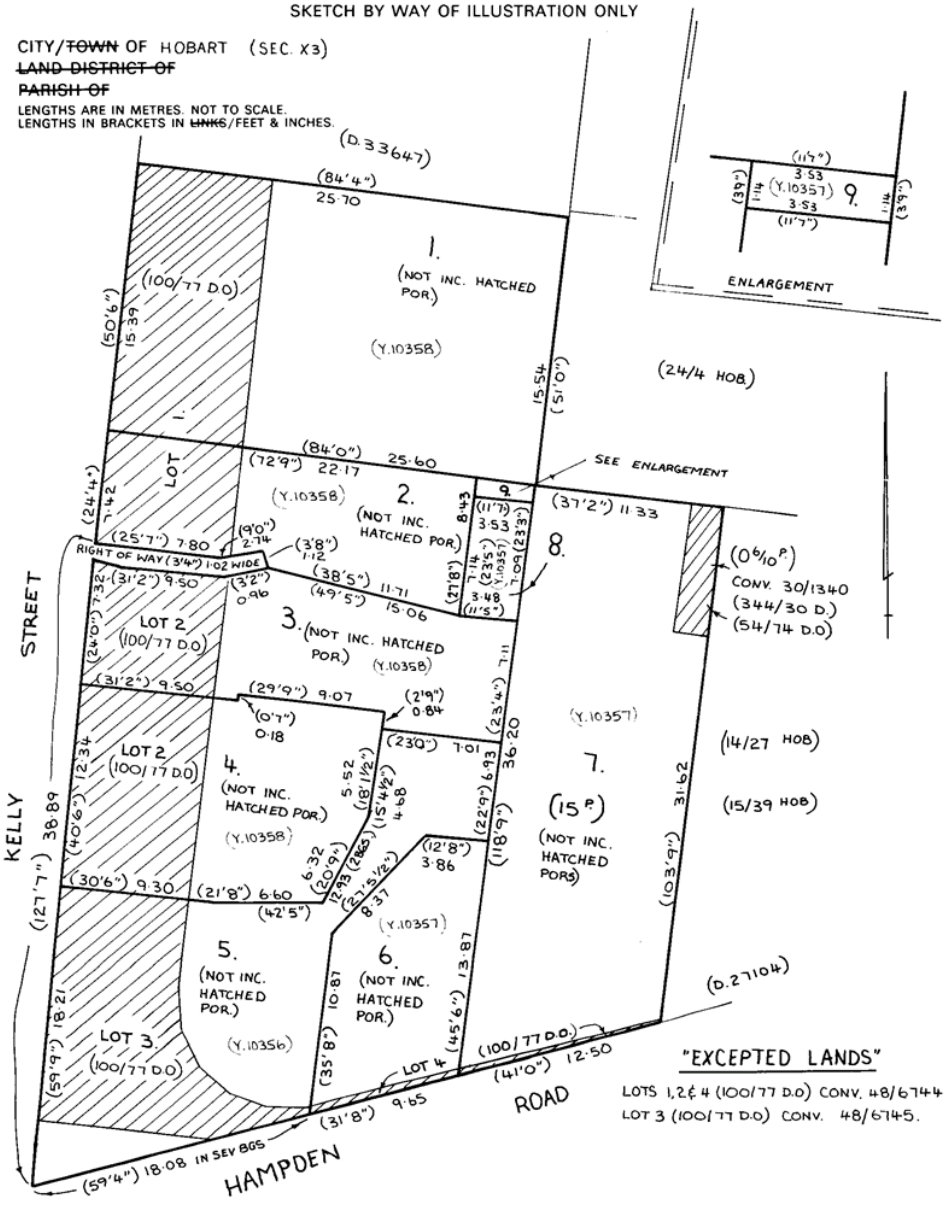

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
79546	1
EDITION	DATE OF ISSUE
8	11-Apr-2005

SEARCH DATE : 12-Dec-2023
SEARCH TIME : 11.15 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 79546 (formerly being 344-30D)
Derivation : Part of 2A-0R-11P. Gtd. to C. McLachlan
Prior CT 2266/57

SCHEDULE 1

C559880 TRANSFER to MRRC PTY LTD Registered 11-Apr-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C618215 MORTGAGE to Commonwealth Bank of Australia
Registered 11-Apr-2005 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

D 344/30

DIAGRAM FROM ACTUAL SURVEY

P/1

PPV1

REGISTERED NUMBER 79546

CITY OF HOBART

No. OF APPLICATION

Part of 2-0-11 Granted to Charles McLachlan C.L.Connor Owner A 4522 CT.

Scale 10 Feet to an inch

REFERENCE TO CORNERS

COR.	BEARING	DISTANCE IN LINKS	FROM

LOT NUMBER ADDED TO LOT 1 4/11/1993

ROADWAY

SOUTH STREET

HAMPDEN ROAD

Concrete Building

Wooden Shed

T. V. Nicholas Ow. 196/128 C.T.

C. L. Connor 576/2 C.T.

C. L. Connor Owner No 51 Brick Cottage

Owner

Brick Shop

Brick Shop No 49

Brick Shop

Not to Scale

17024 5 APR 1957 10.36 AM TASMANIA

To be filled in by Surveyor.
- Date of Instructions
- Survey commenced 29.1.57
- Survey finished 29.1.57
- Error of close 1 in 6,500

Office examination.
- Plotted by
- Examined as to boundaries
- Mathematically checked
- Entered on Card by

I, Anthony Cripps Peacock of Hobart Registered Surveyor, of Tasmania, do hereby certify that this plan has been made from surveys executed by me or under my own personal supervision, inspection, and field check, and that both plan and survey are correct, and have been made in accordance with the Land Surveyors' By-Law No. 2, dated 3rd July, 1946.

Dated this 15th day of March, 1957

A. C. Peacock
Authorised Surveyor.

Property and Title Search

Volume: 48 Folio: 6745

Dealing NO:

Surname: Given Name:

Company Name:

If you are using any search criteria below this line please read the disclaimer below.

Property ID:

or Address: more

Search Clear

The form above is offered to help you locate a folio of the Register to land. Please note that the information about a street address, locality or property name, is not drawn from data maintained by the Recorder of Titles under the Land Titles Act 1980 but is drawn from other data bases maintained by the Government and is therefore not covered by the Assurance Fund. You are responsible for verifying that the search of the folio of the Register obtained by this service relates to the land being searched.

Unable to find any match

Property and Title Search

Volume: 48 Folio: 6744

Dealing NO:

Surname: Given Name:

Company Name:

If you are using any search criteria below this line please read the disclaimer below.

Property ID:

or Address: more

Search Clear

The form above is offered to help you locate a folio of the Register to land. Please note that the information about a street address, locality or property name, is not drawn from data maintained by the Recorder of Titles under the Land Titles Act 1980 but is drawn from other data bases maintained by the Government and is therefore not covered by the Assurance Fund. You are responsible for verifying that the search of the folio of the Register obtained by this service relates to the land being searched.

Unable to find any match

TasWater

SUBMISSION TO PLANNING AUTHORITY NOTICE - SPAN

Reference
TASWASPAN-HOB-2025-0222

Application Reference
PLN-HOB-2025-0290

Address
55 HAMPDEN RD BATTERY POINT TAS 7004

Titles
79546/1, 40041/1, 90423/1, 40041/5, 40041/3, 40041/6, 40041/4, 40041/9, 40041/8, 40041/7, 40041/2

Applicant

Name	Email	Phone	Address	Involvement
ERA Planning and Environment	enquiries@eraplanning.com.au	0361650443	Level 1, 125A Elizabeth Street, Hobart, Tasmania, Australia, 7000	Applicant

Owner

Name	Email Address	Address
MRRC Pty Ltd	michael@swanport.com.au	627 Sandy Bay Road, Sandy Bay, 7005, Australia
HOBART LGA	coh@hobartcity.com.au	16 Elizabeth Street, Hobart, Tasmania, Australia, 7001

Relevant Property Title/s

Selected Titles Total Area: 0m^2

79546/1	40041/1	90423/1	40041/5	40041/3	40041/6
40041/4	40041/9	40041/8	40041/7	40041/2	229127/1

Council Description of Use and/or Development

Council Proposed Use or Development Description

Response

Pursuant to the Water and Sewerage Industry Act 2008 (TAS)
Section 56T(1) - TasWater requires the following additional information before it considers the application:

Conditions

#	Condition	Origin
1	**Connections, Metering, Backflow - connections** A suitably sized water supply with metered connections and sewerage system and connection to the development must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit. **Advice:** TasWater will not accept direct fire boosting from the network unless it can be demonstrated that the periodic testing of the system will not have a significant negative effect on our network and the minimum service requirements of other customers serviced by the network. To this end break tanks may be required with the rate of flow into the break tank controlled so that peak flows to fill the tank do not also cause negative effect on the network.	Water and Sewerage Industry Act 2008
2	**Connections, Metering, Backflow - Removal/installation** Any removal/supply and installation of water meters and/or the removal of redundant and/or installation of new and modified property service connections must be carried out by TasWater at the developer's cost.	Water and Sewerage Industry Act 2008
3	**Connections, Metering, Backflow - Subdivision** Prior to commencing construction/use of the development, any water connection utilised for construction/the development must have a backflow prevention device and water meter nstalled, to the satisfaction of TasWater. **Advice:** TasWater considers the backflow rating of this site to be "HIGH".	Water and Sewerage Industry Act 2008

4	**Asset creation Infrastructure works - Locate** Prior to applying for a Certificate for Certifiable Works, the developer must physically locate all existing infrastructure to provide sufficient information for accurate design and physical works to be undertaken.	Water and Sewerage Industry Act 2008
5	**Asset creation - Infrastructure works - Protect infrastructure** The developer must take all precautions to protect existing TasWater infrastructure. Any damage caused to existing TasWater infrastructure during the construction period must be promptly reported to TasWater and repaired by TasWater at the developer's cost.	Water and Sewerage Industry Act 2008
6	**Asset creation Infrastructure works - Construction Management plan** A construction management plan must be submitted with the application for a Certificate for Certifiable Work. The construction management plan must detail how the new TasWater infrastructure will be constructed while maintaining current levels of services provided by TasWater to the community. The construction plan must also include a risk assessment and contingency plans covering major risks to TasWater during any works. The construction plan must be to the satisfaction of TasWater prior to TasWater's Engineering Design Approval being issued.	Water and Sewerage Industry Act 2008
7	**Conditions - Trade Waste Food** 1. Prior to the commencement of operation the developer/property owner must obtain Consent to discharge Trade Waste from TasWater. 2. The developer must install appropriately sized and suitable pre-treatment devices prior to gaining Consent to discharge. 3. The Developer/property owner must comply with all TasWater conditions prescribed in the Trade Waste Consent.	Water and Sewerage Industry Act 2008 Certificate for Certifiable Work (Plumbing)
8	**Fees payment required** The applicant or landowner as the case may be, must pay a development assessment fee of **$802.53** to TasWater, as approved by the Economic Regulator and the fees will be indexed, until the date paid to TasWater. The payment is required within 30 days of the issue of an invoice by TasWater.	Water and Sewerage Industry Act 2008
9	**Declaration** The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.	Water and Sewerage Industry Act 2008
10	**Advice - Service Locations** Please note that the developer is responsible for arranging to locate the existing TasWater infrastructure and clearly showing it on the drawings. Existing TasWater infrastructure may be located by a surveyor and/or a private contractor engaged at the developers cost to locate the infrastructure. A copy of the GIS is included in email with this notice and should aid in updating of the documentation. The location of this infrastructure as shown on the GIS is indicative only. • A permit is required to work within TasWater's easements or in the vicinity of its infrastructure. Further information can be obtained from TasWater • TasWater has listed a number of service providers who can provide asset detection and location services should you require it. Visit www.taswater.com.au/Development/Service-location for a list of companies • TasWater will locate residential water stop taps free of charge • Sewer drainage plans or Inspection Openings (IO) for residential properties are available from your local council.	Water and Sewerage Industry Act 2008
11	**Water Submetering** As of July 1 2022, TasWater's Sub-Metering Policy no longer permits TasWater sub-meters to be installed for new developments. Please ensure plans submitted with the application for Certificate(s) for Certifiable Work (Building and/or Plumbing) reflect this. For clarity, TasWater does not object to private sub-metering arrangements. Further information is available on our website (www.taswater.com.au) within our Sub-Metering Policy and Water Metering Guidelines.	Water and Sewerage Industry Act 2008
12	**Boundary Trap Area** The proposed development is within a boundary trap area and the developer will need to provide a boundary trap that prevents noxious gases or persistent odours back venting into the property's sanitary drain. The boundary trap is to be be contained within the property boundaries and the property owner remains responsible for the ownership, operation and maintenance of the boundary trap.	Water and Sewerage Industry Act 2008
13	**Trade Waste Advice** Prior to any Building and/or Plumbing work being undertaken, the applicant will need to apply to TasWater for a Certificate for Certifiable work (Building and/or Plumbing). The Certificate for Certifiable work (Building and/or Plumbing) must accompany all documentation submitted to Council. Documentation must include a floor and site plan with: Location of all pre-treatment devices i.e. Grease arrestor Schematic drawings and specification (including the size and type of any proposed treatment device and a drainage design.	Water and Sewerage Industry Act 2008 Certificate for Certifiable Work (Plumbing)

Referral Documents

Version	Document Date	Document Type	Description	Prepared By
1	6 Nov 2025	Request for Information	RFI Response	Daniel Burke
1	6 Nov 2025	Request for Information	RFI Response	Daniel Burke
1	6 Nov 2025	Request for Information	RFI Response	Daniel Burke
1	6 Nov 2025	Request for Information	RFI Response	Daniel Burke

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1	6 Nov 2025	Request for Information	RFI Response	Daniel Burke
1	6 Nov 2025	Request for Information	RFI Response	Daniel Burke
1	6 Nov 2025	Request for Information	RFI Response	Daniel Burke

Schedule of Drawings/Documents

Schedule of Drawings/Documents

Prepared By	Drawings / Document No.	Revision No.	Date of Issue
Gandy and Roberts	Concept water and sewer plans	E	20/08/2025

TasWater Details

Officer Name	Officer Title	Officer Contact Number
Al Cole	Senior Assessment Officer	0439605108

Submitted on **11/11/2025**

Form published: 08/10/2025 08:54

PLN-HOB-2025-0290 – 55 Hampden Road

The Panel has reviewed the proposal and the report below is a summary of the Panel's views and is provided for the consideration of the proponents and Council officers.

Description

The proposal includes demolition to the existing Prince of Wales Hotel located at 55 Hampden Road, partial demolition to the rear of 43 South Street and construction of a three (3) storey apartment building comprising 13 units used for Visitor Accommodation and a two (2) storey townhouse building comprising two townhouses used for residential. The ground floor of the apartment building is to include two separate commercial tenancies; a food and drink premises and a retail use. All car parking is to be within a basement level across both 55 Hampden Road and 43 South Street sites. The basement will consist of 37 car parking spaces, 4 motor bike parking spaces, 20 bicycle parking spaces, bin storage and lifts.

Panel Report

Please Note: The Panel's views expressed below are those discussed between Panel members in the absence of meeting with the Applicant.

1. Is the bulk and scale now considered to be appropriate?

Overall, the Panel felt that the bulk and scale is now considered to be appropriate.

- Bulk and scale is largely consistent with the previous proposed plans reviewed by UDAP;
- The Panel previously commented on the proposal's "significant horizontal flat roofed planes, which are visible from Hampden Road and Arthurs Circus". Whilst there has been little change to address this, the reduction in roofscape of Apartments 12 and 13 is an improvement (by reducing the extent of upper flat roof line as seen from Arthurs Circus).
- Whilst the Panel was previously satisfied with the demolition of 43 South Street on urban design grounds, the proposal to retain 43 South Street is accepted.

2. Whether the Hampden Road and Kelly Street interfaces to be suitably designed for the existing streetscape?

The Panel would still prefer to see secondary access to and from the ground floor apartments on Kelly Street to activate the existing streetscape.

There is no change to warrant varying the Panel's previous comments regarding the Hampden Road and Kelly Street interfaces;

- "…there (is) a lost opportunity for the development to address the interface with Kelly and Hampden Road; much effort has gone into addressing heritage but the actual experience of walking the street has not been as well considered".

- There remains no apartment entries directly from the street which would improve street activation and respond positively to the public realm of Kelly Street.

- There remains no entries off Hampden Road directly into the proposed commercial tenancies, resulting in a poorly activated street frontage that's inconsistent with the adjacent heritage buildings along Hampden Road;

- The Panel remains concerned with the viability and attractiveness of stairway access into the cafe facing Kelly Street. Also note the subject stair representation and annotation on drawing 22019_DA05 contains errors;
  - Outward opening doors continue to indicate they are clashing with the first stair riser;
  - "Split" lines through the stairs typically denote stairs over other stairs. There's no reason for split lines on this single stair;
  - The arrow and text reference "down" is incorrect. The correct reference for the arrow is "up", with the stair connecting RL 27,300 (inside) up to RL 28,355 on the Kelly Street footpath;

The spaces adjacent to the vehicular ramp to basement carparking are arguably still inconsistent with the Battery Point heritage streetscapes. (Notwithstanding that Access Design complies with AS2890.1 – Midson Traffic Report – p.34)

3. Any further recommendations in terms of design and materials?

The Panel makes the following recommendations:

- Regarding design and materials, the Panel repeats their previous note acknowledging "…the importance of this site to the precinct and the responsibility that comes with that in any future detail refinement of this proposal".

- Regarding the Panel's previous concern raised toward the basement carpark entry (including walls and screening) over Council-owned land off Kelly Street, the Panel's previous comments remain applicable.

- Given that there are still large flat roofs to the predominant bulk of the development, (refer Section D p.10, Elevations p.23) albeit set back from the street edges, the Panel does not wholly agree with Purcell Heritage Impact Statement that the 'roof design emulates the generally pitched hipped or gabled roofs in the precinct'. (p.08 /14). This is noted with regard to Hobart roofs are not only viewed from the street but also across, and down, from adjoining precincts.

- The heritage impact statement is also silent on the heritage impact of the ramp and abutments to the basement car parking.

- Landscape design is relevant for assessing the urban design quality of this development, both in the private open space areas, especially the courtyard, and the public interfaces, particularly the green area on the footpath in Kelly Street. Therefore, the proposal would benefit from a landscape plan at this stage, not just a note hinting at future detail. The lack of landscape detail is regrettable given the extent of detail otherwise provided

- Landscape architect involvement was recommended in the previous stage and this would ensure the approach to the courtyard, with trees in the inner courtyard has been tested, including requirements for deep soil, light and irrigation requirements, tree height and form, species selection, etc.

- As per the previous report and comments above, the small Kelly Street area of open space, which is occupied in the design by the large vehicle access entrance, provides an opportunity for integration between the development and the public realm. It needs design to realise the opportunity and turf/lawn grass is unlikely the ideal solution - will become trampled and muddy with the volume of pedestrian traffic in the area. Landscape design should be to detailed concept level, and aiming to introduce a generous, green and richly detailed 'moment' in an urban streetscape which has lots of visitors, yet very few opportunities to stop and rest. Urban greening best practice includes using a variety of flowering species to support biodiversity and nature, even in small spaces.

- Landscape plan should include recommendations for protection of the public trees during construction to ensure that these trees remain.

- From the plans, the proposed basement extends beneath the retained 43 South Street – yet no detail is provided as to how the portion of the building above that is retained, allows for this encroachment of the basement excavation under.

Application Referral Cultural Heritage – Response

Recommendation:	Acceptable Subject to Conditions
Date Completed:	9/12/2025
Address:	55 HAMPDEN RD BATTERY POINT TAS 7004
Proposal:	Demolition and partial demolition of existing buildings, and the development of 2 townhouses, 13 units and two commercials tenancies. The use of 12 units for Visitor Accommodation, a Use of Food Services, and a use of General Retail Hire.
Application No.:	PLN-HOB-2025-0290
Assessment Officer:	Sarah Waight, Senior Cultural Heritage Officer

Proposal/background:

This application is a revised submission which has come about as a result of Council advice on the planning application PLN-HOB-2024-0338 which proposed to demolish 43 South Street.

Feedback from Council Cultural Heritage Officers has been provided to the applicants via a series of meetings, emails, and formal feedback dating from 2020 to 2025. Advice has been consistent - that the demolition of the dwelling at 43 South Street is unlikely to be supported under the Historic Heritage Code of the Scheme due to that property being identified as a named significant building type in the heritage precinct statements in the Planning Scheme. This same advice was included in Council's formal feedback under the Planning Application Enquiry PAE-20-179.

This application has been modified and now retains the house at 43 South Street with some demolition at the rear and a new rear addition. There are several other modifications to the apartments including partial excavation under 43 South St for underground carparking.

Heritage Significance:

The proposal is located within the Battery Point 1 Heritage Precinct as described in Table E13.2 of the Historic Heritage Code of the *Hobart Interim Planning Scheme 2015*. It has the following statements of significance:

This precinct is significant for reasons including:

1. *The wide variety of architectural styles and historic features ranging from entire streets of 19th century Colonial Georgian cottages, to Victorian, Edwardian and Pre and Post War examples of single and attached houses that are of historic and architectural merit, many of which demonstrate housing prior to mass car ownership.*
2. *It is primarily a residential area with a mix of large substantial homes and smaller workers cottages on separate lots, gardens, an unstructured street layout, and lot sizes that show successive resubdivision into narrow lots that demonstrate early settlement patterns of Hobart.*
3. *The original and/or significant external detailing, finishes and materials demonstrating a high degree of integrity with a homogenous historic character.*

The following provisions of the Scheme apply:	
HIPS 2015 Discretion	**Applicable clause**
Table E13.2 Heritage Precinct E13.8.1 Demolition E13.8.2 Buildings and Works other than Demolition E13.8.4 Buildings and Works in Heritage Precinct BP1	 E13.8.1 P1 E13.8.2 P1, P3, P4 E13.8.4 P1, P2, P3, P4, P5, P6, P7, P8, P9

Representations:	
Fifty three (53) representations were received during the statutory advertising period. The following heritage/streetscape related comments were made:	
Concern	**Response**
Excavation • Concerns that excavation will cause structural damage to foundations of historic buildings across Battery Point due to the assumed likely use of explosives to remove granite/bluestone/sandstone /dolerite for the carpark.	A condition is recommended for a construction management plan to address potential impacts upon 43 South Street as well as adjacent heritage properties as a result of excavation and vibration concerns.
Demolition • The current Prince of Wales Hotel is an example of mid-century architecture that contributes to Battery Point.	The contribution that this c. 1966-67 building makes to the heritage precinct is assessed in the supplementary revised Heritage Impact Assessment by Purcell, dated 2025, as not contributing to the statements of significance for the precinct. This is discussed further in response to clause E13.8.1 P1.
Scale and height • Out of character with Battery Point because it is so large and tall. • There is no precedence for something of this scale in Battery Point; its scale will affect the village atmosphere.	The street facing buildings proposed on Hampden Road are generally in keeping with the established heights of other buildings including 47 South Street, which is a two storey building. The proposal presents as a two storey building with attic space and dormer windows. The building beyond is three storeys, however it is generally of a similar height to the Hampden Road frontage (see drawing Elevations 1:100, drawing no. 22019_DA13 by Jaws Architects, dated 30/10/2025, Revision 03). This is assessed further against clauses E13.8.2 P1 and P3 and E13.8.4 P3. The height requirements of the zone provisions are not considered in the Historic Heritage Code.
General • The design is fundamentally not 'in-keeping' with the historic and cultural values of the Battery Point precinct. It will dominate the streetscape, directly	The impact of the proposed development is considered in response to clauses E13.8.2 P1 and P3, as well as E13.8.4 P1-P9. The proposal includes stepping of ridge heights along Kelly Street, and architectural features are considered to draw from the surrounding historic buildings in a contemporary manner.

opposing the local heritage code objectives. • It is modern, bulky and inconsistent with the small cottages, narrow streets and village atmosphere of Battery Point.	This includes the contemporary interpretation of three individual two storey Georgian buildings on Kelly Street and two on Hampden Road.

Assessment: E13.8 Development Standards for Heritage Precincts

E13.8.1 Demolition

Objective:

To ensure that demolition in whole or in part of buildings or works within a heritage precinct does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.

E13.8.1 P1

Demolition must not result in the loss of any of the following:
(a) buildings or works that contribute to the historic cultural heritage significance of the precinct;
(b) fabric or landscape elements, including plants, trees, fences, paths, outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct; unless all of the following apply;
i) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;
ii) there are no prudent or feasible alternatives;
iii) opportunity is created for a replacement building that will be more complementary to the heritage values of the precinct.

Response:

A revised Heritage Impact Assessment (HIA) by Purcell, dated 2025 along with the earlier HIA by Purcell, dated December 2023 has been submitted. The 2025 HIA concludes that 55 Hampden Road, ie the Prince of Wales Hotel and associated carparking are all intrusive and are not elements defined in the statements of significance of the precinct and, therefore, the demolition of these features will not result in the loss of any stated heritage values of the precinct.

Fig 1: 43 South Street – house, fence and planting to be retained with minor demolition to the rear. Source: Heritage Officer March 2025

The house of 43 South St (Fig 1 above) is clearly defined in the first statement of significance … *The wide variety of architectural styles and historic features ranging from entire streets of 19th century Colonial Georgian cottages, to Victorian, Edwardian and Pre and Post War examples of single and attached houses that are of historic and architectural merit.* It is now, as part of this application, to be retained with some minor demolition at the rear and the removal of the side driveway. The rear demolition is a single story later addition and will not be visible from the public realm or streetscape and therefore does not make any contribution to the significance of the precinct. In summary, there is no loss of buildings or works that contribute to the significance of the precinct when the streetscape definition in the Scheme is taken into account.

It is considered appropriate to include a condition should the proposal be approved to ensure the excavation below for parking does not impact on the structural integrity and stability of the house at 43 South Street.

The proposal now satisfies E13.8.1 P1.

Assessment: E13.8.2
E13.8.2 Buildings and Works other than Demolition
Objective: *To ensure that development undertaken within a heritage precinct is sympathetic to the character of the precinct.*
E13.8.2 P1 *Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2.*
Response: The design and siting of the proposal is a series of contemporary forms that reflect the form of a two and half storey Victorian Georgian building with attic elements located directly on the street frontage. Partially recessed behind these elements is a larger flat roof structure that contains the internal apartments over the 3 floors that have a different materiality, fenestration pattern and overall appearance. While not visible from the street, there is an internal courtyard/open space and circulation space. While there is a height differential between the single storey houses in Kelly Street and the new proposal, the new submitted drawings do show a response to the slope in the street with each Kelly St element stepping up in height, however further design details are required to demonstrate that this can be achieved. In terms of the setting of Hampden Road, there are 2 storey buildings on the same side of the street in the vicinity of the subject site, at Da Angelo restaurant and Jackman and McCross, the neighbouring Post Office and further along to 95 Hampden Road and then down to building on either side of Runnymede Street entrance. The development will have a larger footprint that the existing development occupying the existing carpark and therefore have a greater mass than existing particularly when viewed from South Street and further afield in streets such as Arthur Circus. A number of design techniques have been employed such as the use of glazing, different materiality and fenestration patterns assisting with the reduction of the visual bulk. The angled corner of the development on Kelly and Hampden Road is a reflection of the form of the original Victorian Georgian Prince of Wales Hotel (Fig 2 below).

Fig 2: Prince of Wales Hotel built c.1845 and demolished and the present hotel constructed in c.1965. Source: Tasmanian Archive and Heritage Office PH30-9158

Detriment, as per the above clause means, 'loss, damage, or injury'. In this case the existing buildings and elements being demolished are not of heritage significance and while clause E13.8.2 P1 refers only to detriment to the heritage values, the Objective is also appropriate to consider: 'To ensure that development undertaken within a heritage precinct is sympathetic to the character of the precinct'.

In consideration of the above description, the proposal does respond to and does reflect the overarching character, material selection, design and siting, albeit in a contemporary manner.

A standard condition is required regarding the proposed colours and materials should the application be approved.

It is considered that clause E13.8.2 P1 is satisfied.

E13.8.2 P3
Extensions to existing buildings must not detract from the historic cultural heritage significance of the precinct.

Response:
The proposed extension is to the rear of 43 South Street. It is a small structure containing a sitting area with a skylight, windows to the north east and an entrance from an internal courtyard. It is recessed behind the existing house and will not be visible from South Street, hence not have any impact on the precinct values when the streetscape definition within the Scheme is taken into account.

It is considered that clause E13.8.2 P3 is satisfied.

E13.8.2 P4
New front fences and gates must be sympathetic in design, (including height, form, scale and materials), and setback to the style, period and characteristics of the precinct.

Response:
The fence elements in the proposal are:

- Masonry planter boxes to Kelly Street

- Gate on South Street between the new development and 43 South Street (measures 1.8m) set 2.6 m back from South Street.
- FE-1 timber boundary fence to 1.8m high between 41 and 43 Kelly St.
- FE-2 timber paling fence and gate to 1.1 m with 50% transparency. It is unclear how far along the boundary between 41 and 43 South St FE-2 extends.
- Landscaping walls and adjacent to the boundary of Kelly Street between subject property and 46 Kelly St.
- The existing brick fence to 43 South Street is being retained.

Whilst there is some detail lacking, the fences presented are appropriate and sympathetic to the character of the Heritage Precinct, however a condition of permit would be appropriate if the DA is approved to provide clarification through revised drawings.

The proposed fences are considered to satisfy E13.8.2 P4.

E13.8.3 Subdivision
Objective:
To ensure that subdivision within a Heritage Precinct is consistent with historic patterns of development and does not create potential for future incompatible development.

E13.8.3 P1
Subdivision must not result in any of the following:
(a) detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2;
(b) a pattern of subdivision unsympathetic to the historic cultural heritage significance of the precinct;
(c) potential for a confused understanding of the development of the precinct;
(d) an increased likelihood of future development that is incompatible with the historic cultural heritage significance of the precinct.

Response:
The proposed subdivision is minor and relates to small irregular components. The proposed development will, on paper, result in a consolidated single lot. However, in a physical form it will present from the street as a series of differently designed components although part of the one complex. In addition, 43 South St will retain its front fence and garden and hence will present as a separate lot with side fencing separating it from the property at 41 South St and the side walkway that leads into the rear townhouse part of the development.

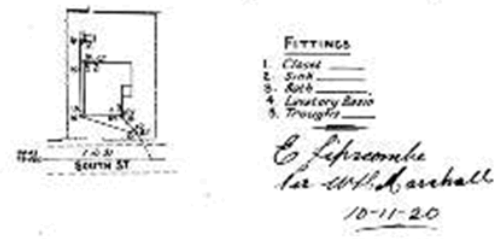

Fig 3: 1920 Drainage Plan for 43 South St showing the house and boundary. Source: Council records.

While this development will result in the reverse of what is described in the statement of significance outlined in point 2 – i.e. "…demonstrating early

settlement patterns of Hobart" the actual lots that currently exist and are to be subdivided, do not reflect the early settlement patterns, just residual and irregular land parcels.

It is considered that clause E13.8.3 P1 is satisfied.

E13.8.3 Subdivision

E13.8.3 P4

Any new lot created in Heritage Precinct BP1 must not detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site.

Response:

The proposal is for the amalgamation of all land parcels and creation of a large single lot of 2025m2, including the existing 350m2 lot of 43 South Street. The existing pattern of development within the vicinity of the site is one of smaller narrow lots. This proposal differs in that while it is a single large development, it will present in the streetscape as though it has the form of a series of conjoined and separate buildings reflecting the existing built form of conjoined buildings and degree of densification that can be found in Battery Point.

It is considered that the proposal satisfies E13.8.3 P4.

E13.8.4 Buildings and Works in Heritage Precinct BP1

Objective:

To ensure that development undertaken within Heritage Precinct BP1 is sympathetic to the character of the precinct.

E13.8.4 P1

Site area per dwelling may be less if the development does not detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site.

Response:

The site area per dwelling has the following Scheme definition: '*means the area of the site (excluding any access strip) divided by the number of dwellings.*' Under the proposed scenario of this development the new lot (including 43 South Street which has an area of 350m2) has a combined area of 2025m2. Clause E13.2.2 of the Historic Heritage Code states '*This code does not apply to use…*' therefore the breakdown of townhouses, units or visitor accommodation is irrelevant under the Code as they are all, under the scheme definition, dwellings. There are 16 dwellings proposed which results in a site area per dwelling of 126.6 m2.

It is noted there are different site area standards between E13.0 Historic Heritage Code and Residential density for multiple dwellings under clause 11.4.1.

The applicant's planning report considers that the proposal meets the Acceptable Solution A1 which requires the site area per dwelling unit must not be less than 350 m2. However, based on the requirements of the Code, it is concluded that an assessment must be made against the Performance Criteria P1.

Irrespective of the differing approaches to calculating the site area per dwelling, it is acknowledged that Battery Point has a mix of differing dwelling types and densities including development at the denser end of the scale. However, the clause requires consideration of pattern of development in the vicinity of the site which is not dissimilar to the 100m streetscape definition. In the vicinity of the

subject site there are many shops and also residential properties, some of which have a lesser site area per dwelling than specified in the Scheme with 41 South Street and 46 Kelly St having site area per dwelling of 168 m2 and 190 m2 respectively. If the relevant significance statement is considered the proposal can be considered to reflect the site area per dwelling that can be found in the general vicinity of Battery Point.

It is considered that clause E13.8.4 P1 is satisfied.

E13.8.4 P2
Buildings should be close to the street frontage except where the prevailing setback on the same side of the street is substantial, in which case the setback shall conform to the general building line.

Response:
The proposed buildings are both on and close to the street frontage and conform to the general building lines as seen along Hampden Road and Kelly Street.

It is considered that clause E13.8.4 P2 is satisfied.

E13.8.4 P3
The height of development must neither be obtrusive in the streetscape nor detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site

Response:
This performance criteria mandates, by using the term "must", that the height of a building cannot detract from the pattern of development. The pattern of development characteristic along both Kelly and South Streets are of single storey dwellings with a gap between the proposed development and neighbouring properties to accommodate the access to the underground carpark. This provision of the Scheme is intended to attain a result which continues a pattern of development characteristic of the features which corresponds to the cultural heritage significance of the Battery Point 1 Heritage Precinct. The height of the proposed development is considered to reflect the pattern of development within the Hampden Road streetscapes and those two story buildings that are highly visible on corners. The open area between the proposal and 46 Kelly Street for the access into the basement assists to mitigate the change in scale, however this change or disparity of scale between single and 2 or 3 storey buildings in Battery Point is not uncommon. The retention of 43 South Street and scale of rear development in the townhouses, contributes to the integration of the proposal into the South Street streetscape.

It is considered that clause E13.8.4 P3 is satisfied.

E13.8.4 P4
Where reasonable and practicable, a dwelling must substantially occupy the width of the frontage of a lot, except where the prevailing setbacks from side boundaries on the same side of the street are substantial and not so as to exclude a driveway or car parking at the side of the building.

Response:
The proposal reasonably occupies the width of the frontages to Kelly and South Streets and Hampden Road whilst allowing for vehicular access in Kelly Street. It is noted that commercial activities occupy the Hampden Road street level with dwellings above.

It is considered that clause E13.8.4 P4 is satisfied.

E13.8.4 P5
The rear setback of the principal building must not detract from the layout pattern of development that contributes to the cultural heritage significance of the precinct and its contribution to private amenity facilitated by the 'house and garden' form of development.

Response:
The existing layout and pattern of development of the hotel and carpark at 55 Hampden Road is already at odds with the pattern of development that is characteristic of the heritage precinct. The current hotel development with no clear front, side or rear setback in a bitumen carpark makes no contribution to the significance of the heritage precinct.

While the new proposal is not a traditional house and garden form, the development does show pockets of landscaping, garden bedding, planters and an internal courtyard with the notation 'Landscaping Planting to Future Detail' offering private amenity to those new apartments and townhouses. Paved courtyards/private open space are proposed to the front in Kelly Street and to the side. While this development is not a traditional housing type on separate lots, it offers, in a contemporary way, private amenity of dwellings with small gardens and open space. In many ways this is already a characteristic of many properties in Battery Point that have either no front gardens or small pocket front gardens and rear gardens.

It is considered that clause E13.8.4 P5 is satisfied.

E13.8.4 P6
The building must not detract from the pattern of development that is a characteristic of the cultural heritage significance of the Precinct in the vicinity of the site.

Response:
The existing building, layout and pattern of development at 55 Hampden Road is already at odds with the pattern of development that is characteristic of the heritage precinct.

However, the proposed building of multiple townhouses and commercial spaces that are proposed to replace the existing Prince of Wales Hotel are a contemporary design that responds to and reflects the historic shops and houses addressing Hampden Road which are all sited close to or on the front boundary. The proposed townhouses in Kelly Street front the street and present as contemporary interpretation of a Victorian Georgian townhouse with projecting attic forms with the larger apartment development set behind the street frontage.

On this basis, the proposal is not considered to detract from the pattern of development within the Battery Point 1 Heritage Precinct.

It is considered that clause E13.8.4 P6 is satisfied.

E13.8.4 P7
Land directly between a dwelling and the street shall not be designed or paved or used for the manoeuvring or parking of vehicles except to gain access.

Response:
No land between a dwelling and the street will be designed for the parking of vehicles. A vehicle ramp provides access to the underground car park which is located to the side between the proposal and 46 Kelly Street.

It is considered that clause E13.8.4 P7 is satisfied.

E13.8.4 P8
Each lot must have not more than one crossing over the footpath per frontage and have a maximum width of 3 m unless it can be demonstrated that the crossing and its width is essential and will:
(a) not detract from the historic cultural heritage significance of the precinct;
(b) provide a net benefit in parking quantum taking into account any loss in on-street parking required to facilitate the additional or wider access.

Response:
The width of the crossing to Kelly Street is 5.9 metres and therefore greater than 3 metres due to it being an in/out access to an underground carpark. It is, however, smaller than the existing crossover width of 7.6 metres. There will be no loss of historic cultural heritage significance to the Battery Point 1 Heritage Precinct and there is no change to on-street parking.

It is considered that clause E13.8.4 P8 is satisfied.

E13.8.4 P9
Parking must not detract from the cultural heritage significance or the setting of existing dwellings.

Response:
All proposed car parking for the development is underground and does not detract from the cultural heritage significance of the area.

It is considered that clause E13.8.4 P9 is satisfied.

Conclusion:

The proposal is considered to satisfy the following provisions of the Historic Heritage Code of the Scheme:

Table E13.2 Heritage Precinct	
E13.8.1 Demolition	E13.8.1 P1
E13.8.2 Buildings and Works other than Demolition	E13.8.2 P1, P3, P4
E13.8.4 Buildings and Works in Heritage Precinct BP1	E13.8.4 P1, P2, P3, P4, P5, P6, P7, P8, P9

Conditions:

HER 17a
The palette of exterior colours, materials and finishes must reflect the palette of colours, materials and finishes within the local streetscape and precinct.

Prior to the issue of any approval under the *Building Act 2016*, revised plans must be submitted and approved as a Condition Endorsement showing exterior colours, materials and finishes in accordance with the above requirement.

All work required by this condition must be undertaken in accordance with the approved plans.

HER 1
A detailed plan showing all dimensions, colours, materials and finishes of all proposed and existing fences and gates (including retaining walls, planter boxes and boundary fences) within 4.5 metres of a frontage must be provided.

Prior to the issue of any approval under the *Building Act 2016*, revised plans must be submitted and approved as a Condition Endorsement showing all front fences and gates in accordance with the above requirement.

HER 20 - Heritage - Landscaping and Trees
The site must be landscaped within one month of completion of the construction of the approved development.

A landscaping plan and documentation must be submitted and approved as a condition endorsement, prior to the issue of any approval under the *Building Act 2016* or the commencement of work on the site (whichever occurs first). The landscaping plan must:

1. include details of landscaping and planting within all open areas of the site including the colours, materials and finishes of retaining walls (including all dimensions);
2. show details of surface finishes of pathways and driveways;
3. show buildings and trees (including botanical names) on neighbouring properties within three metres of the boundary adjacent to the excavation for the carpark;
4. include a planting schedule of all proposed trees, shrubs and ground covers, including botanical names, common names, pot sizes, sizes at maturity, and quantities of each plant;
5. provide details of how dead, diseased or damaged plants will be maintained over a six month period or until established;
6. provide details of all inground irrigation systems;
7. show minimum soil depths across the site and specify soil types to ensure plantings will thrive.
8. show all relevant dimensions, a north point and be to scale;

All work required by this condition must be undertaken in accordance with the approved landscaping plan and documentation.

HER 2
The process of excavation for the proposed carpark must not damage or result in the deterioration of any structures or vegetation proposed to be retained on the property known as 43 South Street. Heritage fabric at the adjacent properties of 47 Hampden Road, 44-46 Kelly Street and 39-41 South Street must also be protected during and as a result of the excavation works.

A construction management plan and plans prepared by a suitably qualified engineer must be provided to demonstrate that the proposed excavation under 43 South Street and across the site will not undermine, damage or result in the deterioration of the structures, including by way of vibrations as a result of the works.

Prior to the issue of any approval under the *Building Act 2016*, the above construction management plan and revised plans must be submitted and approved as a Condition Endorsement in accordance with the above requirement.

Advice: The applicant is advised that the removal of the parking spaces show on drawing 22019_DA04 Rev 03, dated 30/10/2025 and numbered 32, 33, 34, 35 or 36 may be considered acceptable under the Heritage Code, although their removal may be the subject of a further application and assessment.

HER 3
Detailed drawings must be submitted to demonstrate that the stepping down and drop in ridge height of three brick apartments facing Kelly Street can be achieved with the RLs provided.

Prior to the issue of any approval under the *Building Act 2016*, revised plans must be submitted and approved as a Condition Endorsement in accordance with the above requirement and identify any level changes within the subject site.

NAME: Sarah Waight
TITLE: Senior Cultural Heritage Officer
DATE: 4 December 2025

Response to representations

NAME: Nicole Manley
TITLE: Cultural Heritage Officer
DATE: 9 December 2025

DEVELOPMENT ENGINEERING

ASSESSMENT SUMMARY:

CLAUSE	DESCRIPTION	ASSESSMENT
E5.0 Road and railway access code –DOES APPLY		
E5.5.1	Existing road accesses and junctions	P3 - Performance Criteria
E5.5.2	Existing level crossings	N/A
E5.6.1	Development adjacent to roads and railways	N/A
E5.6.2	Road accesses and junctions	Acceptable Solution
E5.6.3	New level crossings	N/A
E5.6.4	Sight distance at accesses, junctions and level crossings	Acceptable Solution
E6.0 Parking and Access Code - DOES APPLY		
E6.6	Parking number assessment	Performance Criteria
E6.7.1	Number of vehicle accesses	Acceptable Solution
E6.7.2	Design of vehicle accesses	Acceptable Solution
E6.7.3	Vehicle passing area along an access	Acceptable Solution
E6.7.4	On-site turning	Acceptable Solution
E6.7.5	Layout of parking areas	Performance Criteria
E6.7.6	Surface treatment of parking areas	Acceptable Solution
E6.7.7	Lighting of parking areas	Acceptable Solution
E6.7.8	Landscaping of parking areas	Performance Criteria - Planner to assess
E6.7.9	Design of motorcycle parking areas	Acceptable Solution
E6.7.10	Design of bicycle parking areas	Acceptable Solution
E6.7.11	Bicycle end trip facilities	N/A
E6.7.12	Siting of car parking	Planner to assess
E6.7.13	Facilities for commercial vehicles	Performance Criteria
E6.7.14	Access to a road	Acceptable Solution
E6.7.15	Access to Niree Lane Sandy Bay	N/A
E7.0 Stormwater - DOES APPLY – Assessed by EEU		

RECOMMENDATION:

Approval with conditions / refusal

REPRESENTATIONS:

There were 100 + representations during the advertising period the planner has provided a summary of all the issues raised these are bolded below with responses outlined in red

Traffic impacts both during development and as consequence of the completed development are also frequently raised.

Traffic impacts are inevitable during any development. Mitigation strategies, such as Traffic Management Plans, are crucial to ensure the safety of pedestrians, cyclists, and motorists, while minimising disruption. Hampden Road experiences approximately 4,000 vehicle movements per day. Based on the RMS Guide, the proposed development is projected to generate roughly 293 additional trips daily, with an estimated peak of 36 trips per hour during both the AM and PM periods.

Increased Traffic: The development is expected to generate more traffic, impacting the quality of life for residents and local businesses. Basement parking accessed via a single ramp to Kelly Street will exasperate existing traffic congestion.

-The residential and short-term accommodation development is projected to generate 64 daily vehicle trips. The majority of these movements are anticipated to utilise the Hampden Road/Kelly Street junction for egress. It is important to note that traffic flow on Kelly Street is generally less congested than that observed at the existing crossover on Hampden Road. Consequently, selecting Kelly Street as the primary access point for the proposed development, due to its lower traffic volume and short distance to Hampden Road, presents a more favourable option. This approach would minimise disruption to the higher volume of vehicular traffic on Hampden Road

Waste Managment: Waste management for the future uses has not been detailed, particularly where waste is to be stored and how it is to be collected

a waste storage area has been provided for all tenants in the basement carpark, this is located next to a hoist to facilitate waste collection by a private contractor from street level. Waste collection provisions are consistent with previously approved similar size developments

Construction impacts such as dust, noise, and traffic disruptions will deter tourists and disrupt the area's peaceful enjoyment over the course of construction.

– Traffic impacts are inevitable during any development. Mitigation strategies, such as Traffic Management Plans, are crucial to ensure the safety of pedestrians, cyclists, and motorists, while minimising disruption.

a. Local businesses, including cafes and shops, will suffer due to loss of tourist trade, construction disruptions, and operational challenges like parking and traffic flow issues.

- A condition has been applied to the permit to require that a traffic management plan be implemented during the construction period for the development this should minimis impacts around

COMMENTS:

Due to the scope of the proposal, the application has been referred to the Council's Manager Waterways, Manager City Infrastructure, Manager City Mobility, Manager Open Space and Manager Surveying Services. The delegated officers' responses, including recommendations are inserted in the respective referral reports.

CONDITIONS:

- ENG 1 – Protection of Council assets (Waterways Group / EDP Imposed)
- ENG 2a– vehicle barriers
- ENG 3B / ENG 3C – driveways
- ENG 4: Surface treatment
- ENG 5: The number of car parking spaces approved on the site, for use is *37*
- ENG Tr1 - Design

- ENG Tr2 construction traffic and parking management
- ENG 11 Waste
- ENG 12: An ongoing waste management plan for all commercial waste and recycling/compost bins must be implemented post construction

- ENG s1 – lighting
- ENG s2 Line marking of turning

- ENV 2: SWMP design (Waterways Group / EDP Imposed)

ADVICE:

- Dial before you dig
- Fees and charges
- Building Permit
- Plumbing Permit
- Occupation of the Public Highway
- Driveway surfacing over highway reservation
- Condition endorsement engineering
- Redundant Crossover
- Crossover Construction
- Work in the highway reservation
- Waste Disposal
- Visitor Accommodation

DETAILED ASSESSMENT:

E5.0 Road and Railway Assets Code

E5.2 Application of this Code	YES	NO	This Code applies to use or development of land:
		No	(a) that will require a new vehicle crossing, junction or level crossing; or
	Yes		(b) that intensifies the use of an existing access; or
			(c) that involves a sensitive use, a building, works or subdivision within 50m metres of a Utilities zone that is part of:
		No	(i) a rail network;
		No	(ii) a category 1 - Trunk Road or a category 2 - Regional Freight Road, that is subject to a speed limit of more than 60km/h kilometres per hour.

Clause for Assessment	Comments / Discussion (In bold)
Clause E5.5.1: Existing road accesses and junctions **PERFORMANCE CRITERIA**	The existing road access must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the *Hobart Interim Planning Scheme 2015 (HIPS 2015)*. **Documentation submitted to date does not comply with the Acceptable Solution; therefore assessment against the Performance Criterion is relied on for clause E5.5.1 (A3).** Acceptable Solution A3: - **DOES NOT COMPLY: (The annual average daily traffic (AADT) of vehicle movements, to and from a site increased by more than 20% or 40 vehicle movements per day)**

	The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is the greater. Traffic generation rates from the RMS Guide **Residential Component** For medium density residential dwellings, the RMS Guide recommends a rate of 4 trips per day per dwelling, with a peak of 0.5 trips per dwelling per hour. With a total of 2 residential units this equates to the following residential traffic generation: • 8 trips per day • 1 trips AM/PM peak **Visitor Accommodation Component** Trip generation rates for visitor accommodation is assumed to be similar to residential. A rate of 5 trips per day per dwelling, with a peak of 0.6 trips per dwelling per hour has been adopted. With a total of 14 units of visitor accommodation, this equates to the following traffic generation: • 56 trips per day • 8 trips AM/PM peak **Commercial Component** Two commercial tenancies are proposed with a total combined floor area of 79.3m2 . The RMS Guide recommends a rate of 200 trips per day per 100m2 of gross floor area for commercial tenancies, with a peak of 26 trips per hour per 100 m2 This equates to 159 trips per day with a peak of 21 trips per hour for the commercial component of the development. **Cafe** A rate of 60 trips per day per 100m2 of gross floor area has been adopted from the RMS Guide, with a peak rate of 5 trips per hour. With 125m of floor area, This equates to 75 trips per day, with an evening peak of 6 trips per hour. Total Trip Generation 298 trips per day with 36 trips in the PM peak hour, The evening peak period will have the highest traffic generation as this coincides with the peaks for the café and commercial components. **The majority of traffic accessing the car park of the site will enter via right-in/ left-out manoeuvres at Kelly Street.** Performance Criteria – P3: - **ACCEPTED AS MEETING THE PERFORMANCE CRITERIA** Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:

	(a) the increase in traffic caused by the use; **- The total generation of the development is likely to be 298 vehicles per day. Whilst the actual traffic generation of the existing hotel on the site is unknown, it is likely that it is a similar magnitude to the development proposal.** (b) the nature of the traffic generated by the use; **- All traffic generated by the proposed development will be residential in nature. All traffic utilising the underground car park will be associated with residential and visitor accommodation components of the development. This is compatible with the existing traffic utilising *Kelly* Street and Hampden road near the subject site.** (c) the nature and efficiency of the access or the junction; **- access junction with Kelly Street will be approximately 6 metres wide and will have a peak generation of 36 vehicles per hour. The access will therefore operate at a relatively high level of efficiency.** (d) the nature and category of the road; **- Kelly Street is a local residential street that carries a relatively low traffic volume. At its southern end, Kelly Street is commercial in nature (due to the existing site, the bakery opposite, and the various commercial sites in Hampden Road near the site). The balance of the street is exclusively residential in nature. The traffic generated by the development is consistent with these land uses.** (e) the speed limit and traffic flow of the road; **- The general urban speed limit of 50-km/h applies to *kelly* Street. This speed limit is appropriate for the residential nature of the development.** (f) any alternative access to a road; **- Alternative access would be available via Hampden Road, which is not considered appropriate due to the higher traffic volumes and narrow road width.** (g) the need for the use; **- The driveway is required to provide car parking access for the development.** (h) any traffic impact assessment; and **- A Traffic Impact Assessment was submitted (Midson Traffic TIA September 2025)** (i) any written advice received from the road authority. **- A TIA was requested, the applicant provided a TIA in support of the development, Midson Traffic TIA September 2025.** **Based on the documentation submitted to date and given the above assessment, the proposed access is accepted as meeting *Performance Criteria P3:E5.5.1* of the Planning Scheme.**
Clause E5.5.2: Existing level crossings NOT APPLICABLE	Documentation submitted to date does not invoke clause E5.5.2. No intensification of an existing level crossings proposed.
Clause E5.6.1: Development adjacent to roads and railways NOT APPLICABLE	Documentation submitted to date does not invoke clause E5.6.1. No development adjacent to category 1 or category 2 road proposed.
Clause E5.6.3: New level crossings	Documentation submitted to date does not invoke clause E5.6.3. No new level crossings proposed.

NOT APPLICABLE	
Clause E5.6.4: Sight distance at accesses, junctions and level crossings **ACCEPTABLE SOLUTION**	The sight distance at access and junctions must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the *Hobart Interim Planning Scheme 2015 (HIPS 2015)*. **Documentation submitted to date does comply with the Acceptable Solution for clause E5.6.4.** Acceptable solution - A1: - **DOES COMPLY** Sight distances at: (a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1; and (b) rail level crossings must comply with AS1742.7 Manual of uniform traffic control devices - Railway crossings, Standards Association of Australia. - **N/A**

E6.0 Parking and Access Code

E6.2 Application of this Code	This code applies to all use and development.
Clause for Assessment	**Comments / Discussion (In Bold)**
Clause(s) 6.6's are all to do with parking number assessment **PERFORMANCE CRITERIA**	The parking number assessment must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the *Hobart Interim Planning Scheme 2015 (HIPS 2015)*. **Documentation submitted to date does not comply with the Acceptable Solution, therefore assessment against the Performance Criterion is relied on for clause E6.6.1 (a).** Acceptable solution - A1: - **DOES NOT COMPLY: The proposal includes 37 on–site car parking spaces, which is 22 less than required by Table E6.1.** The number of on-site car parking spaces must be: (a) No less than the number specified in Table E6.1, minus the number of car parking spaces that cannot be provided due to the site including container refund scheme space; Except if: (i) The site is subject to a parking plan for the area adopted by Council, in which case parking provision (spaces or cashin-lieu) must be in accordance with that plan. (ii) The site is subject to clauses E6.6.5, E6.6.6, E6.6.7, E6.6.8, E6.6.9 or E6.6.10 of this planning scheme. - **Table E6.1 requires: the following** • **Dwelling - 2 space per dwelling - 4 spaces required** • **1 visitor space for residential component** • **Visitor accommodation 1 space for each bedroom 32 bedrooms 32 spaces** • **Commercial General retail and hire – 1 space for each 30m2 of floor area 74.3m2 - 3 spaces** • **Café Restaurant – 15 spaces for each 100m2 of floor area or 1 space for each 3 seats (greater of) 125.6 m2 - 19 spaces** **Total spaces required 59 – total spaces provided 37 resulting in a shortfall of 22** **However all parking spaces as per the Midson report have been allocated to the residential/ visitor accommodation component of the development resulting in**

	an actual shortfall of 22 spaces. And an assessment against the performance criteria. Performance Criteria - P1: - **ACCEPTED AS MEETING THE PERFORMANCE CRITERIA** The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following: (a) car parking demand; **- The theoretical parking demands associated with the proposed development are calculated in Section 5.3 of the Midson Traffic TIA (dated September 2025) The parking demand has been calculated to be 38 spaces. The provision of 37 spaces represents a shortfall of 1 spaces on the actual empirical parking demand calculated. The development will only provide on-site parking for the residential and visitor accommodation components of the development however. These components have sufficient on-site parking to satisfy the likely demands.** (b) the availability of on-street and public car parking in the locality; **- There is a relatively large pool of available parking in Kelly Street, Hampden Road and connecting streets in the surrounding area. Whilst this parking is typically in high demand, the on-street parking demands for the commercial and café components are likely to be similar to the existing Prince of Wales Hotel. It is also noted that the removal of the existing driveway in Hampden Road will result in the addition of 3 on-street car parking spaces. The increased provision of on-street parking brings the total number of spaces (on-street and off-street combined) to meet the requirements of the calculated parking demands associated with the development.** (c) the availability and frequency of public transport within a 400m walking distance of the site; **- Metro Tasmania operate regular bus services along *Sandy bay road* which is within 400 metres of the subject site.** (d) the availability and likely use of other modes of transport; **- The site is located near residential and commercial catchments. Walking and cycling modes of transport are likely to be utilised from Salamanca and Hobart areas.** (e) the availability and suitability of alternative arrangements for car parking provision; **- No alternative parking provision is available or considered necessary.** (f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces; - **Not applicable.** (g) any car parking deficiency or surplus associated with the existing use of the land; - **Not applicable.** (h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site; - **Not applicable.** (i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity; - **Not applicable.**

	(j) any verified prior payment of a financial contribution in lieu of parking for the land; **- The City's current position is not to support a financial contribution in lieu of parking for developments.** (k) any relevant parking plan for the area adopted by Council; - **Not applicable.** (l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code; and - **Not applicable.** (m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code. - **No impact.** **Based on the documentation submitted to date and given the above assessment, the parking provision is accepted as meeting the *Performance Criteria P1:E6.6.1* of the Planning Scheme. This is particularly due to the actual parking demands that will be generated by the development.** **"E6.6.2 Number of accessible parking spaces** **The need for accessible parking spaces is not required for a residential development.** **The restaurant and commercial tenancy components of the development are classified as Class 6 building under the BCA Code. This requires an accessible parking provision of 1 space per every 50 car parking 28 55 Hampden Rd - Traffic Impact Assessment spaces or part thereof. The proposed development does not provide parking for either the restaurant or commercial tenancies and therefore the disabled parking requirement is zero (0 spaces divided by 50 spaces).** **E6.6.3 the Number of motorcycle parking spaces with the development site providing more than 20 on-site car parking spaces is one per 20 spaces.** **This is a requirement for 1 motorcycle parking space. The provision of 4 motorcycle parking spaces therefore satisfies the requirements of Acceptable Solution A1 of Clause E6.6.3 of the Planning Scheme.** **E6.6.4 Number of bicycle parking spaces** **The need for bicycle parking spaces is not required for a residential development.** **The City Transport Group are comfortable that the TIA meets the performance criteria – P1.** **Based on the documentation submitted to date and given the above assessment, the parking provision is accepted as meeting the Performance Criteria P1:E6.6.1 of the Planning Scheme. This is particularly due to the actual parking demands that will be generated by the development.**

Clause E6.7.1: Number of vehicle accesses **ACCEPTABLE SOLUTION**	The number of vehicle accesses must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the *Hobart Interim Planning Scheme 2015 (HIPS 2015)*. **Documentation submitted to date does comply with the Acceptable Solution for clause E6.7.1**. Acceptable solution: - **DOES COMPLY** The number of vehicle access points provided for each road frontage must be no more than 1 or the existing number of vehicle access points, whichever is the greater. **One (1x) crossover (Kelly Street frontage) - Existing, no additional crossover(s) proposed.**
Clause E6.7.2: Design of vehicle accesses **ACCEPTABLE SOLUTION**	The design of the vehicle access must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the *Hobart Interim Planning Scheme 2015 (HIPS 2015)*. **Documentation submitted to date does comply with the Acceptable Solution for clause 6.7.2.** Acceptable Solution - A1: - **DOES COMPLY** Design of vehicle access points must comply with all of the following: (a) in the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with section 3 – "Access Facilities to Off-street Parking Areas and Queuing Areas" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking Location; **- Documentation submitted to date can meet this requirement** Sight distance; - **Documentation submitted to date can meet this requirement** Width; and **- Documentation submitted to date can meet this requirement** Gradient - **Documentation submitted to date can meet this requirement**
Clause E6.7.3: Vehicle passing area along an access **ACCEPTABLE SOLUTION**	Vehicle passing must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the *Hobart Interim Planning Scheme 2015 (HIPS 2015)*. **Documentation submitted to date does comply with the Acceptable Solution for clause E6.7.3.** Acceptable solution - A1: - **DOES COMPLY** Vehicular passing areas must: (a) be provided if any of the following applies to an access: (i) it serves more than 5 car parking spaces; - **Yes** (ii) is more than 30 m long; - **Yes** (iii) it meets a road serving more than 6000 vehicles per day; - **No** (b) be 6 m long, 5.5 m wide, and taper to the width of the driveway; - **Documentation submitted to date can meet this requirement** (c) have the first passing area constructed at the kerb; - **Documentation submitted to date can meet this requirement** (d) be at intervals of no more than 30 m along the access. - **Documentation submitted to date can meet this requirement**

Clause E6.7.4: On-site turning **ACCEPTABLE SOLUTION**	On-site turning must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does comply with the Acceptable Solution for clause E6.7.4.** Acceptable solution - A1: - **DOES COMPLY** On-site turning must be provided to enable vehicles to exit a site in a forward direction, except where the access complies with any of the following: (a) it serves no more than two dwelling units; - **COMPLIES** (b) it meets a road carrying less than 6000 vehicles per day. – **COMPLIES**
Clause E6.7.5: Layout of parking areas **PERFORMANCE CRITERIA**	The layout of the parking area must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not comply with the Acceptable Solution, therefore assessment against the Performance Criterion is relied on for clause E6.7.5.** Acceptable Solution A1: - **DOES NOT COMPLY:** The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with clause 5.3 "Headroom" of the same Standard. Performance Criteria - P1: - **ACCEPTED AS MEETING THE PERFORMANCE CRITERIA** The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and manoeuvring on-site. **- Acceptable, documentation submitted to date can meet this requirement** • Car Parking Space Dimensions (AS2890.1 Fig 2.2 = 2.4x5.4m Class 1A): **- Documentation submitted to date can meet this requirement** • Car Parking Space Design Envelope (AS2890.1 Fig 5.2 300mm clearance on side): **- Documentation submitted to date can meet this requirement** • Headroom: (AS2890.1 Fig 5.3 = 2.2m clearance): **- Documentation submitted to date can meet this requirement** • Parking Space Gradient (5%): **- Documentation submitted to date can meet this requirement** • Aisle Width (AS2890.1 Fig 2.2 = 5.8m Class 1A): **- Documentation submitted to date can meet this requirement** • Garage Door Width & Apron (AS2890.1 Fig 5.4 = 2.4m wide => 7m wide apron): **- Documentation submitted to date can meet this requirement** • Parking Module Gradient (manoeuvring area 5% Acceptable Soln, 10% Performance): **- Documentation submitted to date can meet this requirement** • Driveway Gradient & Width (AS2890.1 Section 2.6 = 25% and 3m): **- Documentation submitted to date can meet this requirement** • Transitions (AS2890.1 Section 2.5.3 = 12.5% summit, 15% sag => 2m transition): **- Documentation submitted to date can meet this requirement**

	• Vehicular Barriers (AS2890.1 Section 2.4.5.3 = 600mm drop, 1:4 slope): **- Documentation submitted to date can meet this requirement** • Blind Aisle End Widening (AS2890.1 Fig 2.3 = 1m extra): **- N/A** • (AS2890.1 2.5.2 Layout design of circulation roadway ramps (c) (B99 & B85 passing at intersections **Documentation submitted can not meet this requirement** **The following advice was provided by the applicants traffic engineer to support the deficiency at the ramp intersection with the basement parking** *The swept path of a B99 undertaking the tighter exit manoeuvre at the base of the ramp requires the use of more than half of the available width at the base of the ramp. In Figure 1 below, exiting B99 and entering B85 vehicles are utilising the ramp simultaneously. This demonstrates that it is possible that no overlap can be achieved within the ramp itself. Once the vehicles have passed, the apparent overlap within the car park does not occur because the B99 vehicle has already exited the site in the opposite direction the only way that the conflict can occur is if the entering vehicle meets the exiting B99 vehicle at the base of the ramp within the car park as they both undertake the turn manoeuvre.* *Under this scenario, one of the vehicles would need to stop to permit the other vehicle to complete their manoeuvre. In this regard, the design of the ramp is considered adequate and appropriate for the low volume associated with the car park's use.* *The car park is intended to provide parking for residential and visitor accommodation components only. There will therefore be a level of familiarity with the use of the car park, which will not be publicly accessible. It is further noted that AS2890.1 does not specify which direction the B99 and B85 vehicle shall be travelling. It states: "Intersection areas designed for use by one vehicle at a time shall be designed for use by the B99 vehicle. Areas in which it is necessary for two vehicles to pass one another shall be designed for a B85 vehicle to pass a B99 vehicle. In both cases areas shall be checked using single turn swept path templates for the B99 vehicle and the B85 vehicle, generated in accordance with Appendix B, Paragraph B3.1, which include the swept path clearances specified in Paragraph B3.2. The swept path clearances shall clear any kerbs at the boundary of the intersection area".* **Based on the documentation submitted to date and given the above assessment, the layout of parking areas is accepted as meeting the *Performance Criteria P1:E6.7.5* given the driveway configuration.**
Clause E6.7.6: Surface treatment of parking areas **ACCEPTABLE SOLUTION**	The surface treatment must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does comply with the Acceptable Solution for clause E6.7.6**. Acceptable Solution - A1: - **DOES COMPLY** Parking spaces and vehicle circulation roadways must be in accordance with all of the following; (a) paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway; and (b) drained to an approved stormwater system, unless the road from which access is provided to the property is unsealed.

	Documentation submitted to date indicates a concrete surface treatment, able to be drained to an approved stormwater system. Condition on Planning Permit to ratify timing.
Clause E6.7.7: Lighting of parking areas NOT APPLICABLE	The lighting of parking areas must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not invoke clause E6.7.7.** Acceptable Solution A1: Parking and vehicle circulation roadways and pedestrian paths serving 5 or more car parking spaces, used outside daylight hours, must be provided with lighting in accordance with clause 3.1 "Basis of Design" and clause 3.6 "Car Parks" in AS/NZS 1158.3.1:2005 Lighting for roads and public spaces Part 3.1: Pedestrian area (Category P) lighting. **Documentation submitted to date indicates no new (> 5 spaces) parking area(s).** *(Planner to assess)*
Clause E6.7.8: Landscaping of parking areas NOT APPLICABLE	The landscaping of parking areas must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not invoke clause E6.7.8.** Acceptable Solution A1: Landscaping of parking and circulation areas must be provided where more than 5 car parking spaces are proposed. This landscaping must be no less than 5 percent of the area of the car park, except in the Central Business Zone where no landscaping is required. **Documentation submitted to date indicates no new (> 5 spaces) parking area(s).** *(Planner to assess)*
Clause E6.7.9: Design of motorcycle parking areas ACCEPTABLE SOLUTION	The motor bike parking must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does comply with the Acceptable Solution for clause E6.7.9**. Acceptable Solution A1: - **DOES COMPLY** The design of motorcycle parking areas must comply with all of the following: (a) be located, designed and constructed to comply with section 2.4.7 "Provision for Motorcycles" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking; and (b) be located within 30 m of the main entrance to the building. **Submitted documentation indicates adequate motorcycle parking provisions on-site.**
Clause E6.7.10: Design of bicycle parking areas NOT APPLICABLE	The bicycle parking must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not invoke clause E6.7.10.** Acceptable Solution A1: The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.

	Acceptable Solution A2: The design of bicycle parking spaces must be to the class specified in table 1.1 of AS2890.3-1993 Parking facilities Part 3: Bicycle parking facilities in compliance with section 2 "Design of Parking Facilities" and clauses 3.1 "Security" and 3.3 "Ease of Use" of the same Standard. User Class: **Residential** **NO REQUIREMENT** Table E6.2 sets out the number of bicycle parking spaces required. The requirement for spaces for a use or development listed in the first column of the table is set out in the second and forth columns of the table with the corresponding class set out in the third and fifth columns. If the result is not a whole number, the required number of (spaces) is the nearest whole number. If the fraction is one-half, the requirement is the next whole number.
Clause E6.7.11: Bicycle end trip facilities NOT APPLICABLE	The bicycle end trip facilities must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not invoke clause E6.7.11.** Acceptable Solution A1: For all new buildings where the use requires the provision of more than 5 bicycle parking spaces for employees under Table E6.2, 1 shower and change room facility must be provided, plus 1additional shower for each 10 additional employee bicycle spaces thereafter. **Documentation submitted to date indicates no new (> 5 spaces) bicycle parking area(s).** *(Planner to assess)*
Clause 6.7.12: Siting of car parking NOT APPLICABLE	The siting of car parking must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not invoke clause E6.7.12.** Acceptable Solution A1: Parking spaces and vehicle turning areas, including garages or covered parking areas in the Inner Residential Zone, Urban Mixed Use Zone, Village Zone, Local Business Zone and General Business Zone must be located behind the building line of buildings located or proposed on a site except if a parking area is already provided in front of the building line of a shopping centre. **Documentation submitted to date indicates no new parking area(s) within the respective zones.** *(Planner to assess based on DE assessment of Clause 6.7.5 layout of parking area)*
Clause E6.7.13: Facilities for commercial vehicles NOT APPLICABLE	The facilities for commercial vehicles must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not invoke clause E6.7.13.** **Documentation submitted to date does not indicate any requirement for commercial vehicles loading, unloading or manoeuvring.**

Clause E6.7.13: Facilities for commercial vehicles **PERFORMANCE CRITERIA**	The facilities for commercial vehicles must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not comply with the Acceptable Solution, therefore assessment against the Performance Criterion is relied on for clause E6.7.13.** Acceptable Solution A1: - **DOES NOT COMPLY** Commercial vehicle facilities for loading, unloading or manoeuvring must be provided on-site in accordance with Australian Standard for Off-street Parking, Part 2 : Commercial. Vehicle Facilities AS 2890.2:2002, unless: (a) the delivery of all inward bound goods is by a single person from a vehicle parked in a dedicated loading zone within 50 m of the site; and - **DOES NOT EXIST** (b) the use is not primarily dependent on outward delivery of goods from the site. - **NO** Performance Criteria - P1: - **ACCEPTED AS MEETING THE PERFORMANCE CRITERIA** Commercial vehicle arrangements for loading, unloading or manoeuvring must not compromise the safety and convenience of vehicular traffic, cyclists, pedestrians and other road users. **- Acceptable, documentation submitted to date can meet this requirement** ***The proposed food services and general retail and hire uses will require commercial vehicles to deliver goods to the site. However, there are no dedicated loading zones within 50 m of the site. As such, the application invokes discretion for this standard, and will require consideration against the corresponding performance criteria.*** **It is estimated that a medium sized van (Ford Transit, Mercedes-Benz Sprinter, Fiat Ducato) would need to access the site to collect deliver goods Councils traffic engineering officer has assessed the proposal and provided the following response** **The presence of P5 parking spots on the within a close vicinity of the development should be appropriate to accommodate the medium size service van when servicing the site.** **Based on the submitted documentation to date and given the above assessment, the facilities for commercial vehicles is accepted as meeting the *Performance Criteria P1:E6.7.13* of the Planning Scheme.**
Clause E6.7.14: Access to a road **NOT APPLICABLE**	The access to a road must satisfy the Acceptable Solutions of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not to invoke clause E6.7.14.** **Documentation submitted to date does not indicate any access to a road, existing or proposed.**
Clause E6.7.15: Access to Niree Lane Sandy Bay **NOT APPLICABLE**	The access to Niree Lane must comply with the Acceptable Solutions or meet the Performance Criteria (where applicable) for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015). **Documentation submitted to date does not invoke clause E6.7.15.** **Documentation submitted to date does not indicate any proposed development within Niree Lane.**