



CITY OF HOBART

AGENDA

CITY PLANNING COMMITTEE MEETING (OPEN)

MONDAY, 16 MAY 2016

AT 5.00 PM

SUPPLEMENTARY ITEM

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6. COMMITTEE ACTING AS PLANNING AUTHORITY

6.1 APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 2015

6.1.5 MCROBIES GULLY LANDFILL, MCROBIES ROAD, SOUTH HOBART – EXTENSION OF LANDFILL AREA – PLN-15-00885-01 – FILE REF: 44-10-1 255x's (Council)

The General Manager reports:

“In accordance with the provisions of Part 2 Regulation 8(6) of the Local Government (Meeting Procedures) Regulations 2015, this supplementary matter is submitted for the consideration of the Committee.

Pursuant to Regulation 8(6), I report that:

- (a) information in relation to the matter was provided subsequent to the distribution of the agenda;
- (b) the matter is regarded as urgent; and
- (c) advice is provided pursuant to Section 65 of the Act.”

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report	Council
Committee:	16 May 2016
Council:	23 May 2016
Expiry Date:	1 June 2016
Application No:	PLN-15-00885-01
Address:	McRobies Gully Landfill, McRobies Road, SOUTH HOBART
Applicant:	Hobart City Council, GPO BOX 503, HOBART
Proposal:	Extension of Landfill Area
Representations:	Five (5)
Discretion:	Three (3)

1. Executive Summary

- 1.1. Planning approval is sought for the extension of landfill area (Use Class: Recycling and Waste Disposal) at 30 McRobies Road, South Hobart (McRobies Gully Landfill).
- 1.2. The site is zoned Utilities and Environmental Management however the works are restricted to the area zoned Utilities only. Three (3) discretions were invoked.
 - 1.2.1. Potentially Contaminated Land Code
Clause E2.6.2 Excavation
 - 1.2.2. Landslide Code
Clause E3.7.1 A1 Buildings and Works
Clause E3.7.3 Major Works
- 1.3. Four (4) representations objecting and one (1) supporting the proposal were received within the statutory advertising period (commencing 5 December 2015 for the statutory period of 28 Days).
- 1.4. The proposal is recommended for approval.
- 1.5. The final decision has been delegated to the Council.

2. Site Detail



Figure 1: Site Context Plan (source www.thelist.tas.gov.au 3 May 2016)

- 2.1. The site is approximately 1.7ha in size, is comprised of 10 separate titles and in addition to the landfill area, contains composting facilities, a waste transfer station and a resource recovery centre.

The site is located 3km west of the CBD in a valley on the eastern side of Mount Wellington. The site adjoins land owned by Cascade Brewery to the north, west and south and to the east the land is owned by Hobart City Council (Knocklofty Reserve) and a number of private residential lots in South Hobart.

The landfill site is a minimum of 500m from the nearest residence with the surrounding land directly adjacent to the site being predominantly a recreational use with both formal and informal trails used by walkers, runners and bike riders.

3. Proposal (Extension of Landfill Area)

- 3.1. The proposal is to extend the current permitted landfill height from 184m AHD to 198.5m AHD on North-Western side and 196.5m AHD on the North-Eastern face. This increase in height - which does not extend to the entire site - will be graded down to the site's low points being the drainage lines. It will partly occur over the existing landfill footprint with the remainder requiring an expansion of the footprint in a north-westerly and north easterly direction.
- 3.2. The landfill footprint expansion will occur over an estimated 15 year period and require the removal of 3ha of native vegetation.

The areas to be cleared adjoin the current landfill and extend to just below the 200m contour on the North-Western and North-Eastern sides of the landfill¹.

¹ The Development Proposal & Environmental Management Plan Nov 2015, p27 states: the areas to be cleared adjoin the current landfill, and extend to just below the 200m level on the North-west and North-east sides of the landfill.

- 3.3. There will be no change to the commercial vehicle movements, the type or quantity of machinery, the operating hours, the number of staff, the type of waste or the permitted maximum quantity of waste received at the landfill per annum – that is, 85,000 tonnes per annum (noting that the site currently receives approximately 25,000 to 35,000 tonnes of general waste per annum).

4. Background

- 4.1. As the proposal is for an extension to a Level 2 activity, the application was referred to the Environmental Protection Authority (EPA) for assessment under the *Environmental Management and Pollution Control Act 1994*. The EPA undertook an environmental impact assessment, and issued a determination. The determination states that the conditions and restrictions specified in the EPA Permit Part B, together with the definitions in Schedule 1 and the associated attachments to Permit Part B, must be contained in any permit granted by the Council under the *Land Use Planning and Approvals Act 1993*.

- 4.2. The development application documents provide the following background details:

The proposal provides for an operating life on the landfill (based on current estimates) of approximately 15 years. It is the City's intention that it ceases to operate a category 2 landfill in 2030. This proposal will provide the city with sufficient time to plan for life without a category 2 landfill, and ensure adequate planning for waste reduction, funding of post closure costs and identification of transport and disposal arrangements for residual waste to alternative facilities after 2030.

The proposal will not result in any changes to on site operational practices. Changes may be implemented as a result of increasing efficiencies in operations and to continue to recover more components of the waste stream, however any such changes would be implemented at the landfill regardless of the proposal. The current filling sequence involves moving filling operations around the site to cater for seasonal influences such as rain and moisture levels, and this process will be maintained under the proposal. The western gully is significantly more susceptible to increased moisture and as such will be filled as a priority particularly during the dryer, warmer months. The filling sequence will result in the western gully being completed and capped prior to the completion of the North east section.

5. Concerns raised by representors

- 5.1. The following table outlines the issues raised by representors. All concerns raised with respect to the discretions invoked by the proposal will be addressed in Section 6 of this report.

Concern Raised	Planning Response
<ul style="list-style-type: none"> The application should be re-advertised due to the description being incorrect. 	<ul style="list-style-type: none"> The description of the proposal advertised is considered sufficient to accord with the legislative requirements.
<ul style="list-style-type: none"> Return Degraives Street to two-way traffic and require all tip traffic to have entry and egress solely off McRobies Road, in particular to alleviate the impact on the Cascades Female Factory Historic Site. 	<ul style="list-style-type: none"> There will be no operational change to the site including the level of patronage; therefore any impact caused by traffic will not change. The permitted maximum quantity of waste received at the landfill per annum is to remain unchanged, at 85,000 tonnes per annum. Furthermore, there is no statutory requirement for consideration to be given to any impact on the Cascades Female Factory. As such, this consideration is beyond the scope of the planning assessment.
<ul style="list-style-type: none"> The proposal should not have been exhibited over the Christmas/New year break. 	<ul style="list-style-type: none"> The timing of the public exhibition period was determined by the EPA and was undertaken in accordance with legislative requirements. It is noted that the period commenced on 5 December 2015.
<ul style="list-style-type: none"> Enduring impact of smell, noise, dust and dirt and traffic issues for the residents of South Hobart. 	<ul style="list-style-type: none"> These issues were addressed by the Environment Protection Authority and any impacts were found to be acceptable subject to conditions.
<ul style="list-style-type: none"> Impact on the World Heritage listed Cascade Female Factory. 	<ul style="list-style-type: none"> The matter was referred to the Tasmanian Heritage Council who advised that the proposed extensions to the landfill area are well away from the Cascade Female Factory. The Heritage Council do not require any statutory approval of the works and did not have any additional suggestions beyond standard advice in Heritage Tasmania's existing predevelopment assessment guidelines. As such, this consideration is beyond the scope of the planning assessment.

<ul style="list-style-type: none"> Any rise in height may affect threatened species because of an extension of the habitat of weed species and feral animals. 	<ul style="list-style-type: none"> These issues were addressed by the Environment Protection Authority and any impacts were found to be acceptable subject to conditions.
<ul style="list-style-type: none"> Lack of boundaries showing the National Estate Listed area and the boundaries of Wellington Park 	<ul style="list-style-type: none"> The National Estate Register has been made redundant and the register was not transferred over to the National Heritage List and is therefore not subject to the <i>Environmental Protection and Biodiversity Conservation Act 1999</i> (Commonwealth). The boundary of Wellington Park is approximately 850m from the area subject to the landfill expansion. As such, this consideration is beyond the scope of the planning assessment.
<ul style="list-style-type: none"> Blown rubbish, especially plastics. 	<ul style="list-style-type: none"> This matter has been specifically considered by the Environmental Protection Authority and has been found to be acceptable subject to conditions.
<ul style="list-style-type: none"> The increased life of the landfill site should not be given approval until landfills across Tasmania has been accurately priced. 	<ul style="list-style-type: none"> This is beyond the scope of the planning assessment.
<ul style="list-style-type: none"> Large quantities of food and green waste, recyclables and the like are currently being buried in Tasmanian landfills. 	<ul style="list-style-type: none"> This is beyond the scope of the planning assessment
<ul style="list-style-type: none"> Currently approximately 40% of the weight received at Derwent Park Materials Recycling facilities is glass. 75% of used glass packaging ends up in various landfills around the State. 	<ul style="list-style-type: none"> This is beyond the scope of the planning assessment.
<ul style="list-style-type: none"> The expansion is important given the expenses in establishing the site have been met and any expansion would be very cost effective. 	<ul style="list-style-type: none"> Noted
<ul style="list-style-type: none"> The new plan appears very short sighted. It implements a planned shutdown well before necessary. I strongly recommend looking at the technical limits to the site usage and extending the plans to that technical limit. 	<ul style="list-style-type: none"> This is beyond the scope of the planning assessment.

- | | |
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| <ul style="list-style-type: none"> City bypass road is required linking Lenah Valley to South Hobart especially for trucks. | <ul style="list-style-type: none"> This is beyond the scope of the planning assessment. |
|--|--|

6. Assessment

6.1. The development area is located within the Utilities Zone under the *Hobart City Interim Planning Scheme 2015*.

6.2. The development has been assessed against:

- 6.2.1. Utilities Zone
- 6.2.2. Potentially Contaminated Land Code
- 6.2.3. Landslide Code
- 6.2.4. Parking and Access Code
- 6.2.5. Stormwater Management Code
- 6.2.6. Attenuation Code

6.3. The following discretions were invoked:

6.3.1. Discretion Table

		HIPS requirement	Proposed development
Discretion 1	Excavation Potentially Contaminated Code Clause E2.6.2	All works involving excavation of potentially contaminated land are discretionary.	The proposal requires excavation to provide for the land fill expansion.
Discretion 2	Landslide Code Works in a Landslide Hazard Area Clause E3.7.1	All works other than minor extensions located in a landslide hazard area are discretionary.	The subject area is within tracts of land that are identified as both Low and Medium Landslide Hazard Areas on the planning scheme maps.
Discretion 3	Landslide Code Major Works in a Landslide Hazard Area Clause E3.7.3	All major works in a Landslide Hazard Area are discretionary.	The works being excavation, vegetation clearance and soil disturbance of an area that are defined as Major Works.

6.4. Discretion 1

- 6.4.1. The first discretion is triggered under Clause E2.6.2, Excavation under the Potentially Contaminated Land Code. This results in all works involving excavation of potentially contaminated land being discretionary. The relevant performance criteria as follows:

Excavation does not adversely impact on health and the environment, having regard to:

- (a) N/A
- (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.*

- 6.4.2. The DPEMP and the Environmental Assessment Report together with the conditions and restrictions in the EPA permit ensure that the excavation works associated with the landfill extension will not adversely impact on human health or the environment and appropriate specific remediation and protections measures will be implemented.

- 6.4.3. The proposal is therefore acceptable in terms of clause E2.6.2P1.

6.5. Discretion 2

- 6.5.1. The second discretion is triggered under clause E3.7.1 of the Landslide Code. All works are discretionary and must be assessed against P1 as follows:

Buildings and works must satisfy all of the following:

- (a) *No part of the buildings and works is in a High Landslide Hazard Area;*
- (b) *The landslide risk associated with the buildings and works is either:*
 - (i) *Acceptable risk; or*
 - (ii) *Capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.*

- 6.5.2. No part of the works is within a High Landslide Hazard Area. The DPEMP, the detailed engineering plans and the Environmental Assessment Report together with the conditions and restrictions in the EPA permit will ensure that the landslide risk associated with the work is an acceptable risk.

- 6.5.3. The proposal is therefore acceptable in terms of clause E3.7.1.

6.6. Discretion 3

- 6.6.1. The third discretion is triggered under clause E3.7.3 of the Landslide Code. The proposal includes substantial areas of vegetation clearance and soil disturbance in areas that are identified as being both low and medium Landslide Hazard Areas and therefore Major Works is defined as follows:

Means any of the following"

- (a) *Excavation of 100 cubic metres;*
- (b) *Excavation or soil disturbance of an area of 1,000sqm or more;*
- (c) *Clearance of vegetation involving an area of more than 1,00sqm;*
- (d) *N/A.*

- 6.6.2. There is no acceptable solution for Major Works in a Landslide Hazard Area and therefore the proposal must be assessed as follows:

Major works must satisfy all of the following:

- (a) *no part of the works is in a High Landslide Hazard Area;*
- (b) *the landslide risk associated with the works is either:*
 - (i) *acceptable risk; or*
 - (ii) *capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.*

- 6.6.3. No part of the works is within a High Landslide Hazard Area. The DPEMP, the detailed engineering plans and the Environmental Assessment Report together with the conditions and restrictions in the EPA permit will ensure that the landslide risk associated with the work is an acceptable risk.

7. Discussion

- 7.1. The proposed landfill extension is within the Utilities Zone. The use as a Recycling and Waste Disposal is a permitted use in the Utilities Zone as it is an existing facility. There are no applicable development or use standards in the Utilities Zone; as such the proposal meets all acceptable solutions for the Zone.

- 7.2. The proposal was assessed against the following codes:

- 7.2.1. *Potentially Contaminated Land Code*
Discretion is triggered under this code pursuant to clause E3.7.1, Excavation.

The DPEMP and the Environmental Assessment Report together with the conditions and restrictions in the EPA permit will ensure the proposal is acceptable in terms of clause E2.6.2P1. All other relevant acceptable solutions are met.

7.2.2. *Landslide Code*

Two discretions are triggered under this code pursuant to clause E3.7.1, Building & Works and clause E3.7.3, Major Works.

No part of the works is within a High Landslide Hazard Area. The DPEMP, the detailed engineering plans and the Environmental Assessment Report together with the conditions and restrictions in the EPA permit will ensure that the landslide risk associated with the work is an acceptable risk and therefore acceptable in terms of clause E3.7.1 and E3.7.3. All other relevant acceptable solutions are met.

7.2.3. *Parking and Access Code*

There are no changes to the requirements of the use in relation to this code. As such the proposal is considered to meet all relevant requirements of this code.

7.2.4. *Stormwater Management Code*

The proposal does not include any new impervious surfaces, new parking areas or subdivision. As such, the works that includes details of both minor and major stormwater drainage systems meet all relevant acceptable solutions of the code.

7.2.5. *Electricity Transmission Infrastructure Protection Code*

The works that are to occur within the corridor do not include a building and are therefore exempt pursuant to clause E.4.1 (b).

7.2.6. *Attenuation Code*

The proposal is for an area a minimum of 500m from the nearest sensitive use. All relevant attenuation distances are met and therefore all relevant acceptable solutions are met under this code.

- 7.3. It is critical to the approval that all works are contained within the Utilities Zone, as the use class Recycling and Waste Disposal is a prohibited use in the adjacent zone – the Environmental Management Zone.

The zone boundary is not defined by a cadastre boundary and is instead defined by the 200m contour. As such, a condition that requires the 200m contour to be clearly marked on site to the satisfaction of the Director of City Planning and that no works including vegetation removal or soil disturbance must be above of the 200m contour will be essential to the approval.

8. Conclusion

- 8.1. The proposed extension of the landfill area (Recycling and Waste Disposal) at 30 McRobies Road, South Hobart satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval.

9. Recommendations

That A. Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for an extension of landfill area at McRobies Gully Landfill – 30 McRobies Road, South Hobart for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

1. The use and development must be substantially in accordance with the documents and drawings that comprise the planning application No. PLN-15-00885-01 as outlined in Attachment A to the permit except where modified below.

Reason for condition

To clarify the scope of the permit.

2. The person responsible for the activity must comply with the conditions contained in Schedule 2 of Permit Part B, which the Board of the Environmental Protection Authority (EPA) has required the planning authority to include in the permit, pursuant to Section 25(5) of the *Environmental Management and Pollution Control Act 1994*.

Reason for condition

To ensure that the development complies with the permit conditions determined by the Environmental Protection Authority.

3. Prior to the commencement of the works, the 200m contour must be surveyed and clearly marked on site to the satisfaction of the Director of City Planning and all works including vegetation removal or soil disturbance must be below the 200m contour.

Reason for condition

To ensure all works occur within the Utilities Zone.

- B. The Council include the following advice to the applicant:

1. Please consult your private building surveyor to ascertain whether the development requires approval under the *Building Act 2000*. Where approval is required this is to be obtained from the Council prior to the commencement of any works.
2. An application for a plumbing permit must be lodged in accordance with the *Building Act 2000* and *Tasmanian Plumbing Regulations 2014*, and a permit issued prior to the commencement of any plumbing work on site.

3. Council seeks advice from the Commonwealth in relation to potential impacts on matters of National Environmental Significance, due to the listing of the Swift Parrot under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. Information on the Commonwealth environmental legislation can be obtained on the internet at www.environment.gov.au/epbc/ or by telephoning the Commonwealth's Environment Department on 1800 803 772.

Part B

1. Part B of this permit, as referred to in Condition 2 above, includes the attached documentation Permit Conditions – Environmental No. 9322, dated 19 April 2016 and signed by the Director, Environmental Protection Authority.



Clare Hester

CONSULTANT PLANNER

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Caroline Lindus)

ACTING SENIOR STATUTORY PLANNER

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 11 May 2016

Attachment(s) Attachment A – Documents and Drawings List
Attachment B – Documents and Drawings
Attachment C – EPA Permit

Supporting Document(s) See Table of Supporting Documents below.

Attachment A

**Documents and Drawings that comprise
Planning Application Number - PLN-15-00885-01**

DEVELOPMENT ADDRESS: **McRobies Gully Landfill - McRobies Road,
SOUTH HOBART**

LIST OF DOCUMENTATION:

Description	Drawing Number/Revision/Author/Date, Report Author/Date, Etc	Date of Lodgement to Council
Application Form		17/7/15
Title		17/7/15
Plans	1 - 6	17/7/15
Supporting Information	1-4	17/7/15
Additional Information, Final Drawings	Typical cross sections; 200m maximum level site plan	22/7/15
Additional Information letter		14/8/15
Additional Information,	Environmental Management Plan	24/7/15
Additional Information	Environmental Management Plan	30/11/15
EPA Referral Letter		21/8/15
Environmental Protection Notice		17/7/15

Supporting Documentation List
Planning Application Number PLN-15-00885-01

DEVELOPMENT ADDRESS: **McRobies Gully Landfill – McRobies Road, South Hobart**

SUPPORTING DOCUMENTS LIST

Description	Date:
Development Proposal	12/2/16
DPEMP Response	12/2/16
Drain Drawings	12/2/16
Ecological Assessment	12/2/16
Further information email	12/2/16
Environmental Significance Map	12/2/16
Further Information Land Use	12/2/16
Proposed 2m lift stage	12/2/16
Risk Register	12/2/16
Site Plan	12/2/16
Surface and Ground Water Schedule	12/2/16
Waste Landfill	12/2/16
Water Monitoring	12/2/16
Weed and Hygiene Plan	12/2/16



Enquiries to: L

☎: (03) 6238 2820

✉: wilson@hobartcity.com.au

Our Ref: ew:ew

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21 August 2015

Chair, Environmental Protection Authority Board
GPO Box 1550
HOBART 7001

Att: Senior Environmental Officer (Assessments), Kate Düttmer

Dear Madam

**MCROBIES GULLY LANDFILL, 30 MCROBIES ROAD, SOUTH HOBART
EXTENSION OF LANDFILL AREA
APPLICATION NO. PLN-15-00885-01**

Council received on 17 July 2015 a development application for an extension to the landfill area at McRobies Gully Landfill, 30 McRobies Road, South Hobart.

In accordance with Section 25(1)(b) of the *Environmental Management and Pollution Control Act 1994* the Council is formally referring the application to the Board of the Environmental Protection Authority.

Pursuant to Sections 25 (1D) and (1E) of the Act, please advise Council within 14 days regarding the Board's determination on whether the application needs to be assessed. If no notification is received, Council will assume that the Board has determined that the application needs to be assessed as a Level 2 activity, and will await further advice from you in that respect.

Please contact the person named above if you have any questions in relation to this referral.

Yours faithfully

(Rohan Probert)
**SENIOR STATUTORY PLANNER
CITY PLANNING**

DEVELOPMENT APPLICATION DOCUMENT

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 24/07/2015.

Planning Authority: Hobart City Council



MCROBIES GULLY WMC ENVIRONMENTAL MANAGEMENT PLAN CITY OF HOBART

JULY 2015 - Revision 6

**SEM Project No: 0561.002
G&R Project No: 13.0591**

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ACN 117 492 814 - ABN 24 117 492 814 | F100 04, Revision 19, 10 June 2013



Authorisation: Page 1 of 1

DEVELOPMENT APPLICATION DOCUMENT
This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 24/07/2015.
Planning Authority: Hobart City Council

**DEVELOPMENT APPLICATION
DOCUMENT**

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 24/07/2015.

Planning Authority: Hobart City Council

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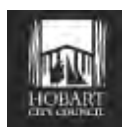


This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-0 and was received on the 24/07/2015.

Planning Authority: Hobart City Council

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Appendix B	Map of McRobies Gully catchment and surrounds
Appendix C	IMS – Risk Register, McRobies Gully WMC



This document is one of the documents relevant to the application for a planning permit for the development and was received on the 24/07/2015.

Planning Authority: Hobart City Council

1. EXECUTIVE SUMMARY

1.1 SCOPE OF DOCUMENT

This document is the latest Environmental Management Plan (EMP) for the McRobies Gully Waste Management Centre (McRobies Gully WMC). It is a revision of the previous EMP for the site, entitled *McRobies Gully Refuse Disposal Site – Environmental Management Plan, August 2002* (the 2002 EMP). It also incorporates information from recent Annual Reports for the operation, which are produced by Hobart City Council (the City) as a permit requirement. The review aims to achieve the following:-

- To reflect the changes in legislation since the 2002 EMP was written, and in particular the change from the *Draft Tasmanian Landfill Code of Practice (DELM 1996)* to the *Landfill Sustainability Guide, DPIWE 2004 (LSG)*;
- To reflect changes in the operation since 2002;
- To ensure that the site is being managed and will continue to be managed in accordance with current best practice environmental management;
- To provide a summary of recent environmental performance, typically the last three financial years; and
- To assist in the development of a new Environment Protection Notice (EPN) for the site.

Each section of this EMP includes the following subsections, as required:-

- Overview – the overview is intended to provide a brief outline of the activity in question. In some cases past experience, works or incidents may be included.
- Environmental Objective – the environmental objective defines the general goal that the City is attempting to achieve.
- Acceptable Standard – where possible the acceptable standard will be based on the LSG. In some cases, alternative standards will be adopted from other reference documents. Any alternatives to the LSG will be appropriately referenced.



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- Current Actions – this subsection will provide a description of actions and operations that are in current practice.
- Future Actions – this subsection will provide details on approved and forecasted projects and proposed changes to operational procedure.
- Performance Measures – this subsection will outline what will be used to measure the success of current and future actions in meeting acceptable standards and working toward the environmental objectives as outlined.

This structure will allow for the operations at McRobies Gully WMC to be assessed and measured in accordance with the *EMPCA* with particular reference to Section 4 which states the following:

“4 – (1) For the purposes of this Act, the best practice environmental management of an activity is the management of the activity to achieve an ongoing minimisation of the activity’s environmental harm through cost-effective measures assessed against current international and national standards applicable to the activity.

(2) In determining the best practice environmental management of an activity, regard must be had to the following measures: -

- (a) Strategic planning by the person carrying out, or proposing to carry out, the activity;
- (b) Administrative systems implemented by the person, including staff training;
- (c) Public consultation carried out by the person;
- (d) Product and process design;
- (e) Waste prevention, treatment and disposal.

(3) Subsection (2) does not limit the measures to which regard may be had in determining the best practice environmental management of an activity.”

This document also relates directly to the City’s third party accredited Integrated Management System (IMS), which is structured to comply with the requirements of ISO 9001, AS4801 and ISO 14001 standards, covering the areas of quality, occupational health and safety and environmental management respectively.

1.2 SUMMARY

The McRobies Gully WMC is well located less than 3km west of the Hobart CBD and is the most central of the sites that receive waste in the Greater Hobart region. Being in a valley at the foot of Mt Wellington means the natural conditions, such as steep topography, can pose challenges with respect to managing the environmental impact of the site. However, there are also some



characteristics of the site which minimise the risk of environmental impacts related to the operations.

Stormwater and leachate management at the site are key issues. The large catchments combined with steep topography, mean that rainfall is channelled down through the filling area, leading to large quantities of leachate and stormwater that need to be conveyed and treated in short time frames. The site drainage infrastructure was originally (circa 1975) designed to allow dilute leachate to overflow to the environment during high rainfall periods. Diversion of clean stormwater around the filling area is a critical element in lessening the load on the leachate infrastructure at the site, to reduce the incidence of overflows to acceptable levels. Diversion of stormwater should also have the effect of lowering the level of saturation within the fill.

In the absence of an engineered liner, the underlying low permeability rock which is close to the original valley ground level, provides a good barrier of protection to the groundwater within the rock, as the leachate preferentially flows down the valley to the leachate pond rather than down into the underlying groundwater aquifer. Groundwater contamination has therefore been minimal over the life of the site and is not anticipated to become a problem into the future.

Landfill gas (LFG) at the site is extracted and converted to energy under a contract with a third party (AGL). This operation minimises the risk of odour issues and horizontal migration of LFG.

The channelling of wind down the valley poses an issue for the site with respect to windblown litter. The commissioning of the waste transfer station (WTS) in late 2014 means that windblown litter can be reduced considerably by the selective closing of roller doors at the WTS. Operating the WTS also means that the width of the active landfill face is now considerably less, and receives more compacted material, which also assists to reduce windblown litter as well as other potential issues such as vermin, birds and odour.

Complaints related to the site have been minimal and provided that the incidence of leachate overflows can be reduced to acceptable levels, the site can continue to operate with minimal risk of environmental impact. If the site is allowed to continue to fill above the currently approved filling height, this will mean that capital expenditure can initially be focussed on better water management at the site, rather than being needed for rehabilitation, which would then be spread out over a longer timeframe. This will not only mean socioeconomic benefits to the region, but will result in better environmental outcomes.

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2. BACKGROUND

Waste disposal has been occurring at the present site since 1975. The site was previously bushland and is zoned Recreational under the 1982 Hobart Planning Scheme. Under this zoning a landfill is a discretionary activity. In 1967 the Hobart City Council purchased approximately 89 hectares of land for the purpose of developing a long term controlled disposal area. Following the approval of a development proposal, including an environmental impact assessment, by the then Department of Environment the site commenced operations in 1975 and has operated continuously since that time.

Since commencing operations in 1975, McRobies Gully WMC has played a significant role as a receiver of wastes from all waste generating sectors. The site's location (less than 3 km from the Central Business District (CBD)) means that McRobies Gully WMC is the best located site for small vehicle and commercial vehicular access in the Hobart City Council area and for some adjacent municipal areas including parts of the Eastern Shore.

3. SITE LOCATION

3.1 LOCATION

The McRobies Gully WMC is located in South Hobart at the western end of McRobies Road in the foothills of Mount Wellington some 3 km west of the CBD. The site is contained within a hydrological catchment area of approximately 250 ha extending from the high ground north of the Cascade Brewery to the south side of Pottery Road. A map indicating the McRobies Gully Creek catchment to the bottom of the tip is provided in Appendix B.

To the west and north, the land adjoins the Mountain Park and on the east it adjoins the Knocklofty Reserve. To the south a small proportion of the perimeter of the site adjoins private properties which are accessed from McRobies Rd.

3.2 GEOLOGY AND HYDROGEOLOGY

A detailed geological assessment of the McRobies Gully area was undertaken by Mineral Resources Tasmania (MRT) in the period 2000 to 2002, and the findings of this assessment are summarised in the report *Tasmanian Geological Survey Record 2002/16*.

3.3 SURFACE WATERS

The site is a natural river valley in the foothills of Mount Wellington with steep slopes where gradients of 1:2 and 1:3 are typical.

The McRobies Gully Rivulet is a tributary of the Hobart Rivulet and has one major, and several minor tributaries which join within the site. McRobies Gully Rivulet is fully piped downstream of the site and enters the Hobart Rivulet below the Cascade Brewery close to where Degraves Street joins McRobies Road.

The McRobies Gully Rivulet catchment ultimately drains to the Hobart Rivulet immediately downstream of Degraves St. At this point the Hobart Rivulet water quality is typically of relatively good to only slightly



degraded quality. This is most likely due to the relatively undeveloped and unmodified upper catchment.

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3.4 VEGETATION

A typical wet sclerophyll eucalypt forest, also containing dogwood, musk, tea-tree and associated ground cover growth on primarily mudstone, siltstone and doleritic soils, covers the undisturbed area of the site. The ground cover and understorey have to a large extent been removed in areas of hillside adjacent to current operations, particularly on the south western slopes of the site as a result of repeated burn offs prior to 1990 (Hazard Analysis McRobies RDS Module 1 1992).

The reduced ground cover results in higher surface run off coefficients (i.e. greater overland flow) and more turbid surface water in wet weather. This issue is present in a significant area of bush land in South Hobart and is not exclusive to the McRobies Gully WMC.

3.5 LAND OWNERSHIP AND USES

To the east of the landfill is Knocklofty Reserve. To the north and northwest of the site, including the area around Noahs Saddle has been listed as part of the National Estate down to the 200 m AHD contour. Mountain Park extends down from Mt Wellington and adjoins the northwestern boundary of the land allocated to the McRobies Gully WMC, about 1.5 km from the area being filled.

Cascade Gardens, which is a reserve, includes the park immediately below the Cascade Brewery and also some land on the spur between McRobies Road and the Hobart Rivulet. It is approximately 300m from the entrance to the landfill.

There is a small amount of overlap between the filling area and Knocklofty Reserve, due to historical operations. This EMP outlines a future filling plan that will not increase that overlap and will in fact rehabilitate some of the overlap area.

3.6 CLIMATE

The McRobies Gully WMC lies in the foothills of Mt. Wellington. The nature of the site and the significant volume of traffic require that due attention be given to the prevailing weather conditions, in particular during periods of high wind and rainfall.

The most relevant information currently available is from the BOM stations in the surrounding area including Mt. Wellington and Ellerslie Road. An on-site electronic weather station will be installed at the McRobies Gully WMC so site staff members are in a better position to more accurately gauge conditions on the site such as rainfall, wind speed and direction and temperature. This enables the City to make accurate decisions in relation to adopting precautionary measures in times of high wind speed and prolonged rainfall.

The local microclimate varies across the McRobies Creek catchment. The area further upslope and closer to Mt Wellington on average receives greater rainfall, is colder and windier than the lower valley area where landfilling operations occur. The climate data from the Ellerslie Rd Stations is shown in Table 1 below. It is likely therefore that the Ellerslie Road Station is most representative of conditions at the site, although it would be reasonable to expect conditions to be somewhere between the two sets of readings.



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Table 1: Climate Data – Hobart (Ellerslie Rd) Station 094029

	Mean max temp (°C)		Mean min temp (°C)		Mean rainfall (mm)		Mean number of days of rain ≥ 1 mm		Mean 9am wind speed (km/h)	Mean 3pm wind speed (km/h)
Jan	21.7		11.9		47.3		5.7		13.5	19
Feb	21.7		12		40.1		4.9		12	17.7
Mar	20.1		10.9		45		6.1		12.3	16.2
Apr	17.3		9		51.2		6.8		12.7	14.5
May	14.4		7		46.3		6.9		11.8	12.6
Jun	12		5.2		54.1		7.2		11.4	12.2
Jul	11.7		4.6		52.2		7.8		12.1	13.2
Aug	13.1		5.2		53.7		8.4		12.6	14.5
Sep	15.1		6.4		53.4		8.5		14.8	17
Oct	17		7.8		61.8		9.4		15	18
Nov	18.7		9.3		54.4		7.9		14.2	18.9
Dec	20.3		10.8		56.2		7.1		13.8	19.1
Annual	16.9		8.3		615.7		86.7		13	16.1
Years	131		131		132		121		105	104
	1881	2013	1882	2013	1882	2013	1893	2014	1893	2010

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3.6.1 Rainfall

Based on available data it is estimated that the typical rainfall averaged across the catchment is in the range of 600–700 mm per annum, with rainfall approximately spread evenly through the year. Rainfall occurs on more days in winter, but a greater proportion of higher intensity events occur in the summer months.

Evaporation is low during the winter months at < 1 mm per day. Insolation rates are low in winter due to greater cloud cover and fog and also through sunlight being intercepted by surrounding hills, when the sun is low in the sky. The site is thus wettest during the winter months, due to lower evaporation rates.

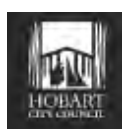
3.6.2 Wind

The Ellerslie Road Station indicates that there can be more than 50 days per year with maximum wind gusts in excess of 60km/h. This can include 10 or more days above 80 km/h, and 10 days between 70 km/h and 80 km/h. On almost all of these gusty days, the prevailing wind direction is from a westerly aspect. The valley orientation on a north westerly – south easterly axis is such that on a large proportion of windy days, gusts are funneled down the valley.

3.7 SOCIOECONOMIC CONSIDERATIONS

There are a number of strategic documents that relate to the future of waste management within Tasmania and the Hobart region.

Tasmanian Waste and Resource Management Strategy



***The Hobart City Council Strategic Plan
HCC Waste Management Strategy 2010 – 2015
Strategic Operating Plan – McRobies Gully WMC 2010 – 2015***

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3.7.1 Summary of Strategic Direction

There are a number of themes that are common to the strategic documents reviewed above, the main ones being:

- A desire for greater collaboration between the state government, regional bodies and local Councils;
- A strong push for waste minimisation and diversion of waste from landfill; and
- A desire to better manage residual wastes and minimise the environmental impact of waste disposal activities.

It is clear also from the Hobart City Council strategies, that there is a need to plan for alternative disposal options in the Hobart area in preparation for the eventual cessation of landfilling activities at the McRobies Gully WMC, with continuation of other waste management activities at the site (waste transfer station, composting, recycling and resale). A consideration of some alternative disposal sites is discussed below. There are also other waste disposal options that may be available to the City other than landfills, including various Waste Transfer Stations in the region and future alternate facilities, such as waste to energy plants.

3.7.2 Other Disposal Sites within the Greater Hobart region

There are two other landfill sites within the Hobart region that could potentially receive the waste from the McRobies Gully WMC in the future.

*Copping Waste Management Centre
Jackson Street Waste Management Centre, Glenorchy*

3.7.3 Future Options for Disposal of Hobart City Council's Waste

It is generally acknowledged that the eventual closure of this site will almost certainly see the permanent cessation of landfill operations within the Hobart City Council municipal area. As such, the longevity of this asset has major significance in terms of future waste management activities and costs for the citizens and businesses of Hobart. Following the closure of the McRobies Gully WMC, the transport of waste to a more distant site will almost certainly mean increased cost of waste disposal in the city. Thus, the site can be considered a valuable asset to those businesses utilising the site for disposal, as it is keeping their operating costs lower than they would be if the site was closed.

There are two main factors that will contribute to costs associated with the operations, which will in turn affect disposal fees at the site, when the site is closed. These costs will apply either when the current approved fill level (184m AHD) is reached, or at a later date if a new filling level is approved, which is a major consideration of this EMP.

The first is the most significant – rehabilitation expenses. If the site is closed when the current



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approved filling plan is complete, then there are some significant rehabilitation costs required in the next 3–4 years. The City currently charges ratepayers a nominal rehabilitation fee of \$50 per year per rated tenement. These costs can be spread over a longer timeframe if approval to continue filling to an increased height can be achieved, and the fee to rate payers may then be able to be revised down. A later completion date will also mean that initial capital funds can be targeted at providing necessary environmental upgrades, such as better diversion of stormwater away from the landfill footprint, and significantly decreasing the incidence/likelihood of leachate overflows. These initiatives are discussed in detail in Sections 4.8 and 4.9 below.

The second factor is increased transport costs, associated with the likely option of utilising another facility (such as Copping landfill) for waste disposal. If approval is granted to continue filling to an increased height, this cost increase can be delayed.

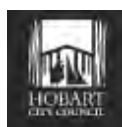
The City will need to decide which is the best option to manage its on-going waste disposal requirements. It is not considered essential for the City to have a direct investment or control over waste disposal infrastructure beyond the life of the McRobies Gully WMC, apart from any waste transfer stations provided for the use of the the City's own ratepayers and residents, and City vehicles.

3.7.4 Current Local Economic Conditions

As reported in the document *Structural Change in the Tasmanian Economy – Department of Treasury and Finance, April 2013*:-

"The Tasmanian economy is currently facing some major challenges due to a range of adverse external factors and relatively weak local demand for goods and services. As a result, Tasmania's performance, according to most economic indicators such as employment, investment and economic growth, has been rather weaker than the national economy. Some of these forces are cyclical in nature, while others are the result of structural changes that will have much longer term economic impacts."

The closure of the McRobies Gully WMC will have cost implications and will introduce further uncertainty for the current residential and business customers. This uncertainty must be carefully managed with proper analysis of the potential cost impact undertaken to ensure that any cost changes are understood and can be planned for by stakeholders. This is particularly important in the context of a struggling local economy, where the capacity to absorb extra costs is decreased. If closure of the landfill in the short term can be avoided, whilst improving the environmental performance of the site, this will be a good outcome for the ratepayers of Hobart.



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4.

LANDFILL OPERATIONS

4.1 ENVIRONMENTAL MANAGEMENT SYSTEM

The City operates under a third-party certified Integrated Management System (IMS), which complies with ISO 9001 (Quality), ISO 14001 (Environmental), AS/NZS 4801 (Safety) and ISO 31000 (Risk Management), as well as other standards and legislation which are applicable to The City's operations. At the core of the IMS is a risk register which lists all of the activities of the City which may carry risk, and details possible cause and effect scenarios for those activities.

Each scenario is assigned an inherent risk (i.e. the risk if no controls are in place) which is calculated using a risk matrix built on likelihood and consequence ratings. The existing controls are then listed and taken into account for the residual risk ranking, using the same risk matrix. Risk treatment plans are developed for activities with a significant residual risk, and once completed, the controls for each line item on the risk register are updated and the residual risk is recalculated. The latest risk register, which was reviewed as part of this EMP review is included in Appendix D.

It should be noted that as part of the City's IMS, all complaints are handled centrally, including those relating to potential nuisance caused by the McRobies Gully WMC. All complaints are taken in the the City's Customer centre, and then forwarded to the appropriate officer for action. Once the actions required for each complaint are completed, the officer involved closes out the complaint in the central system.

4.2 WASTE TYPES RECEIVED

4.2.1 Waste Transfer Station

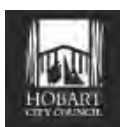
In 2013, the City completed construction of a new waste transfer station (WTS) at the McRobies site. The WTS will provide a range of benefits to the management of the site, including:-

- Increased safety for domestic vehicles who will be directed to the WTS and will no longer need to access the tip face;
- Increased waste diversion from landfill due to improved waste handling and scavenging;
- Slightly increased compaction, as the waste is compacted into bins for disposal at the tip face;
- Better management of impacts such as wind-blown litter, odour and vermin due to improved control of waste acceptance and handling.

The WTS is the "last port of call" for vehicles, who are directed to recycling operations prior to accessing the WTS, thus promoting the diversion of materials from landfill.

4.2.2 Overview

All wastes received at the site are classified into waste types in accordance with the *Tasmanian Waste Classification Reporting Tool*. The major categories are municipal, commercial industrial and construction demolition waste. These are further broken down according to the waste generator category (e.g. domestic, council, waste processing facility, other council) where possible.



Quantities of waste received at the site by waste type are listed in Table 3.

Table 3: Quantities received by waste type, 11/12 & 12/13

Code	Waste type	2011/12 (t)	2012/13 (t)
A1	Municipal domestic	19 291	18 756
A2	Municipal other domestic	11 285	8 888
A3	Municipal council	1 326	833
B0	Commercial & industrial unknown	11 829	18 523
BX	Commercial & industrial waste processing facility	0	0
C0	Construction & demolition unknown	72 359	18 125
C2	Construction & demolition other domestic	0	0
C3	Construction & demolition other council	19 180	57 926
CX	Construction & demolition waste processing facility	0	0
Total received		135 271	123 049
Clean fill		>88 000	>70 000
Composting		5 768	8 031
Recycling		6 500	6 844
Landfill		34 562	36 060
EPN limit		85 000	85 000

4.2.3 Controlled Waste (Hazardous Waste)

The City previously accepted a range of controlled (hazardous) wastes at the McRobies Gully WMC, subject to approval by the EPA, including asbestos, contaminated soil, and some clinical & related waste. All approved controlled waste has historically been disposed of in a secure area of the McRobies Gully WMC located at the western boundary of the disturbed area of landfill.

Environmental Objective

The objective is to prevent or minimize the release of environmentally harmful or potentially harmful material into the environment from the landfill in either the short or longer term.

Acceptable Standard

LSG:

Landfills must accept only those wastes that are consistent with the appropriate category of the landfill under the Landfill Classification System and as stipulated in the permit conditions.

EPN 715/1:

“(b) After June 30, 2004 no controlled waste is to be accepted for disposal at the waste depot without the prior written approval of the Director, with the exception of the following low level controlled wastes:



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- (i) Asbestos waste;
- (ii) Shredded scrap tyre waste;
- (iii) Suitably treated and dried sewage sludge, including grit, silt and screening provided that total and leachable concentration values do not exceed those specified for Low Level Contaminated Soil in DPIWE Bulletin 105; Classification and Management of Contaminated Soil for Disposal; and
- (iv) Sharps in an approved sealed sharps container and sanitary waste (in accordance with Condition H3 below), but not infectious or cytotoxic waste.

Current Actions

Commercial quantities of controlled waste are no longer accepted at the site. The secure area previously utilised for controlled waste is reaching capacity, so the remainder of the airspace has now been reserved for small residential quantities of asbestos.

Biosolids from the Macquarie Point Wastewater Treatment Plant were previously disposed of at the site – the majority were composted. Due to improved trade waste performance in the region, these biosolids were able to be diverted away from the landfill, and biosolids are now not accepted at the site.

Future Actions

If any information in regard to unknown controlled waste locations becomes available, this will be recorded on the site map.

Performance Measure

Continue to accept domestic quantities of asbestos to the secure area in compliance with EPN 715/1, including annual report of amounts received to the EPA.

Rehabilitation of the secure area currently being utilised, once it reaches capacity in accordance with LSG and EPN 715/1.

4.2.4 Liquid Waste

Tankered liquid waste is not accepted at the McRobies Gully WMC, either in the filling areas or the leachate pond.

4.3 COMPACTION AND WASTE HANDLING

4.3.1 Environmental Objective

The objective is to maximise diversion of waste streams away from landfill, avoid the risks associated with acceptance of unsuitable wastes (eg. controlled wastes), and maximise compaction which in turn makes the most of the available space. Better compaction also assists with a range of other potential impacts, such as differential settling of waste.

4.3.2 Acceptable Standard

LSG:

Landfills must accept only those wastes that are consistent with the appropriate category of



the landfill under the Landfill Classification System and as stipulated in the permit conditions. Waste must be placed in a manner that minimises litter and pest animal problems, and optimises use of landfill space. Waste must be placed in a manner which will maximise its stability, reduce long term risks arising from degradation/settling and optimise the operation of the landfill.

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Default parameters for placement and compaction as detailed in the Landfill Sustainability Guide are shown in below. The defaults that apply to the McRobies Gully WMC are shown in **bold**.

Table 4: Default parameters for placement and compaction (LSG)

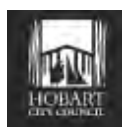
Parameter	Landfill Category		
	A (Solid Inert)	B (Putrescible)	C (Secure)
Plant equipment	Bulldozer	Multi-purpose landfill vehicle or compactor	Compactor
Minimum compacted density	NA	>650 kg/m³	>850 kg/m ³
Maximum height of waste 'lift'	2 m		
Size of active tipping area	Not more than 50 m by 30 m		
Width of active tipping face	4–5 m per truck		
Slope of tipping face	50%		

4.3.3 Current Actions

Compaction is achieved at the site by utilising a Traxcavator and Tana Compactor, which are kept at the site at all times. Operators capable of operating the plant are available at all times required, to compact and cover all waste deposited. The active tipping face does not exceed 50 m in width on any given day. Each successive landfilling lift does not exceed 2 m in vertical height, excluding cover material, and is progressively covered with a suitable low permeability material to a minimum depth of 300 mm.

The City has designated areas for the placement of certain types of inert waste not destined to be landfilled, including but not limited to concrete, rubble, and metals. The City no longer accepts commercial quantities of controlled waste. However, in the event that residential controlled waste is delivered to the site, it is deposited in the secure controlled waste designated area, a significant distance (at least 100m) from the active tip face.

In November 2013 The City commenced operating a WTS at the site. The WTS results in improved



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waste handling, as the WTS has been designed with better diversion performance in mind. The WTS will also have the beneficial impact of improved compaction, as the waste is compacted into bins with a ram at the end of the moving floor, prior to being transported to the active face.

4.3.4 Future Actions

The City will continue to monitor compaction by undertaking 6-monthly surveys for comparison with previous levels to identify areas which may require further compaction.

4.3.5 Performance Measures

Improved compaction, as demonstrated by survey results.

4.4 WASTE COVERING

4.4.1 Environmental Objective

To minimise potential problems associated with exposed waste, such as wind blown litter, vermin, odours and increased leachate generation, by covering the active face(s) at the end of each day and progressively capping completed filling areas.

4.4.2 Acceptable Standard

LSG:

Putrescible and controlled wastes must be completely covered by a suitable material at the completion of daily landfill operation or more frequently as required.

EPN 715/1:

Requirements regarding compaction, the use of 'Envirocover' product for daily cover, width of active face, and lift height restrictions are outlined in EPN 715/1.

4.4.3 Current Actions

Landfill covers (a solid steel structure with canvas coverings and aeration systems) are used to cover some areas of waste. The City maintains 4 landfill covers on site. Landfill covers are not without limitations, and not always appropriate to use, and daily cover with soil is often also required.

Adequate volumes of other suitable cover material (other than the landfill covers) to cover the active face are stockpiled adjacent to the active face, or at other suitable areas on site, at all times. In instances whereby there is insufficient material on site, material is purchased to enable covering to occur.

Areas of the landfill are progressively capped according to the following sequence:

- At least 300 mm deep layer of suitable low permeability material;
- A geotextile with a minimum in situ impermeability of 1×10^{-9} metres/second or higher on slopes;
- An appropriately designed drainage layer of at least 100 mm thickness; and
- A final layer of 300 mm of topsoil.

All rehabilitation (waste capping) works have detailed construction drawings and geotextile specifications which are forwarded to the EPA, via the licensing officer for the site prior to any works commencing.



<p align="center">DEVELOPMENT APPLICATION DOCUMENT</p>

<p>This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on 16/07/2015</p>

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4.4.4 Future Actions

Continue to cover waste on a daily basis, and apply intermediate cover to completed areas prior to rehabilitating.

4.4.5 Performance Measures

Number of complaints regarding odour, wind blown litter, vermin.

Compliance with permit.

4.5 FILLING SEQUENCE**4.5.1 Overview**

Placement of waste at the site is undertaken in accordance with the current filling sequence. The filling sequence is devised on the basis of providing a wind break to the active face wherever possible to minimise impacts such as windblown litter and odour.

4.5.2 Environmental Objective

To progress the filling activities in a systematic manner which maximises the available space and provides the best management of potential impacts such as wind blown litter, odour and improved surface water management.

4.5.3 Acceptable Standard

LSG:

Waste must be placed in a manner that minimises litter and pest animal problems, and optimises use of landfill space. Waste must be placed in a manner which will maximise its stability, reduce long term risks arising from degradation/settling and optimise the operation of the landfill.

EPN 715/1:

C1 Landfilling.

4.5.4 Current Actions

A revised filling sequence has been devised with a final close out surface designed to be just below the 200m AHD level. This sequence continues the filling on in the northern side of the western gully, and the north eastern side of the side. This sequence involves 2 m lifts.

4.5.5 Future Actions

The City will continue to conduct filling operations in accordance with the revised filling sequence, up to a maximum AHD level of 200m.

The filling area in the north-west corner of the site is mostly shaded throughout the day, and therefore tends to remain quite wet, particularly during winter as it does not receive enough sunlight to dry out. There is potential to consider using this area to fill during summer and use the area in the north-eastern section of the site as the active face in winter. This will be incorporated in the new



filling sequences for the site.

4.5.6 Performance Measures

Survey results to show progress against filling sequence.

4.6 WATER MANAGEMENT

Water management relies upon the management of three water flows with the intention of minimising the volumes to be managed and avoiding mixing the streams. The three components to be kept separate are stormwater, leachate and groundwater.

As a result of the historic design of the site, it is difficult to avoid at least some degree of mixing of these streams. The focus of current actions is to prevent the mixing of these components as much as is practicable. This requires the minimisation of stormwater entering the fill and improved management of leachate, to reduce impacts on surface and ground waters.

The main areas of concern in relation to site water management are as follows;

- Water contamination (groundwater and surrounding waterways);
- the management of the McRobies Gully Rivulet and the surrounding catchments once it reaches the McRobies Gully WMC (stormwater);
- the management of rainfall and other water that enters the fill, including moisture generated from breakdown of waste deposited in the landfill (leachate);
- the accumulation and passage of this leachate through the landfill;
- the stability of the fill (particularly that of sloped faces) by minimising saturation of fill by leachate; and
- the movement of water off-site via leakage from the base and sides of the landfill (groundwater).

Significant improvements have recently been made in the way storm water entering the site is captured and directed around the site to natural waterways (the Hobart Rivulet). The City is committed to further developing water management practices to minimise impact on the surrounding and receiving environments.

4.7 LEACHATE MANAGEMENT

4.7.1 Overview

There is the potential for interactions between stormwater, leachate and groundwater at the site and thus there is the need for an integrated approach to the management of these different waters. This section primarily describes leachate management, but also discusses potential impacts on groundwater as a result of the implementation of the control measures. Those issues primarily related to groundwater are discussed in Section 4.10.

At the time of the initial filling of the McRobies Gully WMC in 1975, low permeability engineered liners and leachate collection systems were not an environmental requirement. Leachate management at the site is thus aimed at reducing the rate of leachate generation, improving diversion of uncontaminated storm water runoff away from the landfill footprint, and collection of leachate for further treatment.

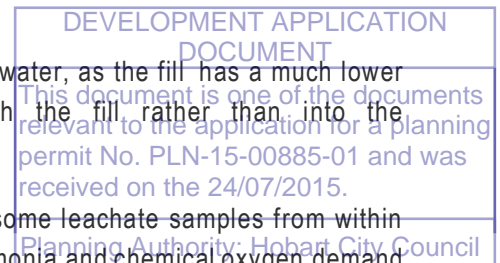
Although there is no engineered low permeability liner beneath the fill, the low permeability

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underlying rock appears to limit ingress of leachate into groundwater, as the fill has a much lower permeability, and thus leachate preferentially flows through the fill rather than into the groundwater aquifer in the underlying rock.

Previous groundwater investigations included the collection of some leachate samples from within the fill. Concentrations of some leachate indicators such as ammonia and chemical oxygen demand were at the low end of the range normally expected for landfills, while more mobile indicators like chloride were closer to middle of the typical range. This appears to indicate that there is a significant degree of biodegradation occurring as leachate travels down valley through the fill, with those indicators amenable to biological treatment decreasing, while the chloride concentration is unaffected. It also tends to indicate that there has historically been probable excessive water entering the fill and thus generally diluting concentrations of all contaminants.

From the results of the MRT investigation it appears that virtually all of the leachate generated enters the leachate pond. The leachate pond has open crib block walls on the up valley side allowing free flow of leachate into the pond. On the down valley side of the leachate pond there is a reinforced concrete wall which is constructed directly on to underlying rock. The base of the leachate pond is bedrock. The leachate pond is fenced off primarily as a risk management issue, but the fence also partially prevents windblown gross litter entering the pond.

In dry weather all leachate collected in the leachate pond is diverted to sewer. The currently used high level sewer is a 225 mm diameter pipe which runs along McRobies Road to the trunk sewer with no other connections. At higher flow rates exceeding the capacity of the inlet structure to the sewer, excess flow overflows to the main stormwater pipe after undergoing settling in the leachate pond.

It is also noted that overflows have occurred due to blockage of the pipe diverting flow to the leachate pond from the main stormwater pipe. This has typically been a result of high rainfall washing gravel and silt down the main pipe.

There is a magnetic flow meter on the 225 mm sewer pipe. An ultrasonic flow meter has been installed on the main 1650 mm storm water pipe. Data is gathered from these meters via a data logger. Flowrates to sewer gradually fall over several days after rain in an exponential decay type curve taking approximately one week to return to a base level of flow. The stormwater flowrate drops more rapidly with the flow falling to low levels about 1–2 days after the cessation of rain.

4.7.2 Environmental Objective

To minimise and manage leachate to ensure the prevention of pollution of groundwater and surface water.

4.7.3 Acceptable Standard

LSG:

- Landfills must be designed so that pollution of water by leachate is prevented.
- Landfills must be designed to contain leachate over the time that the waste poses a risk to protected environmental values for groundwater.
- An engineered clay liner is the minimum control required for Putrescible landfills. In relation to pre-existing landfills that do not comply with the design specifications outlined



in Table 3.1 (of the LSG), the operator must be able to justify to the Regulatory Authority that environmental harm is not occurring.

- Category B and C landfills must be equipped with a leachate collection system. Leachate accumulating on the liner must not exceed a hydraulic head of 0.3 m above the lowest point of the liner. Excess leachate must be collected in a leachate collection system and prevented from escaping from the landfill into groundwater or surface waters.
- Separate collection systems must be installed for leachate generated in cells that receive controlled or other hazardous wastes.
- Leachate must be managed to prevent contamination of surface or ground waters, prevent offensive odours and minimise human contact with the leachate.

EPN 715/1:

EPN 715/1 outlines requirements for leachate management including collection, desludging of leachate pond, aeration, and minimisation of overflows.

It is noted that ammonia has been selected as the most appropriate indicator based on results to date. Indicator standards are to ensure that the Hobart Rivulet ammonia nitrogen concentration does not exceed 0.25 mg/L as a result of leachate contaminated overflow and that the samples from groundwater bore 1996/3 have an ammonia as nitrogen concentration less than 0.25 mg/L. These compare with 0.5 mg/L which is the NHMRC (1996) drinking water guidelines value and 0.32 mg/L which is the 99% trigger value in the ANZECC (2000) environmental guidelines for fresh water quality. Future investigation may result in other suitable indicators being identified and values set.

Previously there was a network of up to 22 groundwater bores at the site, including 9 bores in the fill from which leachate samples were extracted and used to monitor changes in leachate composition as well as leachate standing water levels in the fill. Leachate extraction was undertaken from extraction bores from March 2004 through to May 2006, but was discontinued due mainly to on-going pump problems. Over that period approximately 32 ML of leachate in total was extracted and discharged to the leachate pond. Diversion of clean stormwater around the fill and progressive rehabilitation of completed fill areas are considered to be better measures for management of leachate levels within the fill, and will be the priorities going forward.

4.7.4 Current Actions

The leachate pond is deslugged on approximately a once per 3 year frequency. The rate of sludge buildup is relatively slow and the sludge volume is less than 20% of the leachate pond after this time. Sludge buildup is monitored by inspection and deslugged when the sludge level exceeds an average depth of 500 mm. The sludge has a high sand content, is dewatered by gravity as the leachate pond is pumped down and most of the sludge is of a spadeable consistency

As any sludge removed from the leachate pond in the form of liquid slurry is not likely to be suitable for treatment at TasWater's wastewater treatment plants it is disposed of as controlled waste following written approval from the Director of Environmental Management. Mulch or sawdust is used to absorb excess moisture from the liquid slurry. The leachate sludge undergoes immediate burial.

Leachate Overflows



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Overflows are detected either by inspection during wet weather or by periodic inspection, and by the telemetric equipment on site. Blockages resulting in dry weather overflows usually occur as a result of gravel washed down the stormwater pipe during rain. Thus inspections of the weir system are made during all weather to determine the potential for future blockages.

The regular inspections are on a fortnightly basis. The majority of blockages occur after significant rainfall and inspections are made after every significant rain event within 24 hours of the rainfall commencing.

The relevant officer at the EPA is contacted immediately once the City has determined that there is an incident of a leachate contaminated discharge of the Hobart Rivulet. This is followed by a written incident report forwarded to the Director of Environmental Management within 5 working days or alternatively as soon as all information relevant to the incident has been obtained.

The City's maintenance personnel are immediately notified of any leachate overflows to storm water and are required to conduct a visual inspection of the leachate collection system to determine the nature of the overflow and ensure there are no blockages of the associated infrastructure. When City maintenance personnel are unavailable a licensed contractor is engaged to conduct the inspection and if required perform corrective maintenance. An assessment report is required from the personnel carrying out this work.

Leachate irrigation of the landfill as a leachate treatment method is not considered an option, due to potential stability issues with saturated fill, as mentioned above. Additionally, potential irrigation areas are a significant distance from the leachate pond thus resulting in a high cost of piping or the requirement to install local leachate bores at significant expense. In addition, there is more than adequate capacity to transfer the leachate to the sewer network for treatment at the Macquarie Point WWTP. It is anticipated that with sufficient surface water controls (see Section 4.9) that all leachate can be collected and treated at the wastewater treatment plant, except in the most extreme rain events.

4.7.5 Future Actions

The City is undertaking capital works to reduce the number of leachate overflows, and works will be based on a design specification of handling a 1 in 20 year annual recurrence interval rainfall event (with a duration critical for the McRobies Gully catchment to leachate pond) before overflow to stormwater occurs.

Diversion of McRobies Gully Rivulet around the landfill will greatly reduce the number and volume of leachate contaminated overflows. The City has committed to a future capital works program which includes the design and construction of further stormwater diversion drains.

Once the diversion system has been constructed and commissioned, an assessment of the effectiveness of the diversion system in reducing overflows of contaminated water will be undertaken to determine what, if any further measures should be taken. Assessment of the leachate pond will be undertaken to determine if the operation of the pond could be changed. One option is that it becomes an overflow dam which is usually empty, with leachate flows diverted straight to sewer, and the leachate dam is only used when sewer capacity is reached and/or sewer blockages.



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Slope stability - the City has been advised that the only viable method of addressing the potential slope stability problems of the bank above the recycling area is to reduce the water table in this part of the landfill. As discussed above, diversion of storm water around the site and rehabilitation of completed fill areas are the priorities, due to the difficulties surrounding leachate extraction.

Progressive capping of landfill will continue to prevent rainwater ingress.

4.7.6 Performance Measures

Completion of capital works over the coming years to reduce the incidence of leachate overflows to only during a 1 in 20 year annual recurrence interval rainfall event (with a duration critical for the McRobies Gully catchment to the leachate pond).

4.8 SURFACE WATER MANAGEMENT

4.8.1 Overview

As part of the construction of the McRobies Gully WMC, a pipe was laid along the natural ground level of the site in order to transfer flow from the upper part of McRobies Gully Rivulet to the Hobart Rivulet. The pipe was extended as the filling sequence moved further up McRobies Gully, along with branch pipes collecting flows from smaller gullies. This pipe is the major outlet for stormwater for the site, so its condition past the site is critical for the effective separation of leachate and sediment from natural stormwater flows.

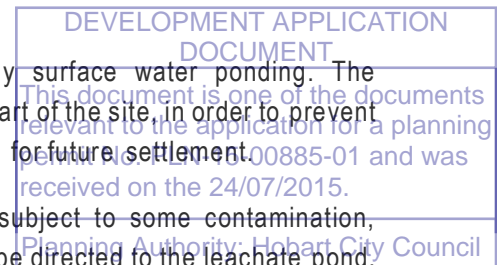
The pipe system has over the years received infiltration of leachate through various joints and cracks, and also receives some inflow of runoff from seepages and surface runoff from the filled areas. Previous assessment of the pipe network beneath the fill, albeit over a decade ago, showed that the pipe is of adequate size and generally in good condition. However, various points of localised damage may be expected to get worse over time, as reinforcement rusts and settlement occurs in the fill above. While the pipe is unlikely to have any trouble within the operating life of the filling operation, it is clear that it cannot be relied upon after closure to function in coming decades as an avenue for directing clean storm water through the site.

The stormwater leaving the site during and following heavier rainfall events has a high turbidity. A large proportion of this turbidity is a result of fine particles being washed off the western slopes of the valley. The siltstone and mudstone based soils from these slopes generate a high concentration of very fine colloidal particles. Repeated burning of the western hillside has resulted in little topsoil cover and limited understorey growth, giving high runoff coefficients and significant sediment loads in stormwater.

Larger particles can be trapped in sedimentation tanks, but much of the finer solids are not considered to be removable by settling. Removal of very fine particles by engineering means is costly, particularly for large volumes of water. There is a significant area of land in South Hobart, such as along Old Farm Road where there is a similar situation, so this is not solely a landfill issue. It is considered that the longer term approach to this issue must be to develop methods to improve regeneration of the understorey and build up a layer of topsoil to reduce erosion and trap sediments in the organic matrix, whilst also improving the capture of storm water entering the site.

As McRobies Gully WMC approaches the full design levels the final profile established in the western





and northern reaches will be convex in shape to prevent any surface water ponding. The proposed final profile provides for increased height in the central part of the site, in order to prevent ponding after settlement of the deepest fill, along with allowance for future settlement.

Whilst in operation, the runoff from the landfill footprint will be subject to some contamination, albeit much less than water seeping through the fill, so it will still be directed to the leachate pond, as at present. After final close out, it will be feasible to keep the runoff free of contamination and direct it to the storm water system, further reducing the load to the leachate system.

4.8.2 Environmental Objective

To manage stormwater in accordance with best practice environmental management and to a level which enables the achievement of the protected environmental values of receiving waters.

4.8.3 Acceptable Standard

Uncontaminated surface water must be prevented from mixing with waste and/or carrying sediment or contaminants off the landfill site. This will minimise the generation of leachate, and avoid erosion of cover material or waste from the landfill. Landfills should be designed with bunding and drains to intercept and divert surface water run-off from entering areas that have been filled or are actively being filled. The design of these drains should provide sufficient capacity to capture and divert all runoff from a 24 hour 1 in 10 year annual recurrence interval (ARI) storm event.

4.8.4 Current Actions

The fire trail above the eastern side of the landfill has been developed into a perimeter drain. Due to the nature of the soil, underlying bedrock and the relatively healthy understory, the proportion of overland flow on this side of the landfill is lower than the western face. This drain is inspected on a quarterly basis, with more frequent inspections following periods of heavy rainfall. Litter patrols are undertaken to reduce gross litter in the storm water runoff from the site. However, windy weather rapidly distributes litter and this often occurs in conjunction with rainfall, but the impact of this issue has been significantly reduced since the WTS commenced operation in 2013.

Works were undertaken in the past to improve the headwall construction where McRobies Gully Rivulet enters the stormwater pipe under the fill. This improved the historical situation where low flows of the Rivulet entered the fill by passing underneath the headwall and into the fill. The works completed enable flows of up to 1 in 75 year ARI storm to enter the stormwater pipe under the landfill, with an ultimate design ARI of 1 in 100 year.

Other works completed to improve stormwater diversion include:-

- The rehabilitation of the western face of the controlled waste area with clay capping and revegetation.
- The fire trail above the western side of the landfill was upgraded to provide a collection drain for overland flow of surface water from this hillside. The greater portion of this channel drains down the valley, while the remainder is drained back to McRobies Gully Rivulet above the western headwall.
- The upper part of the existing drainage channel along the western side of the landfill in the section up valley from the green waste receiving area has been filled in to reduce



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leachate egress in this area. Following filling, the area will be capped with a low permeability layer and formed into a drainage channel shape to minimise flow of storm water into the fill.

- To address high turbidity discharges in heavier wet weather events, options for understorey regeneration of the western hillside were reviewed, and the resulting understorey regeneration plan for the western hillside was implemented.

4.8.5 Future Actions

Complete the Diversion drains from the Western & Northern Catchment areas to reduce the amount of leachate generated during rain events, reduce the leachate levels within the fill, and reduce the incidence of leachate overflows to only during a 1 in 20 year annual recurrence interval rainfall event (duration critical for the McRobies Gully catchment at the leachate pond).

The City will investigate stormwater harvesting for the site, particularly to replace the use of potable water at the composting operation. The City will also ensure that "clean" stormwater from hard surface areas is diverted to the stormwater system, rather than the leachate system. A decision on what is clean stormwater will need to be made as part of the overall site storm water strategy. Collection of storm water from roofed areas of the WTS and recycling area is currently occurring, further improving the storm water capture at the site.

4.8.6 Performance Measures

Reduction in number of leachate overflows.

Reduction in potable water use.

4.10 GROUNDWATER MANAGEMENT

4.10.1 Overview

Geology and hydrogeology of the site is described in Section 3.2 above. Groundwater investigations to date indicate that overall the landfill is having a relatively low impact on the underlying groundwater, and that only minor management measures are required.

The main finding is that leachate is preferentially flowing down the valley through the fill, as the permeability of the fill is several orders of magnitude less than that of the surrounding rock (the fill permeability is observed to be up to approximately 4 metres per day, whereas the bedrock is up to 0.1 m per day). Thus the landfill appears to be acting as a drain with a net groundwater flow from the parent ground into the fill material and virtually all leachate is being discharged at the toe of the landfill.

From the results of groundwater testing down valley from the landfill there does appear to be a very small flow of leachate into the groundwater, but the analyses indicate that contaminant concentrations average less than 1% of those present in the leachate pond and less than 0.3% of typical leachate concentrations.

As a result of internal structures affecting water flow (firewalls), the slope above the Recycling area has a continuous seepage of leachate, and thus there is considered to be the potential for slope stability problems in the event of an earthquake. It is not possible to fully quantify the



degree of risk this represents. The only major remedial action which is considered to be possible is that of reducing the water table in this area of the landfill.

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4.10.2 Environmental Objective

To ensure that groundwater is not degraded by landfill activities.

4.10.3 Acceptable Standard

LSG:

Landfill design must include provision for groundwater monitoring bores. A network of groundwater monitoring bores should be installed under the direction of a suitably qualified hydrogeologist. Bore installation should take into account potential for cross contamination of multiple aquifer systems.

EPN 715/1:

Sections M3 and M4 of EPN 715/1 relate to the installation of groundwater monitoring wells.

4.10.4 Current Actions

The City has worked extensively with hydrogeologist Bill Cromer to better understand the hydrology at the site above the recycling area. At the end of 2008, fortnightly water level monitoring was replaced with water level monitoring in conjunction with groundwater sampling, as it was the view of the consultant that this would not compromise the understanding of hydrological conditions at the site (*McRobies Gully Tip: Results of August 2008 groundwater sampling, Dec 2008, W. Cromer*).

Dewatering bores were installed at appropriate locations on the site to draw down the water table within the fill for a number of reasons including lowering the hydraulic head within the fill, which reduces the potential for leachate to enter the surrounding groundwater. The dewatering program was discontinued as discussed in Section 4.8.

4.10.5 Future Actions

As a landfill liner cannot be practicably installed at McRobies Gully WMC, future actions to prevent groundwater contamination are directed at reducing storm water ingress and lowering water tables within the fill as detailed in the future actions for stormwater and leachate management in Sections 4.8 and 4.9 above.

4.10.6 Performance Measures

Monitor changes and trends in groundwater monitoring results.

4.11 LANDFILL GAS MANAGEMENT

4.11.1 Overview

The City is committed to reducing greenhouse gas emissions. As part of this commitment the City has developed a Local Action Plan (LAP). The LAP includes the following objective:

“To reduce greenhouse gas emissions from McRobies Gully WMC through the diversion of



organic material and the capture, re-use and/or flaring of methane."

The hierarchy of options for use or treatment of landfill gas is:

- Cogeneration
- Substitution of fossil fuel
- Power generation
- Intermittent use and flaring
- Flaring
- Treatment and discharge
- Discharge

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The City now has a long term agreement with Australian Gas Light Pty Ltd (AGL) for gas extraction, flaring and power generation at the McRobies Gully WMC. The agreement was subject to the gas flow rate being viable, and as was anticipated, the flow rate was deemed to be sufficient for AGL to undertake the design and construction of a power generation system for export of electricity.

An energy conversion plant and associated gas extraction system has been installed on site, as per the requirements of the Landfill Gas Partnership Agreement between the City and the State Government. The Partnership Agreement, enacted in December 2001 stated that 'Within 3 years of signing this Agreement, the City will have installed and have in operation landfill gas management infrastructure'. This requirement has not only been met, but surpassed the expectations of all parties.

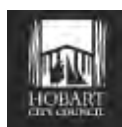
The Landfill gas project is also of major significance to the City's greenhouse gas emission reductions under the *Cities for Climate Protection Program*, assisting it to reach Milestone 5.

The landfill extraction system at McRobies Gully has achieved the following (Table 5):

	2012/13 Financial year	Since commencement
Methane destroyed (CH ₄) in CO ₂ equivalent	25,917t (CO ₂ e)	241,505t (CO ₂ e)
Electricity produced	6,000 MWh	41,278 MWh

Table 5: LFG Cogeneration Achievements

Based on *Cities for Climate Protection* (CCP) methodology the total residual landfill gas emissions were estimated at about 7,000 tonnes of carbon dioxide equivalent (CO₂-e) for 2007/08. Based on international methodologies for waste disposal, however, it has been calculated that about 7,000 tonnes CO₂-e per annum is being "sequestered" in the McRobies Gully landfilling operation i.e. some of the carbon, such as that in wood, largely does not breakdown or breaks down very slowly and stays in the landfill for hundreds of years. This amount of sequestration almost exactly offsets the residual methane emissions not captured by the landfill gas collection system. This accords with information from the US EPA on landfills. Thus the McRobies Gully WMC has close to a net zero greenhouse gas emission profile.



4.11.2 Environmental Objective

Landfill gas should be captured and treated to minimise emissions to the atmosphere.

4.11.3 Acceptable Standard

LSG:

Landfill gas must not present a source of odour or an explosion or toxicity hazard. The contribution to greenhouse gas emissions should be minimised.

EPN 715/1:

Section LFG1 of EPN 715/1 relates to Landfill Gas Management.

4.11.4 Current Actions

The City has an agreement with Australian Gas Light Pty Ltd (AGL) for long term gas extraction, flaring and power generation. The organic waste operation at the site diverts a high proportion of green waste and this reduces the volume of greenhouse gas which will ultimately be generated at the site. All commercial quantities of organic waste are also diverted to the composting area.

4.11.5 Future Actions

Continue to work with AGL to extend the LFG extraction network as needed. A plan of the existing infrastructure is included in Appendix E.

The landfill should continue to generate a significant amount of gas for at least 20–30 years after the cessation of landfilling on the site. The methane generated by McRobies Gully WMC requires the City to report to the Federal Government detailing its emissions in accordance with the National Greenhouse and Energy Reporting System (NGERS).

4.11.6 Performance Measures

Amount of gas combusted and amount of energy created by AGL.

NGERS reporting data.

4.12 SITE SECURITY, SIGNAGE AND TRAFFIC

4.12.1 Overview

Site access and traffic control are important elements of the operations of the McRobies Gully WMC to ensure safe and environmentally acceptable performance. The commissioning of the waste transfer station (WTS) in 2013 for the use of all domestic sized vehicles means significantly improved traffic management for the bulk of vehicles which access the site. These vehicles can now access the WTS utilising permanent sealed roads with signage and consistency of route (ie. the tipping face by nature was continually being moved – this is now irrelevant to WTS users). The use of clear permanent signage and colour coded lines on roads provides clear direction to users. For example, customers with green waste follow the green line on the road to the green waste disposal area etc. This is supplemented by engineered traffic management structures such as traffic islands and staff direction to vehicles where required.

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Heavy vehicles continue to dispose of waste direct to the active face. The changing location of the general waste tipping face results in a high cost of ensuring a trafficable surface to the face. Extended wet weather, particularly in winter, can result in difficulties in maintaining access to the face. In finished areas of the site access roads are constructed and maintained to a higher standard with a sub-base and sealed surface. A wheel wash facility is now in operation at the site and all vehicles accessing the active face are required to use this facility prior to exiting the site.

The Recycling Centre has a significant number of vehicle movements per day. The traffic flow is a one way loop through this site, which generally works well, but the close proximity of trucks and forklifts to light vehicles in this area requires on going management to minimise the risk of potential vehicle damage. The road surfaces are sealed in this area, with some gravelled car parking and product storage areas and there is considered to be relatively limited environmental impacts from this area in terms of dust and off site contamination.

4.12.2 Environmental Objective

To minimise the generation of environmental nuisances both on and off site, including creation of dust and transport of mud and litter on vehicles.

4.12.3 Acceptable Standard

LSG:

Access to the site must be controlled to minimise risks to safety of public, as well as controlling unauthorised entry and waste dumping. Public access to active tipping areas must be kept to a minimum.

Signs must be erected and maintained in reasonable condition to clearly convey important operational and safety information. Movement of vehicles to and from the landfills must not present safety concerns or pose a nuisance with regard to noise and road grime.

Landfills must be designed to ensure that operations minimise off-site impacts resulting from dust, litter and noise so that environmental nuisance is not caused.

EPN 715/1:

SO1 – SO4 of EPN 715/1 outlines the relevant requirements.

4.12.4 Current Actions

The sections of road which are either permanently or semi-permanently in place i.e. the road entering the site and in the recycling area and the initial 200m into the site from the weighbridge, is either hot mix or chip sealed to reduce dust generation and reduce mud leaving the site. Roads servicing the waste transfer station are asphalt sealed roads with kerb and channel.

There is a speed limit on all roads in the site. At higher speeds vehicles can create excessive quantities of dust and thus while limiting speeds is primarily for safety reasons, the low speeds assist in minimising dust generation.

Temporary closure of the landfill occurs if the access roads are considered either unsatisfactory or unsafe for usage. Factors that will be considered in making this determination will include wind

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speed and direction, rainfall and temperature (in relation to possible ice build up on the entrance to the site) and an assessment of the surface and road conditions.

As part of the installation of a weather station at the McRobies Gully WMC, warning lights have been placed on the Toll Booth at the Weighbridge. An orange light is automatically triggered by a specified wind speed (which is currently set at 60 km/h), this will mean that users are to proceed with extreme caution. A red light is triggered (at this stage gusts > 80 km/h) to signify the temporary closure of the site until conditions have abated. The weighbridge is then closed to landfill users. Traffic management options such as use of barriers in appropriate locations will be undertaken if so required to prevent entry of users to the tipping area.

Upon closure a sign is placed at the front of the site notifying customers of the temporary closure of the Site. Site personnel remain available whilst the site is temporarily closed to provide advice to the public on the reasons for closure, likely timeframe to re-opening and possible options members of the public may have.

Security of the site through increased fencing has been implemented to the extent possible and necessary, particularly around the western boundary. Full fencing of the site is not considered necessary given the high cost to achieve.

The use of the WTS by all light vehicles, which constitutes approximately 70% of all vehicles, minimises the risk of these vehicles carrying potential contamination off-site on their wheels. Heavy vehicles, which access the tipping face directly, are required to use the vehicle wheel wash when leaving the site. These changes have significantly reduced the risk of off-site contamination of local waterways by all vehicles utilising the site. The wheel wash can continue to operate after cessation of filling activities at the site, to service City vehicles and other vehicles that may require the facility. McRobies Gully WMC staff will ensure the use of the wheelwash facility, by way of visual inspection of trucks leaving the site and driver warnings/education.

4.12.5 Future Actions

A particular benefit of the WTS is that the roads to the tipping face now receive minimal traffic on weekends thereby allowing increased opportunities for maintenance when required. The City will continue to monitor temporary roads and undertake maintenance as required. As areas of the landfill are rehabilitated, the network of sealed roads will be able to be extended, further reducing capacity for dirt & litter on access roads.

4.12.6 Performance Measures

Reduction of dirt and litter on access roads.

Continued use of vehicle wheel wash for all large vehicles.

4.13 BUFFER DISTANCES

4.13.1 Overview

The McRobies Gully WMC is located in South Hobart at the western end of McRobies Road in the foothills of Mount Wellington some 3km west of the CBD. The site is contained within a valley extending from the high ground north of the Cascade Brewery to the south side of Pottery Road.



On the west and north the land adjoins the Mountain Park and on the east it adjoins the Knocklofty Reserve. To the south a small proportion of the perimeter of the site adjoins private properties which are accessed from McRobies Rd.

Hobart International Airport is the nearest landing ground/airfield, and is over 20 km from the site. The nearest residence to the current and future tip face is over 600 m away. The diverted drain about the west and southern edge of the tip is an ephemeral watercourse called McRobies Gully Creek, and there is an unnamed ephemeral watercourse that drains through the tip from north. The nearest permanent watercourse is Hobart Rivulet, which is at least 700m from the entrance to the WMC.

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4.13.2 Environmental Objective

Landfills have the potential to impact on a number of sensitive land uses. Buffer distances between a landfill and sensitive land uses should be sufficient to:

- prevent surface water from carrying sediment or contaminants off the landfill site;
- ensure that air traffic is not exposed to potential hazards from birds; and
- ensure that local amenity is not detrimentally affected by unpleasant odours, litter, noise, vermin or dust. (*Landfill Sustainability Guide, EPA, 2004*).

4.13.3 Acceptable Standard

LSG:

Landfills must be located with sufficient distance between the boundary of the landfill site and adjacent, sensitive land uses. Recommended buffer distances as included in the LSG are included in Table 6 below.

Table 6: Distance between Landfills and Sensitive Receptors (from the LSG)

	Landfill Category		
	A (Solid Inert)	B (Putrescible)	C (Secure)
Permanent watercourses (excluding farm dams)	50 m	100 m	100 m
Landing grounds and airfields	10 000 m	10 000 m	10 000 m
Residences	300 m	300 m	500 m

4.13.4 Current Actions

Current buffer distances are as per the Acceptable Performance, details in the relevant sections above.

4.13.5 Future Actions

Ensure that buffer distances to residences are maintained – consider including the buffer zone to residences in the Hobart Planning Scheme. No other future actions envisaged, as the site will comply with buffer distances until closure based on proposed filling sequence.

4.13.6 Performance Measurement



Maintain buffer distances as required.

4.14 DUST MANAGEMENT

4.14.1 Overview

Any large area where the land has been disturbed and is subject to vehicular traffic has the capacity to generate dust. Other potential dust sources are stockpiles of earth and dusty loads of waste. The magnitude of the impact will depend on, the type and size of the operation, prevailing wind speed and direction, adjacent land use, occurrence of natural and/or constructed wind breaks and wind-abatement measures or buffers.

4.14.2 Environmental Objective

The generation of dust will be kept to a minimum through the use of appropriate dust suppression measures.

4.14.3 Acceptable Standard

LSG:

Landfill operators must minimise the generation of dust at the landfill site. Where generation of dust does occur, the dust must be controlled to ensure that environmental nuisance does not occur beyond the landfill boundary.

EPN 715/1:

No specific requirements.

4.14.4 Current Actions

The use of the weather station at the site assists in the measurement of conditions where higher levels of dust generation can occur as well as their likely movement at the site. Temperatures and wind speeds are indicators for dust generation and off-site dust migration. WMC staff on a daily basis monitor these indicators and undertake constant visual assessment of dust levels.

Based on observations to date, dry weather conditions, recently disturbed, uncovered waste, fill and other materials and wind speeds in excess of 40 km/h may create a dust nuisance at McRobies Gully WMC.

In these situations watering of unsealed roads to the tip face and stockpile areas is conducted to suppress wind transported dust. If water is unavailable due to restrictions or lack of supply, the actions taken will be dependent on conditions at the time. If site staff believe an unacceptable respiratory risk or environmental nuisance exists, they are required to contact the Responsible Officer and seek advice on appropriate measures that may include the temporary closure of the site.

The Responsible Officer keeps an up-to-date record of dust promoting activities, complaints about dust, and the action taken.

4.14.5 Future Actions

Certain activities at McRobies Gully WMC can contribute to dust generation. The following

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actions will be implemented to reduce dust levels from these activities:

- Restricting vehicle movements through signage and supervision to specified routes in unsealed areas.
- Controlling vehicle speeds through signage and supervision, and ensuring that trucks transporting material within the site are covered and tailgates are securely fixed.
- Progressive rehabilitation of completed landfill sections in order to prevent both erosion and dust emissions.
- Careful management of shredding of organic waste to minimise generation of airborne particles.

Dust has not been noted as a significant problem to date particularly offsite. However if complaints begin to occur regularly, the City will undertake such measurements and control measures as considered appropriate to adequately address the situation.

4.14.6 Performance Measurement

The number of complaints received in relation to dust generation per annum, both on site and off site.

4.15 LITTER

4.15.1 Overview

Municipal waste, especially lightweight plastic materials and papers, can be spread over wide areas by the wind. Wind-blown litter can also foul drains and waterways as well as interfere with neighbouring activities.

Litter control required at the landfill varies throughout the year depending on wind strength and the orientation and elevation of the tipping area. No single control option will be entirely successful for the entire life of the landfill. The litter control strategy employed is designed to be flexible and includes both engineering solutions and management options.

4.15.2 Environmental Objective

To avoid offsite loss of litter to or from vehicles or the tipping face. To minimise on site litter which has the potential to leave the site by wind or surface run off. Reducing the negative environmental impact of litter on/to the surrounding environment.

4.15.3 Acceptable Standard

LSG:

Landfill operators must take all reasonable steps to prevent litter generation, to minimise litter leaving the site and must regularly clean up litter adjacent to the landfill.

EPN 715/1:

SO8 of EPN 715/1 outlines requirements for litter management.



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4.15.4 Current Actions

Within the WMC

Litter patrols are conducted regularly (as dictated by available resources, weather conditions and/or accumulation of litter) around for the perimeter of the site, the working tip face and dormant areas of the WMC on an approximately monthly basis. Mobile litter fencing was trialled, but provided little observable benefit and was time consuming to manoeuvre and maintain. The site is closed in high winds which results in reduced wind blown litter generation during these periods.

The recent opening of the WTS means vastly improved windblown litter management, as roller doors can be closed to contain litter on windy days, and in accordance with prevailing winds. It also results in better compacted loads of domestic waste being delivered to the tip face, which significantly reduces the opportunity for windblown litter to occur.

Outside the WMC

Garbage trucks transporting putrescible waste to the site use an enclosed container for carrying loads. Facilities are provided for washing the City's municipal waste trucks near the entrance of the WMC at the leachate pond. Litter from washing is periodically collected and disposed of and the wash water is collected and treated to sewer.

The approach roads are inspected by City vehicles for waste material that may have been spilled by vehicles approaching the WMC. The litter and spill material is collected and/or cleaned immediately. The City's street sweeping equipment is utilized to clean roads in extreme events.

4.15.5 Future Actions

The following actions are to be implemented to reduce the amount of litter that accumulates in and around the WMC: -

Within the WMC

Improve systems for gross litter collection at the entrances to the stormwater system. All future stormwater diversion designs will incorporate best practice litter management measures. This includes upgraded litter collection systems at the entrance to the leachate pond.

Outside the WMC

Vehicles are required by law to cover loads. Members of the public arriving at the WMC with loose or poorly secured loads from which waste could be spilled are to be reminded that littering is an offence and could result in infringement notices and significant fines, and barring from the facility.

4.15.6 Performance Measures

Records of litter patrols.

Number of complaints received annually in regard to litter adjacent to the WMC boundaries.

Number of fines issued, and EPA licensing officer reports.



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4.16 VERMIN AND WEEDS

4.16.1 Overview

Flies, mosquitoes, rats, cats and birds (typical disease vectors) are attracted by food wastes and still waters at landfills. If uncontrolled, these pests can affect public health and surrounding ecosystems. The main mechanisms for the control of disease vectors is the cover of waste daily and eliminating any open water bodies that are not required for fire, sediment and leachate control.

Where noxious weeds become established at a landfill, these weeds can spread through surrounding areas and impact on farming activities or natural ecosystems. Noxious weeds can become established through colonisation or through introduction by contaminated seed or weed infested mulch used to revegetate exposed areas of earth. Any noxious weeds onsite are managed by regularly inspecting the site for noxious weeds and eradicating any weeds present through appropriate means.

The most successful bird deterrent strategies rely upon a variety of techniques. While the immediate spreading of cover material over the wastes may not entirely deter birds, it can be supplemented with other options such as nets or monofilament wires over glide-paths or water dams, anti-perch strips buildings, and active measures such as acoustic bird scaring devices (gas guns or mimicking distress calls), and predator decoys. Since birds become accustomed to one particular measure, some variation in the active measures used is necessary.

It is noted that a large proportion of the birds present at the WMC appear to use the site as a roosting area and do not visit the tipping face. The number of birds at the tipping face is invariably a small percentage of the total number of birds present at the site.

4.16.2 Environmental Objective

To minimise disease vectors emanating from the landfill by denying pests food and shelter.

To manage the landfill site so that it does not become a source of noxious weeds.

To minimise the impact birds have on the surrounding residential environment and nearby water bodies.

4.16.3 Acceptable Standard

LSG:

Landfill operators must actively discourage the presence of nuisance animals and weed species to avoid public health impacts and environmental degradation.

EPN 715/1:

SO9 – SO10 of EPN 715/1 outlines requirements for vermin and weed management.

4.16.4 Current Actions

Waste is promptly compacted and covered daily to minimise exposure of possible food sources and habitats. Insect infestations detected in incoming waste or within the WMC are treated immediately with a suitable biodegradable pesticide that is kept on site at all times.



The site is graded so as to minimise areas of standing water. There is regular brushcutting of vegetation on finished vegetated areas of the site.

Putrescible waste delivered to the organic waste recycling area is incorporated into mulched green waste on the day of delivery.

Bird numbers are monitored on a regular basis. Trials on imitation bird noise were previously carried out, but the trial was not effective enough to warrant continuation. Baiting is not feasible due to potential harm to protected species.

The landfill tipping faces are covered daily to minimise the possibility of the spreading of disease through the bird population.

A qualified pest inspector is subcontracted to inspect the WMC on a routine basis for pests and vermin, and reports to the Responsible Officer any concerns, and any control measures deemed necessary. Species predominantly removed are feral cats and possums.

In addition to weeding the site and access road, green waste mulch is used to cover and suppress noxious weeds growing around the site. A record of activities to control noxious weeds is kept and maintained in the log of operations.

4.16.5 Future Actions

No future actions are warranted at this stage particularly given the opening of the WTS, which is further reducing the presence of vermin and the spreading of weeds.

4.16.6 Performance Measures

Records of pest and vermin control measures for the WMC.

Implementation of findings of the qualified pest controller.

Data from audits of bird numbers.

4.17 ODOUR

4.17.1 Overview

Landfill odour is a key consideration in deciding whether a landfill will adversely affect the amenity enjoyed or expected by surrounding neighbours. It also affects the design and operation of the site. At all times, the landfill is managed to prevent offensive odours beyond the site boundary.

For the remaining life of the WMC the general waste tipping face will be at least 500 metres from the nearest residence. The hazardous waste disposal area is about 900 metres from the nearest residence. It no longer accepts commercial quantities of controlled waste, as such there is little to no odorous controlled waste received to the site.

4.17.2 Environmental Objective

To ensure that there are no adverse impacts on the local community including loss of amenity by



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atmospheric emissions.

4.17.3 Acceptable Standard

LSG:

"Landfill operators must minimise the generation of unpleasant odours at all times. If odours are apparent, the odours must not be detectable outside the boundary of the landfill site."

EPN 715/1:

No specific requirements relating to odour, but implied requirements in other sections, such as complaints management and general operations management e.g. daily covering of waste.

4.17.4 Current Actions

A summary of actions taken recently to mitigate the risk of nuisance caused by odour include:-

- All commercial quantities of potentially odorous wastes such as organic wastes are now received at the composting facility which has its own procedures for avoiding the associated odour issues.
- Odour-masking sprays will be applied to suppress odours from suspect materials, as may be required.
- The practice of disposal of the potentially odorous wastes to the hazardous waste area has been discontinued. The City now diverts all odorous wastes to the composting operation, where the waste is immediately incorporated into compost piles to suppress odour.
- The extraction and combustion of LFG via the energy generation plant operated by AGL is a further risk mitigation measure with respect to odour.
- Use of the wheel washing facility by all commercial vehicles leaving the site minimises the transport of potentially odorous material to residential properties adjacent to the site.
- Aeration and mixing equipment has been utilised in the leachate pond to minimise odour caused by anaerobic conditions.
- Diversion of the biosolids from Macquarie Pt Wastewater Treatment Plant has been achieved.

Any odour complaint is investigated and a report prepared on the probable source and what measures should be implemented to reduce the odour or prevent recurrence. Records of complaints and actions taken are kept in the City's centralised system.

4.17.5 Future Actions

Continue to manage odour complaints and implement actions where required.

4.17.6 Performance Measures

The number of complaints relating to odour per annum.



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4.18 NOISE

4.18.1 Overview

Landfill operations generally involve noisy plant and have the potential to cause nuisance to the users of surrounding areas. Sources of noise at a landfill include truck noise (body, engine and exhaust), reversing sirens, external telephone bells, mobile machinery and equipment used for resource recovery operations such as concrete-crushing equipment.

Site operations should be set out to minimise noise impacts by using natural and/or constructed features such as earthen bunds and depressions as well as minimising steep –haul roads. Other means of minimising noise by planning are to schedule potentially noisy activities to minimise impacts on the community.

There have been no complaints received by the City in regard to noise in recent years.

4.18.2 Environmental Objective

To ensure the noise generated by activities at the Waste Disposal Site do not create an environmental nuisance to the surrounding community.

4.18.3 Acceptable Standard

LSG:

Activities on the site must be managed so as not to cause environmental nuisance. As a general guide the equivalent continuous A-weighted sound pressure level (Leq) of the sound emitted from the site should not exceed 50 dB(A), when measured within twenty-five metres of a noise sensitive building. The sound level is to be measured and adjusted for tonal and impulse components in accordance with AS1055. The Leq is to be measured over a period of between 10 and 15 minutes.

If the landfill site is to operate outside the hours of 0700 to 1800, this level should be reduced to 45 dB(A) between the hours of 1800 to 2200, and further reduced to 40 dB(A) between the hours of 2200 and 0700 (0900 on Sundays) the following morning. Higher sound pressure levels may be acceptable in areas with significant ambient noise from other sources.

EPN 715/1:

SO12 of EPN 715/1 outlines the requirements for management and monitoring of noise.

4.18.4 Current Actions

Machinery and equipment at the WMC is maintained to ensure the level of noise generated by each item does not exceed specified equipment levels.

As part of the project to collect and flare landfill gas at the WMC, the City engaged a consultant (Pearu Terts) to undertake background readings of noise levels at the site during the period 10pm to 2am on still nights, as this is considered to be the most sensitive time. Findings of the noise survey indicated a background noise level at locations indicative of the site boundaries of about



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33–35 dB(A) in the period 10pm to 2am on still nights. The noise survey information was provided to AGL to consider in their design of the electricity generation system. The City will conduct noise monitoring of landfill operations, once every three years or after any changes to operation which could have significant impacts of noise levels. This noise monitoring will occur at sensitive times and in still weather conditions. The exact locations selected for monitoring noise levels will be as determined by the consultant employed to assess background reading for the site. The results from this testing will be included in future annual reports.

4.18.5 Future Actions

Any new systems on site will be designed so as not to significantly increase noise levels at the site boundaries.

A log of complaints is to be kept and any complaints, which are justified, relating to noise shall be investigated and reported to the Director of Environmental Management with remedial action to taken to prevent recurrence.

4.18.6 Performance Measures

Number of noise complaints received annually.
Evaluation of background levels as a result of the noise monitoring program.

4.19 FIRE MANAGEMENT

4.19.1 Overview

All fires are totally banned at the WMC. Detailed procedures surrounding the fire incidents at the site are included in the City's Management System, and tip staff are trained in their application.

A 100mm reticulated water supply is available adjacent to the Toll Booth at the weighbridge and the organic waste recycling area, and this supply extends beyond the gas flare to the site office and plant shed.

4.19.2 Environmental Objective

To prevent landfill fires and efficiently extinguish any that occur to prevent harmful emissions and loss/degradation of surrounding bushland.

4.19.3 Acceptable Standard

LSG:

Fire prevention - Landfill operators must not allow fires to be lit on any part of the landfill or within the landfill boundary, and must extinguish any fires that do occur as quickly as possible.

Fire control - Landfill operators must demonstrate sufficient capacity to extinguish any fires that occur on site. Powered pumps and high-capacity hoses must be installed. Fire fighting water must be available at all times. Sites lacking a reticulated water supply suitable for fire fighting must store water on site, with a sufficient volume to control fires.

EPN 715/1:

SO7 of EPN 715/1 outlines the requirements for fire management.



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4.19.4 Current Actions

Site personnel are required to ensure no materials that may cause a fire to ignite are placed on the tip face. Fire extinguishers are located at the Toll Booth, in the Compactor and Bulldozer as well as in the site shed adjacent to the tipping face. The City has a water tanker which can be used to assist in fire fighting operations. The site may be closed on high fire risk days, subject to an assessment of the specific conditions at the site.

Risk management plans will be required for any works involving welding, gas cutting and other activities involving sources of ignition as well as high fire risk days. Hazard reduction (vegetation clearance) to be undertaken periodically as part of the WMC fire prevention strategy. The frequency of hazard reduction shall be based on advice from officers of the Tasmanian Fire Service and/or the City's relevant manager. Vegetation clearance shall not contribute to slope instability, erosion or sediment generation as this may result in adverse water quality impacts downstream.

4.19.5 Future Actions

Installation of further stormwater diversion drains within 3–4 years will provide the added benefit of being a fire barrier. A section of the drain will incorporate a fire trail, which provides an increased barrier.

4.19.6 Performance Measure

Number of fires per annum

The measures undertaken (including timeframe) to bring any fires under control. This information will be logged and forwarded to the Director of Environmental Management.

Installation of storm water diversion drains within 3–4 years, which will also act as fire barriers.

4.20 VISUAL IMPACTS

The visual impact of the site is minimal, as the only vantage points are from residences to the south along the valley who are far enough away to not be adversely affected, and from Mount Wellington, which similarly is quite a distance away. This EMP with its associated proposed filling sequence and other operational commitments will not increase the visual impact of the site. Lighting of the current and future buildings will take into account the potential for glare nuisance, and the final profile of the site will be designed to integrate with the surrounding landscape.



5. ENVIRONMENTAL MONITORING

5.1 OVERVIEW

Monitoring of landfills is a critical part of the overall management strategy. In particular, monitoring of leachate and landfill gas produced are key components, as well as monitoring of the receiving environment, including surface water and groundwater monitoring. The City monitors the site in accordance with EPN 715/1 and best practice environmental management.

5.2 REPORTING

The City submits an annual report to the EPA, as required by EPN 715/1, which outlines the environmental and operational performance of the site for the previous financial year. In addition, the City publishes a public annual report of its performance for the previous year including waste management related activities.

Monitoring is undertaken for stormwater, groundwater, and leachate quality, for a range of parameters in accordance with EPN 715/1. Test results including the date of sampling, sample site, name of laboratory conducting tests, and the laboratory report are forwarded to the Responsible Officer and to the EPA within 30 days of testing, or if the results are unavailable at that time within 5 working days of the results being received by the City.

HCC reviews all monitoring results as they become available to check compliance against relevant guidelines and to identify possible trends early, to enable prompt corrective actions where required. Any relevant information is reported through the organisation as required, both to Senior Management and also to Operations staff.

5.3 STORMWATER MONITORING

The stormwater monitoring program at McRobies Gully is based on regular quarterly sampling along with wet weather event and incident based sampling. The monitoring program measures the main surface flow entering the site in the McRobies Gully Rivulet and any flow in the stormwater pipe below the leachate pond along with measurements of the receiving water above and below the discharge point.

5.3.1 Environmental Objective

To ensure that stormwater is not degraded by landfill activities, by regular representative monitoring of the receiving environment, enabling response to implement preventative and corrective actions where required.

5.3.2 Acceptable Standard

LSG:

“Surface water must be monitored on a regular basis to detect and respond to any pollution from the landfill and to demonstrate compliance with any statutory requirements.”



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EPN 715/1, Section M1 – M4

5.3.3 Current Actions

The current surface water monitoring program at McRobies Gully WMC consists of sampling from up to five sites described below on a quarterly basis (ie. in excess of the acceptable standard). These sites are indicated on the catchment map shown in Appendix B.

- Site 1: McRobies Gully Rivulet watercourse immediately prior to its entry to the 900 mm stormwater pipe under the fill i.e. upstream of the landfill. This sampling point rarely has water present for sampling, particularly in the dryer months, as such at times there are no samples able to be taken
- Site 2: Pottery Creek at John Turnbull Park, Lenah Valley.
- Site 3: Stormwater manhole immediately below the leachate pond, thus assessing degree of contamination in site discharge.
- Site 4: 5m above the 1500mm storm water pipe entering the Hobart Rivulet, near Degraes Street.
- Site 5: 5m below the 1500mm storm water pipe entering the Hobart Rivulet, near Degraes Street.

Sites 4 and 5 are measured to assess the net impact of any discharge of stormwater from McRobies Gully. It is noted that the stormwater discharge to the Rivulet also includes road runoff and other stormwater collected below the landfill.

Surface water samples are taken at six-monthly intervals by a properly equipped appropriately trained and experienced City officer. Parameters tested from all sites include:-

- pH, conductivity, turbidity, total alkalinity, sulphate, chloride,
- total suspended solids, total dissolved solids,
- conductivity, redox potential
- chemical oxygen demand,
- ammonia as nitrogen, total nitrogen, combined nitrite and nitrate as nitrogen,
- total phosphorus, ortho phosphorus as phosphorus,
- total cyanide, dissolved organic carbon (DOC),
- *E. coli* (DST)

Once a year, samples are analysed for concentrations of a range of metals (Al, Cd, Cr, Cu, Fe, Mn, Ni, Pb, and Zn). All samples are tested at NATA certified laboratories.

Additional monitoring

In addition to routine sampling, during 2010/11, Hobart City Council monitored upper and lower sites in Hobart Rivulet as well as sites in other rivulets unrelated to McRobies Gully. Samples were taken monthly. A summary of the results of the sampling program was included in the document *Derwent Estuary Program 2010-11 Stormwater and Rivulet Monitoring Report*. The summary follows:

“Overall water quality showed similar trends to other sites with a slight decrease in water quality since the 2002-05 monitoring program. Water quality results were very similar for all three Rivulets, with good TSS results but elevated Enterococci levels and nutrients.



Hobart City Council also monitored Enterococci levels at three additional Hobart Rivulet sites – directly upstream of the McRobies Gully outfall, directly downstream of the McRobies Gully outfall and at Macquarie Point, in the mouth of the Rivulet. Enterococci results were low on both sides of the McRobies Gully outfall, suggesting that Enterococci loads from McRobies Gully Rivulet are not high. Enterococci levels at Macquarie Point were higher than those observed at the Hobart Rivulet lower site.”

5.3.4 Future Actions

The regular surface water monitoring program will be continued in its current form.

5.3.5 Performance Measures

Quality of analytes as sampled compared to relevant water quality guidelines.

Sampling conducted at quarterly intervals in accordance with the scheduled dates.

EPA receiving laboratory reports within the time frames given.

5.4 OVERFLOW MONITORING

5.4.1 Environmental Objective

To ensure that stormwater is not degraded by landfill activities. The objective of the monitoring program is to ensure that accurate measurement of the environmental impacts of all overflow incidents is undertaken.

5.4.2 Acceptable Standard

To provide a monitoring system to detect and measure all leachate contaminated overflows from McRobies Gully WMC and ensure that sufficient monitoring of all overflow incidents is undertaken to assess potential environmental impacts.

5.4.3 Current Actions

Any discharges from the leachate pond which the City becomes aware of are sampled and tested from the sites sampled under the regular stormwater monitoring program i.e. immediately downstream of the leachate pond, and at points 5m upstream and downstream of the stormwater pipe discharge to the Hobart Rivulet.

In order to better monitor the incidence of the leachate pond overflows to stormwater, a telemetry and monitoring system has been installed and is utilised. The flow monitoring system at the leachate pond is currently comprised of a magflow meter on the sewer discharge directly below the leachate pond. Additional monitoring of the leachate collection system includes an ultrasonic flow metering instrument on the 1500mm stormwater pipe directly below the leachate pond. All pipelines, whether sewer or stormwater, leaving the site now have flow measurement equipment.

In dry weather with no blockages of the sewers all flows from the leachate pond are directed to sewer, either through the low level sewer or a larger diameter higher level sewer. The flow rates from each of the magflow meters on the two sewer pipelines indicate whether there are blockages in either sewer. In addition a level monitoring system has been installed in the leachate pond to



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indicate overflows.

5.4.4 Future Actions

The City will continue to carry out monitoring in accordance with EPN 715/1 in the event of a leachate overflow.

5.4.5 Performance Measures

Reporting of incidents within the stated timeframes.

Flow monitoring data on all sewers and stormwater pipes leaving the leachate pond area.

Data from level monitoring system.

5.5 GROUNDWATER MONITORING

5.5.1 Environmental Objective

To ensure that groundwater is not degraded by landfill activities, by regular representative monitoring of the surrounding groundwater, enabling response to implement preventative and corrective actions where required.

5.5.2 Acceptable Standard

LSG:

"Regular, representative sampling of groundwater must be conducted to ensure early detection of any contamination by leachate and to demonstrate compliance with any statutory requirements.

In accordance with the State Policy on Water Quality Management 1997, relevant water quality standards (trigger values) from the latest revision to the Australian Water Quality Guidelines (ANZECC and ARMCANZ 2000) will be used to set the water quality objective unless otherwise specified by the Environmental Management and Pollution Control Board."

EPN 715/1, Section M1 – M4,

5.5.3 Current Actions

Groundwater sampling is currently undertaken on a six-monthly basis from two up-gradient bores - 2007/1, 2007/2, which are located in the McRobies Gully up valley from the former controlled waste area and in the northern gully upstream of the landfill and one down-gradient bore - 1996/3, which is down valley from the leachate pond. Bores 2007/01 and 2007/02 replaced previous monitoring locations 1996/1 and 1996/2 respectively, as the filling activities encroached on these bores. The hydraulic gradient is approximately aligned with the valley, as evident by comparing the approximate standing water level (SWL) in the three current monitoring locations, with 1996/3 SWL being at an RL roughly 100m lower than the SWL measured in 2007/1 and 2007/2.

The exact locations are shown on the geological map for the site in Appendix C.

The samples are collected in accordance with Australian Standards and are tested for:-

- pH, conductivity, turbidity, total alkalinity, sulphate, chloride,
- total suspended solids, total dissolved solids,
- conductivity, redox potential



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- chemical oxygen demand,
- ammonia as nitrogen, total nitrogen, combined nitrite and nitrate as nitrogen,
- total phosphorus, ortho phosphorus as phosphorus,
- total cyanide, dissolved organic carbon (DOC),
- *E. coli* (DST)

Once a year, samples are analysed for concentrations of a range of metals (Al, Cd, Cr, Cu, Fe, Mn, Ni, Pb, and Zn). All samples are tested at NATA certified laboratories.

5.5.4 Future Actions

Continue with current groundwater monitoring program as per licence conditions.

5.5.5 Performance Measure

Quality of analytes as sampled compared to relevant water quality guidelines.

Sampling conducted in accordance with licence.

Director of Environmental Management receiving laboratory reports within the time frames given.

5.6 LANDFILL GAS MONITORING

5.6.1 Environmental Objective

To demonstrate that the final capping and landfill gas extraction system is effectively controlling landfill gas emissions and show that horizontal migration of landfill gas is not occurring. To minimise harmful Greenhouse gas emissions. To generate electricity from the combustion of landfill gas.

5.6.2 Acceptable Standard

LSG:

"Where landfill gas collection systems have been installed, regular monitoring of gas composition, combustion efficiency and flow rate should be undertaken to enable annual reporting of emissions from the system. Alternatively, stack emissions can be measured directly following flaring. Where landfill gas is not collected, regular monitoring should be undertaken to detect whether landfill gas presents a source of odour or an explosion or toxicity hazard, and to estimate greenhouse gas emissions."

EPN 715/1:-

No specific requirement.

5.6.3 Current Actions

Given that there is a landfill gas collection system and Power Generation Unit in operation at the site, landfill gas monitoring is not a requirement. However the City has decided to conduct periodic monitoring of the capped areas to provide best practice operational control with respect to the collection system and as a measure of final capping performance.

Preliminary surface monitoring was undertaken in March 2014 for the first time at the site. SEMF staff and City staff attended the site and undertook some preliminary monitoring, as a means of a training exercise for staff so that in house monitoring can be continued.

The specific reference to surface monitoring in the LSG follows:-



"Surface monitoring should demonstrate that the cover and (where present) gas collection system is effectively controlling landfill gas emissions. Areas of the site where waste has been placed and either intermediate or final cover has been applied should be traversed in a systematic pattern with a handheld detection device. Readings should be taken on calm days (i.e. winds below 10kph) at a height of 5 cm above the ground, as well as in depressions or surface cracks. Monitoring should be undertaken by a suitably qualified person in accordance with relevant Australian Standards, including AS 3580.11.1-1993: *Methods for sampling and analysis of ambient air – Determination of volatile organic compounds - Methane and non-methane volatile organic compounds - Direct-reading instrumental method.*"

It was noted on the day of monitoring that conditions were quite windy, and most likely local wind speed was higher than 10 kph at the time of the survey (11am to 1pm, 18 March 2014). The Ellerslie Road observations for the day indicated prevailing winds from the WNW to NNW and readings of 7 kph at 9am and 35 kph at 3pm, with a maximum reading of 68 kph recorded at 2:13pm. Given the topography of the site, a valley which channels wind from Mt Wellington down towards Hobart, it would be difficult to find a day with calm conditions (ie. less than 10 kph as described in the LSG).

A brief walkover of the southern section of the site was conducted, where areas have been rehabilitated (see Figure 9). Cracks and depressions in the finished surface were targeted as well as readings in pits and other infrastructure and also general readings. Typical readings were:-

- Methane: between 0 and 20 ppm;
- CO: 0 ppm; and
- O₂: 20.9%.



Figure 9: Rehabilitated areas – LFG monitoring

The meter used was an Eagle LEL Meter, and the meter was zeroed off-site by the monitoring team in what would be expected to be typical fresh air conditions. Given the low readings on the day, the meter was tested in some non-typical conditions where high concentrations would be

expected, as follows:-

Tubing from the Eagle meter was inserted into a composting pile at the site and a reading of 85 ppm for methane was measured; and the exhaust gas from the field vehicle was tested and the alarm for a high CO reading was triggered.

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5.6.4 Future Actions

The City consider undertaking future methane monitoring events periodically, utilising a similar procedure to the one trialled in March 2014. Data, such as monitoring conditions and results from field measurements be captured utilising a standard form. Monitoring locations be identified on simple site plan for future reference where relevant. If readings above 500 ppm for methane are encountered, the City may undertake some further, more robust investigations.

5.6.5 Performance Measure

Number of site walkover events carried out. Results from gas testing undertaken during site walkovers.



This document is one of the documents relevant to the application for a planning permit No. P14/00895-01 and was received on the 24/07/2015.

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6. REHABILITATION AND AFTER-CARE

6.1 GENERAL

This Decommissioning and Rehabilitation Plan (DRP) for the McRobies Gully WMC, will minimise the risk of environmental harm or nuisance caused by site and maximise options for its future use.

Once the landfill reaches final permitted filling levels, the filling operation will cease and there will be no further placement of waste. The waste transfer station, the recycling centre and shop and the composting area will all continue to be operated under their current respective operating conditions

6.2 OBJECTIVES FOR REHABILITATION

Objectives that will maximise options for ongoing use of the site include:

- A timeframe for rehabilitation that will meet the City's needs.
- Reshaping the landfill using imported material to provide a minimum surface slope of 5% and maximum embankment slopes of 33%.
- A landfill cap utilising either a geo-synthetic liner or an appropriately impermeable clay source for sealing, and local topsoils for natural revegetation.
- Streamlining environmental monitoring requirements without increasing the risk of off-site contamination.
- Surface drainage methods and site discharge points for stormwater that do not compromise surrounding land use.
- Increase capture of landfill gas, and conversion to energy.
- To manage possible future subsidence of final landfill shape, to avoid finished surface low points, by maintaining reasonable capped slopes.
- To determine a minimal cost solution for management of potential leachate migration to the surface and to groundwater during unusually wet years.
- To continue the current WTS, recycling and composting operations.

6.3 FILL PLAN & FINAL PROFILE

As a component of the development of this EMP, a long term filling plan has been developed, including;

- Estimated annual lifts,
- Annual Rehabilitation requirements (based on lifts)
- Estimation of annual landfill space filled (m³), and surface area required to rehabilitate (m²)
- Costings for rehabilitation (annual & total)
- A final profile of the completed landfill area.

The Fill Plan is a long term strategic plan that allows the City to accurately forecast remaining landfill space and rehabilitation liabilities at any given point. The plan has been developed to remain flexible given that there are 2 main areas where filling occurs.

The final profile height detailed within this EMP is 200m AHD.

6.4 FILL PLAN DETAILS

A comprehensive data analysis has enabled the City to estimate annual levels of the landfill from 2015 until estimated closure when the final profile is reached. The analysis involved



This document is one of the documents relevant to the application for a planning permit for the development and was prepared on 16/5/2016.

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estimating trends in waste acceptance to the site, resource recovery operations that divert waste from landfill, calculation of remaining airspaces, and the calculation of costs associated with performing rehabilitation requirements on an annual basis.

Attachment A shows the annual estimated fill areas, and the following Table details both the volume of the area filled, and the surface area required to be rehabilitated for each year/lift.

TABLE 16 – Annual volumes, rehabilitation requirements, and landfill levels.

Operating Year	Fill volume (m3)	Capping Area (m3)	Level in West (AHD)	Level in North-east section(AHD)
2015/16	76,208	6,520	180	165
2016/17	76,000	5,394		168
2017/18	76,000	4,890	182	170
2018/19	76,000	4,730		172
2019/20	76,208	4,743	184	174
2020/21	76,000	4,749	186	176
2021/22	76,000	4,772		178
2022/23	76,000	4,772	188	
2023/24	76,385	4,795		180
2024/25	76,814	12,012	190	182
2025/26	76,814	14,000	194	184
2026/27	71,723	12,112	200	
2027/28	76,208	14,462		186
2028/29	76,000	14,423		188
2029/30	50,713	9,624		200
TOTALS	1,113,073	121,998		

The Fill plan estimates that the Western landfill will be completed in 2026/27, and that the North-east section of the landfill will reach its final fill height of 200 AHD in 2029/30.

6.5 FUNDING OF REHABILITATION

The City has collected revenue to fund rehabilitation liabilities for several years through a levy on the rates base. Funds are drawn down annually from this reserve to perform rehabilitation works. The amount of the current levy and the time frame it is applicable for is sufficient to raise the required revenue to complete rehabilitation operations in accordance with the fill plan detailed within this EMP.

The amount and duration of the levy may be altered by the City to reflect the amended lifespan of the landfill, however this would be a Council decision.

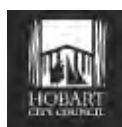
6.6 LANDFILL SUSTAINABILITY GUIDE

The Landfill Sustainability Guide, Section 3.11, outlines the requirement that the design of landfills should take into account the future rehabilitation of the site. Section 5 also outlines specific requirements for rehabilitation and post-care.

6.7 RELEVANT PERMIT CONDITIONS

The specific conditions of Environment Protection Notice No. 715/1 that relate to decommissioning and rehabilitation of the site are as follows:

- SO6 - Waste Capping



- R1 - Progressive rehabilitation
- R2 - R4 Notification requirements, and planning for permanent cessation of disposal operations on the land.

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was made available on 24/07/2015

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6.8 POTENTIAL POST-CLOSURE USES

The site is zoned Recreational under the 1982 Hobart Planning Scheme, dedicated for public purposes for the provision of public utilities – in this case a waste disposal site. Rezoning is therefore not necessary whilst the current and long term use is for operation and potential expansion of the WTS.

It is noted that the WMC operations take up the majority of the lower part of the site, and the current filling area is towards the upper part of the site. Access to the site at the moment is only through the lower part of the site. One option for future use is to fence off the portion of the site that will house the on-going waste management activities, and open up the upper part of the site to public use. Given that the lower part of the site is planned to be continued for use as a waste management centre, this limits the compatible uses for the upper part of the site. Some potential future uses that the City would consider for the upper part of the site include one or a mix of the following:-

- dog exercise zone, trails for cycling, horse-riding, jogging and/or walking;
- Expansion of waste management activities such as further expansion of the composting area or recycling activities;
- Continuation of current activities.

6.9 FINAL REHABILITATION

- Removal of site structures

The current planning is to continue operating the site as a waste management centre, so there will be minimal removal of site structures.

Before reshaping and capping, all structures and fences incompatible with the intended final use will be removed and properly disposed of. All scrap machinery, visible scrap steel and sharps having potential to pierce through or protrude from the final cap will be removed.

Additional compaction and maintenance

After weed management and clearing, the filling area will be covered with a 300 mm minimum thickness intermediate layer of clean fill to remove depressions and for reshaping to a minimum 5% grade on the top of the landfill and maximum 33% on batters, in preparation for final capping and revegetation.

The most recently filled areas will be rehabilitated last to allow the maximum time for settling. Further compaction may then also be required in these areas prior to applying the final cap. Given that the site is currently being progressively rehabilitated, it may be necessary to ensure that future uses are planned around the use of the older areas in preference to the newer areas, to allow for additional settling in the newer fill areas.

The site received waste from 1975, thus some areas have had (at time of writing) up to 39 years



for natural settlement (compaction), in addition to mechanical compaction undertaken as part of the operations. However, given the lack of confidence of waste-type ratios, compacted waste density and settlement rates, six-monthly survey data will be used to ascertain settlement rates. Where settlement results in a surface slope of less than 0.5%, localised remedial works will be undertaken to re-establish.

To summarise:

- The finished surface will be surveyed immediately after final capping, as a basis for monitoring future cap or embankment settlement.
- Six-monthly site surveys will ascertain settlement rates.
- Low points will be topsoiled, groomed and reseeded to prevent the potential for surface water to pond.
- Slopes of less than 0.5% will be reshaped to allow for site drainage.
- Affected surface drains will be reformed and reseeded as appropriate.

Completion of capping

The Landfill Sustainability Guide 2004 (Guide) requires that landfills are capped to ensure infiltration through the cap is no more than 75% of the anticipated seepage rate through the landfill liner. The following works are proposed to achieve this:-

- Any vegetation on the landfill and batter slopes will be cleared.
- The top surface of the landfill will be regraded (if required) to a minimum 5%, by the importation of general clean clayey soil to fill any formed "low spots". The side batters of the landfill will be regraded to maximum of 33% on side batters. The minimum depth of imported clean material, over buried waste will be 300mm and there will be no cut-to-fill to achieve the required shape.
- Proof-roll the graded surface with minimum of 6 passes of appropriate machinery (class SR10 roller, or higher – AS2868). If "soft spots" are identified, they will be topped with clay fill and re-compacted. No density testing is proposed.
- Apply a 300mm minimum thickness barrier over all buried waste (footprint).
- Apply 300mm clay seal layer, or Bentomat (or similar approved geosynthetic clay liner) to manufacturer's specification.
- Apply 100mm drainage layer, topped with non-woven geotextile (eg. Bidum A24).
- Apply a 300 mm minimum thickness soil finished surface suitable for propagation of native grasses and shrubs.
- Survey control will be used during earthworks.
- All fill will be placed in maximum 200 mm (loose) layers and compacted to the following standard compaction Dry Density Ratios (note requirements for minimum and maximum):
- Reshaping Layer: General clayey-soil fill with a standard compaction DDR of 95%, and at -2% to + 2% of optimum moisture content.
- Clay Seal Layer: Clay Barrier: standard compaction DDR of 98% and at -0% to + 2% of optimum moisture content in accordance with AS1289 "Methods of Soil Testing for Engineering Purposes.
- Growing Layer: General clayey-soil fill with a standard compaction DDR of 85%, and at -



2% to +2% of optimum moisture content.

- It is proposed that preparation, fill placement and compaction of the "clay seal layer" be undertaken under Level 1 supervision in accordance with AS3798 "Guidelines on Earthworks for Commercial and Residential Developments". AS3798 provides recommendations on the interpretation and application of relevant test methods in AS1289 and also provides guidance on the specification, execution and frequency of testing for earthworks projects.
- Fill placement and compaction should be carried out during dry weather conditions where possible. Provision should be made for the effective diversion and removal of all surface water from prepared surfaces.

The LSG requires a permeability of less than 1×10^{-9} m/s for the clay seal layer and that other impermeable material (eg Bentonite) may be used as a substitute. If sufficient volume of an economic (close) clay source of this standard is difficult to find, a geo-synthetic clay liner (Bentofix X1000 or similar) can be substituted.

Emissions management

Water emissions from within the filling area will continue to be treated as leachate in the years following closure of the filling area. Over time, the leachate will become more and more dilute, and at some stage the City will liaise with the EPA to discuss scaling down the leachate treatment and monitoring program.

The bulk of stormwater will be diverted around the site, and rain water falling on the rehabilitated areas will be diverted to stormwater drains, subject to gross pollutant removal and discharged as stormwater.

It is planned that landfill gas will continue to be extracted and converted to energy under the contract with AGL. The City will continue to liaise with AGL regarding the ongoing viability of their operation after closure of the filling area.

6.10 AFTER-CARE

Maintenance and monitoring

In the months leading up to cessation of landfilling activities, a post-closure maintenance program should be compiled and submitted for approval by the EPA. Once the site is closed for filling, the maintenance program should be implemented in conjunction with rehabilitation activities. The focus of the maintenance program should be:-

- Maintain the rehabilitated areas and conduct repairs where required eg. cracks, depressions caused by differential settling, inspection of drainage system.
- Continuation of the surface water, leachate and groundwater monitoring program. The program will remain unchanged initially and will be reviewed as needed in conjunction with the EPA.
- Continuation of the LFG extraction and conversion to energy contract with AGL. AGL will be responsible for maintaining the infrastructure. Effectiveness of the gas layer in the cap will be monitored via site walkover gas measurements periodically. Walk overs will also check for horizontal migration of LFG.



This document is one of the documents relevant to the application for a planning permit No. ENR-00885-01 and was received on the 24/07/2015.

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- Continued operation and monitoring of the leachate management infrastructure.

Site closure

*Acceptable
Standard*

LSG

The landfill operator / owner must ensure that waste materials are not received for disposal by the facility after landfill operations cease. Any waste materials that are accepted for use in the rehabilitation must be strictly documented and reported in the same fashion as for an operating site.

*Future
Actions*

Upon closure of the site, and in accordance with the LSG, the City may:-

- Provide adequate public notification, including signage and media notices, of the closure of the landfill. Signage will include contact details for enquiries;
- Secure the site where appropriate to prevent unauthorised dumping.

Reporting

Acceptable Standard

LSG:

The following reporting requirements apply to all closed landfills.

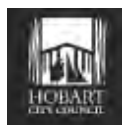
- demonstration that the landfill has been rehabilitated in accordance with the requirements of the landfill rehabilitation and after-care plan;
- regular monitoring information on rehabilitated landfill sites; and
- timely notification of any unusual monitoring results or maintenance required.

*Future
Actions*

A rehabilitation completion report will be submitted to the Regulatory Authority once rehabilitation works are complete. This report should contain all the relevant information to demonstrate that rehabilitation has been completed (e.g. 'as-constructed' drawings and relevant quality assurance documents).

As the continuing owner of the site, the City will provide after-care as described above and will continue to provide reports to the EPA as required by them. Details of what is included in the report will be based on the LSG and/or any specific EPA requirements at the time.

Site sign-off



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Acceptable Standard

LSG:

The landfill owner must clearly demonstrate that the landfill does not pose a threat to the environment before applying to the Regulatory Authority to cease after-care activities.

Future Actions

It is expected that monitoring of the site will be required for 20–30 years after closure. Once sufficient information is obtained over a number of years, to prove that the site is stable and the risk of pollution from the site is negligible, the City may apply to the EPA to cease after-care activities. Application to cease after-care will only be sought once conditions outlined in the LSG, or the relevant guideline at the time are complied with.

Current practice is to place the site on the EPA contaminated sites register to ensure that future purchasers of the site are aware of its history. Adequate financial and personnel resources should be provided for post-closure monitoring and maintenance.

This document is one of the documents relevant to the application for a planning permit No. PLN-11-11-11 and was received on the 24/07/2015.

7. SUMMARY

The following section provides a summary of all major initiatives referenced throughout this EMP.

7.1 MAJOR CONSIDERATIONS

1. The City plans to undertake capital works to reduce the number of leachate overflows. Works will be based on a design specification of handling a 1 in 20 year annual recurrence interval rainfall event (with duration critical for the McRobies Gully catchment at leachate pond) before overflow to storm water occurs.
2. A major priority initiative involves the construction of major surface water drains to capture clean water from the catchments upstream of the WMC, in the Western Gully (McRobies creek) and Pottery Gully areas. These drains will divert a significant portion of water to the site over the landfill and to the Hobart Rivulet without encountering any waste or leachate.
3. Early indications are that the completion of the Western diversion drain is resulting in over 60% less water entering the leachate pond, and ultimately the sewer system. This diversion rate should improve once the Pottery Creek Drain is completed and operational. Diversion of this level of clean water from upgradient of the landfill should directly translate into fewer leachate pond overflows.
4. The City will investigate stormwater harvesting for the site, particularly to replace the use of potable water at the site. The City will also aim to divert "clean" storm water from hard surface areas to the stormwater system, rather than the leachate system.
5. The development of a filling plan, and identification of appropriate rehabilitation to fulfill site closure requirements and in accordance with the fill plan contained within this EMP, including provision of adequate funding.

7.2 MINOR CONSIDERATIONS

1. Continue to monitor compaction by undertaking 6-monthly surveys for comparison with previous levels to identify areas which may require further compaction.
2. Continue to cover waste on a daily basis, and apply intermediate cover to completed areas prior to rehabilitating.
3. Continue to conduct filling operations in accordance with the current filling sequence.
4. Continue to work to extend the LFG extraction network as needed.
5. A particular benefit of the WTS is that the roads to the tipping face now receive minimal traffic on weekends thereby allowing increased opportunities for maintenance when required. The City will continue to monitor temporary roads and undertake maintenance as required.
6. Ensure that buffer distances to residences are maintained. No other future actions envisaged, as the site will comply with buffer distances until closure based on proposed filling sequence.
7. Investigate systems to improve gross litter collection at the entrances to the stormwater system. All future storm water diversion designs should incorporate best practice litter management measures.
8. Vehicles are required by law to cover loads. Members of the public arriving at the WMC with loose or poorly secured loads from which waste could be spilled should be reminded that littering is an offence and could result in infringement notices and significant fines.



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9. Continue to manage odour complaints and implement actions where required.
10. Any new systems on site should be designed so as not to significantly increase noise levels at the site boundaries. A log of complaints is to be kept and any complaints, which are justified, relating to noise shall be investigated and reported to the Director of Environmental Management with remedial action to be taken to prevent recurrence.
11. The regular surface and ground water monitoring programs be continued in its current form.
12. Continue to carry out monitoring in accordance with EPA requirements in the event of a leachate overflow.
13. Undertake future methane monitoring events periodically, utilising a similar procedure to the one trialled in March 2014. If readings above 500ppm for methane are encountered, further more robust investigations should be considered.
14. An on-site electronic weather station should be installed at the McRobies Gully WMC so site staff members are in a better position to more accurately gauge conditions on the site such as rainfall, wind speed and direction and temperature.

This document is one of the documents relevant to the application for a planning permit No. P111/2015 and was received on the 24/07/2015.

8. REFERENCES

Planning Authority: Hobart City Council

- 1982 Hobart Planning Scheme
- AS 1289.B3.1-1989 Methods of testing soil for engineering purposes
- AS 2868-1986 Classification Of Machinery For Earthmoving
- AS 3580.11.1-1993: Methods for sampling and analysis of ambient air – Determination of volatile organic compounds - Methane and non-methane volatile organic compounds - Direct-reading instrumental method
- AS 3798-2007 Guidelines on earthworks for commercial and residential developments
- Australian and New Zealand guidelines for fresh and marine water quality. Volume 1, The guidelines / Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand
- Derwent Estuary Program 2010-11 Stormwater and Rivulet Monitoring Report
- Environmental Management and Pollution Control Act 1994 (EMPCA)
- Hazard Analysis McRobies RDS Module 1 1992
- HCC Waste Management Strategy 2010 – 2015
- Hobart City Council Strategic Plan, Hobart 2025 A Strategic Framework, adopted by HCC in October 2007
- ISO 9001 (Quality), ISO 14001 (Environmental), AS/NZS 4801 (Safety) and ISO 31000 (Risk Management)
- Landfill Gas Partnership Agreement between Hobart City Council and the State Government, enacted in December 2001
- Landfill Sustainability Guide, DPIWE 2004
- McRobies Gully Refuse Disposal Site – Environmental Management Plan, August 2002
- McRobies Gully Tip: Results of August 2008 groundwater sampling, Dec 2008, W. Cromer
- National Greenhouse and Energy Reporting System (NGERS)
- NHMRC (1996) drinking water guidelines
- State Policy on Water Quality Management 1997
- Structural Change in the Tasmanian Economy – Department of Treasury and Finance, April 2013
- Tasmanian Waste and Resource Management Strategy, 2009
- Tasmanian Waste Classification Reporting Tool
- The effects of waste disposal on groundwater quality in Tasmania, Tasmanian Geological Survey Record 2002/16
- www.bom.gov.au



This document is one of the documents relevant to the application for a planning permit No. P15000001 and was received on the 24/07/2015.

9. APPENDICES

Planning Authority: Hobart City Council



This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 24/07/2015.

Planning Authority: Hobart City Council

Appendix A Fill Plan and Final Shape Profile – McRobies Gully Landfill.

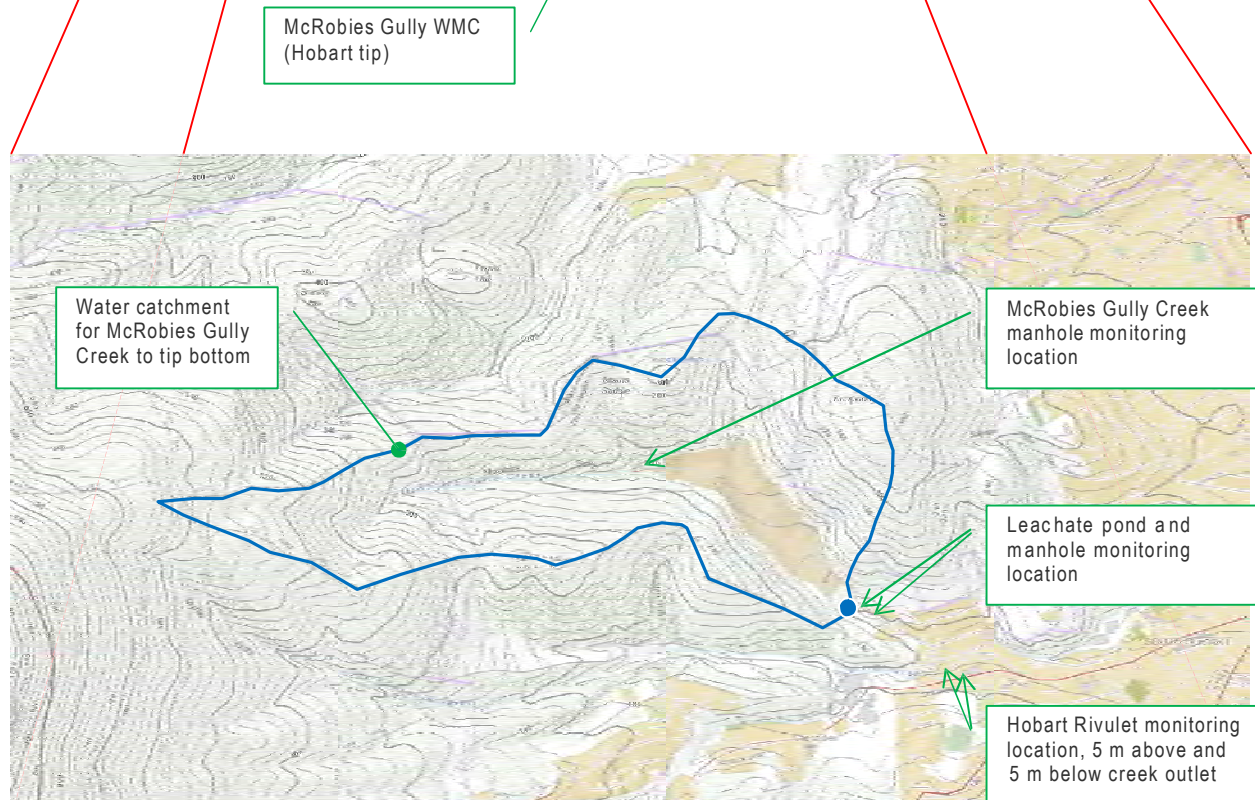
This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 24/07/2015.

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Appendix B Map of McRobies Gully water catchment and surrounds



Aerial photo of Hobart with water catchment for McRobies Gully Creek (detail below)



Detail - Topographic contour map with water catchment for McRobies Gully Creek to bottom of tip



This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 24/07/2015.

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Appendix C Extract of IMS – Risk Register, McRobies Gully WMC

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 24/07/2015.

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This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council



Development Proposal & Environmental Management Plan (DPEMP)

Extension of Landfill Area - McRobies Gully Landfill

November 2015

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council

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12. Appendices

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Appendix I – McRobies Gully Water Monitoring Results

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1. Introduction

This is the Development Proposal and Environmental Management Plan for the Extension of Landfill Area – McRobies Gully Landfill, prepared by;

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In 1967 the Hobart City Council purchased approximately 89 hectares of land at the current site in South Hobart for the purpose of developing a long term waste disposal area. Following the approval of a development proposal, including an environmental impact assessment, by the then Department of Environment the site commenced operations in 1975 and has operated continuously since that time.

Since commencing operations in 1975, McRobies Gully WMC has played a significant role as a receiver of wastes from all waste generating sectors. The site's location (less than 3 km from the Central Business District) means that McRobies Gully WMC is the best located site for small vehicle and commercial vehicular access in the Hobart City Council area and for some adjacent municipal areas, including Kingborough, Glenorchy, and the Eastern Shore.

The current operations are regulated by the EPA under Environmental Protection Notice (EPN) 715/1. The EPN details specific criteria the site must operate in accordance with to maintain operations, and the site has operated continually since 1975 without any infringement notices issued in relation to its operations of a landfill at McRobies Gully. The site is classified as a level 2 Activity under the Environmental Management and Pollution Control Act 1994 (EMPCA), and is currently permitted to accept 80,000 tonnes of general waste per year, and this proposal does not intend to alter that acceptance limit.

There are no Matters of National Environmental Significance under the Environmental Protection and Biodiversity Conservation Act 1999 associated with the proposal that require Commonwealth assessment and approval. There are areas listed under the Act in the Hobart region, with the nearest being the Cascades Female Factory (World Heritage Property), and Commonwealth Heritage Places such as the Commonwealth Law Courts, Anglesea Barracks, and the Hobart Post Office, and Wellington Park is a listed Protected Area to the west of the proposed site. Appendix B provides a map generated from the Australian Government Department of the Environment detailing the protected matters in the vicinity of the proposed site.

This DPEMP has been developed to support Planning Application PLN-15-00885-01 to the City of Hobart. It documents the City's intent to continue landfilling operations in excess of the current permitted final level (184m AHD) up to a maximum height of 200m AHD, and will be provided to the EPA and the Planning Authority to assist their assessment of the activities proposed.

The proposal conforms with the objectives of the Resource Management and Planning System (RMPS) of Tasmania, and the Environmental Management and Pollution Control System (EMPCS), as defined under Schedule 1 of the Act. Table 1 provides a brief summary of the proposal against each of the objectives.

TABLE 1 – Summary of RMPS & EMPCS Objectives

OBJECTIVES (RMPS)	RESPONSE
1(a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity	The proposal provides a secure facility for the disposal of the City & its community's waste until 2030. The timeframe provides time to implement waste reduction measures whilst maintaining a community asset.
1(b) to provide for the fair, orderly and sustainable use and development of air, land and water	The proposal is an approved land use for the defining zone of the property area under the Hobart Planning Scheme (Utilities).
1(c) to encourage public involvement in resource management and planning	The City has developed a Waste Management Strategy 2015-2030, which details community consultation and inclusion, and the City has committed to developing a Good Neighbour Agreement with the surrounding community.
1(d) to facilitate economic development in accordance with the objectives set out in <u>paragraphs (a), (b) and (c)</u>	The proposal has limited influence on economic development.
1(e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State	The City supports constructive relationships between government, community, and industry.
2. In <u>clause 1(a)</u> , sustainable development means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while – (a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations	The proposal will provide for the waste disposal needs of the community for the next 15 years. Upon completion as a landfill, areas of the site will be available as a community asset for passive recreation activities, whilst some areas of the site will remain open as recycling and transfer station facilities.
2(b) safeguarding the life-supporting capacity of air, water, soil and ecosystems	The proposal provides for effective treatment of solid waste, in a location where it can be recorded, managed and disposed appropriately and in accordance with Regulations and guidelines.
2(c) avoiding, remedying or mitigating any adverse effects of activities on the environment	The proposal will result in increased stormwater and reduced leachate generation. It will provide for increased landfill gas capture (methane) and conversion to electricity and carbon dioxide.
OBJECTIVES (RMPS)	RESPONSE
(a) to protect and enhance the quality of the Tasmanian environment	The proposal will allow for the closing out of a landfill site in accordance with best practice closure requirements as defined in the Landfill Sustainability Guidelines. Water Management works proposed will result in increased amounts of water being treated as stormwater, and delivered uncontaminated to the Hobart Rivulet
(b) to prevent environmental degradation and adverse risks to human and ecosystem health by promoting pollution prevention, clean production technology, reuse and recycling of materials and waste minimization programmes	The proposal provides a secure facility for the treatment and disposal of waste, reducing risks to human & ecosystem health. The greater landfill site includes a range of reuse and recycling facilities in including a Tip Shop, landfill gas extraction, and recycling of a range of materials.
(c) to regulate, reduce or eliminate the discharge of pollutants and hazardous substances to air, land or water	The proposal will result in reduced water flows to the leachate system (instead directed through stormwater

consistent with maintaining environmental quality	network), thereby reducing the possibility of inundation of the leachate system and release of pollutants to the environment.
(d) to allocate the costs of environmental protection and restoration equitably and in a manner that encourages responsible use of, and reduces harm to, the environment, with polluters bearing the appropriate share of the costs that arise from their activities	The proposal will provide the City with adequate time to plan and identify all costs associated with landfilling, close out and post closure requirements, and enable fees and charges to be applied that ensure those disposing of waste bear the true cost of dealing with that waste.
(e) to require persons engaging in polluting activities to make progressive environmental improvements, including reductions of pollution at source, as such improvements become practicable through technological and economic development	Application of true cost accounting and recalibrating landfill fees and charges will increase source separation and increase viability of alternative options (to landfilling).
(f) to provide for the monitoring and reporting of environmental quality on a regular basis	The proposal will provide extensive monitoring and reporting in accordance with permit and other requirements.
(g) to control the generation, storage, collection, transportation, treatment and disposal of waste with a view to reducing, minimizing and, where practicable, eliminating harm to the environment	The proposal provides for a secure facility to dispose of waste, reducing transport requirements.
(h) to adopt a precautionary approach when assessing environmental risk to ensure that all aspects of environmental quality, including ecosystem sustainability and integrity and beneficial uses of the environment, are considered in assessing, and making decisions in relation to, the environment	The proposal is subject to a third party accredited Integrated Management System that addresses risk across environment, quality, and safety.
(i) to facilitate the adoption and implementation of standards agreed upon by the State under inter-governmental arrangements for greater uniformity in environmental regulation	The proposal will operate under a permit issued by the State (EPA), and any other standards or arrangement as defined by the State.
(j) to promote public education about the protection, restoration and enhancement of the environment	The City has developed a Waste Management Strategy 2015-2030, which details a range of actions in relation to promotion and education.
(k) to co-ordinate all activities as are necessary to protect, restore or improve the Tasmanian environment	The proposal includes a decommissioning and rehabilitation plan, that commits to appropriate close out and post closure processes.

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2. Proposal Description

2.1 General

This DPEMP has been prepared for the extension of the landfill area at the McRobies Gully landfill.

The City has an obligation to provide for the waste receipt and disposal needs of its community. It has in recent years invested heavily at the site with additions of best practice resource recovery centre, tip shop, and a transfer station, along with significant water management infrastructure. These investments have allowed for the site to provide a long term asset for the City's residents and community.

The extension of the landfill area does not require any additional infrastructure or off-site ancillary facilities, and will not require alternative operational and decommissioning phases. No additional plant or machinery is required for this proposal, nor will it require additional energy or water supply. The site currently receives between 25-35,000 tonnes of general waste per annum. Estimates are that this rate will decrease for the remaining life of the landfill.

Hours of operation will not be affected by the proposal. Hours of operation have been subject to change in the past for operational efficiency reasons, and any change to future operating hours would be within the bounds of the operating permit for the site. There are no seasonal fluctuations associated with the hours of operation, which at present are as follows;

- Monday – Friday – 7.30am to 4.15pm
- Saturday, Sunday & Public Holidays – 10am to 4pm
- Closed - Christmas Day, Good Friday, and New Years Day.

The proposal is to extend the final fill height of the landfill from the currently permitted (under EPN 715/1) level of 184m (height above sea level) to 200m. This height increase proposal does not extend to the entire site. Existing infrastructure such as the transfer station, resource recovery centre, power lines, and surface water drains provide limitations as to the scope of the proposed extension. The proposal applies only to parts of the Northern and Eastern boundaries, as detailed in Appendix A – Detailed site plan – McRobies Gully Landfill.

The proposal provides for an operating life of the landfill (based in current estimates) of approximately 15 years. It is the City's intention that it ceases to operate a category 2 landfill in 2030. This proposal will provide the City with sufficient time to plan for life without a category 2 landfill, and ensure adequate planning for waste reduction, funding of closure and post closure costs and identification of transport and disposal arrangements for residual waste to alternative facilities after 2030.

The proposal will not result in any changes to on site operational practices. Changes may be implemented as a result of increasing efficiencies in operations and to continue to recover more components of the waste stream, however any such changes would be implemented at the landfill regardless of the proposal. The current filling sequence involves moving filling operations around the site to cater for seasonal influences such as rain and moisture levels, and this process will be maintained under the proposal. The western gully (section A) is significantly more susceptible to increased moisture and as such will be filled as a priority particularly during the dryer, warmer months. The filling sequence will result in the western gully being completed and capped prior to the completion of North east section. Table 2 provides estimates of the filling sequence including fill volumes and landfill heights reached in each section per year for the remainder of the landfill life.

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Table 2 – Annual volumes, capping requirements and landfill levels.

Operating Year	Fill volume (m3)	Capping Area (m3)	West (AHD) (Section A)	North-east section (AHD) (Section B)
2015/16	76,208	6,520	180	165
2016/17	76,000	5,394		168
2017/18	76,000	4,890	182	170
2018/19	76,000	4,730		172
2019/20	76,208	4,743	184	174
2020/21	76,000	4,749	186	176
2021/22	76,000	4,772		178
2022/23	76,000	4,772	188	
2023/24	76,385	4,795		180
2024/25	76,814	12,012	190	182
2025/26	76,814	14,000	194	184
2026/27	71,723	12,112	200	
2027/28	76,208	14,462		186
2028/29	76,000	14,423		188
2029/30	50,713	9,624		200
TOTALS	1,113,073	121,998		

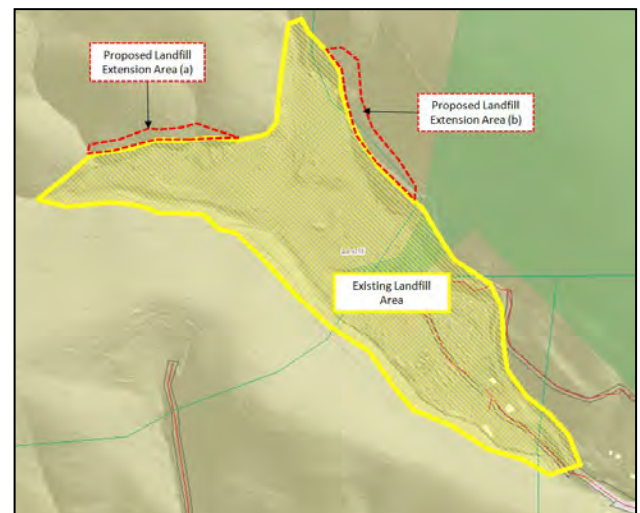
It should be noted that whilst every effort has been taken to calculate fill levels, there are limitations to the reliability of long term waste placement estimates, with factors such as increased waste reduction and recycling programs, increased or reduced commercial activity and construction in the area, and market share amongst regional waste disposal facilities all having the capacity to impact on landfill levels.

2.2 Construction

The proposal does not extend to the entirety of the landfill footprint. Extensions are limited to sections of the west and north-eastern boundaries of the site, as shown in Figure 1. There will be minor works associated with the removal of vegetation from slopes in the area from the current 184m height up to the 200m height.

Erosion control measures will be implemented where required including in the construction of the diversion creeks. Measures include forming section of drain centres with concrete, installation of low flow pipes, and installing appropriate matting to bind soils and plants in the creek lines and surrounding areas, and promote growth to reduce sediment loss. The Western Diversion drain that has realigned McRobies Creek was completed in 2014/15, and has achieved significant growth and has not resulted in any issues in regard to erosion or sediment loss. In areas of the McRobies Creek realignment concrete and gabion steps were installed to prevent erosion of steeper sections and a baffle and water diffusion and litter collection system has been installed at the toe of the drain to slow water flows before delivery to the Hobart Rivulet.

Figure 1 – Existing landfill area & proposed extension footprint



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2.3 Commissioning

There are no major commissioning activities or installation of equipment associated with the proposal.

2.4 General Location Map

The landfill is situated in South Hobart, and Figure 2 details the general location of the landfill site. Figure 3 details the extent of the property boundary surrounding the current & proposed landfill area. A detailed site map is provided as Appendix A, which includes details such as road access and power lines.

Figure 2 – Location map

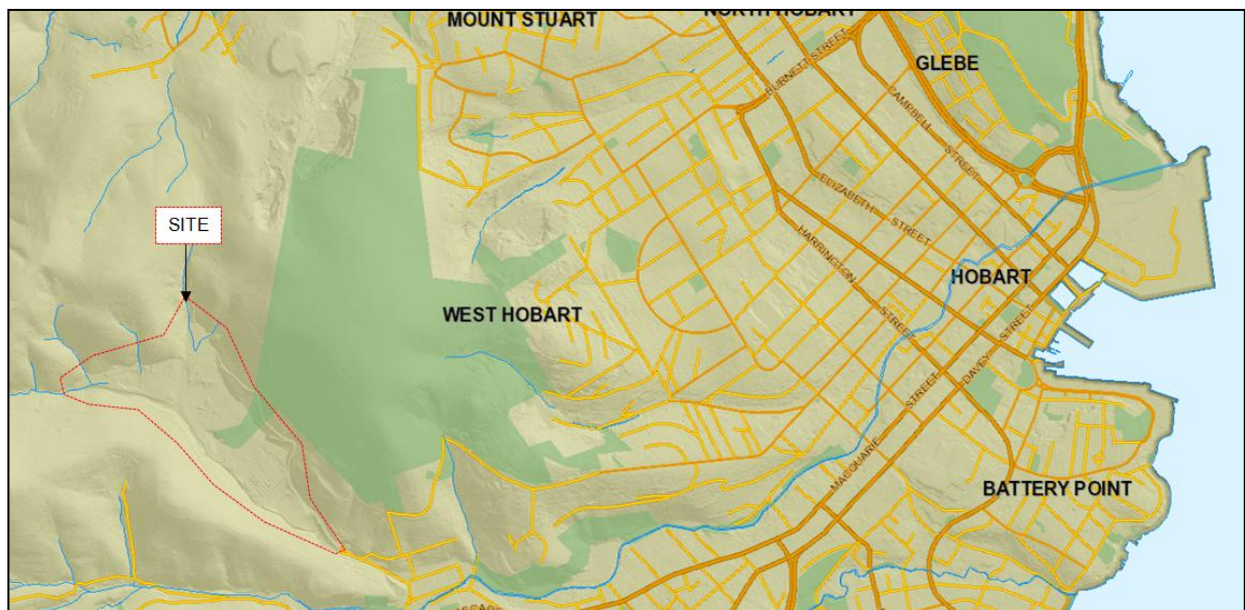
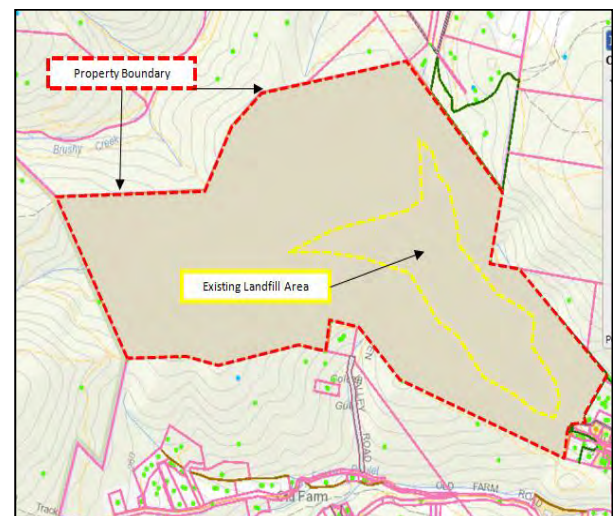


Figure 3 – Property boundary



To the east of the landfill is Knocklofty Reserve. To the north and northwest of the site, including the area around Noahs Saddle has been listed as part of the National Estate down to the 200m AHD contour. Mountain Park extends down from Mt Wellington and adjoins the north-western boundary of the land allocated to the McRobies Gully WMC, about 1.5 km from the area being filled.

Cascade Gardens, which is a reserve, includes the park immediately below the Cascade Brewery and also some land on the spur between McRobies Road and the Hobart Rivulet. There is a small amount of overlap between the filling area and Knocklofty Reserve, due to historical operations. This DPEMP outlines a future filling plan that will not increase that overlap and will in fact rehabilitate the overlap area.

Appendix C provides details on the surrounding land use as defined under the Hobart Interim Planning Scheme 2015.

2.5 Site Plan

A detailed site plan is provided as Appendix A. The plan includes site buildings, infrastructure such as gas lines and underground drainage, the current landfill area and the proposed landfill extension area.

The surface water management network has been planned and implemented over a number of years, with the intent to divert clean water around the landfill rather than under it. Historically water flows to the site from surrounding catchment areas would be directed into the pipe network under the landfill and directed to the leachate pond before release to sewer. Installation of surface water diversion drains around and over the landfill ensures water arriving at the site can be carried to the Hobart Rivulet uncontaminated.

There are two main catchments delivering water to the site, entering via McRobies Creek and Pottery Creek. Figure 4 details the catchment areas surrounding the site. The McRobies Creek diversion drain was built as a priority, as that is by far the largest catchment entering the site.

Figure 4 – Catchment Plan



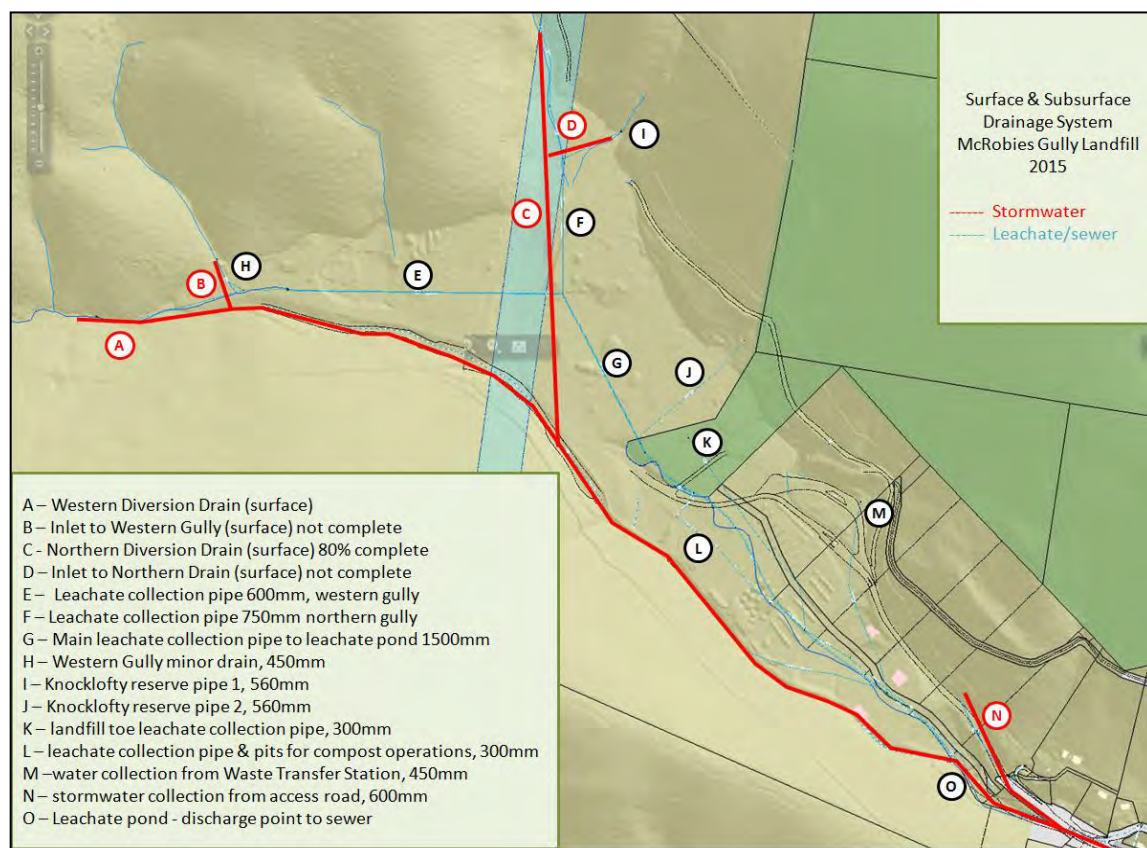
The volume of water that the drain network can divert around or over the landfill is significant and has justified the City's capital investment from both environmental and economic perspectives. Preliminary analysis of water flows has indicated that since the completion of the McRobies Creek realignment, a reduction of 60% of water is arriving at the leachate pond (and being sent to sewer). It is estimated that completion of the Pottery Creek diversion drain in early 2016 will further increase the diversion rate to around 80% of historic rates prior to the installation of the drain network. Water from the catchment to the south east of the Pottery Creek catchment is currently captured by diversion drains above the landfill and delivered to the standard road stormwater network.

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Figure 5 details the stormwater and leachate collection network at the site. The primary avenue for collection and transport of leachate from the landfill to the leachate pond and ultimately sewer, is the main 1500mm pipe that runs the length of the landfill and forks up into the former McRobies Creek and Pottery creeks. There are a series of other smaller pipes located throughout the site that feed into the main pipe from other locations such as the composting area and waste transfer station.

Leachate management at the site is aimed at reducing the rate of leachate generation, improving diversion of uncontaminated stormwater runoff away from the landfill footprint, and collection of leachate for further treatment. The low permeability underlying rock limits ingress of leachate into groundwater, as the fill has a much lower permeability leachate preferentially flows through the fill rather than into the groundwater aquifer in the underlying rock. From the results of research and testing undertaken previously by MRT investigations it appears that virtually all of the leachate generated enters the leachate pond. The leachate pond has open crib block walls on the up valley side allowing free flow of leachate into the pond.

Figure 5 – Leachate and surface water network



Previously there was a network of up to 9 bores in the fill from which leachate samples were extracted and used to reduce leachate standing water levels in the fill. Leachate extraction was undertaken from extraction bores from March 2004 through to May 2006. Diversion of clean stormwater around the fill and progressive rehabilitation of completed fill areas are considered to be better measures for management of leachate levels within the fill, and will be the priorities going forward.

Detailed drawings of the surface water drains (creek realignments) are included as Appendix D, and subsurface drains are shown in more detailed on the Site Plan (Appendix A).

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2.6 Off-site Infrastructure

There is no new infrastructure or off-site ancillary facilities required for this proposal.

3. Project Alternatives

The City has undertaken works to identify possible alternative facilities for waste disposal, in particular when planning for the construction of the Waste Transfer Station and Resource Recovery Centre substantial investigations in to alternative facilities was undertaken by consultants and City Officers.

The selection of McRobies Gully to be extended as a landfill has resulted due to issues such as the identification of a suitable alternative site, and the processes involved in commissioning a new landfill, compared to extending the footprint of a current facility (McRobies Gully).

If the City were to construct a new landfill, it would duplicate the amount of long term management of landfill sites well into the future, such as water and gas management. Construction of a new facility at an alternative location may also be considered by the community to be transferring the impacts associated with an operating landfill from one part of the community to another.

Another alternative would be to cease landfilling operations altogether once the landfill reaches its current permitted fill height. This alternative has been considered however at present it is considered that the economic impact upon the community would be detrimental, with significant costs associated with the transport and disposal of waste to an alternative facility outside of the City of Hobart.

By increasing the current footprint, a further 10-15 years filling is estimated to be able to occur, which will defer costs associated with transport and disposal. Another factor is that the City is hopeful that it will achieve significant waste reduction to landfill progress over the coming years, so that when the landfill is complete, there will be a significantly reduced amount of waste required to be transported and disposed. The proposal to extend the landfill life will also provide more time for alternative treatment methods to be developed, trialled, and tested, and it is hoped that during the proposed life of the landfill that systems that generate energy from waste will become available and reliable within the Tasmanian landscape.

Whilst advanced waste treatment facilities are being implemented around the world, the capital cost to implement, the gate fees required to be charged, the absence of a substantial waste levy to discourage landfilling, the specific waste inputs required and the availability of relatively cheap landfill space within Tasmania result in any advanced waste treatment facility being unviable at present

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4. Public Consultation

Consultation has been undertaken with specific sectors of the community and industry, including the South Hobart Progress Association. The City has committed to developing a **Good Neighbour Agreement** with the South Hobart Community in 2016. The good neighbour agreement will identify a range of considerations and open up an ongoing dialogue between the community and the City.

During the preparation of the City's new Zero Waste Strategy it conducted significant stakeholder consultation in August 2015, and met with a range of industry and government organisations and bodies, in addition to holding 2 public forums for the community to provide input into the City's plans for waste management into the future, including landfilling operations and the proposed extension.

The City also attended a public forum for the South Hobart Community (convened by the South Hobart Sustainable Community Association) in August 2015. The attendance extended to providing a presentation and fielding various questions from the community.

City officers also held face to face meetings with representatives of the South Hobart Progress Association to discuss the proposed landfill extension in 2015. As a component of the community consultation program, a facebook page was set up, together with an on-line survey to gather information from the community.

Through the community consultation process, a vast amount of information has been obtained from individuals, community groups, private industry, various tiers of government and peak bodies, and this information will be critically reviewed for inclusion into the City's new Waste Strategy. The Waste Strategy has immediate linkages with this DPEMP, as it has been scoped to coincide with the closure of landfill as defined within this DPEMP. It is intended that the Waste Strategy will be released for public comment in early 2016.

5. The Existing Environment

5.1 Planning Aspects

The location of the site is detailed in Figure 2 Location Map, and Figure 3 details the property boundaries of the site. Appendix C provides the land zones applicable to the site and its surrounds, as defined under the Hobart Interim Planning Scheme.

The current site (and site for this proposal) is zoned a 'Utilities'. The Use Table prescribes recycling and waste disposal as a permitted use class under the land zone Utilities, with the qualification that sites must be an existing facility, which applies to this proposal. The site is surrounded predominately by land zones of Environmental Living, and Environmental Management, with a small portion of General Residential to the south near the entry to the site.

As the area is predominately bordered by Environmental Living and Management land uses there are no industry, residents, schools, tourist or recreation facilities such as camp grounds within 500m of the proposal. There are some walking tracks and fire trails throughout the reserves that border the site utilised by bushwalkers and cyclists.

5.2 Environmental Aspects

The undisturbed vegetation in the vicinity of the site is a typical wet sclerophyll eucalypt forest, also containing dogwood, musk, tea-tree and associated ground cover growth on primarily mudstone, siltstone and doleritic soils. The ground cover and understorey have to a large extent been removed in areas of hillside adjacent to current operations, as a result of repeated burn offs prior to 1990.

The reduced ground cover results in high surface run off coefficients (i.e. greater overland flow) and more turbid surface water in wet weather. This issue is present in a significant area of bush land in South Hobart and is not exclusive to the McRobies Gully WMC.

The site is bordered to the east of by Knocklofty Reserve. The area to the north and northwest of the site has been listed as part of the National Estate, and Mountain Park extends down from Mt Wellington and adjoins the north-western boundary of the land allocated to the McRobies Gully Site, about 1.5 km from the area being filled. There are no species or sites or areas of landscape that may be affected as defined under the Natural Values Atlas.

There are no high quality wilderness areas defined within the Tasmanian Regional Forest Agreement. The majority of the land tenure in the area is classed as private property, with a formal reserve to the west of the site (the Wellington Park Reserve). Figure 6 details the land tenure as identified under the Regional Forest Agreement.

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5.3 *Socio-economic Aspects*

As reported in the document Structural Change in the Tasmanian Economy – Department of Treasury and Finance, April 2013:-

“The Tasmanian economy is currently facing some major challenges due to a range of adverse external factors and relatively weak local demand for goods and services. As a result, Tasmania’s performance, according to most economic indicators such as employment, investment and economic growth, has been rather weaker than the national economy. Some of these forces are cyclical in nature, while others are the result of structural changes that will have much longer term economic impacts.”

The closure of the McRobies Gully WMC will have cost implications and will introduce further uncertainty for the current residential and business customers. This uncertainty must be carefully managed to ensure that any cost changes are understood and can be planned for by stakeholders. This is particularly important in the context of a struggling local economy, where the capacity to absorb extra costs is decreased. If closure of the landfill in the short term can be avoided, whilst improving the environmental performance of the site, this will be a good outcome for the ratepayers of Hobart. It is clear that there is a need to plan for alternative disposal options in the Hobart area in preparation for the eventual cessation of landfilling activities at the McRobies Gully WMC, with continuation of other waste management activities at the site (waste transfer station, composting, recycling and resale).

The longevity of this asset until 2030 has major significance in terms of future waste management activities and costs for the citizens and businesses of Hobart. Following the closure of the McRobies Gully landfill, the transport of waste to a more distant site will mean increased cost of waste disposal in the city. Therefore the site can be considered a valuable asset to community, as it is keeping the operating costs lower than they would be if the site was closed.

This proposal does not involve amending current practices that would generate additional impacts to the population living in the vicinity of the site.

6. Potential Impacts & their Management

The City has developed an Environmental Management Plan for the McRobies Gully landfill, and combined with the Integrated Management System (third party accredited under Environment, Quality and Safety) these operating documents detail all known potential impacts and outline their management to mitigate or control risks where required. A copy of the Risk Register for the site is included as Appendix E.

Whilst the EMP has been submitted to the EPA and provides substantial information, objectives, actions, and legislative considerations, information has been summarised and provided below for the items detailed within the General Guidelines for Preparing a DPEMP, through sections 6.1 to 6.20.

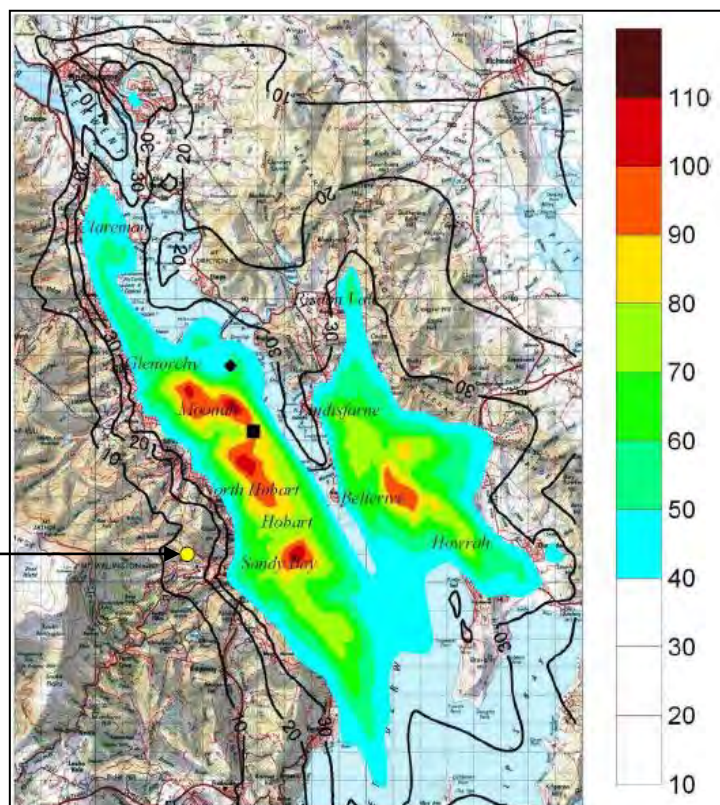
6.1 Air Quality

The proposal will not result in any new point source atmospheric discharge points. The proposal provides long term planning for the rehabilitation and capping of the site to minimise greenhouse gas emissions, and increase gas extraction and conversion to electricity. The landfill gas extraction facility currently in operation at the site extracts methane and converts it to electricity and carbon dioxide. Methane has a global warming potential of over 21 times that of carbon dioxide.

The progressive rehabilitation and close out plan associate with this proposal provides for a fully enclosed landfill when final fill levels are reached, enabling significant amounts of methane to be trapped within the landfill, collected and converted into electricity whilst reducing the greenhouse gas impacts associated with the landfill emissions. The process effectively extracts landfill gas and after undergoing energy conversion process, results in one point source for emissions to air, being the landfill gas plant exhaust. The landfill gas well network is detailed on Appendix A. The City has for a number of years reported under the National Pollutant Inventory, and will continue to do so for the life of this proposal.

Monitoring of Particulate Matter in the Greater Hobart region has been conducted by the Department of Primary Industries Parks Water & Environment to measure against the NEPM for Ambient Air Quality for 2007. The results of that monitoring and report indicate that the air quality in the vicinity of McRobies Gully is better than in built up areas of the City. This indicates that the landfill is not having an adverse impact on air quality in Hobart (figure X).

Landfill location



The nature of the facility (a landfill) is such that it receives products that are at times odorous in nature. It is not feasible to prevent all odour at the site, however it is reasonable to expect any landfill operator to prevent such odours becoming a nuisance and impact on residents beyond the landfill boundary.

The McRobies Gully landfill is managed to reduce the risk of offensive odours, and for the remaining life of the landfill the general waste tipping face will be at least 500 metres from the nearest residence at all times. The controlled waste disposal area (about 900 metres from the nearest residence) no longer accepts commercial quantities of controlled waste, as such there is little to no odorous controlled waste received to the site.

The main odorous wastes received to the site are organic (food industry waste), and received at the composting facility which has its own procedures for avoiding any associated odour risks. These procedures include immediate treatment of materials likely to create odours, not turning piles during certain weather events such as strong winds, and non-acceptance of particularly odorous wastes.

The practice of disposal of potentially odorous commercial wastes to the controlled waste area has been discontinued. The extraction and combustion of Landfill Gas via the energy generation plant operated by AGL is a further risk mitigation measure with respect to odour. Use of the wheel washing facility by all commercial vehicles leaving the site minimises the transport of potentially odorous material to residential properties adjacent to the site. In addition the site no longer accepts sewage sludge (biosolids) from Wastewater Treatment Plants. All waste delivered to the landfill is covered on a daily basis, further reducing the risk of odour nuisance.

Any odour complaint is investigated and a report prepared on the probable source and what measures should be implemented to reduce the odour or prevent recurrence. Records of complaints and actions taken are kept in the City's centralised system. It should be noted that it has been several years since an odour complaint was received in relation to the landfilling operations. Odour complaints are at times received in relation to the composting operation undertaken at the site, with the usual cause being a combination of the acceptance of odorous waste and prevailing wind conditions disseminating the odour (south of the facility). As previously detailed measures at the compost facility have been implemented to reduce these occurrences, in particular the refusal to accept certain materials for treatment owing to their odour, and the modification to operating times to avoid windy periods.

The environmental objective is to ensure that there are no adverse impacts on the local community including loss of amenity by atmospheric emissions, and the current odour management processes will continue to be applied under this proposal.

DEVELOPMENT APPLICATION
DOCUMENT

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council

6.2 Surface Water Quality

The proposal will provide for continued improved surface water quality at the landfill site. The proposed fill plan and final levels include a network of surface water drains to carry clean water around or over the landfill and into the Hobart Rivulet. Final design grades have been designed to manage the surface water catchment following closure of the landfill, as well as effective management during the landfill's operational life. The filling sequence developed under this proposal also aims to maximise surface water control, by completing areas important to the surface drainage network as a priority to allow drains to be installed as soon as practicable.

The City currently undertakes a regular surface water monitoring program, consisting of quarterly collection and analysis of a range of parameters. Monitoring is undertaken in accordance with the Landfill sustainability Guidelines and the EN issued on the site. Results of all monitoring undertaken are provided to the EPA, and further details on the monitoring undertaken, including locations and frequencies is provided in Section 7.

A summary of the results of the McRobies Gully sampling program was included in the document Derwent Estuary Program 2010-11 Stormwater and Rivulet Monitoring Report. The summary follows:

"Overall water quality showed similar trends to other sites with a slight decrease in water quality since the 2002-05 monitoring program. Water quality results were very similar for all three Rivulets, with good TSS results but elevated Enterococci levels and nutrients.

Hobart City Council also monitored Enterococci levels at three additional Hobart Rivulet sites – directly upstream of the McRobies Gully outfall, directly downstream of the McRobies Gully outfall and at Macquarie Point, in the mouth of the Rivulet. Enterococci results were low on both sides of the McRobies Gully outfall, suggesting that Enterococci loads from McRobies Gully Rivulet are not high. Enterococci levels at Macquarie Point were higher than those observed at the Hobart Rivulet lower site."



The regular surface water monitoring program will be continued in its current form under this proposal, and is further outlined in **Section 7 Monitoring & Review**.

6.3 Groundwater

The City currently undertakes regular collection and sampling of groundwater, for a range of parameters. The monitoring program is conducted in accordance with the requirements and frequencies of the Landfill Sustainability Guidelines, and results of monitoring routinely provided to the EPA. Groundwater is monitored from a series of bores located at the site, detailed in Figure 8

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Planning Authority: Hobart City Council

Figure 8 – groundwater bore locations for monitoring



Groundwater sampling is currently undertaken on a six-monthly basis from two up-gradient bores 2007/1 located in the McRobies Gully up valley from the landfill and 2007/2 located in the northern gully upstream of the landfill, and from one down-gradient bore 1996/3, which is down valley from the leachate pond. Bores 2007/01 and 2007/02 replaced previous monitoring locations 1996/1 and 1996/2 respectively, as the filling activities encroached on these bores. The hydraulic gradient is approximately aligned with the valley, as evident by comparing the approximate standing water level (SWL) in the three current monitoring locations, with 1996/3 SWL being at an RL roughly 100m lower than the SWL measured in 2007/1 and 2007/2. The samples are collected in accordance with Australian Standards and are tested for:-

- pH, conductivity, turbidity, total alkalinity, sulphate, chloride,
- total suspended solids, total dissolved solids,
- conductivity, redox potential
- chemical oxygen demand,
- ammonia as nitrogen, total nitrogen, combined nitrite and nitrate as nitrogen,
- total phosphorus, ortho phosphorus as phosphorus,
- total cyanide, dissolved organic carbon (DOC),
- E. coli (DST)

The suite of testing is undertaken to conform with the permit issued by the EPA for operation of the site, and in accordance with the Landfill Sustainability Guidelines.

Once a year, samples are analysed for concentrations of a range of heavy metals (Al, Cd, Cr, Cu, Fe, Mn, Ni, Pb, and Zn). All samples are tested at NATA certified laboratories.

Previous groundwater investigations at the site have included the collection of leachate samples from within the fill. Concentrations of some leachate indicators such as ammonia and chemical oxygen demand were at

the low end of the range normally expected for landfills, while more mobile indicators like chloride were closer to middle of the typical range. This appears to indicate that there is a significant degree of biodegradation occurring as leachate travels down valley through the fill, with those indicators amenable to biological treatment decreasing, while the chloride concentration is unaffected. It also tends to indicate that there has historically been probable excessive water entering the fill and thus generally diluting concentrations of all contaminants.

The regular ground water monitoring program will be continued in its current form under this proposal, and is further outlined in **Section 7 Monitoring & Review**.

6.4 Noise Emissions

Landfill operations generally involve heavy plant and have the potential to cause nuisance to the users of surrounding areas. Sources of noise at a landfill include truck noise (body, engine and exhaust), reversing sirens, external telephone bells and alarms, and mobile machinery and equipment used for landfilling and resource recovery operations.

The City has previously undertaken noise monitoring in relation to the landfilling operations, engaging a consultant to undertake background readings of noise levels at the site during. Findings of the noise survey indicated a background noise level at locations indicative of the site boundaries of about 33–35 dB(A) in the period 10pm to 2am on still nights. The City will conduct noise monitoring of landfill operations after any changes to operation which could have significant impacts of noise levels. This noise monitoring will occur at sensitive times and in still weather conditions. The results from any testing will be included in future annual reports.

There have been no complaints received by the City in regard to noise in recent years. Any noise complaints will be investigated and reported to the Director of Environmental Management (EPA) with remedial action to taken to prevent recurrence if required.

6.5 Waste Management

The proposal is for an extension to a facility that receives waste, rather than generating significant amounts of waste from its operations. There will be minor waste from staff facilities (lunchroom, sewer etc) and emissions to the atmosphere from plant and machinery utilised to perform landfill operations. These wastes & emissions will not change from the current operations under this proposal.

There are two main areas for receiving waste delivered to the site, being the Transfer Station, predominately for light vehicles, and the landfill for commercial operators, including the City. All wastes received at the site are classified into waste types in accordance with the Tasmanian Waste Classification Reporting Tool. The major categories are municipal, commercial industrial, and construction and demolition waste

Commercial quantities of controlled waste are no longer accepted at the site. The secure area previously utilised for controlled waste is reaching capacity, so the remainder of the airspace has now been reserved for small residential quantities of asbestos. Areas where controlled waste has historically been placed at the landfill are documented on detailed site surveys (detailed on Appendix A). The proposed landfill extension will not involve the placement of any commercial controlled waste. Liquid waste is not accepted at the McRobies Gully landfill under any circumstances, and there is no intention under this proposal to include the acceptance of liquid waste.

DEVELOPMENT APPLICATION DOCUMENT

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6.6 *Dangerous goods & environmentally hazardous materials*

There will be no change to current practices associated with this proposal, in relation to the storage and use of dangerous goods and environmentally hazardous materials. The facility currently receives small amounts of materials such as waste engine oil, and domestic asbestos.

Waste engine oil is collected in a secure tank surrounded by a bund, and stored until quantities warrant collection for recycling. Domestic amounts of asbestos are accepted at the site, to encourage appropriate disposal and discourage illegal dumping of asbestos to bushland. Asbestos is only accepted when double wrapped and securely sealed in heavy duty plastic, and buried at the designated controlled waste area.

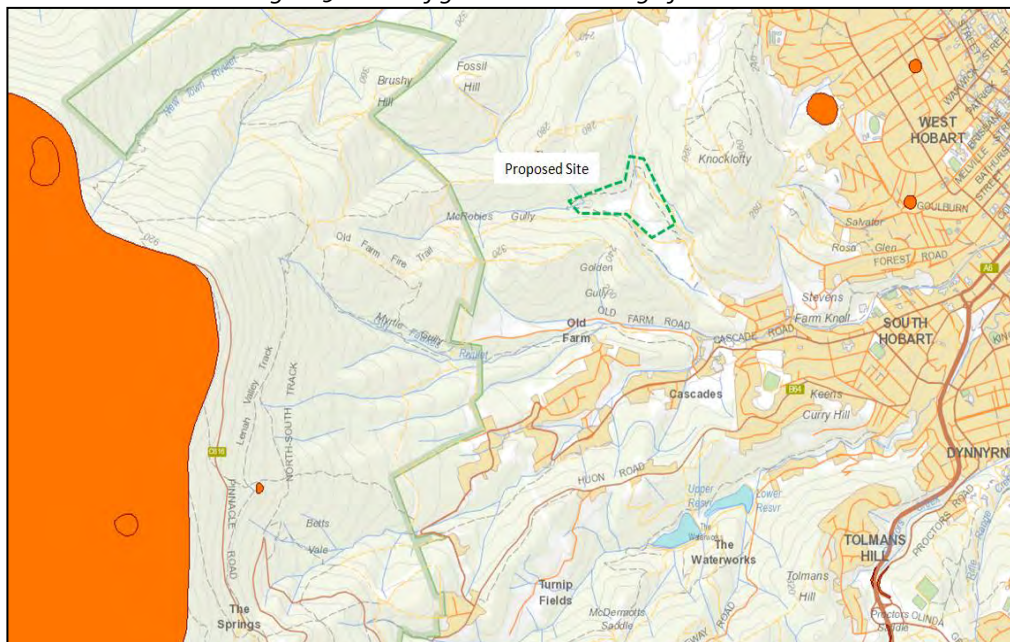
Locations of areas of the current landfill that have received controlled waste are defined in Appendix A - Site Plan.

6.7 *Biodiversity & natural values*

The proposed site sits at the foot of Mount Wellington, in a typical wet sclerophyll eucalypt forest on primarily mudstone, siltstone and doleritic soils. The proposal applies to extension of the current landfill boundary by up to 16m (AHD) to the north and East of the site only. There are no proposals to extend the current footprint to the east or south of the site, as defined in Figure 1.

As detailed in other sections of this DPEMP, there are no impacts on areas defined under the Tasmanian Regional Forest Agreement. There are no sites of geoconservation significance, the nearest sites are detailed in Figure 9, being to the west in the Wellington Range Periglacial Terrain (including the organ pipes, lost world boulder caves and the rocking stone) and the Knocklofty reptile fossil site to the east.

Figure 9 – sites of geoconservation significance



A review of the Natural Values Atlas has identified that there are no species of flora or fauna listed as a threatened species within the footprint of the proposal. When the range of the species search in the Natural Values Atlas is extended to the wider area adjoining the proposal, there are 6 species listed as threatened species under the Natural Values Atlas.

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- Grey Goshawk - endangered
- Knocklofty leek orchid - endangered
- Ammonite Snail - endangered
- Tall wallaby grass – rare
- *Asperula scoparia subsp. Scoparia*, commonly known as prickly woodruff -rare
- Epacris Vergata (Kettering) - vulnerable (unofficial)

Figure 10 – Threatened species under the National Values Atlas

New Species Name? ☒
 Old Species Name? ☒
 Census? ☐

GDA94 Zone 55 Easting/Northing: MULTIPOLYGON(((523431 5252069,523462 5252069,523462 5252069,523431 5252069,523431 5252069)))

Search Area: m

523556.74599, 5251327.41759
 Click on the map to open a large version

Area Search Based On:
☒ Actual Observations
☐ Range Boundary

Search Format:
☒ Simple
☐ Custom
☐ Report/Export

Results Per Page: 100

Species Search Results

View Observations

Page: 1 of 0 1-1 of 0

Species Code	Species Name	Current Species Name	Preferred Common Names	Notes
Page: 1 of 0 1-1 of 0				

There are no sites in proximity to the proposal within the Directory of Important Wetlands in Australia, (of the 10 listed Tasmanian sites).

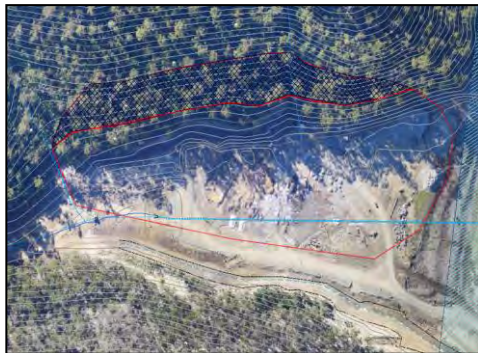
The proposed site is visited by bird life such as Silver Gulls and Pacific Gulls (protected species') and forest ravens. The site is also frequented by possums, wallabies, and feral cats. Biodiversity issues are addressed in the sites IMS Risk Register, and any potential impacts on flora and fauna are detailed and managed accordingly.

The site currently conducts regular weed inspection and removal programs, on a quarterly basis. Where noxious weeds become established at a landfill, these weeds create a risk of spreading through surrounding areas and impacting on natural ecosystems. Noxious weeds can become established through colonisation or through introduction by contaminated seed or weed into the composting operation undertaken at the site. Any noxious weeds onsite are managed by inspecting the site for noxious weeds and eradicating any weeds present through appropriate means. This involves weed spraying in selected areas, and regular brush cutting and maintenance works. The most common weeds treated at the site are Boneseed (*Chrysanthemoides monilifera*) and Gorse (*Ulex europaeus*).

In addition to weeding the site and access roads, green waste mulch is used to cover and suppress noxious weeds growing around the site. It is proposed to continue the current weed inspection and removal program.

There will be 3 hectares of vegetation clearance required under this proposal (30,000m²) over the remaining life of the landfill. The areas to be cleared adjoin the current landfill, and extend to just below the 200m level on the Western and North-East sides of the landfill. Figures 11 details the areas where vegetation clearance is required.

Figure 11 – Vegetation clearance required



The vegetation will not all be removed at the same time, with vegetation clearance to be undertaken as per a schedule to allow for the filling plan to be implemented, whilst avoiding the presence of cleared areas for extended periods of time where possible. Vegetation clearance will be undertaken in accordance with the schedule provided as Table 3.

TABLE 3 – Vegetation Clearance Schedule

Year	Vegetation Clearance Details	m ² to clear	West Section Est Height	North-east section Est Height
2015/16			180	165
2016/17			180	168
2017/18	Stage 1 Western Section (184-190m)	5,600m ²	182	170
2018/19			182	172
2019/20			184	174
2020/21	Stage 1 North-east Section (184-190m)	6,500m ²	186	176
2021/22			186	178
2022/23	Stage 2 Western Section (190-195m)	4,200m ²	188	178
2023/24			190	180
2024/25			190	182
2025/26	Stage 3 Western Section (195-200m)	4,200m ²	194	184
2026/27	Stage 2 North-east Section (190-196m)	5,500m ²	200	184
2027/28				186
2028/29	Stage 3 North-east Section (196-200m)	4,000m ²		188
2029/30				200
TOTAL		30,000m ²		

The Forest Practices Regulations 2007 (under the Forest Practices Act 1985) detail exemptions for the preparation of a Forest Practices Plan for activities associated with vegetation clearance. Section 4 of the regulations details;

4. Circumstances in which forest practices plan, &c., not required

For the purpose of section 17(6) of the Act, the following circumstances are prescribed:

(a) the harvesting of timber or the clearing of trees with the consent of the owner of the land, if the land is not vulnerable land and –

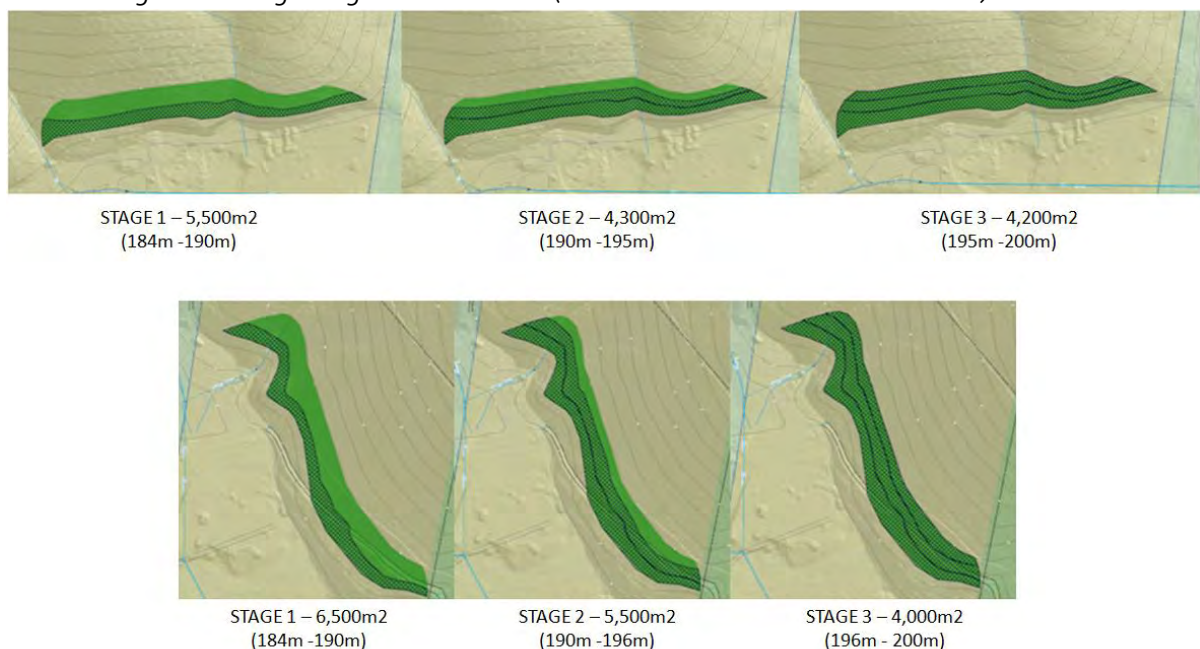
(i) the volume of timber harvested or trees cleared is less than 100 tonnes for each area of applicable land for each year; or

(ii) the total area of land on which the harvesting or clearing occurs is less than one hectare for each area of applicable land for each year –

whichever is the lesser;

As detailed in the vegetation clearance schedule provided in Table 2, in any one year there will not be in excess of 1 hectare of vegetation cleared under this proposal. This proposal does not require a Forest Practices Plan under the Forest Practices Regulations and Forest Practices Act.

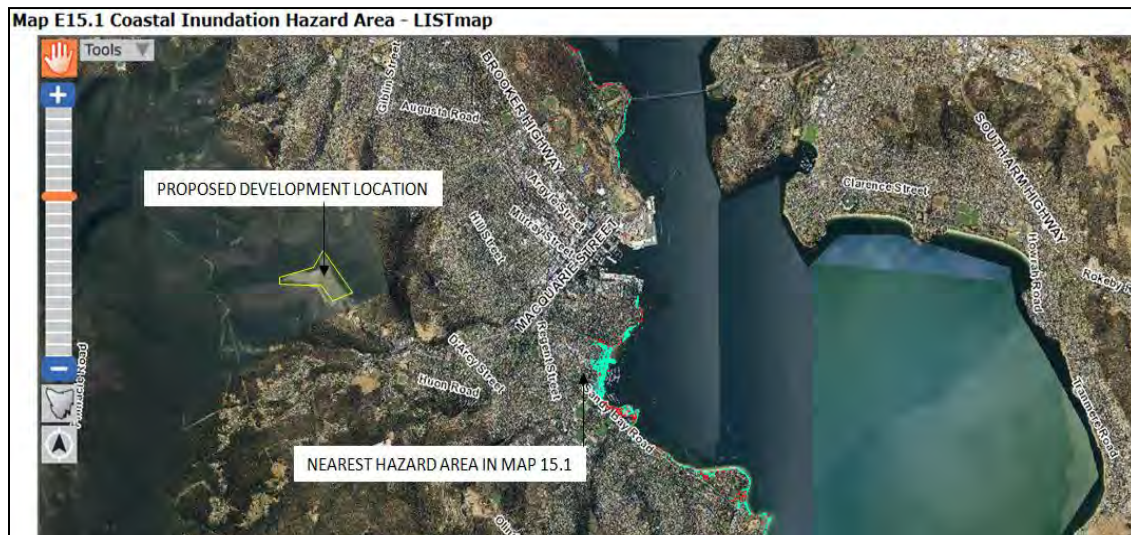
Figure 12 – Staged Vegetation Clearance (Western section and North-east section)



6.8 Marine & Coastal

The site is located a significant distance from the nearest coastal environment, therefore it is considered that the proposal will have no impact on coastal areas. Figure 13 details the areas of concern under the Marine & Coastal layer of the LIST, in relation to their proximity to the proposed site.

Figure 13 – Marine & Coastal Layer - LIST



The principals of the Tasmanian State Coastal Policy relate directly to coastal zones and given the distance of the proposal from the nearest coast line on the River Derwent, the Policy is not considered relevant to the proposal.

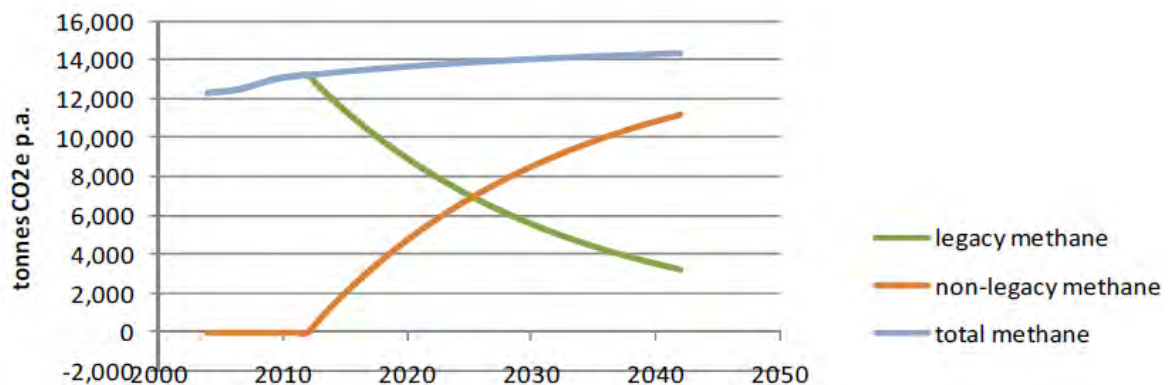
The State Policy on Water Quality Management 1997 seeks to achieve the sustainable management of Tasmania's surface water and groundwater resources by protecting and enhancing their qualities, while allowing for sustainable development. The objectives of the Policy to maintain and enhance water quality, to reduce discharge of pollutants to waterways by the use of best practice environmental management, and to ensure effective water quality monitoring programs are undertaken are all applicable to this proposal.

The proposal does not create any new point source discharges as defined under the Policy. The site currently performs water quality monitoring in excess of permit requirements, and the construction of diversion drains around and over the landfill site have ensured the delivery of significant amounts of clean water to the Hobart Rivulet, with that water previously entering the leachate system and being directed to sewer. The diversion drains have significantly improved the sites capacity to manage polluted water on site and has reduced the possibility of discharge of pollutants to waterways. The proposed rehabilitation plan and future diversion drains will add to the capacity and further reduce the possibility of overflow events.

6.9 Greenhouse gases & ozone depleting substances

In 2012 the City undertook an analysis of methane production rates, in particular to assess its impact under carbon price legislation and associated emissions trading schemes. The conclusion of the analysis was that the site was not, nor was it likely to in future trigger the NGERs reporting threshold (25,000 tpa) given current practices. Modelling was undertaken in accordance with NGERs methods and by using historic and projected waste to landfill data, Figure 14 details the estimated gas generation from legacy waste (1975 to 2012) and also from new waste being placed after 2012.

Figure 14 - Landfill gas generation modelling graph



There are no other additional industrial processes associated with this proposal that will generate significant greenhouse gas emissions. The current heavy plant used to perform landfilling operations will be continued to be used for the proposal, and include a landfill compactor and traxcavator.

6.10 Heritage

There are 2 well known landmarks in the vicinity of the proposed site, being the Cascade Brewery, and the Cascades Female Factory (former women's prison). The Australian Convict Sites was entered onto the World Heritage List in July 2010, and incorporates the Cascades Female Factory along with 4 other Tasmanian sites. The site was included on the National Heritage Register in August 2007, and another part of the site, Yard 4 north, was included on the National Heritage Register in August 2009.

The Tasmanian Wilderness and Macquarie Island are the only other Tasmanian sites on the World Heritage List, and both are a significant distance from the proposal. There are 13 sites listed Australia's National Heritage List, and only one facility (the Cascades Female Factory) is in the vicinity of the proposal.

The Commonwealth Heritage List details 14 sites in Tasmania, five being in the Greater Hobart region, being the Commonwealth Law Courts, Tasmanian Seamounts Area, Anglesea Barracks, and the North Hobart and Hobart Post Offices. The proposal is a significant distance from all listings under the Commonwealth Heritage List. There are 165 sites in South Hobart listed on the Tasmanian Heritage Register. 2 sites are listed in McRobies Road, being the Cascades Female Factory, and the Factory's Cemetery. Given that the site will operate in the same manner as the present landfill it is unlikely that there will be any negative impacts on the heritage listed site due to the activities of the proposal.

When the original landfill was commissioned there were no recorded instances of Aboriginal significance in the footprint of the site.

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6.11 Land use & development

The proposed development is situated on and immediately adjacent to a current landfill. There are no existing uses such as recreation activities or residential activities on the land. The proposal will not alter the land use and development during or after its life. Once complete, the landfill will be fully decommissioned and rehabilitated, and appropriate land uses identified. This process is discussed further in **Section 8** of this DPEMP.

6.12 Visual Impacts

The visual impact of the site is minimal, as the only vantage points are from residences to the south along the valley that are far enough away to not be adversely affected, from sections of Tollmans Hill, and from Mount Wellington, which similarly are quite a distance away. This EMP with its associated proposed filling sequence and other operational commitments will not increase the visual impact of the site. Lighting of the current and future buildings will take into account the potential for glare nuisance, and the final profile of the site will be designed to integrate with the surrounding landscape.

6.13 Socio-economic issues

Socio-economic issues are discussed under **Section 5.3** of this DPEMP.

6.14 Health & Safety Issues

The City has implemented an organisation wide health and safety awareness program, to which all staff have been exposed. The Safety Circle program involved significant contact with staff, and the development of improved health and safety identification and reporting systems, and allocation of responsibility for health and safety to all employees.

There are a wide range of Safe Work Method Statements, Job Safety Analysis' and policy and procedural documentation in operation at the site, to which all staff and contractors must abide. All contractors admitted to the site are formally inducted, and required to provide JSA's & SWMS' and other relevant documentation prior to any works being undertaken. There is no construction of built infrastructure associated with this proposal. The City operates under an accredited safety system, with the Risk Register applicable to the landfill operations included as Appendix E.

6.15 Hazard Analysis & risk Assessment

The City operates under a third-party certified Integrated Management System (IMS), which complies with AS/NZS 4801 (Safety) and ISO 31000 (Risk Management), and is regularly audited both internally and externally. Risks identified include fire, explosion, flood and other hazards. Each identified issue is assigned an inherent risk (i.e. the risk if no controls are in place) which is calculated using a risk matrix built on likelihood and consequence ratings. The existing controls are then listed and taken into account for the residual risk ranking. Risk treatment plans are developed for activities with a significant residual risk, and once completed, the controls for each line item on the risk register are updated and the residual risk is recalculated. Risk associated with the proposal will be considered as per the case for current risks.

6.16 Fire risk

All fires are totally banned at the WMC. Detailed procedures surrounding the fire incidents at the site are included in the City's Management System, and tip operators are trained in their application. A 100mm reticulated water supply is available adjacent to the Toll Booth at the weighbridge and the organic waste recycling area, and transfer station, and this supply extends beyond the gas flare to the site office and plant shed.

The objective of the site in relation to fire risk is to prevent landfill fires and efficiently extinguish any that occur to prevent harmful emissions and loss/degradation of surrounding bushland. Landfill operators must not allow fires to be lit on any part of the landfill or within the landfill boundary, and must extinguish any fires that do occur as quickly as possible.

Site personnel are required to ensure no materials that may cause a fire to ignite are placed on the tip face. Fire extinguishers are located at the Toll Booth, in the mobile plant as well as in the site shed adjacent to the tipping face. The City has a water tanker which can be used to assist in fire fighting operations. The site may be closed on high fire risk days, subject to an assessment of the specific conditions at the site.

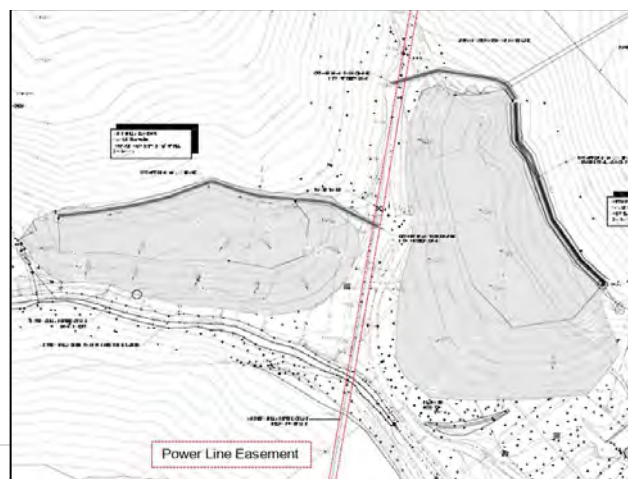
Risk management plans will be required for any works involving welding, gas cutting and other activities involving sources of ignition as well as high fire risk days. Hazard reduction (vegetation clearance) is undertaken periodically as part of the City's broader fire prevention strategies. The site has procedures in relation to emergencies including evacuation and site security requirements.

6.17 Infrastructure & off-site ancillary facilities

There is no construction of infrastructure associated with this proposal. There will be no significant impacts to off-site infrastructure and ancillary facilities. The current landfill has noticed a steady decline in visitation over the past 5-10 years, due to waste reduction practices and other neighbouring facilities being utilised in competition with McRobies Gully.

There are power lines that traverse the landfill area (Figure 15), travelling along the North-South aspect from Lenah Valley to South Hobart. The proposal takes into account the power lines and provides for sufficient clearances. Filling sequences and creek realignments have been designed to consider the power lines at all times and they create the buffer between the two filling areas. The power lines that cross the landfill site are shown in detail in Appendix A.

Figure 15 – Power line easement crossing the site



6.18 Environmental Management Systems

The City operates under a third-party certified Integrated Management System (IMS), which complies with ISO9001 (Quality), ISO14001 (Environmental), AS/NZS 4801 (Safety) and ISO31000 (Risk Management), as well as other standards and legislation which are applicable to The City's operations. At the core of the IMS is a risk register which lists all of the activities of the City which may carry risk, and details possible cause and effect scenarios for those activities.

Each scenario is assigned an inherent risk (i.e. the risk if no controls are in place) which is calculated using a risk matrix built on likelihood and consequence ratings. The existing controls are then listed and taken into account for the residual risk ranking, using the same risk matrix. Risk treatment plans are developed for activities with a significant residual risk, and once completed, the controls for each line item on the risk register are updated and the residual risk is recalculated.

6.19 Cumulative and interactive impacts

The City is aware of another landfill related proposal in the southern Tasmanian region, being the development of specific cell(s) to receive category C waste at the Copping Landfill operated by Southern Waste Solutions.

The proposal contained within this DPEMP will not be impacted or impact upon the development that Southern Waste Solutions has proposed. The proposals address different sections of the waste stream, McRobies Gully does not accept commercial controlled wastes, whereas the Copping Landfill proposal seeks to provide a secure facility to dispose of controlled waste generated within Tasmania, to minimise risks associated with interstate transport of those wastes, or risks associated with inappropriate storage of controlled wastes outside of a secure landfill.

The City is not aware of any other existing or approved developments in the region in the landfill space.

6.20 Traffic impacts

It is expected that vehicle movements will remain unchanged as a result of the proposed development. The largest commercial operator delivering waste to the site is the City itself, through its kerbside waste collection which is undertaken on weekdays, with deliveries made between the hours of 7.30am and 2.00pm.

The majority of commercial deliveries to the site are completed on weekdays, and whilst the site is open it generally does not receive commercial waste and is utilised almost exclusively by the residential sector on Sundays and Public Holidays. The proposed development will have no impact on the operational nature of the site and waste deliveries.

The new waste strategy aims to reduce the need for increased heavy vehicle movements. The waste strategy provides actions and programs for waste reduction & source separation between now and 2030, which aim to result in less waste being delivered to landfill, and by association resulting in fewer vehicles accessing the site.

By extending the capacity of the landfill, the proposed development will reduce future commercial vehicle movements from the site for the disposal of waste from the transfer station. Whilst capacity in the landfill remains, waste from the transfer station is able to be disposed of on site. Once the active landfill is complete and no space remains, waste from the transfer station will be required to be removed from site and delivered

to an alternative facility. This proposed development will defer these increased heavy vehicle movements from the site by around 15 years.

Site access and traffic control are important elements of the operations of the site to ensure safe and environmentally acceptable performance. The commissioning of the waste transfer station for the use of all domestic sized vehicles means significantly improved traffic management for the bulk of vehicles which access the site. These vehicles can now access the site utilising permanent sealed roads and consistency of route (i.e. the tipping face by nature was continually being moved – this is now irrelevant to light vehicles). The site currently receives on average 200 vehicles per day.

The range of operations at the Recycling Centre receive a significant number of vehicle movements per day. The traffic flow is a one way loop through this site, which generally works well, and the road surfaces are sealed in this area with some gravelled car parking and product storage areas around the perimeter. The sections of road which are either permanently or semi-permanently in place i.e. the road entering the site and in the recycling area and the initial zoom into the site from the weighbridge, is either hot mix or chip sealed to reduce dust generation and reduce mud leaving the site, and all roads servicing the waste transfer station are asphalt sealed roads with kerb and channel.

7. Monitoring & Review

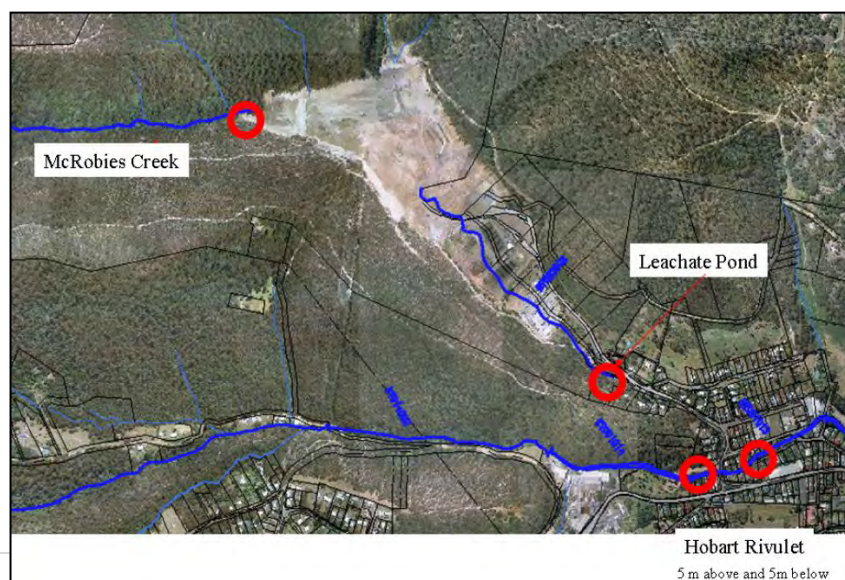
Monitoring of landfills is a critical part of the DPEMP. In particular, monitoring of the receiving environment, including surface water and groundwater monitoring. The City currently monitors the site in accordance with EPN 715/1 and the Landfill Sustainability Guidelines (LSG).

The City submits an annual report to the EPA, as required by EPN 715/1, which outlines the environmental and operational performance of the site for the previous financial year. Monitoring is undertaken for stormwater, groundwater, and leachate quality, for a range of parameters in accordance with EPN 715/1, and the LSG.

The stormwater (surface water) monitoring program at McRobies Gully is based on regular quarterly sampling along with wet weather event and incident based sampling. Monitoring is undertaken more frequently than required by the permit for the site, which dictates 6 monthly surface water sampling. The objective is to ensure that stormwater is not degraded by landfill activities, by regular representative monitoring of the receiving environment, enabling response to implement preventative and corrective actions where required. The current surface water monitoring program at McRobies Gully WMC consists of sampling from up to five sites (depending on flows) described below on a quarterly basis. These sites are indicated on the map shown in Figure 16.

- **Site 1:** McRobies Gully Rivulet watercourse immediately prior to the landfill, i.e. upstream of the landfill. This sampling point rarely has water present for sampling, particularly in the dryer months, as such at times there are no samples able to be taken
- **Site 2:** Pottery Creek at John Turnbull Park, Lenah Valley.
- **Site 3:** Stormwater manhole immediately below the leachate pond, thus assessing degree of contamination in site discharge to sewer.
- **Site 4:** 5m above the 1500mm storm water pipe entering the Hobart Rivulet, near Degraes Street.
- **Site 5:** 5m below the 1500mm storm water pipe entering the Hobart Rivulet, near Degraes Street.

Figure 16 – Surface water sampling points



Sites 4 and 5 are measured to assess the net impact of any discharge of stormwater from McRobies Gully. It is noted that the stormwater discharge to the Rivulet also includes road runoff and other stormwater collected below the landfill. Surface water samples are taken at quarterly intervals by properly equipped and appropriately trained and experienced consultants. Parameters that are tested for from all surface & ground water monitoring is included as Attachment G.

In addition to regular monitoring schedules, telemetric equipment operates at the site. The flow monitoring system at the leachate pond is currently comprised of a magflow meter on the sewer discharge directly below the leachate pond, and a level sensor. Additional monitoring systems include an ultrasonic flow metering instrument on the 1500mm stormwater pipe directly below the leachate pond.

Groundwater monitoring is currently undertaken on a six-monthly basis from two up-gradient bores 2007/1, 2007/2, which are located in the McRobies Gully up valley from the former controlled waste area and in the northern gully upstream of the landfill and one down-gradient bore - 1996/3, which is down valley from the leachate pond. Bores 2007/01 and 2007/02 replaced previous monitoring locations 1996/1 and 1996/2 respectively, as the filling activities encroached on these bores. The hydraulic gradient is approximately aligned with the valley, as evident by comparing the approximate standing water level (SWL) in the three current monitoring locations, with 1996/3 SWL being at an RL roughly 100m lower than the SWL measured in 2007/1 and 2007/2.

Once a year, samples for both surface water and groundwater are analysed for concentrations of a range of metals (Al, Cd, Cr, Cu, Fe, Mn, Ni, Pb, and Zn). All samples are tested at NATA certified laboratories. Appendix G provides details on the sample frequencies of the range of parameters tested under the surface & ground water monitoring programs.

The Annual Report submitted to the EPA each year for the operation of the landfill contains significant level of information in relation to the monitoring and reviews undertaken at the site. This proposal will not impact the level of monitoring and reporting being undertaken. Other aspects the City monitors and reviews in relation to the site are;

- Landfill gas extraction
- Waste acceptance
- Risk reviews (environment, safety, quality)
- Litter
- Vermin (birds, feral cats etc).

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Results of monitoring programs have historically been reviewed and assessed against regulations and standards such as the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, by either external consultants or City staff (conducted externally of the site operations area, by an officer such as the Technical Officer - Environmental). Appendix H – McRobies Gully Water Monitoring Program Analysis provides a review of the results of the 2012/13 surface and groundwater monitoring program.

Figure 15 is a Table from the State Policy on Water Quality Management 1997 that details a range of monitoring categories for Total Dissolved Solids (TDS) against several Protected Environmental Values. A series of water monitoring results taken from above and below the Hobart rivulet outfall are presented in Table 4, with all results well below 1,000 mg/L & as such complying with the Category A limits for all Protected Environmental Value water uses.

Figure 17 - State Policy on Water Quality Management 1997 Table 1

Table 1 Environmental Values and Uses of Groundwater Classified by the Level of Total Dissolved Solids (mg/L)				
Category TDS (mg/L)	A Less than 1000	B 1000-3500	C 3500-13000	D greater than 13000
Protected Environmental Value				
Drinking Water ⁽¹⁾	*			
Irrigation	*	*		
Industry	*	*	*	
Stock	*	*	*	
Ecosystem Protection	*	*	*	*
“ * ” Denotes an environmental value which can be achieved given the level of dissolved solids				
(1) Where groundwaters have TDS levels below 500 mg/L, TDS levels should be maintained below these levels wherever practicable.				

Table 4 – Total Dissolved Solids (TDS) results in the Hobart Rivulet

Sample event	TDS (mg/L) 5m above McRobies Rivulet Stormwater outfall	TDS (mg/L) 5m below McRobies Rivulet Stormwater outfall
December 2009	65	79
August 2012	133	107
November 2012	143	103
February 2013	61	45
May 2013	88	92
August 2013	83	87
January 2014	79	80
June 2015	70	72

Included with this DPEMP is an example of the water monitoring results from a recent standard sampling event (June 2015), included as Appendix I – McRobies Gully Water Monitoring Results. The results show that levels of many parameters in the leachate pond are in excess of those from other sample points, which is to be expected as the leachate pond directs all water to sewer and the Macquarie point waste water treatment plant. The results indicate that the leachate collection system is performing its function of capturing contaminated water for treatment, and not allowing contaminated water to flow unchecked into nearby waterways.

The results also highlight the similarity in water quality between the two sampling sites on the Hobart Rivulet, with the control site above the outfall, and second sample point 5 metres below the outfall. There is a residential catchment which impacts on the rivulet through delivery of water collected from the stormwater system in the area. The results detailed in Appendix I have been assessed against the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, and results that exceed trigger values have been highlighted. At expected, the majority of trigger values appear in the leachate pond sample, which is directed to sewer.

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8. Decommissioning & Rehabilitation

This Decommissioning and Rehabilitation Plan (DRP) for the McRobies Gully WMC will minimise the risk of environmental harm or nuisance and maximise options for its future use.

Once the landfill reaches final permitted filling levels, the filling operation will cease and there will be no further placement of waste. At present it is planned that the waste transfer station, the recycling centre and Tip Shop and the composting area will all continue to be operated under their current respective operating conditions.

As a component of the development of this DPEMP, a long term filling plan has been developed, including;

- Estimated annual lifts
- Annual Rehabilitation requirements
- Estimation of annual landfill space filled (m³), and surface area required to rehabilitate (m²)
- Expenses for rehabilitation
- A final profile of the completed landfill area.

The Fill Plan is a long term strategic plan that allows the City to accurately forecast remaining landfill space and rehabilitation liabilities at any given point. The plan has been developed to remain flexible given that there are 2 main areas where filling occurs.

A filling sequence has been devised with a final close out surface designed to be just below the 200m AHD level, achieved by working to a series of 2m lifts. Appendix F shows the 2m lift plan and final contours of the landfill. Table 1 in section 2.1 of this DPEMP details both the volume of the area filled, and the surface area required to be rehabilitated for each year/lift. The Fill plan estimates that the Western landfill will be completed in 2026/27, and that the North-east section of the landfill will reach its final fill height of 200 AHD in 2029/30.

The City has collected revenue to fund rehabilitation liabilities for several years through a levy on the rates base. Funds are drawn down annually from this reserve to perform rehabilitation works. The amount of the current levy and the time frame it is applicable for is at present sufficient to raise the required revenue to complete rehabilitation operations in accordance with the fill plan detailed within this DPEMP.

The Landfill Sustainability Guide, Section 3.11, outlines the requirement that the design of landfills should take into account the future rehabilitation of the site. Section 5 also outlines specific requirements for rehabilitation and post-care. There are also specific conditions within the EPN 715/1 that relate to decommissioning and rehabilitation of the site.

The WMC operations take up the majority of the lower part of the site, and the current filling area and proposed extension is towards the upper part of the site. Access to the landfill site is through the lower part of the site, via McRobies Road. An option for future use is to fence off the portion of the site that will house the on-going waste management activities, and open up the upper part of the site for public/community use. Some potential future uses that the City would consider for the upper part of the site include one or a mix of the following:-

- trails for cycling, horse-riding, dog exercise zone, jogging and/or walking
- emergency evacuation point
- expansion of on-site activities such as receipt and storage facilities for inert waste recycling

There is a significant network of paths and trails in the surrounding vicinity utilised by walkers and cyclists. The closure of the active landfill presents opportunities to formalise paths between the Wellington Park

Reserve, Knocklofty, Lenah Valley and South Hobart. The intended end use of the facility fits in with the surrounding land use under the planning scheme, being environmental management, whereby the emphasis is on facilitation of passive recreation opportunities.

The current planning is to continue operating the lower section of the site as a waste management centre, so there will be minimal removal of site structures. Before reshaping and capping, all structures and fences incompatible with the intended final use will be removed and properly disposed of. All scrap machinery, visible scrap steel and sharps having potential to pierce through or protrude from the final cap will be removed.

After weed management and clearing, the filling area will be covered with a 300 mm minimum thickness intermediate layer of clean fill to remove depressions and for reshaping to a minimum 5% grade on the top of the landfill and maximum 33% on batters, in preparation for final capping and revegetation.

The most recently filled areas will be rehabilitated last to allow the maximum time for settling. Further compaction may then also be required in these areas prior to applying the final cap. Given that the site is currently being progressively rehabilitated, it may be necessary to ensure that future uses are planned around the use of the older areas in preference to the newer areas, to allow for additional settling in the newer fill areas.

The site received waste from 1975, thus some areas have had up to 40 years for natural settlement (compaction), in addition to mechanical compaction undertaken as part of the operations. However, given the lack of confidence of waste-type ratios, compacted waste density and settlement rates, six-monthly survey data will be used to ascertain settlement rates. Where settlement results in a surface slope of less than 0.5%, localised remedial works will be undertaken to re-establish appropriate surface grades.

The finished surface will be surveyed immediately after final capping, as a basis for monitoring future cap or embankment settlement. Six-monthly site surveys will ascertain settlement rates thereafter, and low points will be topsoiled, groomed and reseeded to prevent the potential for surface water to pond. Slopes of less than 0.5% will be reshaped to allow for site drainage, and affected surface drains will be reformed and reseeded as appropriate.

The Landfill Sustainability Guide 2004 (Guide) requires that landfills are capped to ensure infiltration through the cap is no more than 75% of the anticipated seepage rate through the landfill liner. The rehabilitation program undertaken will abide by the requirements of section 5 of the Landfill sustainability guide.

Water emissions from within the filling area will continue to be treated as leachate in the years following closure of the filling area. Over time, the leachate will become increasingly dilute, and at some stage the City will liaise with the EPA to discuss scaling down the leachate treatment and monitoring program. The bulk of stormwater will be diverted around the site, and rain water falling on the rehabilitated areas will be diverted to stormwater drains (subject to gross pollutant removal) and discharged as stormwater.

It is planned that landfill gas will continue to be extracted and converted to energy under the contract with AGL. The City will continue to liaise with AGL regarding the ongoing viability of their operation after closure of the filling areas.

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In the months leading up to cessation of landfilling activities, a post-closure maintenance program will be compiled and submitted for approval by the EPA. Once the site is closed for filling, the maintenance program will be implemented in conjunction with rehabilitation activities. The focus of the maintenance program should be:-

- Maintain the rehabilitated areas and conduct repairs where required e.g. cracks, depressions caused by differential settling, inspection of drainage system.
- Continuation of the surface water, leachate and groundwater monitoring program. The program will remain unchanged initially and will be reviewed as needed in conjunction with the EPA.
- Continuation of the LFG extraction and conversion to energy contract

Upon closure of the site, and in accordance with the Landfill sustainability Guide, the City will provide adequate public notification of the closure of the landfill. The City will secure the site where appropriate to prevent unauthorised dumping.

A rehabilitation completion report will be submitted to the EPA once rehabilitation works are complete. As the continuing owner of the site, the City will provide after-care as described within the LSG and will continue to provide reports to the EPA as required by them. Details of what is included in the report will be based on the LSG and/or any specific EPA requirements at the time.

It is expected that monitoring of the site will be required for 20–30 years after closure. Once sufficient information is obtained over a number of years to identify if the site is stable and the risk of pollution from the site is negligible, the City may apply to the EPA to cease after-care monitoring activities. Application to cease after-care will only be sought once conditions outlined in the LSG, or the relevant guidelines at the time are complied with.

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9. Commitments

The City of Hobart has been operating a landfill at McRobies Gully since the 1970's, in an environmentally responsible manner throughout that time. In recent years the City has invested significant capital resources to improving the performance of the site, and will continue to do so into the future under this proposal.

Table 5 details all commitments resulting from and referenced throughout this DPEMP.

Table 5 – Commitment Summary

No.	COMMITMENT	RESPONSIBILITY	TIMEFRAME
1	Complete the construction of major surface water drains to capture clean water from the catchments upstream of the site, in the Western Gully (McRobies Creek) and Pottery Gully areas	Civil Construction Personnel	End 2016
2	Reduce the number of leachate overflows, through capital works program of creek diversions	Civil Construction Personnel	End 2016
3	Investigate stormwater harvesting for the site, to replace the use of potable water at the site. The City will also aim to divert clean storm water from hard surface areas to the stormwater system, rather than to the leachate system	Site Staff	Ongoing
4	Develop a filling plan, and identification of appropriate rehabilitation to fulfil site closure requirements and in accordance with the fill plan contained within this DPEMP, including provision of adequate funds	Manager Cleansing & Waste	2016
5	Development of a Good Neighbour Agreement with the South Hobart Community	Manager Cleansing & Waste	2016
6	Monitor landfill compaction and settlement by undertaking 6-monthly surveys	Survey Unit	Ongoing 6-monthly
7	Cover waste on a daily basis, and apply intermediate cover to completed areas prior to rehabilitating	Site Staff	Daily
8	Conduct operations in accordance with the filling sequence.	Site Staff	Daily
9	Extend the Landfill Gas extraction network as needed.	Landfill Gas contractor	As required
10	Ensure that buffer distances to residences are maintained.	Site Staff	Ongoing
11	Investigate systems to improve gross litter collection at the entrances to the stormwater system	Site Staff	Ongoing
12	Manage nuisance complaints (odour, noise) and implement remedial actions where required	Site Staff	Ongoing
13	Continue to conduct regular and un-programmed surface and ground water monitoring programs	Environmental consultant	Quarterly & as required
14	Undertake methane monitoring events periodically.	Environmental Consultant	Annually
15	Install an on-site electronic weather station	Site Staff	2016

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Planning Authority: Hobart City Council

10. Conclusion

This DPEMP has been prepared for a proposal to increase the height of the McRobies Gully Landfill. The increase being sought is from the current permitted height of 184m AHD, up to 200m AHD.

The height increase will create economic benefits to the City and its community, through avoiding transport and disposal costs to alternative facilities, and maintaining a community waste disposal asset in the Hobart Municipal Area until 2030.

The proposal will create environmental benefits through ongoing water management improvements, and progressive rehabilitation and site close out, and provide additional time for new technologies to be implemented to treat waste alternatively to landfilling. The proposal does not seek to alter any current landfilling operations, nor is it being developed to cater for increased patronage of the site. The City has committed to ceasing to operate a putrescible waste landfill at McRobies Gully by 2030. This proposal will provide the City with appropriate time to develop alternatives to landfill, and progressively introduce recycling and reuse programs, and effectively plan and conduct ongoing rehabilitation and close out of the landfill site.

This proposal will be subject to the same regulatory and audit processes as is currently undertaken, such as an EPA issued Environmental Protection Notice, and a range of internal and external standards and guidelines.

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Planning Authority: Hobart City Council

11. References

Environment Management & Pollution Control System

Tasmanian Resource Management & Planning System

Environmental Protection and Biodiversity Conservation Act 1999

Environmental Protection Notice 715/2 (EPA)

State Policy on Water Quality Management 1997

Tasmanian State Coastal Policy 1996

Pitt & Sherry, McRobies Gully Methane Strategy, June 2012

National Heritage List & Values

National Values Atlas

Tasmanian Heritage Register

Historic Cultural Heritage Act 1995

Declared world Heritage Area properties & values

Tasmanian Regional Forest Agreement

Water Management Act 1999

Tasmanian Threatened Species Protection Act 1995

Tasmanian Forest Practice Code

The LIST – conservation reserves, land use, landslide, geoconservation layers, etc.

Australian and New Zealand Environment and Conservation Committee and the Agriculture and Resource Management Council of Australia and New Zealand (ANZECC), 2000 Australian and New Zealand guidelines for fresh and marine water quality. Australia.

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12. Appendices

Appendix A – Detailed Site Plan

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Appendix D – Diversion Drain Drawings

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Planning Authority: Hobart City Council

Appendix E – Risk Register

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Planning Authority: Hobart City Council

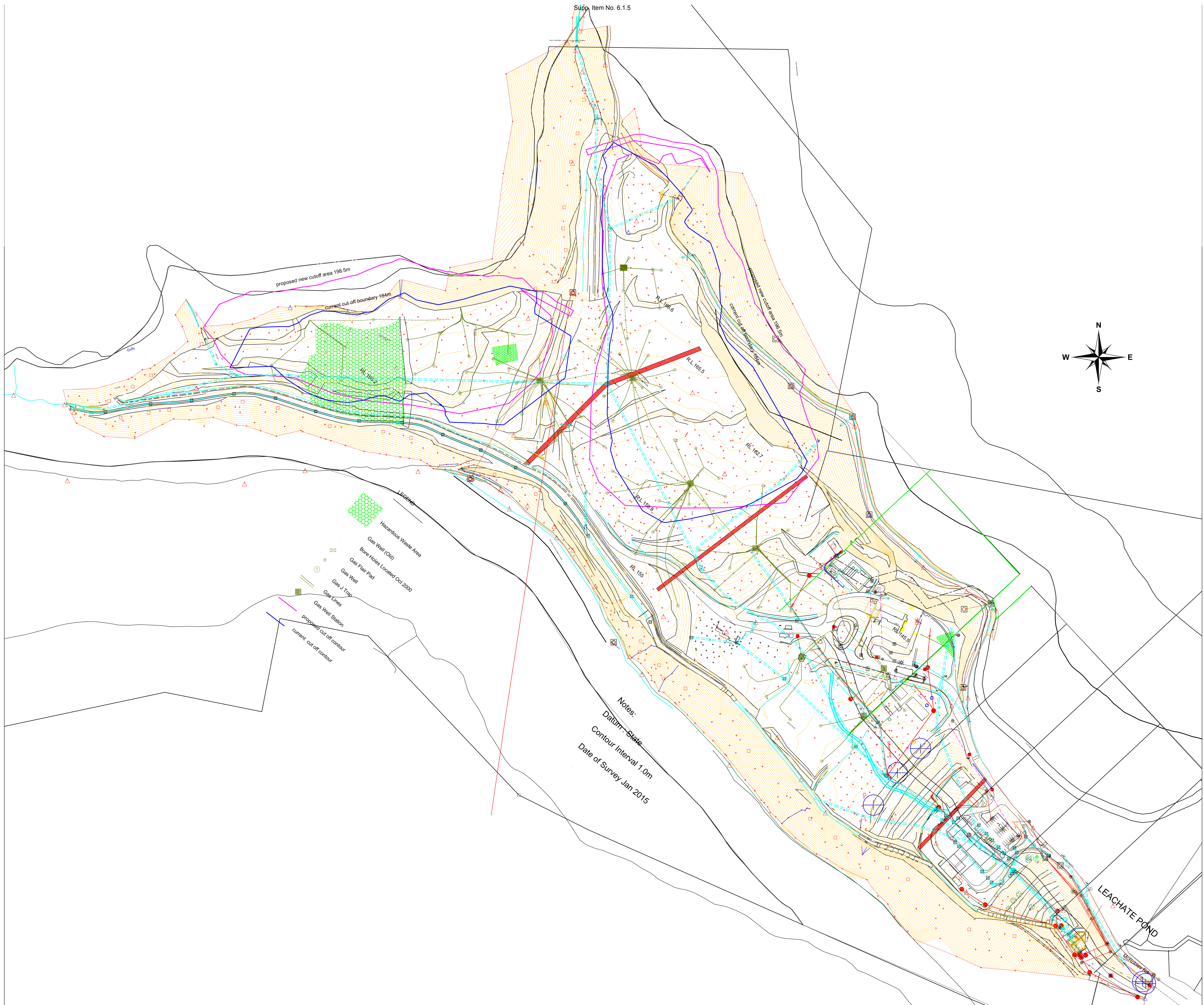
Appendix F – 2m lift plan for proposal

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Appendix I – McRobies Gully Water Monitoring Results

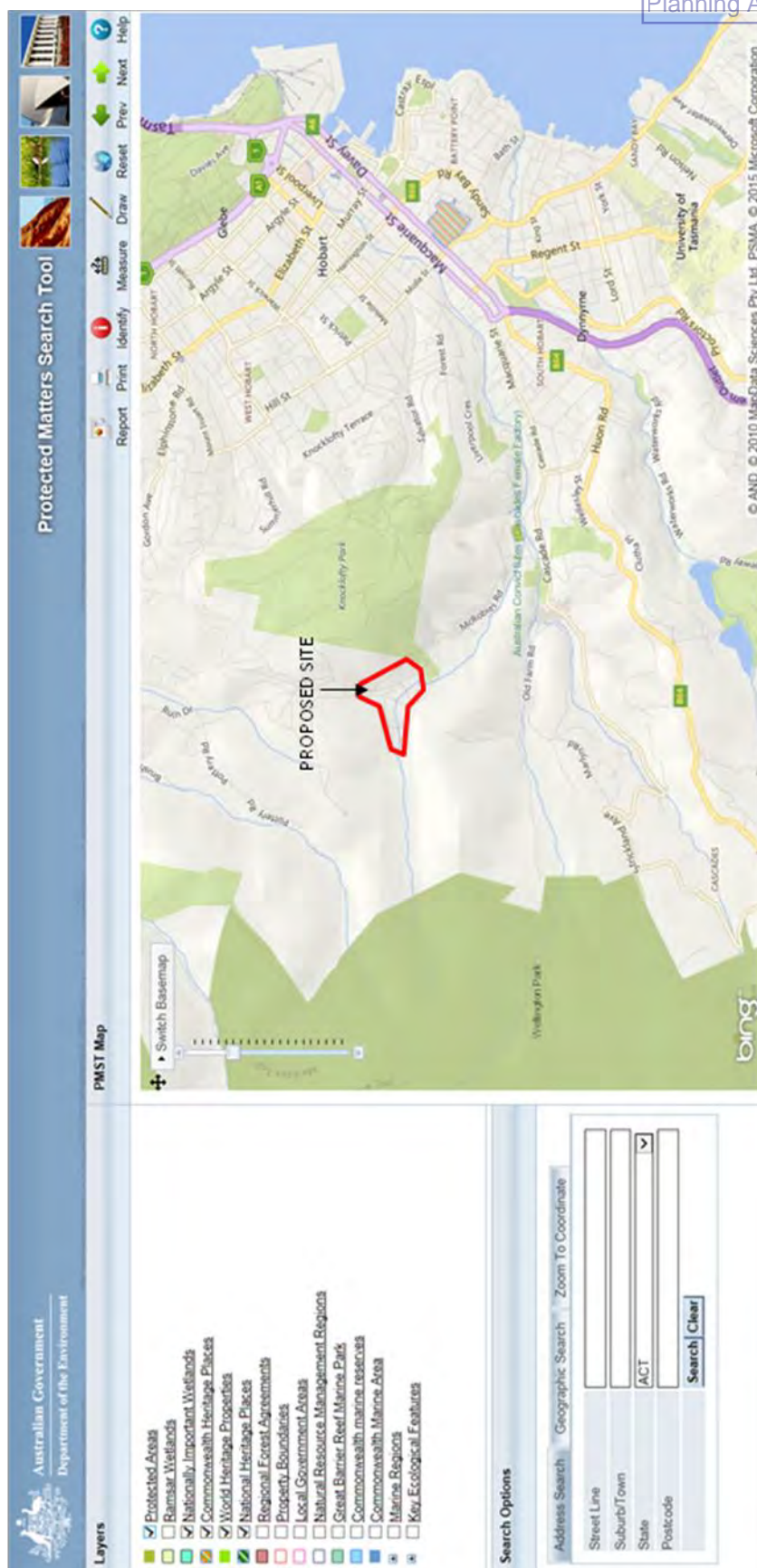
DEVELOPMENT APPLICATION
DOCUMENT
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submitted to the application for a planning
No. PLN-15-00885-01 and was
issued on the 30 November 2015
Planning Authority: Hobart City Council



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Appendix B – Matters of Environmental Significance Map – EPBC

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Hobart City Council
Quarterly Monitoring

Analytical Results June 2015

				Monitoring Site	1996/3	2007/1	2007/2	Hobart Rivulet Downstream	Hobart Rivulet Upstream	Leachate Outflow	McRobies Creek	Pottory Creek
				ANZECC 2000 FW 95%								
Chem_Group	ChemName	output unit	EQL									
Field	Dissolved Organic Carbon	mg/L	0.5		4.9	<0.5	1.1	2.3	2	72	5.7	1.4
	Redox _m	mV			110	130	-6	170	150	210	130	200
Inorganics	COD	mg/L	5		15	<5	<5	8	6	290	22	6
	Cyanide (Total)	µg/L	5	7	<5	<5	<5	<5	<5	9	<5	<5
	Electrical conductivity (lab)	µS/cm	2		1400	1700	2900	100	90	3700	580	150
	pH (Lab)	pH Units			7.4	7	6.2	7.5	7.5	7.9	7.4	7.8
	Total Dissolved Solids	mg/L	5		840	1000	2600	72	70	2100	350	95
	Total Suspended Solids	mg/L	2		-	-	-	2	<2	55	22	<2
	Turbidity	NTU	0.1		-	-	-	2	1.5	50	4.3	0.8
Metals	Aluminium	mg/L	0.01	0.055	-	-	-	0.1	0.09	0.53	0.03	0.04
	Cadmium	mg/L	0.0002	0.0002	-	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	Cadmium (Filtered)	mg/L	0.0002	0.0002	<0.0002	<0.0002	<0.0002	-	-	-	-	-
	Chromium (III+VI)	mg/L	0.001	0.001	-	-	-	<0.001	<0.001	0.003	<0.001	<0.001
	Chromium (III+VI) (Filtered)	mg/L	0.001	0.001	<0.001	<0.001	<0.001	-	-	-	-	-
	Copper	mg/L	0.001	0.0014	-	-	-	0.001	<0.001	0.004	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	0.0014	0.008	<0.001	<0.001	-	-	-	-	-
	Iron	mg/L	0.01		12	0.15	130	0.17	0.14	5.6	0.02	0.06
	Iron (Filtered)	mg/L	0.01		49	0.13	130	-	-	-	-	-
	Lead	mg/L	0.001	0.0034	-	-	-	<0.001	<0.001	0.002	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	0.0034	<0.001	<0.001	<0.001	-	-	-	-	-
	Manganese	mg/L	0.001	1.9	-	-	-	0.008	0.005	1.6	0.001	0.003
	Manganese (Filtered)	mg/L	0.001	1.9	1.7	0.01	8.9	-	-	-	-	-
	Nickel	mg/L	0.001	0.011	-	-	-	<0.001	<0.001	0.03	0.001	<0.001
	Nickel (Filtered)	mg/L	0.001	0.011	0.005	0.001	0.061	-	-	-	-	-
	Zinc	mg/L	0.001	0.008	-	-	-	0.007	0.005	0.016	0.002	0.005
	Zinc (Filtered)	mg/L	0.001	0.008	0.018	0.004	0.015	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO ₃)	mg/L	2		<2	<2	<2	<2	<2	<2	<2	<2
	Alkalinity (Hydroxide as CaCO ₃)	mg/L	2		<2	<2	<2	<2	<2	<2	<2	<2
	Alkalinity (total as CaCO ₃)	mg/L	2		580	550	140	27	25	1400	140	40
	Bicarbonate Alkalinity as CaCO ₃	mg/L	2		580	550	140	27	25	1400	140	40
Major Ions	Chloride	mg/L	1		140	220	210	11	10	610	74	21
	Magnesium	mg/L	0.1		69	20	130	2.3	2	130	6.9	4.8
	Potassium	mg/L	0.1		0.8	2.3	16	0.4	0.4	46	1.7	0.3
	Sodium	mg/L	0.1		89	94	170	6.9	6.1	390	38	11
	Sulphate	mg/L	1		21	50	1300	4	3	<1	45	4
Nutrients	Ammonia as N	mg/L	0.1	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	58	<0.1	<0.1
	Nitrate (as N)	mg/L	0.01	0.158	0.02	0.04	<0.2	0.08	0.24	0.1	0.5	0.11
	Nitrite (as N)	mg/L	0.01		0.01	0.08	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01
	Nitrogen (Total Oxidised)	mg/L	0.01		0.03	0.13	<0.2	0.08	0.24	0.1	0.51	0.12
	Nitrogen (Total)	mg/L	0.1		0.3	0.1	<0.1	13	0.2	61	0.7	0.1
	TKN (as N)	mg/L	0.1		0.3	<0.1	<0.1	12	<0.1	60	0.2	<0.1

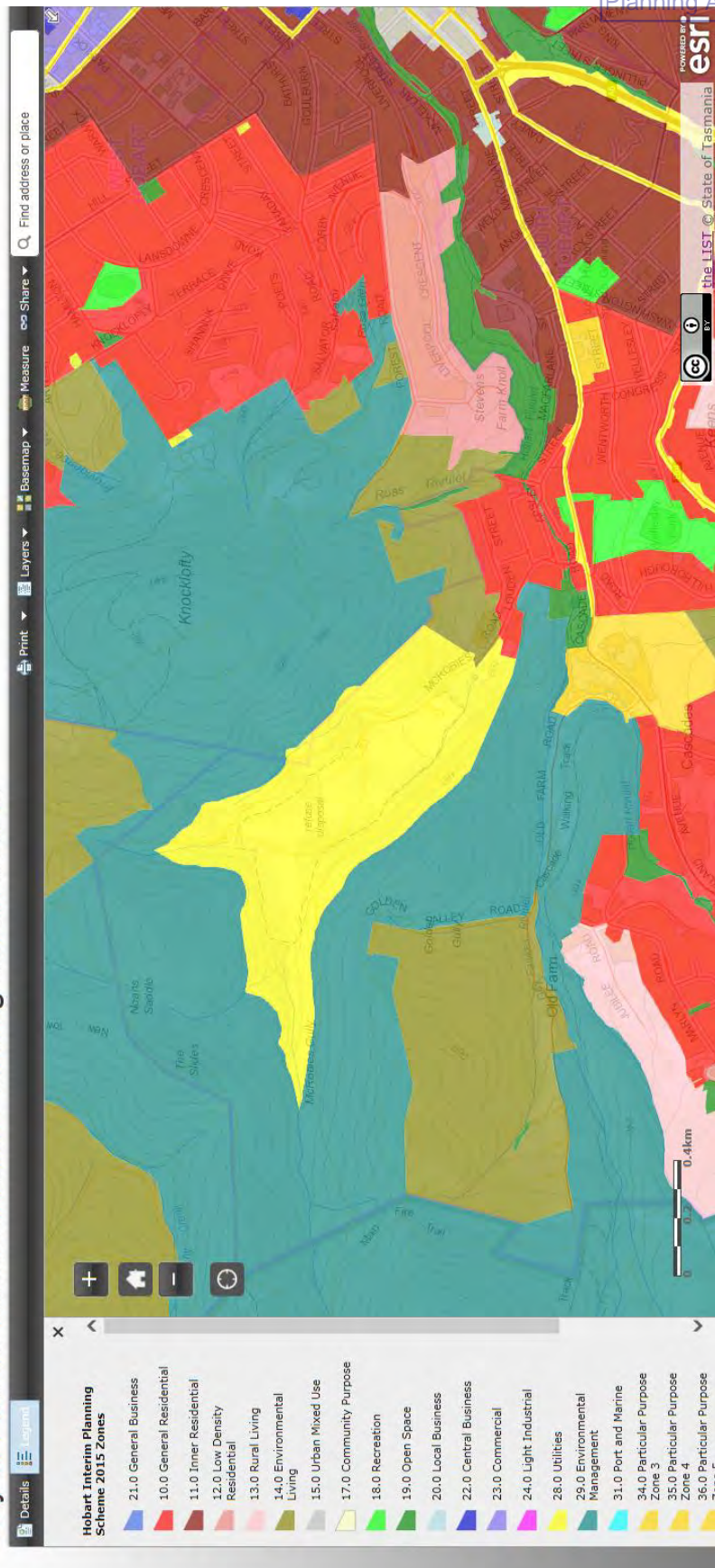
Planning (to sewer). Hobart City Council

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Appendix C – Hobart Interim Planning Scheme – Land Use

City of Hobart: Hobart Interim Planning Scheme 2015



HOBART CITY COUNCIL
McROBIES GULLY REFUSE SITE
FUTURE STAGING

DRAWING INDEX

C001 DRAWING INDEX AND NOTES

C100 TYPICAL SECTIONS

C200 200m MAXIMUM LEVEL SITEWORKS PLAN

C300 WESTERN GULLY SECTIONS SHEET 1

C301 WESTERN GULLY SECTIONS SHEET 2

C302 WESTERN GULLY SECTIONS SHEET 3

C303 WESTERN GULLY SECTIONS SHEET 4

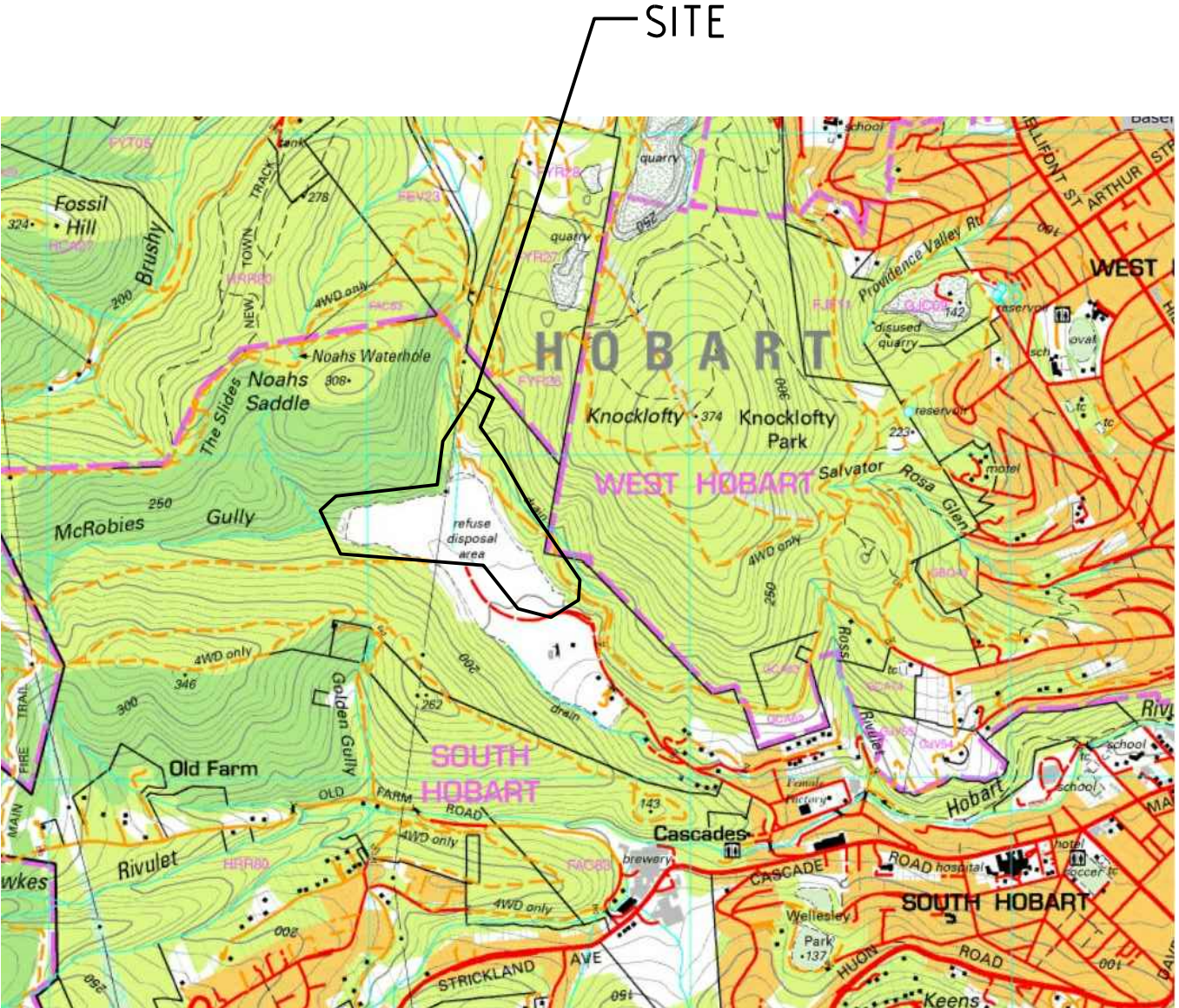
C320 NORTHERN GULLY SECTIONS SHEET 1

C321 NORTHERN GULLY SECTIONS SHEET 2

C322 NORTHERN GULLY SECTIONS SHEET 3

C323 NORTHERN GULLY SECTIONS SHEET 4

C700 DETAILS



LOCALITY PLAN
NTS

CIVIL/HYDRAULIC NOTES

GENERAL

- G1. These drawing are to be read in conjunction with Architectural and Landscape Architectural drawings, Project Contract and Project Specifications. Standards referenced are to the most recent version. This page of notes over ride any engineering specifications. The following drawings over ride these notes.
- G2. All works are to be done by the Contractor unless noted otherwise. Contractor must also make an allowance for works by others (eg. service connections).
- G3. In these notes the Engineer refers to Gandy and Roberts.
- G4. The council for this project is Hobart City Council, and they should be contacted for required inspections of public roads, public stormwater, private car parks and drives with the Engineer, and also for private building/plumbing works. The sewer and water authority is TasWater, they should be contacted for required inspections of municipal sewer and water infrastructure during construction.
- G5. Locate all existing gas, electrical, telecommunications, water mains, sewer mains and stormwater mains etc. prior to the commencement of construction and advise the Engineer of anything that appears not to have been considered in the design.
- G6. Confirm all levels on site prior to the commencement of works.
- G7. Survey has been provided by Hobart City Council. Contractor is to allow for all set out and as constructed requirements.
- G8. The contractor shall be responsible for damages caused by them or their sub-contractors, and any service, infrastructure or building damaged is to be reinstated immediately and the Engineer advised. The contractor shall conduct inspections of nearby buildings and infrastructure prior to heavy construction work starting to protect themselves from claims for damage and to provide a baseline if they have caused damage. This inspection report shall be conveyed to the Engineer within 10 working days of it being done. Construction equipment and methods need to be sensitive to ground and sound vibration prone surroundings, and contractors are responsible for consulting with neighbours, and allowances should be made in the contractor's tender and program for this. If works can't proceed without causing damage they should stop and the Engineer advised.
- G9. Remove all surplus materials from site.
- G10. Following agreement with the Engineer, terminate and abandon redundant existing services discovered during construction and make a note on as-constructed drawing.
- G11. The Engineer is required to inspect the works at hold points on this development. A minimum of one working day of notice is required for inspections, and any results from past testing shall be made available at the time of the inspection. Hold points are at:
- setting out work and Soil and Water Management Plan implementation;
 - completion of excavation for any buildings or roadworks;
 - each lift for filling;
 - prior to sub-base placement;
 - placement of reinforcing;
 - prior to pouring kerb and channel;
 - completion of base placement;
 - completion of seal;
 - prior to backfilling of any service trenches;
 - prior to covering of plumbing in walls or roof cavities;
 - completion of works.
- The Engineer shall also inspect the site as he/she sees fit to ensure work is being done to the design. The Contractor shall pay for any re-inspections required due to their carelessness or failure to comply with the design or instructions, or lack of site or program organisation resulting in multiple inspections where a single inspection could have sufficed.
- G12. Raw materials and constructed works need to be tested to ensure they are of suitable quality and comply with local Municipal Standards and the National Construction Code of Australia, and where not covered by these to comply with standard drawings and specifications from Tasmanian Department of Infrastructure, Energy and Resources (DIER); Water Services Association of Australia (WSAA) codes for Water (Melbourne Retail Water Agencies Edition), Sewerage and Sewerage Pumping Station (with local water and sewer authority supplements); Institute of Public Works Engineering Australia (IPEWA); and product manufacturers.
- G13. On completion of works provide three sets of as-constructed drawings to AS1100.401 by a registered surveyor (measurement of building service hydraulics close to and within a permanent building can be undertaken by an experienced plumber) and full service manual along with electronic drawing files in DXF or DWG formats suitable for reading with a recent version of Autocad to the Engineer. Results of tests with associated commissioning reports and as constructed survey are required to allow the Engineer to confirm in writing to the Local Authority that construction has been substantially completed in accordance with the design drawings and are part of the works, and should form part of the service manual.
- G14. It is assumed that adjacent to the development site is adequate infrastructure provided by the Local Authority and other Statutory Authorities to supply road access, water, power, telecommunications and gas as required by this design; and there is adequate infrastructure or environmental capacity to receive stormwater and sewerage drainage.
- G15. Any departures from the design drawings are to be at the written approval of the Engineer, and approval from authority - except during emergencies when temporary changes can be made prior to seeking approval for a permanent change. Changes includes conflicts with existing services. Rework to make installed system comply the design will be at the Contractor's expense.

APPROVALS

- A1. The contractor is responsible for ensuring that a valid building and plumbing permit is in place for the work and that the Building Surveyor is notified of all site inspection requests. Where work is within a road reserve, a road opening permit must be obtained from local council prior to work. Workplace Standards approval must also be gained where appropriate.
- A2. The contractor is responsible for organising all site inspections and observing all hold points nominated within the contract, these drawings, by the Building Surveyor, the Plumbing Surveyor and other authorities.
- A3. A minimum of one working day of notice is required for the Engineer to attend the site. Do not rely upon facsimile or email to communicate requests - make contact with our office to confirm attendance.
- A4. Photographic documentation is not an adequate basis to proceed beyond a hold point unless approved by the Engineer.

WORK HEALTH AND SAFETY

- HS1. The main contractor and all sub contractors shall comply with the State *Work Health and Safety Act, Regulations, and all relevant codes of practice.*
- HS2. The Gandy and Roberts Design Safety Report 13.0591 revision A forms an integral part of this documentation. This report identifies safety risks and proposes control measures to be followed by the contractor and the building operator. Controls and hazards requiring more explanation than in the safety report are highlighted in our drawings with an exclamation mark in the triangle symbol shown:
- HS3. Should the main contractor or sub contractors identify omissions or errors in the report related to the scope of Gandy and Robert's work on the project, or have safer ways of working, they should contact Gandy and Roberts prior to construction.
- HS4. Should the main contractor propose an alternative design, they need to present these with appropriate safety risk planning to Gandy and Roberts for review.

EARTHWORKS

- E1. All earthworks shall be in accordance with AS3798 "Guidelines on earthworks for commercial and residential developments" with testing methods in accordance with AS1289 "Methods of testing soils for engineering purposes".
- E2. All existing topsoil, vegetation and debris under the building and paved areas shall be stripped to a minimum of 300mm unless noted otherwise. Top soil to be stockpiled as directed, and vegetation and debris removed from site unless noted otherwise. Tree stumps shall be grubbed and holes filled with approved compacted fill.
- E3. For excavation purposes, rock is defined as hard or strongly cemented beds or masses which cannot be ripped at a production rate exceeding 3 m³ per hour using a standard 20 tonne excavator attached with a rock breaker.
- E4. Any interface between cut and fill shall be no steeper than 1V:3H. Cut horizontal benches for any fill placed on ground steeper than 1V:3H.
- E5. All excavations shall be inspected by the Engineer and/or the Local Authority before proceeding any further. Inspection and testing shall occur after each lift during filling. Testing (in accordance with Table 8.1 of AS3798.1) shall be arranged by the contractor such that results are available at time of inspection.
- E6. Subgrade shall be compacted to achieve 98% standard density ratio for cohesive soil, and 75% density index for cohesionless soil. Prior to filling, subgrade is to be proof roll tested. All proof roll testing is to be witnessed by the Engineer. The test shall consist of witnessing soil deflection from the tyre of a single rear axle truck driven at walking speed with a minimum 8 tonne rear axle load and a tyre pressure of 550 kPa. The allowable deflection of subgrade shall not be more than is just visible to an observer standing still as the test vehicle passes, and no visible movement is allowed for sub-base and base tests. Other vehicles that may be allowed by the Engineer are a 12 tonne static roller with 6 tonne/m load, or 20 tonne plant with 450 kPa tyres and greater than 0.035 m² contact area per tyre.
- E7. Fill shall be placed in horizontal layers of 200 to 300 mm deep loose measurement, unless testing can demonstrate to the Engineer that compaction is adequate within larger lifts. Compact each layer of fill within 1% of its optimum moisture content. Maximum particle size is two thirds depth of each lift. Each layer is to be proof roll tested, using nuclear density testing as directed to achieve 98% standard density ratio. For material 60 mm and courser, in-lieu of density testing a test by deflection to done using spot level difference at representative locations before and after rolling three times with 12 tonne roller, with acceptable differences being less than 2 mm.
- E8. Cohesionless (granular) fill to be used unless otherwise approved by the Engineer. Cohesionless (granular) fill to have less than 15% passing the 75 micron sieve, with grading curves submitted for approval. Cohesionless fill shall be compacted to the requirements of Table 5.1 of AS3798. Cohesive fill shall have a minimum 4 day soaked CBR of 5% and a maximum CBR swell of 1%. Minimum standard density ratios for cohesive material shall be as per Table 5.1 of AS3798. Reactive clay shall have a maximum standard density ratio of 100%. Landscaping zones should be compacted to standard density ratio of 85% unless noted otherwise.

ROADWORKS

- R1. It is assumed roads accessing the development site are adequate to take the design traffic load during the design life of 40 years.
- R2. Pavement depth shall be as shown on the typical cross section but shall be subject to CBR testing of subgrade or proof rolling, with final depth shall be approved by the Engineer.
- R3. Kerb and channel shall be formed on a minimum of 100mm sub-base (see note R7) which shall extend a minimum 150 mm beyond the back of the kerb.
- R4. Subsoil drains shall be formed as shown on the drawings and in accordance with AS/NZS3500.
- R5. All radii are to the back of kerb.
- R6. The road profile and cross-fall shall be finished to the satisfaction of the Engineer and shall be to line and level indicated on the drawings, free of any local high or low areas which may hold water.
- R7. All gravel to comply with the following DIER specifications:
Base course: R40 class A - 19 mm Fine Crushed Rock (FCR)
Sub-base course: Sub-base 1 - 40 mm FCR
- R8. Sub-base shall have a minimum modified density ratio of 95% and base to have a minimum modified density ratio of 98%, with nuclear density test results available at proof roll inspection. Tests to be taken at a frequency based on AS3798 (typically the greater of four tests per inspection or one test per 1000 m³).
- R9. Proof roll shall be with a Truck using a single rear axle, tyres at 550 kPa, and the load over rear axle shall be 8 tonnes.
- R9. All landscaped areas affected by the works are to be reinstated to match existing. Refer Landscape Architect for specific requirements.
- R10. Concrete footpaths and driveways are to be constructed to the Municipal Standard drawings unless noted otherwise.

STORMWATER

- SW1. All materials and workmanship shall be in accordance with the local authority's specifications, standard drawings, by-laws and AS/NZS3500.
- SW2. Pipe and channel infrastructure has been designed to convey 20 year average recurrence interval (ARI) storms, with overland flow paths provided for 100 year ARI storms. It is assumed that water flowing onto the development site is contained within Local Authority infrastructure for 20 year ARI storms and the road reserve for 100 year ARI storms. For storms up to 24 hours duration, an allowance of 25% extra rainfall intensity has been made due to protected future climate change in Tasmania (above the 30-years-to-1983 intensities compared to projected ones in approximately 2080).
- SW3. Stormwater trenches, pipe bedding and back filling to comply with the Concrete Pipe Association of Australia installation requirements for type H52 support.
- SW4. Below ground pipework and fittings to be PVC-U SWHD, joints shall be of solvent cement type or flexible joints made with approved rubber rings.
- SW5. Minimum grade of paved areas and pipework shall be 1 in 100. Paved areas ideally shaped to drain to graded pits and trenches without ponding (acceptable limit is 3 mm under a 2 m straight edge).
- SW6. Surface water drains, catchpits/grated pits, and junction boxes shall be constructed as detailed or as specified by the manufacturer. Grated pits to have 150 mm sumps. Pits and lids to be Class A in non-trafficked areas, and pre-cast concrete Class C elsewhere. Convey trench water into pits/manholes through weep holes on upstream side using 2 m of DN100 ag-drain with filter sock.
- SW7. Install all agricultural drains to the requirements of AS/NZS3500 and part 3.1.2. of the BCA.
- SW8. All hydraulic connections and tapings to be clear of driveways and trafficked areas.
- SW9. Where both stormwater and sewer lines are along rear and side boundaries they shall be located to fit inside a 3.0 m easement unless noted otherwise. A single line shall fit within a 2.0 m easement.
- SW10. All manholes to be located clear of future fence-lines.
- SW11. Property connections to be clear of driveways and clear of future fence-lines.

SEWER

- S1. All works in accordance with the Sewerage Code of Australia W.S.A.A 02-2002-2.3 M.R.W.A. Edition - Version 1 and Southern Water's Supplement (Public 04 issued June 2012).
- S2. Property connections to be DN100 PVC-U with a minimum grade of 1 in 60. (Refer above code WSAA SEW-1106). To be located clear of trafficked areas, driveways and fences.
- S3. Where both stormwater and sewer lines are along a rear or side boundary they shall be located in an easement that wholly contains both services. Refer Southern Waters Supplement Clause 4.2.5. and Clause 4.4.5.2 for clearances to other services.
- S4. All manholes to be located clear of future fence lines with end of lines to be 1.2 m past the boundary for any future extension. Refer Clause 4.3.6.

WATER

- W1. All works in accordance with the Water Supply Code of Australia W.S.A.A. 03-2002-2.3 M.R.W.A. Edition - Version 1 and Southern Water's Supplement (Public 02 issued May 2012)
- W2. Single house connections to be DN25 HDPE class 16 to Southern Water's standard drawing SW-SD-W-20 series with meter, backflow device and box to each lot. Located 500 mm inside boundary and 500 mm from edge of driveway on middle side of lot.
- W3. All water mains to be tested and witnessed by the relevant water corporation inspector to static pressure plus 50% prior to backfilling.
- W4. All hydraulic connections and taping to be clear of driveways and trafficked areas.
- W5. For minimum cover over pipes refer to Clause 5.4.2 of the above Supplement.
- W6. All trenches under trafficked areas to be back filled with approved compacted FCR including future driveway extensions.
- W7. Flushing of mains to be carried out in accordance with the manufacturer's recommendations.
- W8. Electromagnetic tracker tape to be placed in all water main trenches above the pipe.
- W9. Taping and takeoffs to be separated by at least 1000 mm.
- W10. Water mains to be bedded on 80 mm approved 7 mm clean metal.
- W11. Concrete anchor blocks to be provided at all sudden changes of direction, both vertically and horizontally at tees and end of lines. Refer to above code drawings WAT-1205 and WAT-1207.
- W12. Road crossings:
DN100 PVC-U conduits for all HDPE.
D1CL with PE wrapping sleeve as per City West Water approved products catalogue.
- W13. For valve and hydrant surface box markings refer to clause 6.8.11 of the above Supplement. Hydrant road markings to comply with the Institute of Municipal Engineering Australia Tasmania Division document titled Fire Hydrant Guidelines - refer section 8. All valves and hydrants to be resilient seated powder coated class 16 and all components to be DN100.

CONCRETE

- C1. All workmanship and materials shall be in accordance with AS3600.
- C2. Concrete grades (UNO on drawings) :
- | ELEMENT | Grade |
|----------|-------|
| General | N25 |
| Footings | N20 |
| Blinding | N15 |
| Pavement | N25 |
- C3. Concrete shall not be poured when the site temperatures are below 5°C.
- C4. Concrete shall be cured by continuous wetting (water spray, ponding or irrigated hessian) or application of an impermeable membrane (secured plastic or curing compound) for an appropriate period of time (not less than 3 days). In hot dry and windy weather spray the surface with aliphatic alcohol while concrete is plastic, water cure for at least 24 hours then cover with impermeable membrane (or continue to water cure) for a further 2 days.
- C5. Construction joints shall be properly formed and used only where shown or specifically approved by the Engineer. Sawn joints shall be cut one third of the way through a slab, through the top mesh for 100 mm slabs and in thicker slabs the mesh shall be placed to avoid being cut. Unless noted elsewhere, sawn joints shall be at 6 m centres at points of changes in geometry and construction joints at 24 m, with jointed areas to have a plan aspect ratio no slenderer than 1:2.
- C6. Cover to reinforcement shall be 40 mm for slabs and 50 mm for footings.
- C7. Reinforcement shall be deformed, 500 MPa yield strength, normal (N) ductility in accordance with AS/NZS4671 for bars and low (L) ductility for mesh.
- C8. Formwork shall be designed and constructed in accordance with AS3610, and is the responsibility of the contractor.
- C9. All steel items to be cast into the concrete surface shall be hot dip galvanised.

DEVELOPMENT APPLICATION DOCUMENT

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council

MASONRY

- M1. All workmanship and material shall be in accordance with AS 3700-2001.
- M2. Blockwork strength - Grade 12.
- M3. Mortar mix shall be Class M3 - 1 : 1 : 6 Cement : Lime : Sand.
- M4. Cavities and cores to be grout filled shall be kept clear of mortar droppings, or blockouts provided to allow cleaning out at base.
- M5. Grout used to fill reinforced masonry shall be N20 grade with sufficient slump to adequately fill the blockwork units.
- M6. Cover to reinforcement to be 15mm to inside of masonry units (20mm for exposure classification B1).
- M7. Refer to the Architectural drawings for details of control joints in masonry walls. If none are shown, provide joints at 8.0m centres. Control joints shall be 10mm wide, free of mortar, and sealed with an appropriate flexible sealant.
- M8. Unless otherwise specified, provide galvanised brick ties at 600mm vertical centres across all control joints and tie masonry walls to steel, concrete or reinforced masonry beams and columns at 600mm centres horizontally and vertically respectively.
- M9. Masonry anchors in hollow masonry to be chemical anchors with sieve insert.

RETAINING WALLS

- RW1. Retaining walls shall be constructed in accordance with AS4678-2002.
- RW2. Backfill to walls shall be an approved granular material (clay shall not be used). A 300mm wide free draining drainage layer shall be provided behind the wall.
- RW3. Provide a suitable waterproofing system to the rear of the wall, unless confirmed otherwise.
- RW4. The wall shall be drained with 100mm slotted PVC pipe installed at 1% fall (minimum) and be connected to the stormwater disposal system (or weepholes installed at the base where appropriate).
- RW5. The Contractor shall maintain excavated batters at a stable slope and provide shoring to steeper excavations until construction and backfilling of the wall is complete.
- RW6. Retaining walls that rely on other structural elements for stability shall be provided with temporary support until after these elements have been constructed.
- RW7. The Contractor shall allow a suitable curing period prior to backfilling. Backfilling shall be performed in a controlled manner which will not impose excessive stress on the wall.

LEGEND

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• 9 60 EX

• 9 80

• 9 80

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— W — W — W —

— EX FS — EX FS — EX FS —

— FS — FS — FS —

— EX S — EX S — EX S —

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— GW — GW — GW —

— TW — TW — TW —

— EX SW — EX SW — EX SW —

— SW — SW — SW —

— AG — AG — AG —

— CW — CW — CW —

— HW — HW — HW —

— HWF — HWF — HWF —

— HWR — HWR — HWR —

— TMW — TMW — TMW —

— CJ — CJ — CJ —

— KJ — KJ — KJ —

— SJ — SJ — SJ —

— W — W — W —

Existing surface level (surveyed)

Existing surface level (interpolated)

Proposed bulk earthworks level

Proposed finished surface level

Existing water supply external to building

Proposed water supply external to building

Existing fire supply

Proposed fire supply

Existing sewer drain

Proposed sewer drain

Proposed sewer drain (greasy waste)

Proposed sewer drain (trade waste)

Existing stormwater drain

Proposed stormwater drain

Proposed stormwater (larger)

Proposed DN100 ag. drain and geofabric sock

Proposed cold water supply internal to building

Proposed hot water supply

Proposed hot water supply (flow)

Proposed hot water supply (return)

Proposed tempered water supply

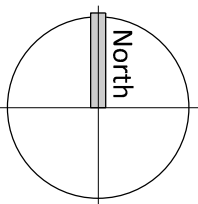
Proposed concrete construction joint

Proposed concrete key joint

Proposed concrete sawn joint

Proposed sediment fence

P2	PRELIMINARY		CT	02-04-2014			
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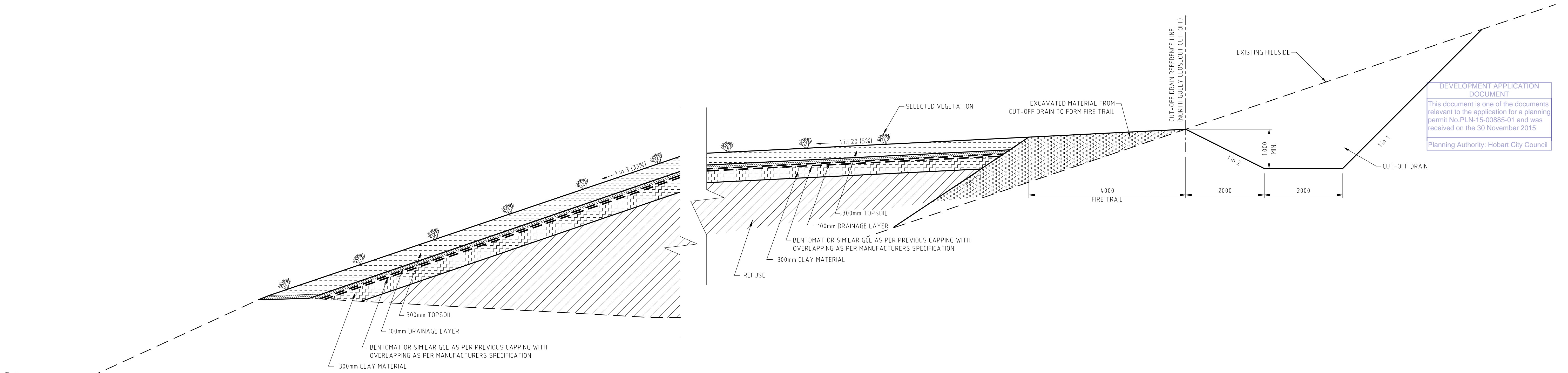
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HOBART CITY COUNCIL
McROBIES GULLY REFUSE SITE
FUTURE STAGING

DRAWING TITLE
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PROJECT 13.0591	DRAWING C200	REVISION P2



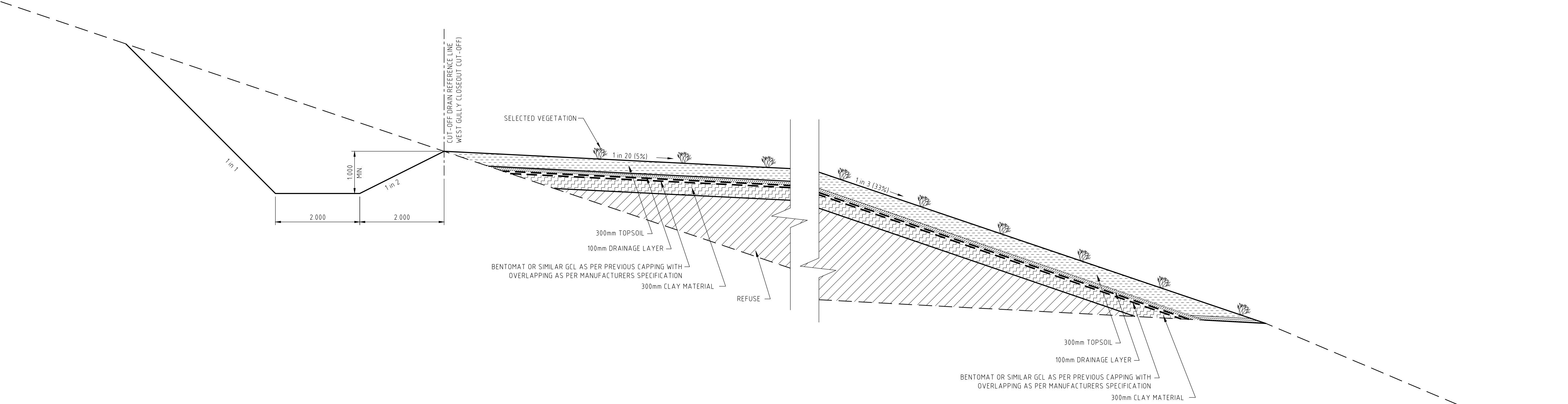
DEVELOPMENT APPLICATION DOCUMENT

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Planning Authority: Hobart City Council

NORTHERN CLOSEOUT CAPPING & NORTHERN GULLY CUT-OFF DRAIN

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WESTERN CLOSEOUT CAPPING & WESTERN GULLY CUT-OFF DRAIN

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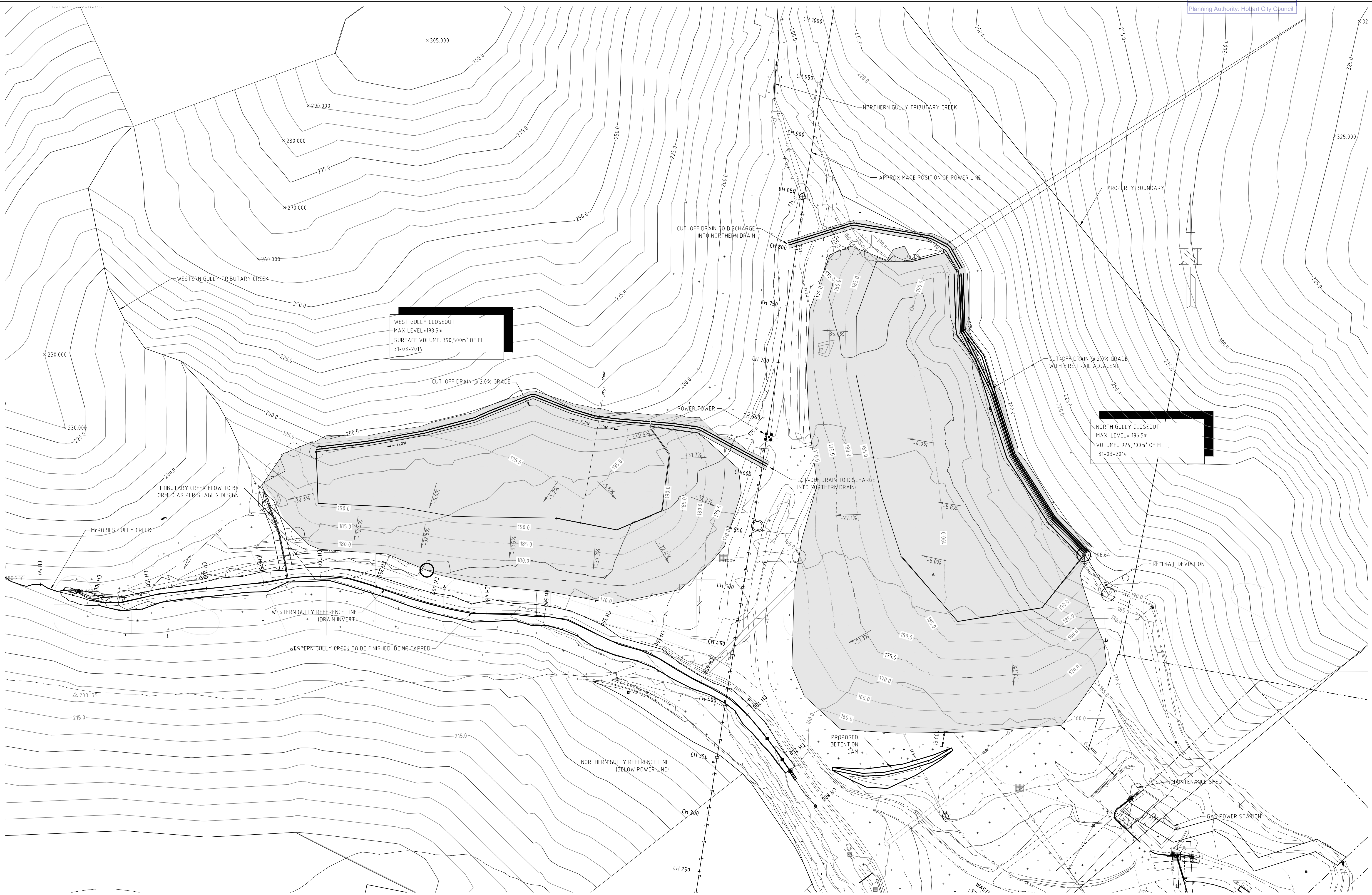
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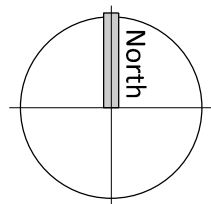
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TYPICAL CROSS SECTIONS

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PROJECT 13.0591	DRAWING C100	REVISION P2



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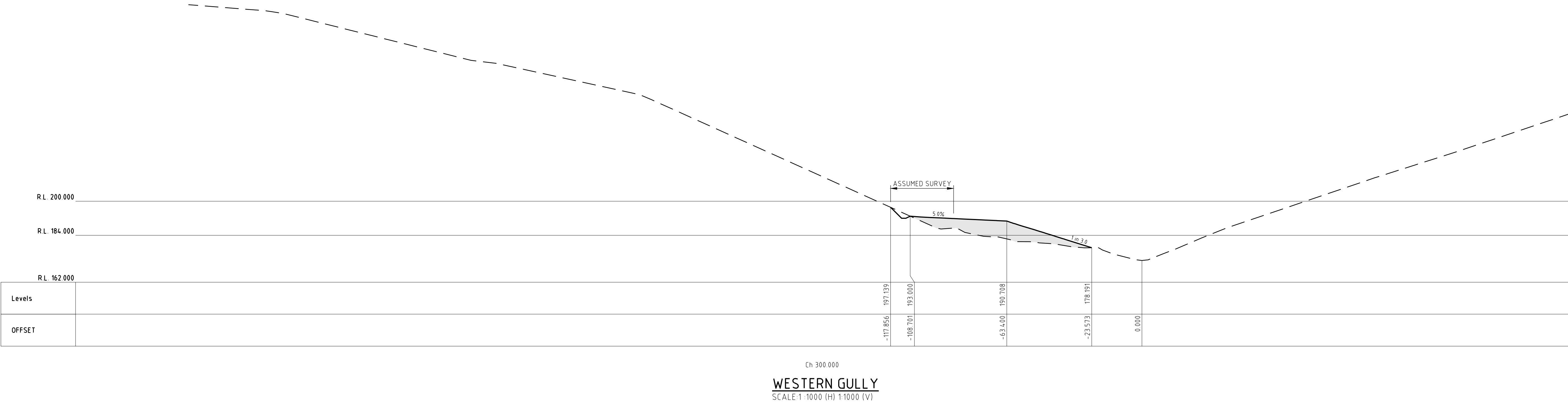
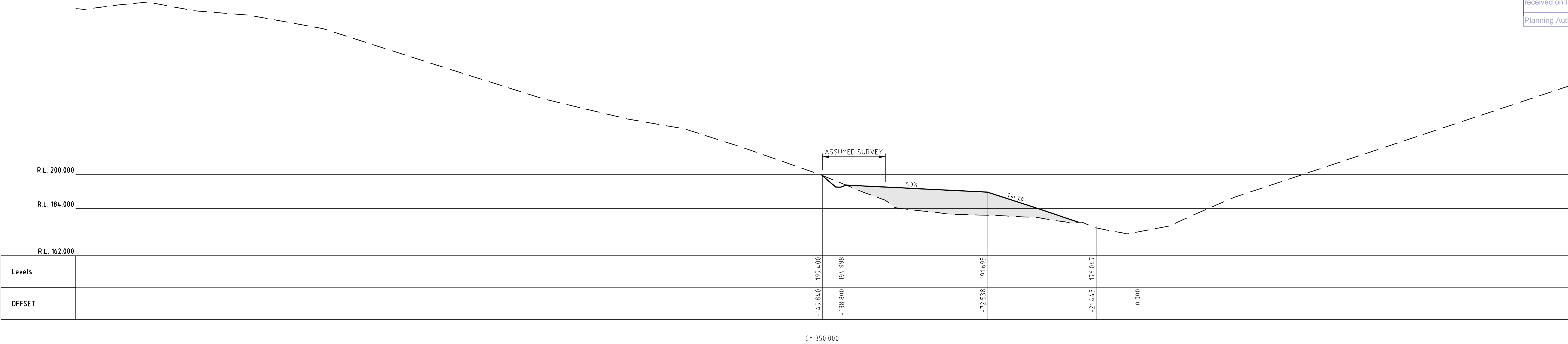


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DRAWING TITLE
200m MAXIMUM LEVEL SITEPLAN

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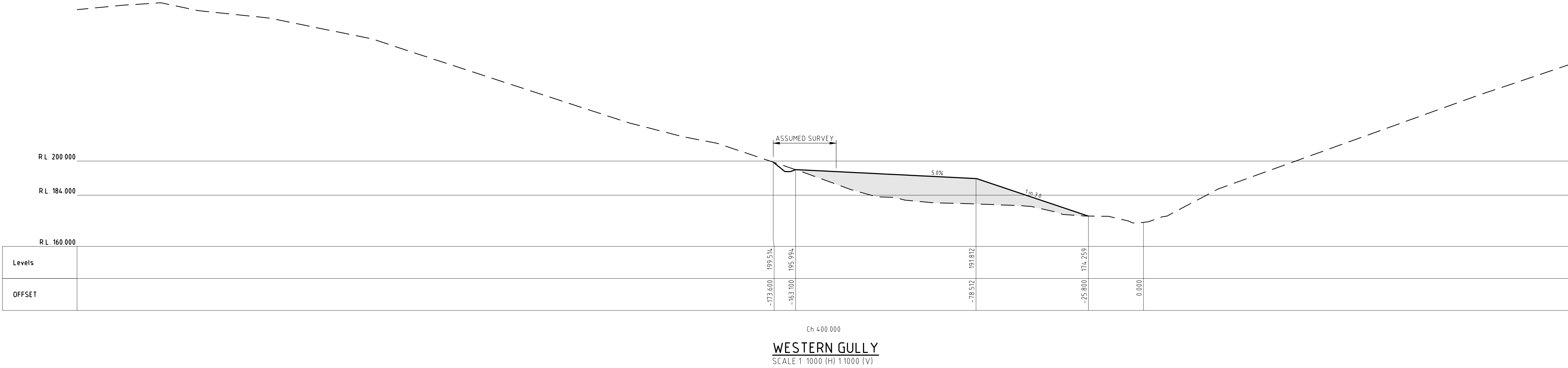
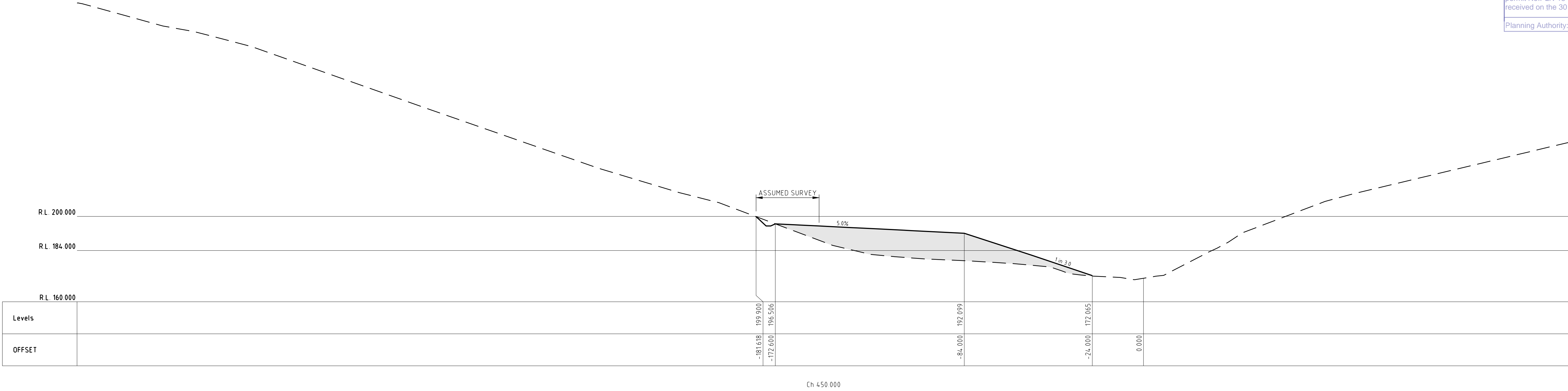
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13.0591	C300	P2

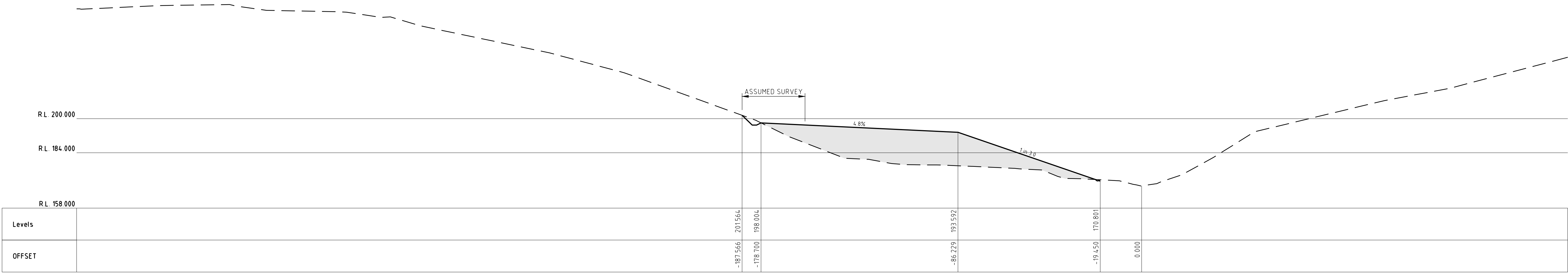
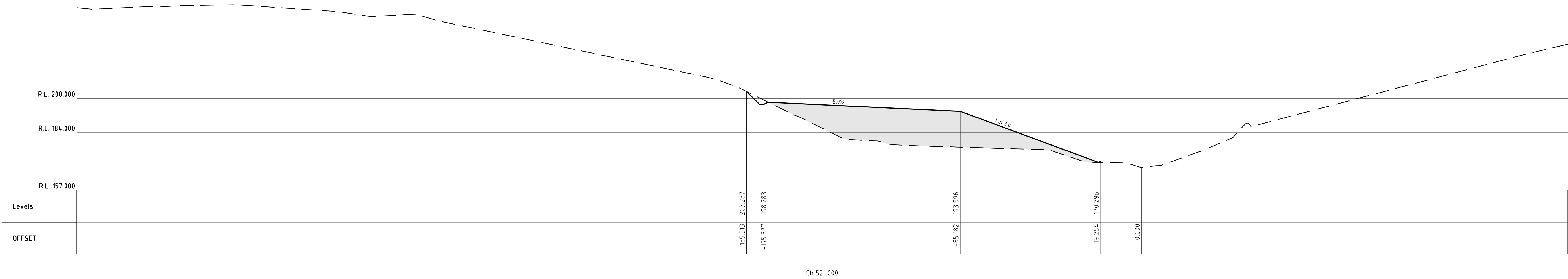


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DEVELOPMENT APPLICATION
DOCUMENT

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WESTERN GULLY
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WESTERN GULLY SECTIONS SHEET 3

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PROJECT 13.0591	DRAWING C302	REVISION P2



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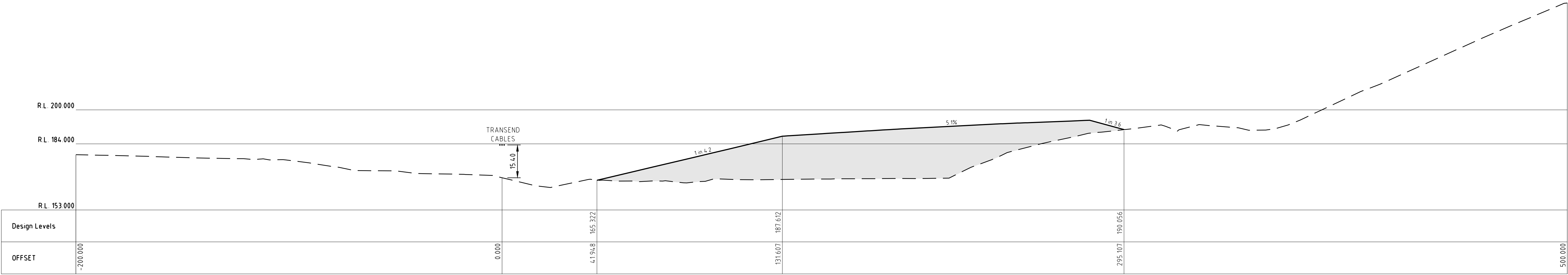
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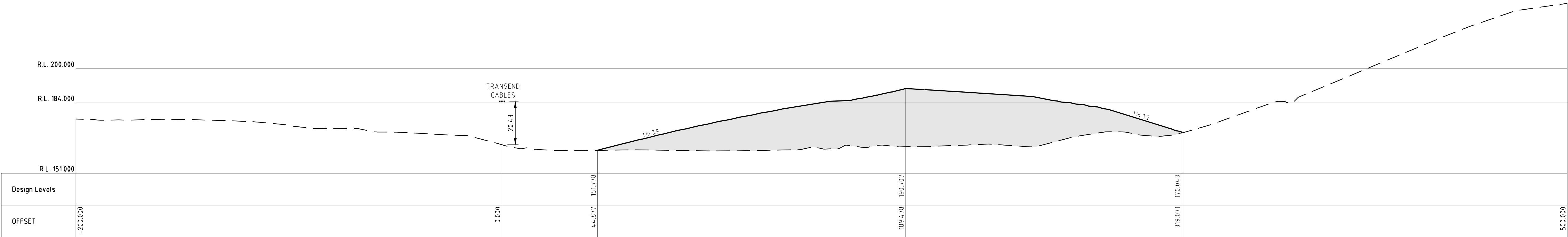
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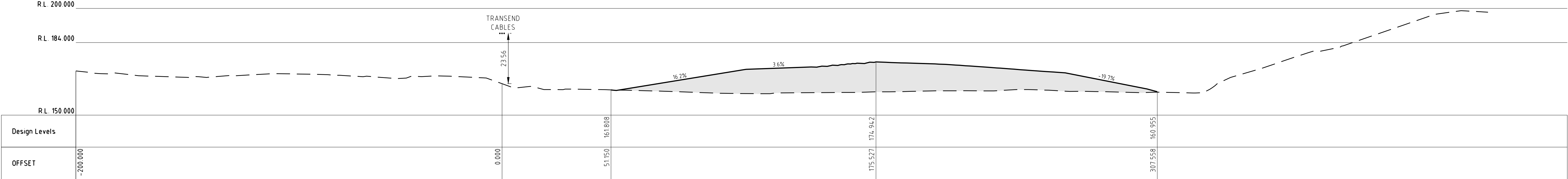
Planning Authority: Hobart City Council



Ch 550.000



Ch 500.000



Ch 450.000

NORTHERN GULLY
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FUTURE STAGING

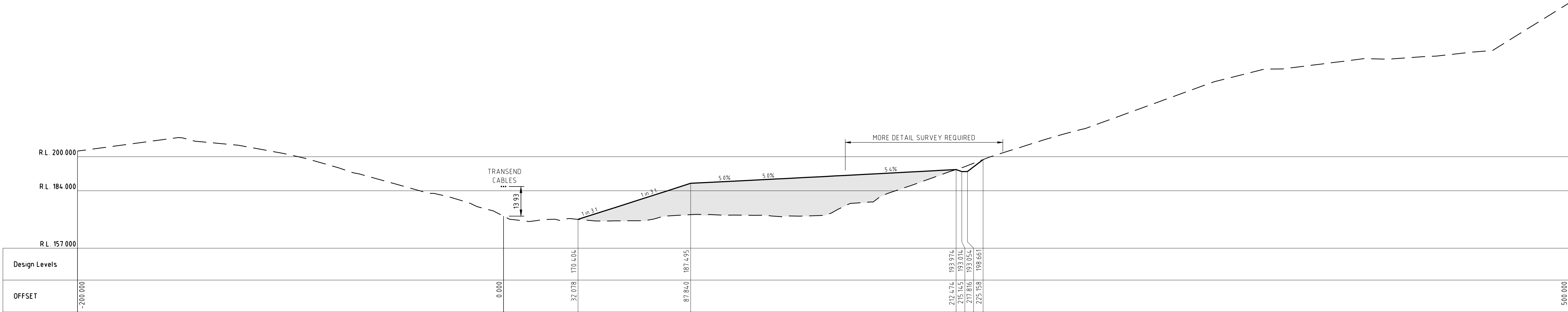
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NORTHERN GULLY SECTIONS SHEET 1

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DESIGNED S.CHAFFEY	DRAWN S.CHAFFEY	CHECKED CT
PROJECT 13.0591	DRAWING C320	REVISION P2

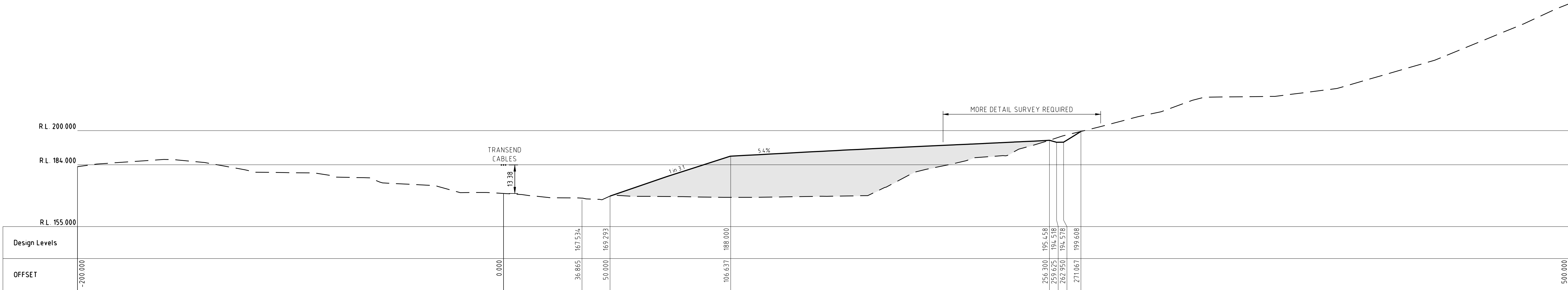
DEVELOPMENT APPLICATION
DOCUMENT

This document is one of the documents
relevant to the application for a planning
permit No.PLN-15-00885-01 and was
received on the 30 November 2015

Planning Authority: Hobart City Council



Ch 650+000



Ch 600+000

NORTHERN GULLY
SCALE:1:1000 (H) 1:1000 (V)

P2	PRELIMINARY	CT	02-04-2014				
REV	DESCRIPTION	APP'D	DATE	REV	DESCRIPTION	APP'D	DATE

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HOBART CITY COUNCIL
McROBIES GULLY REFUSE SITE
FUTURE STAGING

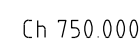
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NORTHERN GULLY SECTIONS SHEET 2

050mm

SCALE

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DESIGNED	DRAWN	CHECKED
S.CHAFFEY	S.CHAFFEY	CT
PROJECT	DRAWING	REVISION
13.0591	C321	P2



SCALE:1 :1000 (H) 1:1000 (V)

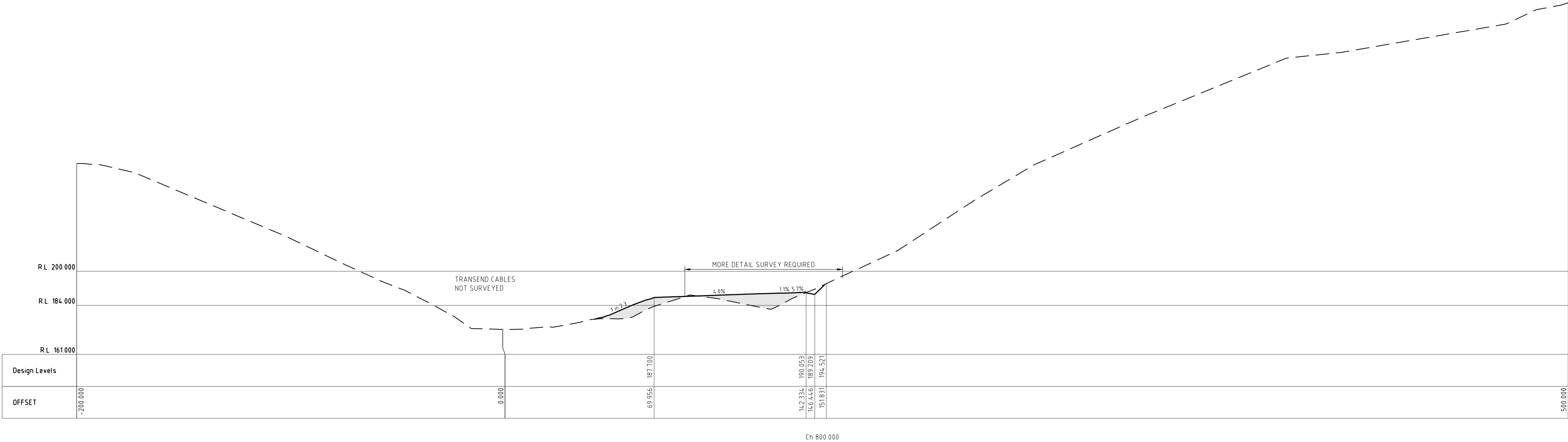
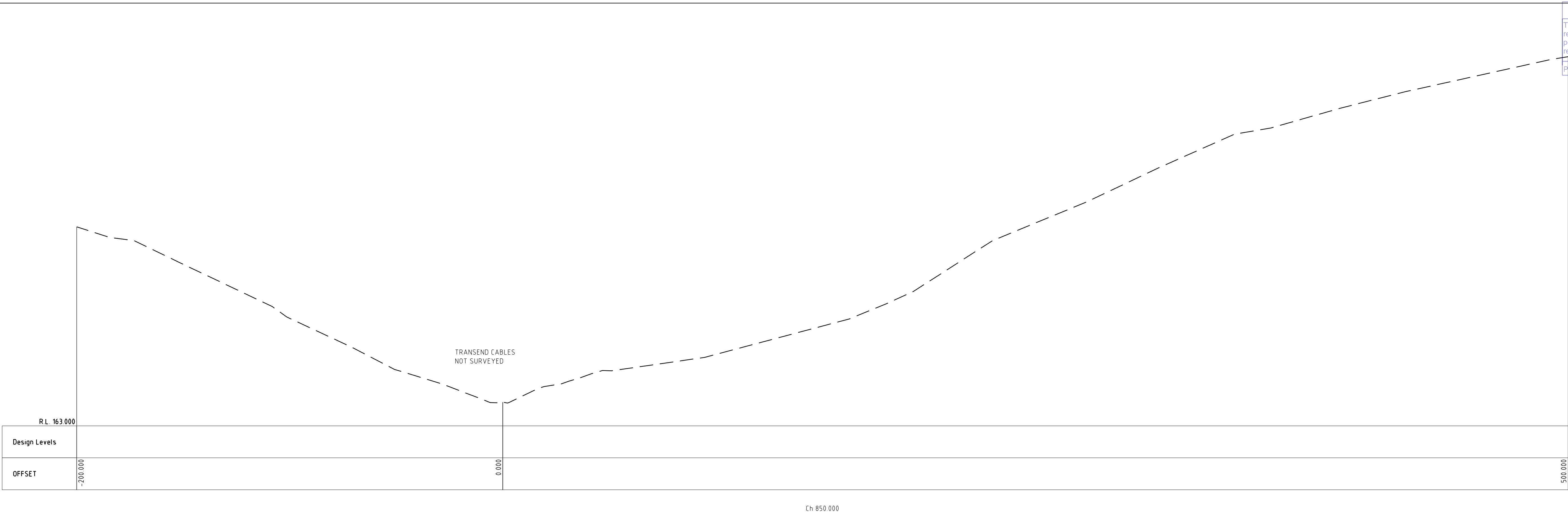
REV	DESCRIPTION	APP'D	DATE

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DRAWING TITLE
NORTHERN GULLY SECTIONS SHEET 3



DESIGNED S.CHAFFEY	DRAWN S.CHAFFEY	CHECKED CT
PROJECT 13.0591	DRAWING C322	REVISION P2



NORTHERN GULLY
SCALE 1:1000 (H) 1:1000 (V)

DEVELOPMENT APPLICATION
DOCUMENT

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council

S:\Projects\2013\13.0591 - McRobies Gully WME Environmental Management Plan\GAB Drawings\Gully Cross Section\3_model.dwg, 31/1/2014 3:34:11 PM

P2	PRELIMINARY	CT	02-04-2014				
REV	DESCRIPTION	APP'D	DATE	REV	DESCRIPTION	APP'D	DATE

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FUTURE STAGING

DRAWING TITLE
NORTHERN GULLY SECTIONS SHEET 4

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DESIGNED S.CHAFFEY	DRAWN S.CHAFFEY	CHECKED CT
PROJECT 13.0591	DRAWING C323	REVISION P2

Task	Activity	Cause	Effect	Highest Risk Consideration(s)	Risk Assessment			Legal & Other Requirements	Controls	Risk Assessment			Important Considerations? (Y if Yes)			Objectives & Targets/Monitoring	Risk Treatment Plan Number
					(Inherent Risk)					(Residual Risk)			Financial	Regulatory/Legal	Reputation		
					Likelihood	Consequence	Risk Rating			Likelihood	Consequence	Risk Rating					
Waste Disposal Operations	Transport of incoming waste	Uncovered waste in vehicles entering the site	Pollution caused by gross litter from poorly secured waste	Q, E	Likely	Minor	H	State Legislation - Litter Act 2007 EPN 715/1 - SO8 Litter Management	signage, litter patrols	Possible	Low	L					
Waste Disposal Operations	Transport of incoming waste	Uncovered waste in vehicles entering the site	Spillage of waste (larger items)	W	Unlikely	Moderate	M	State Legislation - Litter Act 2007 EPN 715/1 - SO8 Litter Management	signage, litter patrols	Unlikely	Low	L					1
Waste Disposal Operations	Transport of incoming waste	High number of traffic movements	Noise nuisance from vehicles	W	Unlikely	Minor	L	EPN 715/1 - S01 Hours of Operation, S012 Noise	location of landfill away from private property, hours of operation	Unlikely	Low	L					1
Waste Disposal Operations	Transport of incoming waste	High number of traffic movements	Air pollution - greenhouse gas impact from vehicle emissions	W	Likely	Low	M		out of Council's control	Likely	Low	M					1
Waste Disposal Operations	Transport of incoming waste	High number of traffic movements	Nuisance from odour generation	W	Possible	Low	L		out of Council's control								1
Waste Disposal Operations	Transport of incoming waste	Small vehicle movements within site causing dust	Nuisance from dust generation	W	Likely	Minor	H		Speed limits, isolated site, WTS, paved roads only	Rare	Low	L					1
Waste Disposal Operations	Transport of incoming waste	Large vehicle movements within site causing dust	Nuisance from dust generation	W	Likely	Minor	H		water truck to suppress dust, speed limits, isolated site	Possible	Minor	M					1
Waste Disposal Operations	Transport of incoming waste	Small vehicle movements within site causing dust	Water contamination by sediment	W	Possible	Minor	M	State Legislation - Litter Act 2007 EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Speed limits, isolated site, WTS, paved roads only, leachate collection system	Unlikely	Low	L					1
Waste Disposal Operations	Transport of incoming waste	Large vehicle movements within site causing dust	Water contamination by sediment	W	Possible	Minor	M	State Legislation - Litter Act 2007 EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Speed limits, isolated site, water truck to suppress dust, leachate collection system connected to sewer	Possible	Low	L					1
Waste Disposal Operations	Transport of incoming waste	Non-permitted waste entering the site	Water contamination	W	Possible	Minor	M	State Legislation - Litter Act 2007 EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	vehicle inspection, onsite personnel, leachate system connected to sewer	Rare	Minor	L					1



Waste Disposal Operations	Transport of incoming waste	Non-permitted waste entering the site	Air pollution and nuisance caused by odour	O ₁ E	Possible	Minor	M		Litter Patrol, Water truck (dust and odour suppression), vehicle inspection, onsite personnel	Unlikely	Minor	L						1
Waste Disposal Operations	Transport of incoming waste	Traffic accident	Physical injury	E ₁ S	Possible	Moderate	H		Speed Limits. Signage, site personnel, WTS	Unlikely	Moderate	M					use of Transport Tasmania to periodically monitor speed of vehicles (as required)	1
Waste Disposal Operations	Transport of incoming waste	Pedestrians walking on roadways within site	Physical injury	E ₁ S	Rare	Major	M		Keep to Footpath, speed limit	Rare	Moderate	L						
Waste Disposal Operations	Transport of incoming waste	Vehicles travelling in excess of speed limits	Physical injury	E ₁ S	Likely	Moderate	H		On Site Speed Limit Signage, onsite personnel	Possible	Minor	M			Y	Y		1
Waste Disposal Operations	Vehicles leaving landfill	Mud and other materials on vehicle tyres	Off site stormwater contamination	O ₁ E	Possible	Minor	M	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Suction Sweeper Water Truck, wheel wash, WTS, paved roads	Unlikely	Low	L						1
Waste Disposal Operations	Vehicles leaving landfill	Mud and other materials on vehicle tyres	Reduced visual appearance of roads	O ₁ E	Likely	Low	M		Suction Sweeper Water Truck, programmed maintenance, WTS, paved roads	Possible	Low	L						1
Waste Disposal Operations	Vehicles leaving landfill	Mud and other materials on vehicle tyres	Transport of weed seeds	O ₁ E	Possible	Low	L	EPN 715/1 - S09 Weed Management	Suction Sweeper Water Truck, wheelwash for large vehicles, WTS, paved roads	Possible	Low	L						1
Waste Disposal Operations	Vehicles leaving landfill	Mud and other materials on vehicle tyres	Nuisance from dust generation within site	O ₁ E	Likely	Minor	H		Water Truck, WTS, paved roads, wheel wash	Possible	Low	L						1
Waste Disposal Operations	Waste disposal	Tipping of waste outside allocated area	Attract vermin and birds	O ₁ E	Likely	Minor	H	EPN 715/1 - S10 Disease Vectors EPN 715/1 - SO2 Staffing	site attendant	Unlikely	Minor	L						1
Waste Disposal Operations	Waste disposal	Tipping of waste outside allocated area	Nuisance from odours	E	Possible	Minor	M	EPN 715/1 - SO2 Staffing	site attendant	Unlikely	Minor	L						1
Waste Disposal Operations	Waste disposal	Tipping of waste outside allocated area	Water contamination	O ₁ E	Possible	Minor	M	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	site attendant	Unlikely	Minor	L						1
Waste Disposal Operations	Waste disposal	Windblown litter	Litter to neighbouring properties	O ₁ E	Unlikely	Low	L	EPN 715/1 - S05 Waste Cover	Programmed Litter Collections	Unlikely	Low	L					Regular Litter Collection reported under SLA	
Waste Disposal Operations	Waste disposal	Windblown litter	Litter to waterways (Hobart rivulet)	O ₁ E	Unlikely	Low	L	EPN 715/1 - S05 Waste Cover	Programmed Litter Sock, grates preventing access to stormwater	Unlikely	Low	L					Regular Litter Collection reported under SLA	
Waste Disposal Operations	Waste disposal	Windblown litter	Poor visual appearance within site	O ₁ E	Likely	Low	M	EPN 715/1 - S05 Waste Cover, SO6 Waste Capping	Maintenance Programme Weekly Checks	Possible	Low	L					Regular Litter Collection reported under SLA	
Waste Disposal Operations	Waste disposal	Windblown litter	Poor visual appearance external to the site	O ₁ E	Rare	Low	L	EPN 715/1 - S05 Waste Cover, SO6 Waste Capping	Maintenance Programme Weekly Checks	Rare	Low	L					Regular Litter Collection reported under SLA	
Waste Disposal Operations	Waste disposal	Not covering refuse daily	Nuisance from odour	O ₁ E	Unlikely	Moderate	M	EPN 715/1 - S05 Waste Cover, SO6 Waste Capping	Cover Lids inert material	Unlikely	Low	L					Recorded under SLA reports	
Waste Disposal Operations	Waste disposal	Not covering refuse daily	Attract vermin and birds	O ₁ E	Likely	Minor	H	EPN 715/1 - S10 Disease Vectors	Cover Lids inert material	Possible	Low	L					Recorded under SLA reports	
Waste Disposal Operations	Waste disposal	Not covering refuse daily	Water contamination	O ₁ E	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Programmed Litter Sock, grates preventing access to stormwater	Unlikely	Low	L					Recorded under SLA reports	
Waste Disposal Operations	Waste disposal	Not covering refuse daily	Contamination from increased leachate generation	O ₁ E	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Leachate management system	Unlikely	Moderate	M					Recorded under SLA reports	



Waste Disposal Operations	Waste disposal	Mobile plant operations	Noise causing complaints	⚡	Possible	Minor	M	EPN 715/1 - S01 Hours of Operation, S012 Noise	use within operating hours, site away from public homes	Rare	Low	L						
Waste Disposal Operations	Waste disposal	Mobile plant operations	Greenhouse gas impact due to emissions	⚡	Likely	Low	M		vehicles meet Australian Standards, refer to Corporate Risk Register									
Waste Disposal Operations	Waste disposal	Mobile plant operations	Fuel spillage	⚡	Possible	Low	L		Spill Kits, plant maintenance	Rare	Low	L						
Waste Disposal Operations	Waste disposal	Food source for birds	Contamination of drinking water supplies	⚡	Possible	Low	L	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Daily Covering, treatment of water by TasWater, reservoir roofs installed	Rare	Low	L						
Waste Disposal Operations	Waste disposal	Some green waste going to landfill	Greenhouse gas impact from emissions	⚡	Likely	Moderate	H		Gas Extraction and flaring, sorting of waste, composting activities	Likely	Low	M				Y		
Waste Disposal Operations	Waste disposal	Some green waste going to landfill	Consumption of landfill space	⚡	Likely	Moderate	H	EPN 715/1 -SO11 Recycling and Recovery of Waste Materials, V1 surveys	compaction, composting activities, waste separation, resource recovery	Possible	Minor	M				Y		1
Waste Disposal Operations	Waste disposal	Landslip/ landslide	Physical injury	⚡	Rare	Catastrophic	H		Landfill Design, emergency procedure	Rare	Catastrophic	H						1
Waste Disposal Operations	Waste disposal	Machine rolling	Physical injury	⚡	Unlikely	Major	H		R.O.P.S, competent operator, seatbelt	Unlikely	Moderate	M						
Waste Disposal Operations	Waste disposal	Machine dislodging items whilst working	Physical injury	⚡	Possible	Moderate	H		Observation by Operator and site attendant, buffer zone	Unlikely	Moderate	M						
Waste Disposal Operations	Waste disposal	Machinery failures	Physical injury	⚡	Unlikely	Moderate	M		Regular Maintenance, pre start checks	Rare	Moderate	L						
Waste Disposal Operations	Waste disposal	Illegal salvaging of items from tip face	Illness (poisoning)	⚡	Unlikely	Moderate	M		site attendant, WTS, scavenging arrangements	Rare	Low	L						1
Waste Disposal Operations	Waste disposal	Illegal salvaging of items from tip face	Physical injury	⚡	Possible	Low	L		Salvage Contract - Spillage Control, site attendant	Rare	Low	L						
Waste Disposal Operations	Waste disposal	Fuelling of vehicles	Physical injury (explosion, inhalation)	⚡	Unlikely	Major	H		Trained Staff, JSA, spill kits	Rare	Major	M						
Waste Disposal Operations	Waste disposal	Working near power lines	Physical injury (electrocution)	⚡	Unlikely	Major	H		Trained Staff, JSA	Unlikely	Major	H				Y		
Waste Disposal Operations	Waste disposal	Receipting of monies	Physical injury &/or stress (from hold up)	⚡	Possible	Major	E		Contract Collection, Hold Up Training for operators, remote monitored duress alarm	Possible	Moderate	H						
Waste Disposal Operations	Waste disposal	Closure of landfill	Stress (from being locked in landfill)	⚡	Possible	Low	L		Site inspection prior to closure, WTS, sign-in register for non-public	Rare	Low	L						
Waste Disposal Operations	Waste disposal	Operation of landfill	Physical injury (from windblown items)	⚡	Possible	Moderate	H		Closure Procedure, Duty Officer, wind monitoring	Unlikely	Moderate	M				Y		1
Waste Disposal Operations	Waste disposal	Operation of landfill	Physical injury (from trip or uneven ground etc)	⚡	Possible	Minor	M		Induction, compaction, JSA, use of vehicle, WTS	Unlikely	Minor	L						
Waste Disposal Operations	Waste disposal	Site inspections	Physical injury (from fall off embankment, into drain etc)	⚡	Possible	Moderate	H		Induction, use of vehicle	Possible	Minor	M						
Waste Disposal Operations	Waste disposal	Operation of noisy machinery	Injury (loss of hearing abilities)	⚡	Possible	Moderate	H		PPE (hearing protection, safety vest, seatbelt), maintenance	Rare	Moderate	L					biennial testing	
Waste Disposal Operations	Controlled waste disposal	Disposal of asbestos	Illness from exposure to dust during disposal	⚡	Unlikely	Major	H		Immediate Burial, domestic amounts only, record of location, acceptance criteria	Rare	Major	M						
Waste Disposal Operations	Controlled waste disposal	Disposal of controlled &/or infectious wastes	Illness (poisoning)	⚡				EPN 715/1 -H1 Controlled Waste Conditions	No commercial controlled waste - minor quantities asbestos only									



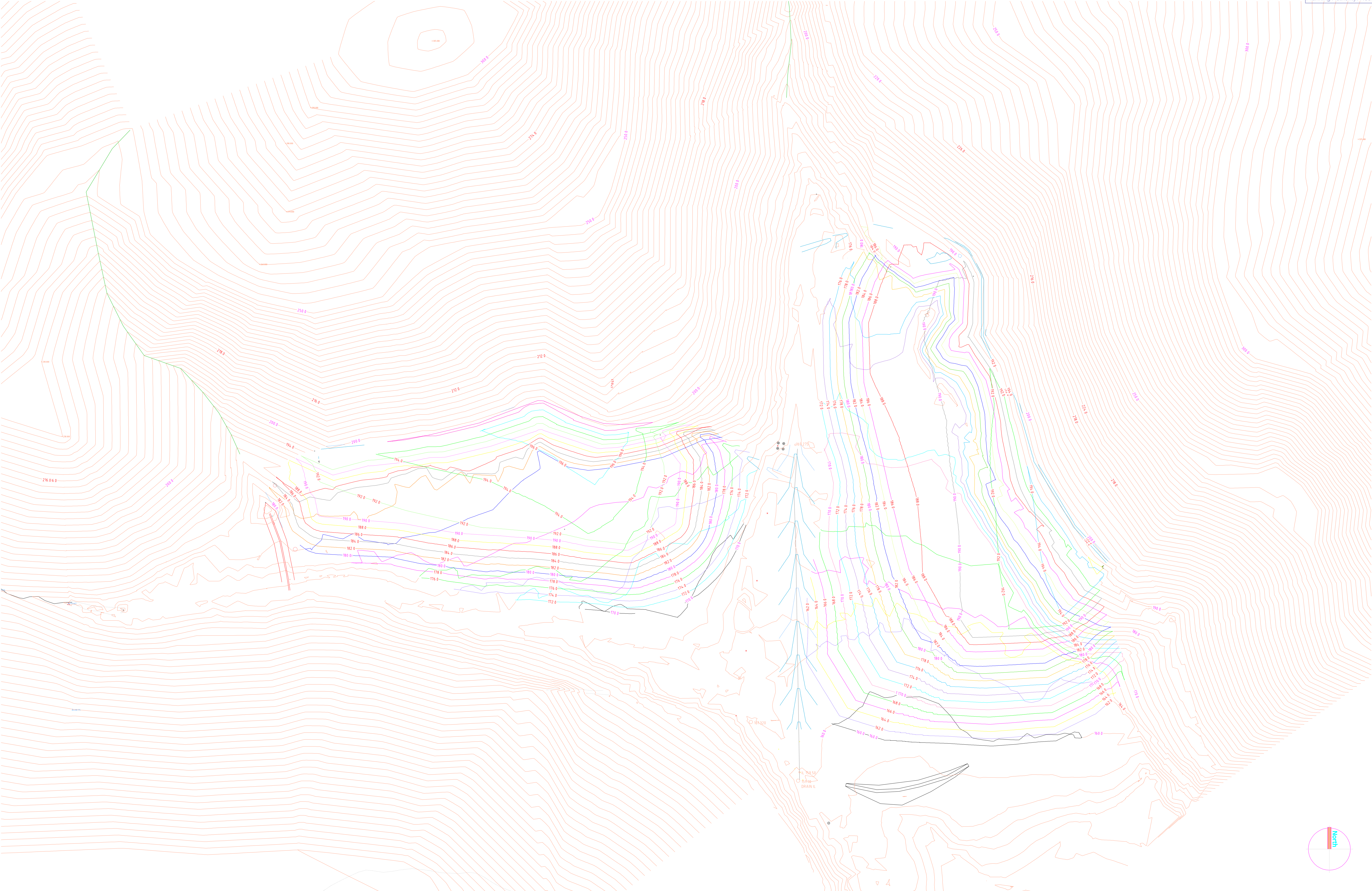
Waste Disposal Operations	Cover fill operations and earthworks	Plant operations transporting cover fill	Noise nuisance	Unlikely	Minor	L	EPN 715/1 - S01 Hours of Operation, S012 Noise	hours of operation, maintenance of vehicles	Unlikely	Low	L						
Waste Disposal Operations	Cover fill operations and earthworks	Plant operations transporting cover fill	Greenhouse gas impact from emissions	Likely	Low	M	vehicles meet AS		Likely	Low	M						
Waste Disposal Operations	Cover fill operations and earthworks	Plant operations transporting cover fill	Fuel spillage	Rare	Low	L	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Spill Kits where fuel can flow to stormwater/sewer. When fuel falls on dirt the contaminated area is dug up and disposed of as contaminated waste	Rare	Low	L						
Waste Disposal Operations	In situ waste management	Landfill gas emissions	Odour nuisance	Almost Certain	Low	H		Landfill Gas / Capture co-generate	Possible	Low	L						AGL contracted to extract gas
Waste Disposal Operations	In situ waste management	Landfill gas emissions	Greenhouse gas impact from emissions	Likely	Minor	H		Landfill Gas / Capture co-generate, resource recovery, composting	Unlikely	Low	L						AGL contracted to extract gas
Waste Disposal Operations	In situ waste management	Landfill gas emissions	Land instability	Unlikely	Major	H		compaction, gas extraction	Rare	Major	M						AGL contracted to extract gas
Waste Disposal Operations	In situ waste management	Leachate within landfill	Land instability	Unlikely	Major	H		good drainage, Leachate Management System, compaction	Rare	Major	M						Water monitoring program as per EPN 715/1 - M2
Waste Disposal Operations	In situ waste management	Leachate within landfill	Water contamination - seepage of leachate into stormwater pipeline or drainage channels	Possible	Minor	M	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Leachate Management System, drains are uphill from main leachate areas	Unlikely	Low	L						Water monitoring program as per EPN 715/1 - M2
Waste Disposal Operations	In situ waste management	Operation of Landfill	Illness (from inhalation of Landfill gas)	Possible	Minor	M		Gas Detector - PPE Available, JSA, confined space register??	Rare	Minor	L						
Waste Disposal Operations	In situ waste management	Operation of Landfill gas plant	Physical injury (explosion)	Rare	Catastrophic	H	EPN 715/1 -LFG1 Landfill Gas Extraction	Evacuation Plan, regular maintenance, shut off valve	Rare	Catastrophic	H				Y		
Waste Disposal Operations	Surface water management	Surface water drains blocked or damaged	Leachate generation causing pollution	Unlikely	Moderate	M	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Leachate Management System	Unlikely	Low	L						Weekly inspections under SLA reports, water monitoring
Waste Disposal Operations	Surface water management	Litter control devices at storm water entrances blocked	Overland flow to McRobies Road and McRobies Creek	Possible	Minor	M	EPN 715/1 -SO8 Litter Management	Regular Cleaning and Inspections, JSA	Rare	Low	L						Weekly inspections under SLA reports
Waste Disposal Operations	Surface water management	Litter sock not cleaned	Odour nuisance	Rare	Low	L		water filtering through sock, weekly inspections, changeover as required	Rare	Low	L						Weekly inspections under SLA reports
Waste Disposal Operations	Surface water management	Litter sock not cleaned	Poor Visual appearance	Unlikely	Low	L		away from public viewing	Rare	Low	L						Weekly inspections under SLA reports
Waste Disposal Operations	Surface water management	Litter sock not cleaned	Vermin attraction	Unlikely	Low	L	EPN 715/1 - S10 Disease Vectors	no food waste	Rare	Low	L						Weekly inspections under SLA reports
Waste Disposal Operations	Surface water management	Water monitoring	Illness (viruses etc from contaminants such as E coli)	Unlikely	Minor	L		Leachate management system, no contaminated or hospital waste, PPE when sampling	Rare	Low	L						water monitoring program as per EPN 715/1 - M2
Waste Disposal Operations	Leachate management	Excess leachate flows diverted to stormwater	Water contamination (Hobart Rivulet)	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Regular Inspections and Cleaning as per EPA, JSA, desludging biennial of pond, monitoring of environment	Possible	Moderate	H						Weekly inspections under SLA reports plus Citect monitoring software



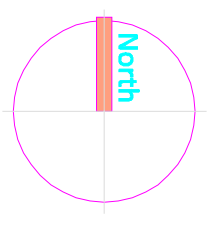
Waste Disposal Operations	Leachate management	Blockage of diversion weir	Water contamination (Hobart Rivulet)	O, E	Possible	Minor	M	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Regular Inspections and Cleaning as per EPA, JSA, desludging biennial of pond	Rare	Low	L					Weekly inspections under SLA reports plus Citect monitoring software	
Waste Disposal Operations	Leachate management	Leachate entering groundwater down gradient of leachate pond	Groundwater contamination	O, E	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	maintenance of pipes, groundwater monitoring, respond with action plan if pollution identified	Possible	Moderate	H					Weekly inspections under SLA reports plus Citect monitoring software	
Waste Disposal Operations	Leachate management	Poor quality leachate affecting treatment plant performance	Poor effluent quality at treatment plant	E	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Aerator, Testing, no more controlled waste	Possible	Minor	M					Weekly inspections under SLA reports plus Citect monitoring software	
Waste Disposal Operations	Leachate management	Anaerobic conditions in leachate pond	Greenhouse gas impact from emissions	E	Possible	Minor	M		Aerator, Testing, inspections	Unlikely	Low	L					Weekly inspections under SLA reports plus Citect monitoring software	
Waste Disposal Operations	Leachate management	Anaerobic conditions in leachate pond	Odour nuisance	E	Likely	Minor	H		Dosing Deodoriser, Aerator, located away from public homes	Unlikely	Minor	L					Weekly inspections under SLA reports plus Citect monitoring software	
Waste Disposal Operations	Leachate management	Leachate monitoring	Physical injury &/or illness (fall into leachate pond)	O, E, S	Possible	Catastrophic	E	Fencing, limited access, sample taken with bc		Rare	Low	L						2
Waste Disposal Operations	General Operations	Weed growth	Spreading of weeds	E	Likely	Low	M	EPN 715/1 - SO9 Weed Management	Weed Spray Program (done by contractors), wheel wash	Possible	Low	L						
Waste Disposal Operations	General Operations	Erosion from areas with intermediate cover, particularly non-vegetated areas	Sediment pollution of surface water	E	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	site management, inspections, repairs	Unlikely	Minor	L						
Waste Disposal Operations	General Operations	Erosion from areas with intermediate cover, particularly non-vegetated areas	Exposure of refuse - surface water contamination	E	Unlikely	Low	L	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management,	Contouring of Landfill, repairs immediate	Unlikely	Low	L						
Waste Disposal Operations	General Operations	Erosion from areas with intermediate cover, particularly non-vegetated areas	Leachate generation	E	Possible	Minor	M	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	site management, contouring of landfill	Possible	Minor	M						
Waste Disposal Operations	General Operations	Vandalism of mobile plant due to insufficient security	disruption to operations	E	Rare	Minor	L		Security Camera - Plant Shed - Fencing, on site personnel	Rare	Low	L					Reported under SLA	
Waste Disposal Operations	General Operations	Breakdown of mobile plant	disruption to operations	O, E, S	Possible	Minor	M		2 Machines Available, plant maintenance, pre-start checks, changeover of machines	Rare	Low	L					Reported under SLA	
Waste Disposal Operations	General Operations	Washing of vehicles	Surface water contamination	E	Unlikely	Low	L	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Water to Triple to sewer, use of wash down enforced	Rare	Low	L					Reported under SLA	
Waste Disposal Operations	General Operations	Fire	General impacts	S	Unlikely	Catastrophic	E		fire fighting equipment, breathing apparatus,	Unlikely	Major	H				Y		3
Waste Disposal Operations	General Operations	Flood	General impacts	S	Unlikely	Catastrophic	E		site design - N/A, Emergency procedure	Unlikely	Major	H						
Waste Disposal Operations	General Operations	Pedestrian access at tip face	Physical injury	S	Possible	Catastrophic	E		Traffic Attend, No Use of Plant Near Vehicles, operator training, site attendant, speed limits, WTS used	Unlikely	Moderate	M						



Waste Disposal Operations	General Operations	Landscaping and revegetation	Erosion from poorly rehabilitated areas - sediments	E	Possible	Low	L	EPN 715/1 - R1, R2, R3, R4 Rehabilitation conditions	No History, site management, leachate pond	Rare	Low	L						
Waste Disposal Operations	General Operations	Landscaping and revegetation	Weed seed source	E, E	Possible	Minor	M	EPN 715/1 - SO9 Weed Management	Weed Spray Program	Unlikely	Low	L						
Waste Disposal Operations	General Operations	Landscaping and revegetation	Poor visual appearance	E, E	Possible	Low	L	EPN 715/1 - SO6 Capping, SO5 Waste Cover, R1, R2, R3, R4	Maintenance programme, site maintenance, rehabilitation program	Unlikely	Low	L						
Waste Disposal Operations	General Operations	Insufficient thickness (or permeability) of final capping	Leachate generation - pollution	E	Possible	Low	L	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	ab, rehab in accrodance wi	Rare	Low	L						
Waste Disposal Operations	General Operations	Insufficient thickness (or permeability) of final capping	Increased water table - land instability, landslip	E	Rare	Major	M	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	emergency response plan??			L						
Waste Disposal Operations	General Operations	lack of filling plan	Poor surface water control, ponding, erosion	E, E	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management,	Filling Plan in place, contouring, site management, Leachate Management Plan, trained staff	Unlikely	Minor	L						
Waste Disposal Operations	General Operations	lack of filling plan	Pollution from increased leachate generation	E	Possible	Moderate	H	EPN 715/1 -C2 Leachate Collection System, C3 Surface Water Management	Filling Plan in place, contouring, site management, Leachate Management Plan, trained staff	Unlikely	Minor	L						
Energy Use	refer to Corporate Risk Register F11/15211																	
Water Use	refer to Corporate Risk Register F11/15211																	
Stair Use	refer to Corporate Risk Register F11/15211																	
Untidy work areas	refer to Corporate Risk Register F11/15211																	
Stress	refer to Corporate Risk Register F11/15211																	
Bullying and Harassment	refer to Corporate Risk Register F11/15211																	
customer service - interaction with customers and/or the general public	refer to Corporate Risk Register F11/15211																	
manual handling	refer to Corporate Risk Register F11/15211																	
vehicle use/travel	refer to Corporate Risk Register F11/15211																	
pedestrian movements	refer to Corporate Risk Register F11/15211																	
cords and electrics	refer to Corporate Risk Register F11/15211																	
cash handling	refer to Corporate Risk Register F11/15211																	
working outdoors	refer to Corporate Risk Register F11/15211																	
emergency management	refer to Corporate Risk Register F11/15211																	



STAGE OF LIFT
SCALE 1:1500 @ A1



This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council

Appendix G – Surface & Ground Water Monitoring Schedules

Table 1 SURFACE WATER AND LEACHATE MONITORING

	MONITORING PARAMETERS	MONITORING FREQUENCY
Group 1	pH	Quarterly
	Conductivity	Quarterly
	Total Dissolved Solids	Quarterly
	Redox potential (Eh)	Quarterly
	Total Suspended Solids	Quarterly
	Turbidity	Quarterly
	Alkalinity (as CaCO ₃)	Quarterly
	Total Nitrogen	Quarterly
	Ammonia	Quarterly
	Nitrate	Quarterly
	Nitrite	Quarterly
	Total phosphorus	Quarterly
	Orthophosphate	Quarterly
	Dissolved Organic Carbon	Quarterly
	Chemical Oxygen Demand	Quarterly
	E. coli	Quarterly
	Total CN (as CN)	Quarterly
Group 2	Total Iron (Fe)	Quarterly
	Aluminium (Al)	Quarterly
	Copper (Cu)	Quarterly
	Zinc (Zn)	Quarterly
	Chromium (Cr)	Quarterly
	Manganese (Mn)	Quarterly
	Nickel (Ni)	Quarterly
	Lead (Pb)	Quarterly
	Cadmium (Cd)	Quarterly
	Chloride	Yearly
Group 3	Sulphate	Yearly
	Sodium (Na)	Yearly
	Potassium (K)	Yearly
	Magnesium (Mg)	Yearly

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council

Table 2 GROUNDWATER MONITORING

	MONITORING PARAMETERS	MONITORING FREQUENCY
Group 1	bore depth	6 monthly
	ground water depth	6 monthly
	static hydraulic head	6 monthly
	pH	6 monthly
	Conductivity	6 monthly
	Total Dissolved Solids	6 monthly
	Redox potential (Eh)	6 monthly
	Total Nitrogen	6 monthly
	Ammonia	6 monthly
	Nitrate	6 monthly
	Nitrite	6 monthly
	Total phosphorus	6 monthly
	Orthophosphate	6 monthly
	Dissolved Organic Carbon	6 monthly
	Chemical Oxygen Demand	6 monthly
Group 2	Total CN (as CN)	6 monthly
	Total Iron (Fe)	6 monthly
	Copper (Cu)	6 monthly
	Zinc (Zn)	6 monthly
	Chromium (Cr)	6 monthly
	Manganese (Mn)	6 monthly
	Nickel (Ni)	6 monthly
	Lead (Pb)	6 monthly
	Cadmium (Cd)	6 monthly
Group 3	Chloride	Yearly
	Sulphate	Yearly
	Sodium (Na)	Yearly
	Potassium (K)	Yearly
	Magnesium (Mg)	Yearly

Appendix H - McRobies Gully Water Monitoring Program Analysis**McRobies Gully Landfill Water Monitoring 2012-13*****Sampling Program Analysis*****Dates**

Monitoring was carried out by an external consultant on all sampling events in 2012-13. The groundwater sampling was carried out on 18/12/12, 27/02/13 and 30/05/13. The surface water sampling was carried out on 28/8/12, 14/11/12, 20/02/13 and 21/05/13. The annual sampling parameters for groundwater were tested in the December round, while the annual parameters for surface water were tested in the February sampling round.

All samples were delivered to the Selfs Point laboratory, with some analysis carried out by Analytical Services Tasmania. The sampling did not include any significant wet weather events (maximum rainfall in the preceding 24hrs was 0.4mm to 9am 20/02/2013), although several samples were taken after recent rain (ie significant rain in the preceding week), giving moderate-high flows.

Results from the downstream Hobart Rivulet site and Pottery Creek outfall are affected by stormwater discharges from their residential catchments. After heavy rainfall, the control sites also record values greater than the default trigger values, and greater variability is likely.

Surface water samples were taken from the Leachate Pond, Hobart Rivulet (5m above and 5m below the McRobie Gully stormwater outfall, between 27 and 29 Degraes St), and the Pottery Creek outfall to New Town Rivulet in John Turnbull Park.

Ground water samples were taken from the two far upgradient bores 2007/1 and 2007/2, and the downgradient bore 1996/3. Cromer (2008) stated the new bores "are hundreds of metres laterally and about 50m vertically upgradient from the tip, and cannot be affected by leachate from it".

Results from the outfall of Pottery Creek to New Town Rivulet at John Turnbull Park are likely to be strongly affected by stormwater from the residential sub-catchment. While there has been only limited development in this catchment since 2006, Pottery Creek is known to be subject to contamination from the residential area and associated sewage infrastructure.

Council has invested significant resources into the construction of a diversion drain to carry clean uncontaminated water around the western boundary of the landfill, rather than piped underneath to the leachate pond. The diversion drain was intended to have two main effects:

- Less stormwater to sewer (which will be predominantly noticeable in decreased sewer flows, and may be noticeable in higher concentrations in the leachate pond); and
- Less frequent discharges of leachate to stormwater (which will be predominantly noticeable in fewer incidents).

Conclusions are drawn based on guideline trigger values, trends of other analytes from the same samples, and historical data.

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 30 November 2015

Planning Authority: Hobart City Council

Results

Trigger values

Guideline values have been adopted from the ANZECC (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* trigger values for “slightly to moderately disturbed” freshwater systems and South-East Australian rivers found in Tables 3.3.2, 3.3.3 and 3.4.1. These are generally the toxicant trigger values for lowland rivers or protection of 95% of freshwater species, except where the 99% trigger value was recommended for slightly-moderately disturbed ecosystems, or a Tasmanian trigger value was provided for upland rivers. Faecal bacteria parameters are measured against secondary contact recreational guidelines detailed in ANZECC (2000). Additional guidance has been taken from trigger values for particular uses of groundwater collated in the NEPC *National Environment Protection (Assessment of Site Contamination) Measure* 1999, Schedule B1, Table 5B, and previous studies of water quality in Hobart. A ‘historical’ site-specific trigger of the median + standard deviation has also been used as a rough indication of historical range.

Limits of Reporting and Analytes

Metal concentrations in the reporting period have been determined by both ICP-AES and ICP-MS. The laboratory limit of reporting (LOR) provided by ICP-AES can exceed the trigger values for several metals, including cadmium, lead and selenium, and as such, it is impossible to determine if these metals are less than the guideline values.

Groundwater samples taken on 28/7/2011 were analysed for total metals rather than dissolved metals. The environmental effects of high metal concentrations rely on their bioavailability. Total metals may be much higher than dissolved metal concentrations for the same environmental impact.

Surface Water

All parameters sampled only once per year (arsenic, selenium, mercury, TPH, BTEX, polynuclear aromatic hydrocarbons, pesticides and PCBS) came back as below the Limit of Reporting, except for arsenic in the leachate pond (7ug/L). However the laboratory noted the Leachate Pond sample contained 0.17ug/L of hexazinone, a broad spectrum herbicide. This herbicide was also detected in the leachate pond annual sample of March 2011. Previous studies reported in Ganapathy (1996) found that hexazinone has a moderately long half-life of more than 56 days in creeks, however the level detected in the leachate pond is below the EC₅₀ for the most sensitive specie reported in the UN FAO Specification and Evaluation for Hexazinone (2012) (0.21ppm for blue-green algae).

For the four samples taken, the leachate pond did not meet the default trigger values for conductivity (3 samples out of 4), pH (1/4), TSS (4/4), turbidity (4/4), total nitrogen (4/4), nitrates (3/4), ammonia, total phosphorous (3/4), orthophosphorous (3/4), chloride (3/4), E.coli (4/4), cyanide (4/4), aluminium (2/3), chromium (4/4), copper (3/4), iron (4/4), manganese (2/4), nickel (4/4), lead (1/4), and zinc (2/4). The exceedances are large as expected, and the leachate pond must discharge to sewer.

Pottery Creek exceeded the trigger value for pH (2/4), TSS (1/4), turbidity (1/4), total nitrogen and nitrates (3/4), chloride (1/4), E.coli (1/4), aluminium (2/4), chromium (1/4), copper (4/4), iron (1/4) and zinc (4/4). All of these results were however within one standard deviation of the median for this site, except for faecal bacteria and heavy metals taken in June, under extremely high flow. A

clear continuance of Pottery Creek having generally poorer water quality than Hobart Rivulet (though much better than the leachate pond) can be observed.

The Hobart Rivulet results were strongly influenced by antecedent rainfall.

- Hobart Rivulet exceeded the trigger values in the July round in total phosphorous (downstream), E.coli (both) and aluminium (both). Whilst some analytes had higher values at the downstream site (12 vs 4 out of 30 analytes), the differences were slight and well within the likely sampling error.
- The December samples exceeded trigger values for ammonia, total phosphorous, chloride (downstream), aluminium (upstream) and copper (upstream). There was no real bias between upstream and downstream sites (10 vs 9 out of 30 analytes higher at the downstream site) and the differences were quite small, with the exception of chloride and E.coli. The chloride level at the downstream site was 16 times the median for this site. The E.coli reading was less than the secondary contact limit, and only slightly above the historical trigger.
- The May samples, taken after moderate rainfall, exceeded trigger values for TSS, E.coli and zinc. TSS and zinc were both within the historical trigger for the site. E.coli results were above the secondary contact values at both sites, however the downstream site was only 2.5 times greater than the upstream site. The downstream level was not unusual when compared to Hobart Rivulet samples taken after rainfall at Tara St, and E.coli is one of the contaminants most strongly linked to stormwater. A slight imbalance between the sites was noted (10 vs 7 out of 33 analytes higher downstream), but the differences were quite small, with the exception of E.coli.
- The downstream site returned higher values for all analyte results above the limit of reporting than the upstream site after the heavy rainfall event in June. The most significant differences between the sites were shown for conductivity and total dissolved solids. Total suspended solids, turbidity, total nitrogen, nitrates, ammonia, E.coli, aluminium, chromium, copper, iron and zinc were all above the guideline trigger values both above and below the outfall. Of these, TSS and the heavy metals were within their respective historical trigger values (though aluminium was 20 fold greater than its median value). Nitrogen analytes and E.coli were above the historical trigger values, and had readings approximately 5 times their median values.

Heavy rain washes sediments into the Rivulet and high flows suspend solids in the water column, hence the high TSS and turbidity readings. This may also explain the high total metal levels. Heavy rain is known to wash fertilisers and faecal material into the stormwater system, and may cause sewer exfiltration and overflows (private or public), leading to high nitrogen and E.coli levels. Hobart Rivulet has a large residential catchment upstream of the sampling sites, and McRobies Creek outfall also receives a residential sub-catchment.

Groundwater

The August samples measured TSS and turbidity, which are not required for groundwater. Neither sampling run could measure ammonia levels from 2007/2 due to interferences.

Analyte levels in both sampling runs were no higher in the downgradient bore 1996/3 than in at least one of the upgradient bores 2007/1 and 2007/2, with the exception of dissolved organic carbon (DOC) and pH for both rounds, and total nitrogen and total phosphorous in the December round.

- DOC was three times higher in the downgradient bore than the upgradient bores in the August samples, and nine times higher in the December samples. This appears to be due

largely to the notably lower DOC levels in the new upgradient bores than the previous upgradient bores they replaced.

- pH was slightly higher in the downgradient bore than in either upgradient bores, however was still within the acceptable range, and the reading was consistent with the historical data.
- Total nitrogen was higher at the downgradient bore (0.3mg/L) than at either upgradient bores (<0.1mg/L) in the December round, however was below the default trigger value. Total phosphorous was higher at the downgradient bore (1.5mg/L) than at either upgradient bores (0.4mg/L) in the December round. All these results are above the trigger value of 0.013mg/L.

Various analytes exceeded the default trigger values used.

- Nitrogen levels in the upgradient bores in August were slightly above the trigger value, and the reading at 2007/1 was above the historical trigger. Ammonia levels were also slightly above the guideline trigger value at the two sites tested – 2007/2 could not be analysed for ammonia due to interferences.
- The upgradient bore 2007/2 recorded conductivity, sulphate, iron, manganese, nickel, selenium and zinc levels above the default trigger values, and a more acidic pH level than the acceptable range. However all of these results are within one standard deviation of the median for this site, apart from manganese (slightly lower), selenium and zinc. All historical selenium results have been less than the LoR (which is occasionally higher than the trigger value) apart from those recorded in August. Whilst two results, though positive, were below or at the trigger value, the reading from 2007/2 (upgradient of the tip) was 22 times greater than the trigger value, and 55 times greater than the downgradient bore. The next selenium analysis however has returned to below the LoR. The zinc level of 95ug/L is nearly twelve times the trigger value, however readings of this order of magnitude have been recorded previously at this bore.

Due to the high background readings at the upgradient bore 2007/2, there is no evidence that the landfill is contaminating groundwater.

References

Australian and New Zealand Environment and Conservation Committee and the Agriculture and Resource Management Council of Australia and New Zealand (ANZECC), 2000 *Australian and New Zealand guidelines for fresh and marine water quality*. Australia.

<http://www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1.html>

Cromer, WC; 2008. *McRobies Gully Tip: Upgradient monitoring bores 2007/1 and 2007/2*. Unpublished report by William C Cromer Pty Ltd for the Hobart City Council 10 December 2008.

FAO, 2012. *FAO Specifications and Evaluations for Agricultural Pesticides : Hexazinone*.

http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Specs/Hexazinone_2012.pdf

Ganapathy, C; 1996. *Environmental Fate of Hexazinone*. Department of Pesticide Regulation, California, USA.

<http://www.cdpr.ca.gov/docs/emon/pubs/fatememo/hxzinone.pdf>

GHD; 2012. *Report for McRobies Gully Landfill: 2010/11 Monitoring Summary*. Unpublished report by J Pene, GHD, for the Hobart City Council April 2012.

NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, Table 5B



Enquiries to: J Holmes
 ☎: 62780272
 ✉: holmesje@hobartcity.com.au
 Our Ref: S44-10-1
 JH:SH
 (s:\administration\memos-reports-letters\j
 holmes - letter response to app pln-15-
 00885-01.doc)
 Your Ref: S44-010-01

14 August 2015

Rohan Probert
 Senior Statutory Planner
 City Planning, City of Hobart

Dear Mr Probert

MCROBIES GULLY LANDFILL - EXTENSION OF LANDFILL AREA APPLICATION NO. PLN-15-00885-01

This correspondence contains additional information required to be submitted to Council under section 54 of the *Land Use Planning and Approvals Act 1993*, and as detailed by Council in its letter of 7 August 2015. Please find corresponding responses to each of the four requests for information as follows;

1. There will be no change to the operations of the site as a result of the proposed development. There will be no additional or new machinery utilised on site, and landfilling processes will continue as they are currently undertaken, by using the current machinery or equivalent on site, being a landfill compactor and a traxcavator/dozer.
2. It is expected that commercial vehicle movements will remain unchanged as a result of the proposed development. The largest commercial operator delivering waste to the site is the City of Hobart, through its kerbside waste collection which is undertaken on weekdays, with deliveries made between the hours of 7.30am and 2.00pm. Opening hours for the site are within the permitted hours for commercial vehicle movements in the zone with the exception of Sundays & Public holidays.

Day	Opening hours	Permitted hours in the zone
Monday to Friday	7.30am – 4.15pm	7.00am – 7.00pm
Saturday	10am – 4pm	9am – 5pm
Sunday & Public Holidays*	10am – 4pm	None

*The facility is closed on the public holidays of Christmas Day, New Years Day and Good Friday.

The vast majority of commercial deliveries are completed on weekdays, and whilst the site is open it generally does not receive commercial waste and is utilised almost exclusively by the residential sector on Sundays and Public Holidays. The proposed development will have no impact on the operational nature of the site and waste deliveries.

By extending the capacity of the landfill, the proposed development will reduce future commercial vehicle movements from the site for the disposal of waste from the transfer station. Whilst capacity in the landfill remains, waste from the transfer station is able to be disposed of on site. Once the active landfill is complete and no space remains, waste from the transfer station will be required to be removed from site and delivered to an alternative facility. This proposed development will defer these increased commercial vehicle movements from the site by 10-15 years.

3. Landslide risk assessment will be addressed by the Board of the Environmental Protection Authority. A clause in the current Environmental Protection Notice refers directly to slope stability and landslide risk (EPN 715/1, C4).

Advice from the Environmental Protection Authority (Jaimie Clarke, Section Head Waste Management) is that as landslip risk assessment is contained within the current operating permit for the site, a request to change any permit condition will require approval of a new permit, whereby all conditions will be assessed by the EPA.

4. As per point 3, Landslide risk assessment will be addressed by the Board of the Environmental Protection Authority.

Whilst this issue will be addressed by the EPA, it must be noted that there has been significant works undertaken at the site in recent years to improve water management to, through and from the site, with a network of stormwater drains constructed to transport clean water around the landfill. This will decrease risks associated with slope stability at the site, by effectively diverting both McRobies Rivulet and Pottery Creek around the landfill and into the Hobart

Rivulet, rather than through the landfill into waste and ultimately the leachate system.

In regard to performance criterion E15.7.5 of the Inundation Prone Areas Code, I can advise that the rate of stormwater discharge from the property will not increase as a result of the proposed development. Catchments delivering water to the site will remain unchanged and continue to receive and transport water via the stormwater drainage network to the Hobart Rivulet.

Stormwater quality will not be reduced as a result of the proposed development. All rainwater falling on the area of the proposed development will be captured and directed to sewer (via the leachate system) and remain separate from the existing stormwater drainage network.

I trust that this additional information is sufficient to satisfy the requirements of the planning permit application. If you require any further information please contact me on 62780727 or at holmesje@hobartcity.com.au.

Yours sincerely



(Jeff Holmes)

CLEANSING & WASTE POLICY COORDINATOR

DEVELOPMENT APPLICATION DOCUMENT
This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 14 August 2015.
Planning Authority: Hobart City Council

DEVELOPMENT APPLICATION
DOCUMENTApplication for
planning permit

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.



Planning Authority: Hobart City Council

OFFICE USE ONLY

Application
Number

ALL APPLICATIONS

Location of proposed development

McROBIES GULLY LANDFILL
McROBIES RD SOUTH HOBART

Postcode

Certificate of Title No.

126957

Lot No. 1

Applicant's name*

JEFF HOLMES

Applicant's postal address

GPO BOX 503

HOBART

BH Telephone 62383272

Postcode 7000

Facsimile 62349757

Email holmesje@hobartcity.com.au

Owner's name*

CITY OF HOBART

Owner's postal address

GPO BOX 503

HOBART

BH Telephone

Postcode 7000

Facsimile

Email

Contact person*

JEFF HOLMES

Contact person's postal address

AS ABOVE

BH Telephone

Postcode

Facsimile

Email

* See page 4 for definitions

DESCRIPTION OF PROPOSED DEVELOPMENT

Please tick the appropriate box or boxes. If they don't accurately describe your proposal, please detail under 'Other'

☐ New house☐ House extension/addition☐ Demolition☐ Partial Demolition☐ Fencing☐ Change of use (please specify)☐ Subdivision☒ Other (please specify)

EXTENSION OF LANDFILL AREA

Present use(s) of land and buildings

MUNICIPAL LANDFILL

Have you had pre-application discussions with a Council Planning Officer?

☒ Yes☐ No

If "Yes" please give officer's name if known

ROMAN PROBERT

Please visit www.hobartcity.com.au if you wish to make an appointment with a planning officer prior to lodgement.

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

Application for planning permit *continued*

ALL APPLICATIONS

FLOOR AREA *Refer to definition of floor area in relevant planning scheme*

Existing floor area	Proposed floor area (total)	Site area
214 m ²	214 m ²	214 m ²

CAR PARKING ON SITE

Number existing	Number proposed
214	214

VALUE

Value of work (inclusive of GST)
\$ 0

SITE CONTAMINATION *This information determines whether a site may need a contamination assessment before it is further developed.*

Have any potentially contaminating uses been undertaken on this site? ☒ Yes ☐ No ☐ Don't know

TASMANIAN HERITAGE REGISTER

Is this property on the Tasmanian Heritage Register? ☐ Yes ☒ No

Please note: Two additional sets of drawings are to accompany the THC Works Application (failure to do so will result in a copying charge)

NON-RESIDENTIAL USE/DEVELOPMENT

NOTE: This section must be completed for all applications for non-residential use/development.

HOURS OF BUSINESS

What days and hours of operation are proposed for the business ☐ Are the proposed hours of business different from the existing use or situation? ☒ No ☐ Yes Please complete details below.

	From	To		From	To
Monday to Friday	7.30 am	4.15 pm	Monday to Friday		
Saturday	10.00 am	4.00 pm	Saturday		
Sunday	10.00 am	4.00 pm	Sunday		

Application for planning permit *continued*NON-RESIDENTIAL DEVELOPMENTS *(continued)*DEVELOPMENT APPLICATION
DOCUMENT

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

NUMBER OF EMPLOYEES

List the total number of people who will be working on the site.

	TOTAL EMPLOYEES		MAXIMUM EMPLOYEES AT ANY ONE TIME	
	Part time	Full time	Employees (total)	Time of day/week
Existing (previous) use		7	7	7 DAYS/WK
Proposed use		7	7	7 DAYS/WK

GOODS DELIVERIES

Will there be any goods deliveries to and from the site? ☐ No ☒ Yes *Please estimate the number and type of Vehicles and how often they will make trips.*

Type/size of vehicle				
Number of vehicles				
Trip frequency per day/week/month				

PLANT/MACHINERY

Is there any large plant or machinery that would need to be installed or used on site such as refrigeration units and generators

☐ No ☒ Yes

If yes, please list the type of machinery and ensure location, dimensions etc are clearly marked on your plans.

LANDFILL COMPACTOR + TRAXXATOR

OUTDOOR STORAGE / SEATING / NUMBER OF BEDS

Is outdoor storage proposed?

☒ No ☐ Yes

If yes, please ensure your plans show where the outdoor storage areas are and what type of goods are stored. This information will help us assess the impact of the proposal on amenity.

If you are proposing a night club, cafe or the like, what is the number of seats proposed including the capacity at any bar area?

N/A

Please ensure the arrangements are shown on your plans. This information enables us to assess the car parking arrangements.

If you are proposing a hotel, motel, visitor accommodation, hostel or the like, what is the number of beds proposed?

N/A

Please ensure the beds are clearly indicated on your plans. This information enables us to assess the car parking arrangements.

SIGNAGE

Is any signage proposed?

☒ No ☐ Yes

If Yes, please show clearly on the plans of existing (if applicable) and proposed signage.

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

Application for planning permit *continued*

ALL APPLICATIONS

In respect to page one of this application the "Applicant's name" means the name of the person making the application. The applicant will be advised of the determination in respect of the application. The applicant will be written to if additional information is required.


The "Owner's name" is the owner as described in the definition below of owner.

The "Contact Person" is the person that should be contacted in respect to any matters relating to the application up to its determination. In most cases the applicant and contact person will be the same. However, in the instance of an applicant being an architectural firm (ie XYZ Architects) the contact person may be an architect (ie I. Draw). The contact person (unless they are the same as the applicant) will not be advised of the decision of Council.

DECLARATION BY APPLICANT (*mandatory*)

I declare that the information given is a true and accurate representation of the proposed development, and **I am liable for the payment of Council application processing fees even in the event of the development not proceeding.** I understand that the information and materials provided with this development application may be made available to the public in electronic form on the Council's website. I understand that the Council may make such copies of the information and materials as, in its opinion, are necessary to facilitate a thorough consideration of the Development Application. I have obtained the relevant permission of the copyright owner for the communication and reproduction of the plans accompanying the development application, for the purposes of assessment of that application. I indemnify the Hobart City Council for any claim or action taken against it in respect of breach of copyright in respect of any of the information or material provided.

Signature of applicant



Name (please print)

JEFF HOLMES

Date

15/6/15

IF APPLICANT IS NOT THE OWNER

If the applicant is not the owner of the land, the applicant must include a declaration that he/she has notified the owner/s

I hereby declare that I am the applicant for the development/change of use at the address detailed in this application for a planning permit, and that I have notified the owner/s of the land that I am making this application, in accordance with Section 52 (1a) *Land Use Planning Approvals Act 1993*.

Signature of applicant



Name (please print)



Date



Name/s of owner/s notified



Date notified



DEFINITION OF OWNER

"owner" means any one or more of the following:

- in the case of a fee simple estate in land - the person in whom that estate is vested;
- in the case of land not registered under the *Land Titles Act 1980* and subject to a mortgage - the person having, for the time being, the equity of redemption in that mortgage;
- in the case of land held under a tenancy for life - the person who is the life tenant;
- in the case of land held under a lease of a term not less than 99 years or for a term of not less than such other prescribed period - the person who is the lessee of the land;
- in the case of land in respect of which a person has a prescribed interest - that person;
- in the case of Crown land within the meaning of the *Crown Lands Act 1976*, the Crown in right of the State of Tasmania;

but does not include the holder of an interest in land other than the Crown in the right of Tasmania if the interest of the holder cannot reasonably be discovered by search of the Register within the meaning of the *Land Titles Act 1980* or a search conducted at the Registry within the meaning of the *Registration of Deeds Act 1935*.

COUNCIL OR CROWN LAND

If the land that is the subject of this application is owned or administered by either the Crown or Hobart City Council, the consent of the Minister of the Crown or the General Manager of the Council, whichever is applicable, must be included here. This consent should be completed and signed by either the Minister, the General Manager of Hobart City Council, or their delegate (as specified in Subsections 52 (1D-1G) of the Land Use Planning and Approvals Act 1993).

I NICK HEATH being responsible for the administration of land at MCROBIES GULLY LANDFILL

declare that I have given permission for the making of this application for LANDFILL EXTENSION

Date 13/7/15

Signature [Signature]

(This consent is for the making of the application only, and does not constitute landlord consent for the development to occur.)

**Tasmania****DEVELOPMENT APPLICATION
DOCUMENT**

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

**DEPARTMENT of
PRIMARY INDUSTRIES,
WATER and ENVIRONMENT**

John G. G.

ENVIRONMENT DIVISION

Enquiries: Mark Cretney

Phone : (03) 62 33 6374

Fax : (03) 62 33 3800

Email : mark.cretney@dpiwe.tas.gov.au

Our Ref : (031180)tm

CERTIFIED MAIL

- 9 AUG 2004

Mr Brent Armstrong
General Manager
Hobart City Council
GPO Box 503
HOBART TAS 7000

Dear Mr Armstrong

Environment Protection Notice (EPN) 715/1 McRobies Gully Landfill

I refer to your Environmental Management Plan prepared by Hobart City Council requesting variation of the permit conditions for the McRobies Gully landfill. Please find attached Environment Protection Notice 715/1 varying several conditions, and imposing new conditions to create a consolidated list of conditions for the site.

This notice takes effect on the date on which it is served upon you. You may appeal to the Appeal Tribunal against this Notice, or against any requirement contained within the Notice, within fourteen days of that date, by writing to:

**The Chairperson
Resource Management and Planning Appeal Tribunal
GPO Box 2036
HOBART TAS 7001**

Please note that the Hobart City Council is legally obliged to comply with the requirements of the EPN.

If you have queries regarding the above, please in the first instance contact Mark Cretney on 6233 6374 or by e-mail to Mark.Cretney@dpiwe.tas.gov.au.

Yours sincerely

Frank Cattell

Frank Cattell
DIRECTOR OF ENVIRONMENTAL MANAGEMENT

Enc.

GENERAL ENQUIRIES (Statewide): Telephone: 1300 368 550

Internet: <http://www.dpiwe.tas.gov.au>

Environmental Protection Notice

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council



Tasmania

Department of Primary Industries, Water and Environment

ENVIRONMENT PROTECTION NOTICE NO. 715/1

Issued under section 44 of the Environmental Management and Pollution Control Act
1994

Issued to: The General Manager
Hobart City Council
GPO Box 503
HOBART TAS 7001

Activity: Waste Depot
Refuse disposal at McRobies Gully landfill
SOUTH HOBART TAS 7004

I, Frank Cattell, Director of Environmental Management, being satisfied in accordance with Section 44(1)(d) of the *Environmental Management and Pollution Control Act 1994* (the Act), and in relation to the above mentioned environmentally relevant activity that it is desirable to vary the conditions of your permit, and issue this Environment Protection Notice (EPN) to the above mentioned person as the person responsible for the activity.

GROUNDNS

The grounds upon which this EPN is issued are that:

It is desirable to vary conditions of permit number 3516 issued by the Director of Environmental Management on 21 December 1995:

- (a) Because some conditions must be varied or new conditions imposed to reflect changed management or operational practices as outlined in the *McRobies Gully Refuse Disposal Site Environmental Management Plan August 2002* prepared by Hobart City Council;
- (b) To reflect continuous improvement consistent with the objectives of the *Environmental Management and Pollution Control Act*;
- (c) To ensure that there are adequate safeguards against environmental harm or nuisance being caused by the activity;
- (d) Because the wording of certain conditions must be varied to reflect current or updated terminology and / or clarify the meaning of the condition.

The further grounds upon which this notice is issued are listed in **Schedule 2** of this notice.

Director of Environmental Management: *Frank Cattell*

Date of Issue: - 9 AUG 2004

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DEFINITIONS

Unless the contrary appears, words and expressions used in this EPN have the meaning given to them in **Schedule 1** of this notice. If there is any inconsistency between a definition in the EMPCA and a definition in the EPN, the EMPCA prevails to the extent of the inconsistency.

REQUIREMENTS

In accordance with s.44(3) of the EMPCA, the person responsible for the activity is required to comply with conditions contained in **Schedule 3** of this notice. These conditions prevail over the terms of the permit to the extent of any inconsistency.

INFORMATION

Attention is drawn to **Schedule 4**, which contains important additional information.

PENALTIES

If a person bound by an environment protection notice contravenes a requirement of the notice that person is guilty of an offence and is liable on summary conviction to a penalty not exceeding \$50,000 or in the case of a body corporate \$100,000.

This notice takes effect on the date on which it is served upon you.

You may appeal to the Appeal Tribunal against this notice, or against any requirement contained in the notice, within 14 days of that date, by writing to:

**The Chairperson
Resource Management and Planning Appeal Tribunal
GPO Box 2036
Hobart Tas 7001**

Signed: Frank Cottrell
Director of Environmental Management

Date:

Director of Environmental Management:

Frank Cottrell

Date of Issue:

- 9 AUG 2004

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Planning Authority: Hobart City Council

SCHEDULE 1

Definitions of Terms

'Activity (or activities)' means one or more environmentally relevant activity or activities (as defined in section 3 of the EMPCA) to which this permit relates;

'Best Practice Environmental Management' or 'BPEM' has the meaning described in section 4 of EMPCA;

'Clean fill' means Soil, rock, concrete, bitumen or similar non-putrescible material that is not contaminated by other waste; and does not contain contaminant levels exceeding limits set by the Director in Bulletin 105, *Classification and Management of Contaminated Soil for Disposal*.

'Controlled waste' has the meaning described in the EMPCA and further prescribed in the *Environmental Management and Pollution Control (Waste Management) Regulations, 2000*.

'EMP' means the 'Hobart City Council, McRobies Gully Refuse Disposal Site, Environmental Management Plan', prepared by Hobart City Council, and submitted to the Director by the Hobart City Council in August 2002. The Director may at any time approve a revised Environmental Management Plan which overrides the previous EMP to the extent of any inconsistency.

'EMPCA' means the *Environmental Management and Pollution Control Act, 1994*;

'Envirocover' is a brand name for a biodegradable plastic material that can be placed over waste as an alternative to daily cover material;

'Environmental nuisance' means the emission of a pollutant that unreasonably interferes with, or is likely to unreasonably interfere with a person's enjoyment of the environment;

'Environmental harm' is any adverse effect on the environment (of whatever degree or duration) and includes an environmental nuisance;

'Leachate' means any liquid that is either released by or has percolated through waste and contains dissolved or suspended forms of gases, other liquids and solids.

'LUPAA' means the *Land Use Planning and Approvals Act, 1993*;

Permeability means the degree of permeability of the material. An engineering term for saturated hydraulic conductivity (K-value).

'Planning authority' means a Council.

'Pollutant' has the meaning given in Section 3 of the EMPCA:

'Person responsible' means any person who is or was responsible for the environmentally relevant activity (or activities) for which this EPN is issued and

Director of Environmental Management: *Frankie Anttila*

Date of Issue: - 9 AUG 2004

includes the officers, employees, agents and assigns of that person, and includes a body corporate;

'State Policy' means a Tasmanian Sustainable Development Policy made under Part 2 of the *State Policies and Projects Act 1993*;

'The Board' is the Board of Environmental Management and Pollution Control as established under section 12 of the EMPCA. (The Board is located within the Department of Primary Industries, Water and Environment);

'The Director' is the Director of Environmental Management holding office under section 18 of the EMPCA and includes a person authorised in writing by the Director of Environmental Management to exercise the relevant power or function on the Director's behalf. (The Director is located within the Department of Primary Industries, Water and Environment);

'The land' means the land on which the activity (or activities) to which this EPN relates may be carried out, situated at and known as the McRobies Gully landfill, Hobart, in the State of Tasmania (see the hatched area in Attachment 1). The land, includes:

- (a) Buildings and other structures permanently fixed to the land; and
- (b) Land covered with water; and
- (c) Water covering land; and
- (d) Any estate, interest, easement, servitude, privilege or right in or over land

DEVELOPMENT APPLICATION DOCUMENT
This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.
Planning Authority: Hobart City Council

Director of Environmental Management: *Frank Cattell*

Date of Issue: - 9 AUG 2004

SCHEDULE 2**SUMMARY OF GROUNDS FOR ISSUING THIS ENVIRONMENT PROTECTION NOTICE**

The following table provides the grounds for varying the Conditions in Permit reference No L/3516 (waste disposal activity).

Condition in Schedule 3 of this EPN	Condition in Permit No: L/3516	Grounds
Q1	Nil	A new condition to impose a limit on the amount of waste disposed because environmental management infrastructure is designed accordingly.
G1.	G4	Varied to clarify the meaning of the condition and to prevent environmental harm by ensuring best practice environmental management is maintained at all stages of development and operation of the waste depot.
G2	Nil	A new condition to ensure all persons responsible for the activity have access to and are familiar with the relevant documents associated with activities at the site to promote compliance with the conditions.
G3	Nil	A new condition to ensure all practical steps are taken to protect the environment
G4	G2	Varied to clarify the meaning of the condition.
G5	Nil	A new condition to ensure the Director is aware of whom is responsible for the activity.
G6	Nil	A new condition to specify the minimum content requirements of the Environmental Management Plan review report and to set the date of submission of this report to the Director to ensure the timely submission of environmental information relating to the activity.
G7	Nil	A new condition to ensure a proper register of public complaints is maintained by the person responsible as this may give an indication of changing environmental performance as this may give an indication of changing environmental performance over time.

Director of Environmental Management: *Frank Cottrell*

Date of Issue:

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DEVELOPMENT APPLICATION
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Condition in Schedule 3 of this EPN	Condition in Permit No: L/3516	Grounds
C1 (a)	G7	Varied to define the location of the site and that landfilling must be confined within the hatched area of the attached plan (Attachment 1), so that the direct impacts of landfilling are similarly confined.
C1 (b)	G7	Varied to define the maximum height of landfilling and the degree of slope to ensure the site does not exceed its approved airspace or become unstable.
C1 (c)	Nil	A new condition to ensure the stability of the landfill by limiting the height of each lift
C1 (d)	Nil	A new condition requiring a new site development plan to accurately outline how the site will be developed.
C1 (e)	Nil	A new condition that establishes survey base stations in the landfill to determine movement and therefore provide an indication of stability of the landfill
C2 (a)	G9	A new condition to ensure leachate is retained on site and does not escape with the potential to cause environmental harm
C2 (b)	Nil	A new condition to ensure the leachate dam does not contain excessive sludge thus reducing its capacity to contain leachate and so prevent accidental release.
C2 (c)	Nil	A new condition to reduce the level of the water table in the landfill in order to reduce the hydraulic head forcing leachate down through the base of the landfill.
C2 (d)	Nil	A new condition to reduce the operating level of the leachate dam to ensure sufficient capacity to store leachate during wet weather and so prevent accidental release.
C2 (e)	Nil	A new condition to improve the performance of the leachate dam by treating the leachate.
C2 (f)	Nil	A new condition to ensure waste water from the vehicle wash down bay does not cause pollution.

Director of Environmental Management: *Frank Cattell*

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Condition in Schedule 3 of this EPN	Condition in Permit No: L/3516	Grounds
C2 (g)	Nil	A new condition to ensure all possible measures are undertaken to provide for the orderly drainage of leachate under gravity.
C2 (h)	Nil	A new condition to ensure leachate is not discharged from the land giving rise to pollution
C3 (a)	G 10	A new condition to ensure cut off drains are capable of diverting storm water around the site so as this water does not contribute to the volume of leachate.
C3 (b)	Nil	A new condition to ensure potentially contaminated storm water does not cause pollution
C3 (c)	Nil	A new condition to ensure stormwater drains are adequately lined.
C3 (d)	Nil	A new condition to ensure drains are adequately constructed
C3 (e)	Nil	A new condition to prevent sediment causing pollution
C3 (f)	Nil	A new condition to ensure the drains are maintained
C3 (g)	Nil	A new condition to ensure the integrity of the drain which transfers McRobies Rivulet below the landfill footprint is regularly monitored
C3 (h)	Nil	A new condition to ensure the head wall at the entrance of McRobies rivulet into the landfill is capable of handling a 1 in 75 year storm event.
C3 (i)	Nil	A new condition to limit the turbidity of stormwater discharging from the landfill
C3 (j)	Nil	A new condition to ensure the surface water from eastern and northern faces surrounding the site are properly managed.
C3 (k)	Nil	A new condition to restore vegetation on the western slopes to ease run off intensity
C4	Nil	A new condition to prevent accidental release of leachate and minimise the potential for slope failure of the fill and valley walls, and to allow an understanding of the causes

Director of Environmental Management: *Frank Catell*

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DEVELOPMENT APPLICATION DOCUMENT

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Planning Authority: Hobart City Council

Condition in Schedule 3 of this EPN	Condition in Permit No: L/3516	Grounds
		of slope failure for improved management conditions.
C5	Nil	A new condition to ensure quality control of the project is maintained.
C6	Nil	A new condition to ensure independent quality control for all engineering works.
V1	Nil	A new condition to establish a regime of annual volumetric surveys to monitor the amount of waste being disposed.
SO1	G8 (a) (b) (e)	Varied to clarify the meaning of the condition and to restrict the hours of operation
SO2	G8 (b) (f) (g)	Varied to clarify the meaning of the condition and to specify staffing and machinery operating requirements.
SO3	Nil	A new condition to require the person responsible to develop an Operations Manual to facilitate the proper functioning of the facility and to ensure compliance with the EPN conditions.
SO4	Nil	A new condition to ensure the site has appropriate signage to prevent inappropriate disposal at the site.
SO5	G8 (d)	Varied to specify the depth of each landfill lift and covering requirements to ensure the site is operated in accordance with BPEM.
SO6	Nil	A new condition to specify final capping requirements to prevent the ingress of water into the landfill once final design height has been reached.
SO7	Nil	A new condition to specify new fire control measures to reduce the potential hazard that may arise from a landfill fire.
SO8	Nil	A new condition to specify new litter control measures to reduce environmental nuisance arising from the dispersal of litter.
SO9	Nil	A new condition to develop a weed management plan to reduce the threat of weeds

Director of Environmental Management: *Frank Cuthell*

Date of Issue: - 9 AUG 2004

DEVELOPMENT APPLICATION

DOCUMENT

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Condition in Schedule 3 of this EPN	Condition in Permit No: L/3516	Grounds
		encroaching into neighbouring bushland.
SO10	Nil	A new condition to specify new disease vector control measures to minimise the risk of the landfill giving rise to infestations of rodents and/or scavenging birds.
SO11	C 1 C2 C3	Varied to specify new recycling measures to assist with resource recovery and the minimisation of the amount of material being landfilled.
SO12	N1	A new condition to control noise emanating from the site. The condition reflects the terminology in the Australian Standard AS1055 and provides consistency in noise measurement with other Level 2 activities.
SO13	Nil	A new condition to ensure the composting operation is carried out in accordance with best practice environmental management.
LFG 1	Nil	Unchanged (This condition was inserted in permit 3516 by EPN 680/1 on 3 August 2003.)
H1, H2	Nil	A new condition to require written approval from the Director for disposal of controlled wastes, other than those listed, to reduce the likelihood of such wastes being disposed of in a manner that causes environmental harm.
H3	Nil	A new condition to ensure batteries and waste oil are managed in a sustainable manner, in accordance with Australian Standards.
R1, R2, R3, R4	R1	Varied to require timely notification of cessation of operations to enable appropriate rehabilitation procedures to be carried out, and to require rehabilitation to be carried out in accordance with an approved Site Closure and Rehabilitation Plan that meets BPEM standards
M1, M2, M3, M4	M1	Varied to require the use of modern accreditation practice and currently applicable standards in sample collection and sample analysis procedures, as well as specify monitoring and reporting requirements.

Director of Environmental Management: *Frank Catell*Date of Issue: **9 AUG 2004**

DEVELOPMENT APPLICATION DOCUMENT

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Planning Authority: Hobart City Council

SCHEDULE 3 – CONDITIONS

Q1

Maximum Quantities: The maximum amount of waste that can be received by the McRobies Gully landfill, excluding clean fill, is 85,000 tonnes per year.

(Annual permit and inspection fees are derived from this figure)

The permit holder must comply with the following conditions:

GENERAL CONDITIONS

- G1 The land must be developed and used, and the activity on the land must be carried out and monitored, in accordance with the environmental management measures set down in the EMP and in accordance with Best Practice Environmental Management, unless otherwise specified in these conditions or contrary to EMPCA.
- G2 A copy of these conditions and any associated documents referred to in these conditions must always be held in a location that is known and accessible to the person responsible for the activity. The person responsible for the activity must take all reasonable steps to ensure that all persons who are responsible for undertaking work on the land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.
- G3 If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.
- G4 None of the following changes, if it may cause or increase the emission of a pollutant, or otherwise result in environmental harm, may take place in relation to the activity without a new permit from the relevant planning authority (where the authority determines that a permit is required) or, if no such permit is required, the prior written approval of the Director:
- (a) a change to a process used in the course of carrying out the activity; or
 - (b) the construction, installation, alteration or removal of any structure or equipment used, in the course of carrying out the activity
 - (c) a change in the nature of the materials used in the course of carrying out the activity.
- G5 If the person who is or was responsible for the activity will cease or ceases to be responsible for the activity, then as soon as reasonably practicable, but not later than 30 days after that cessation, that person must:
- (a) notify the Director in writing of that fact;
 - (b) provide the Director with full particulars in writing of any person succeeding him or her as the person responsible; and
 - (c) notify any such person of the requirements of any relevant permit, environment protection notice or other environmental obligations.

Environmental Protection Notice

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- G6 (a) The person responsible for the activity must provide an annual review report of the operations of the waste depot to the Director which should include details of the performance of the site and may include, but not be limited to, volume and mass disposed, density achieved, leachate levels, testing, analyte trends, monitoring, general compliance with the EMP, a summary of complaints received and actions taken for the complaints and any other relevant information.
- (b) The person responsible for the activity must submit an annual review report to the Director every 12 months, and be submitted within 3 months of the end of the review period. For the period of the review, each report shall include an evaluation of the environmental performance of the site with respect to the environmental controls detailed in the EMP and the conditions of this permit.
- (c) The EMP must be critically reviewed by the person responsible for the activity by 12 months from the date of these conditions and at 5 yearly intervals thereafter.
- G7 A public complaints register must be maintained and made available for inspection by an authorised officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:
- (a) the time at which the complaint was received
 - (b) contact details for the complainant
 - (c) the subject matter of the complaint
 - (d) any investigations undertaken with regard to the complaint; and
 - (e) the manner in which the complaint was resolved, including any mitigation measures implemented.

LANDFILL DESIGN AND MAINTENANCE**C1 Landfilling**

- (a) Landfilling must be confined within the hatched area as detailed in Attachment 1.
- (b) Final contours of the landfill must not exceed RL 184 and slopes being no steeper than a grade of 1 in 20 (V:H).
- (c) A new site development plan providing the filling sequence, along with areas proposed for rehabilitation, including a timeline, must be prepared and submitted to the Director by 31 August 2004.
- (d) A set of survey base stations must be established and routinely surveyed to monitor any movement - vertical or horizontal - of the landfill to better ascertain the degree of settlement and to determine whether the fill is moving.

C2 Leachate Collection System

- (a) All practical measures shall be undertaken to ensure that all leachate in excess of the field capacity of the waste is collected and prevented from escaping from the landfill into groundwater or surface waters.
- (b) The leachate dam must be desludged every 3 years at a minimum.
- (c) The level of the water table in the landfill must be reduced by pumping down utilising submersible pumps. Where the fill is 30 metres in depth the target water table depth is 15 metres above the base of the landfill, but where the fill is 40 metres in depth the target is 25 metres above the base of the landfill. The leachate extracted must be transferred by pipeline directly to the leachate dam.
- (d) The operating level of the leachate dam must be lowered to reduce the potential for groundwater contamination down valley and also provide 600 kilolitres wet weather storage capacity.
- (e) At least one mixer / aerator must be installed in the leachate dam to reduce ammonia concentrations along with a reduction in chemical oxygen demand.
- (f) Waste water from the vehicle wash down area must be directed to a new sewer pipeline by 30 June 2005.
- (g) All practical measures must be undertaken to ensure leachate flows through the fill material and discharges at the toe of the landfill into the leachate dam.
- (h) The landfill must be operated so that pollution of water by leachate is prevented.

C3 Surface Water Management

- (a) Cut-off drains must be constructed at strategic locations on the land and be capable of handling run off generated by a 24 hour, 1 in 20 year storm event.
- (b) All stormwater and intercept drains are to be lined with impermeable material to achieve a permeability of 10^{-8} m/s to prevent surface water from entering the landfill.
- (c) Specifications and design drawings for the perimeter drains must be submitted to DPIWE for approval by the Director, before construction of any new perimeter drain commences.

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- (d) All perimeter and cut off drains must contain appropriate sediment control measures that prevent excessive sediment loads discharging from the drains.
- (e) Drains must be regularly cleaned to remove unwanted material such as, vegetation, litter and sediment.
- (f) In the event that stormwater becomes contaminated with leachate, all practical measures must be undertaken to stop contaminants from discharging beyond the borders of the land. Contaminated stormwater may be either:
 - (i) Transferred to the leachate dam, providing the dam has adequate capacity.
 - (ii) Be irrigated over the landfill cells; or
 - (iii) Removed to an approved Waste Water Treatment Plant.
- (g) The pipe laid along the natural ground level of the site in order to transfer flow from the upper part of McRobies Gully Rivulet under the landfill to the Hobart Rivulet must be inspected at least once every three years.
- (h) The headwall where McRobies Gully Rivulet enters the stormwater pipe and the stormwater pipe itself must be designed and constructed to enable flows of up to a 24 hour storm event with a 1:75 year return interval to enter the stormwater pipe and pass under the landfill.
- (i) The maximum permissible turbidity for stormwater discharging from the landfill is 50 NTU in dry weather and 100 NTU in wet weather, or that equivalent to the Hobart Rivulet upstream of the discharge.
- (j) A review of surface water drainage options for the eastern and northern faces of the landfill must be undertaken by 30 December 2004.
- (k) An understorey rehabilitation plan for the western slopes must be developed by 30 June 2005.

C4 Slope Stability

- (a) The operator must undertake a landfill risk assessment for the landfill and the valley walls in accordance with the *Australian Geomechanics Guideline Volume 35, No. 1: Landslip Risk Management and Guidelines*. This risk assessment should include consideration of the recommendations of the NHT funded project (NLP 13188), *The Effects of Waste Disposal on Groundwater Quality in Tasmania, McRobies Gully Waste Depot, South Hobart: Appendix 1 Seismic Risk McRobies Gully*, by D. E. Leaman, Leaman Geophysics, plus other natural and artificial contributing factors for land stability.
- (b) In the event of a significant slope failure, the Director and Mineral Resources Tasmania must receive written notification within 12 hours.

C5 Quality Assurance

- (a) A suitably qualified engineer with appropriate experience must be present when any significant construction works are undertaken at the landfill. The engineer must supervise works to the leachate collection system and surface water controls. The suitably qualified person shall be directly responsible for:

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- (i) The supervision of all technical staff involved;
- (ii) 'Signing off' of all quality control testing;
- (iii) The complete documentation of all relevant activities including engineering construction and quality assurance activities;

C6 (a) Quality assurance specifications must be prepared for construction and testing of all significant landfill engineering works, including surface water drains, caps and the leachate collection system. In particular:

- (i) All quality control testing and certification is to be performed independently of both Council and the construction contractor; and
 - (ii) A report documenting conformance with the design and these conditions will be prepared on completion of the works and signed off by the engineer referred to in C4, and submitted to the Director for final approval.
- (b) Best Practice Environmental Management must be maintained at all stages of construction of the leachate collection system, management of leachate from the waste depot and construction and maintenance of stormwater drains.

Director of Environmental Management: *Frank Cottrell*

Date of Issue:

SITE OPERATIONS**V1 Surveys**

- (a) Annual volumetric surveys of the landfill, commencing one year from the date of issue of this permit, must be carried out and the results of the survey must be provided to the Director within 14 days of Council's receipt of the results.
- (b) Monitoring of the composition of the waste stream entering the landfill must be undertaken.
- (c) Within 12 months of the commencement of collection of waste composition data an annual report on waste types received must be submitted to the Director.
- (d) Data should be recorded in a manner that is compatible with the Australian Waste Database.

SO1 Hours of Operation

- (a) The opening hours at the landfill facility will be from 7.30 am to 4.15pm Monday to Friday and 8.00am to 4.30pm on Saturday and 9.00am to 4.30pm on Sunday and public holidays. The site must be closed Christmas day and Good Friday.
- (b) Council may allow disposal of refuse on the site outside the normal operating hours for contractors with special needs where a specific prior arrangement has been made.
- (c) The hours of operation must be posted on a sign, which must be erected and maintained at the entrance to the site.
- (d) Access must be through a security gate that must be locked when the site is unattended.

SO2 Staffing

- (a) While the site is open for disposal it must be attended by a person or persons whose duties shall include directing of traffic on the site to disposal and recycling areas, and the supervision of the dumping of refuse.
- (b) The level and nature of staffing must be adequate for environmentally responsible and safe management of the landfill.

SO3 Operations Manual

An updated site operations manual or equivalent system must be developed within 6 months of the date of issuing this permit and made available to all landfill personnel. The manual should provide detailed information relating to waste depot operations and must detail operational procedures required to ensure compliance with these conditions.

SO4 Signage

Signs must be erected and maintained in reasonable condition to convey important operational and safety information.

Signage must encompass the following:

- (a) Direction and distance to the site (to be installed at major intersections and other appropriate locations en route to the site)
- (b) Hours of operation and tipping fees (to be installed at the gate or gatehouse).
- (c) Hazards and dangerous areas on the site (eg leachate dams)

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- (d) Items that can be recycled and the locations within the site where recyclable items should be deposited for collection / processing.
- (e) Responsibilities (eg. Vehicle operators must ensure that the remnants of their load or material stuck to the underside of the vehicle or the wheels does not litter public roads).
- (f) Contact staff / organisation and relevant telephone numbers to report any fire or other emergency at the site.

SO5 Waste Cover

- (a) Machinery capable of spreading, compacting and covering the refuse must be kept on site at all times. A person capable of operating the machinery shall be available for an adequate period of time to spread; compact and cover all refuse deposited.
- (b) An 'Envirocover' or alternative approved cover material must be used to cover putrescible waste material at the end of each day of operation.
- (c) Adequate volumes of suitable cover material to cover the active face must be stockpiled adjacent to the active face at all times.
- (d) The active tipping face must not exceed 50m in width, and public access to the tipping face must be minimised.
- (e) Each successive landfilling lift must not exceed 2m in vertical height, excluding cover material.
- (f) Each 2m lift of compacted waste must be progressively covered with compacted clay or other suitable low permeability material to a minimum depth of 300 mm, with the exception of the final lift. This cover may be temporary and may be removed immediately prior to landfilling on a successive lift.
- (g) Council may choose to operate another tipping face for inert materials.
- (h) Council must operate a separate tipping face for controlled wastes specified in H1 (b).

SO6 Waste Capping

- (a) Unless otherwise approved in writing by the Director, on reaching the final lift of compacted waste, the waste must be progressively capped according to the following sequence:
 - (i) 500 mm deep layer of compacted clay, or suitable low permeability material, with a maximum *in situ* permeability of 1×10^{-9} metres/second,
 - (ii) An appropriately designed drainage layer of at least 100 mm thickness; and
 - (iii) A final layer of 300 mm of topsoil.
- (b) The landfill operator may apply to the Director to undertake alternative capping procedures provided they can demonstrate environmental acceptability.
- (c) Capping must commence at the rate of approximately 10,000m² per financial year of areas at final height.

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SO7 Fire Management

- (a) The operator of the landfill must demonstrate sufficient capacity to extinguish any fires that may occur on site.
- (b) The lighting of fires at the waste depot is not permitted.
- (c) Fires occurring at the waste depot must be extinguished as soon as possible using all practical means available.
- (d) Fire control measures at the refuse site must be to the satisfaction of the Tasmanian Fire Service. Correspondence from the TFS indicating the suitability of fire control measures must be submitted to the Director by 31 August 2004.
- (e) Hazard reduction (vegetation clearance) is to be undertaken periodically as part of the landfill fire prevention strategy. The frequency of hazard reduction shall be based on advice from officers of the Tasmanian Fire Service and / or Council's Fire Management Officer. Vegetation clearance shall not contribute to slope instability, erosion or sediment generation as this may result in adverse water quality impacts downstream.

SO8 Litter Management

- (a) Litter control measures must be employed around and close to active landfilling areas.
- (b) Litter must be cleared at least weekly, but more frequently when litter is readily apparent, from inactive areas of the waste depot, litter control fences, and roads within a one half-kilometre radius of the waste depot boundary.
- (c) Inspections of the areas specified in SO8(b), for the purpose of litter management, must be carried out on a weekly basis. A record of the dates of such inspections and litter clearing must be kept and maintained for a period of at least 2 years.
- (d) The landfill operator must develop procedures for managing the acceptance and placement of lightweight, loose wastes to minimise transportation off-site
- (e) The operator must implement systems for gross litter collection at the entrances to the stormwater system.
- (f) The operator must investigate moving light vehicles away from the tipping face through the construction of a fully enclosed waste transfer station by June 2005.

SO9 Weed Management

A management plan must be prepared and implemented to stop the spread of weeds to the bushland area immediately adjacent the landfill site.

SO10 Disease Vectors

Council must implement an effective control program to minimise and control disease vectors such as rodents and scavenging birds

The program may include:

- (i) The employment of traps
- (i) The erection of fences
- (ii) Regular baiting by a reputable pest control firm, which must include:

Director of Environmental Management: *Frank Catell*

Date of Issue: - 9 AUG 2004

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- (a) Maintaining a log record of operations which details the type of baits used and their deployment locations
- (b) A bait selection and method of deployment that does not allow the non-target native animals to be affected.

SO11 Recycling and Recovery of Waste Materials

- (a) Specific clean and secure hard stand areas must be set aside at the landfill site for the segregation and collection of green waste, scrap metal and white goods (i.e. refrigerators, washing machines, dishwashers etc).
- (b) Green organic waste stockpiles must be kept free from contamination and heavy wood (such as tree trunks, thick branches and stumps) and shall be mulched on a regular basis. The mulch may be used for interim cover, rehabilitation of the waste depot, use in Council parks and gardens or for commercial sale.
- (c) Green organic waste stockpiles must not exceed 15,000m³ in size prior to mulching.
- (d) All recycling and collection areas must be adequately signposted.
- (e) All recycling and collection areas must be kept in a neat and orderly state, with appropriate access.
- (f) Salvaging activities may be permitted onsite with Council approval.
- (g) A voluntary recycling facility must be maintained at the waste depot for the recovery of:
 - Glass
 - Aluminium cans
 - Steel cans
 - Liquidpaperboard cartons
 - PET, HDPE plastic bottles
 - Cardboard and newsprint
 - Lead acid batteries –refer to condition H3
 - Used engine oil – refer to condition H3

SO12 Noise

- (a) Noise emissions from the activity when measured at any domestic premises in other ownership and expressed as the adjusted time average A-weighted sound pressure level must not exceed:
 - 45 dB(A) during the specified hours of operation, and
 - 40 dB(A) outside these hours.
- (b) Where the combined level of noise from the activity and the normal ambient noise exceeds the noise levels stated above, for the appropriate time of day, this condition will not be considered to be breached unless the noise emissions from the activity are audible and exceed the ambient noise levels by at least 5 dB(A). Noise level measurements must be taken in the presence of ambient noise normally existent in the area.
- (c) The time interval over which noise levels are to be averaged must be between 10 and 20 minutes.

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- (b) Measured noise levels are to be adjusted for tonality and impulsiveness in accordance with Australian Standard AS 1055.
- (c) All methods of measurement must be in accordance with Australian Standard AS 1055 – 1997 *Acoustics – Description and measurement of environmental noise* and the *Tasmanian Code of Practice for Sound Pressure Level Measurement*.

SO13 Composting Operation

- (a) A hardstand area of 30,000 square metres, incorporating a sub-grade of clay material, will be graded and drained to reduce seepage into the landfill. Composting operations must be confined to this area.
- (b) All run off from the composting pad must be directed to the leachate pond.
- (c) Unless otherwise approved by the Director, machinery must not be operated on the site outside the hours given in SO1 (a), with the exception that the composting screen and front end loader may be operated until 5.00pm.
- (d) A person or persons, whose duties shall include directing traffic on the site to the green waste stockpile area and composting area must attend the site while the site is open for acceptance of waste.
- (e) The mixture of feedstock that is being composted must be managed to ensure that the following parameters are maintained within the windrows during the thermophilic stage of the composting operation:
 - (i) Moisture content between 45 – 65%
 - (iii) Oxygen content between 12 – 14% for 99% of the time and never less than 5% oxygen content.
 - (iv) Carbon : Nitrogen ratio >15
 - (v) Temperatures of at least 55°C should be achieved for three consecutive days for the whole composting mass. Temperatures within the windrows must not exceed 65°C.
- (f) Moisture content, oxygen content and temperature of windrows must be monitored on weekdays. All monitoring data collected in accordance with this condition, along with protocols involved in conducting monitoring, must be made available to an authorised officer upon request.
- (g) Unless otherwise approved by the Director only the following materials may be received, stored and/or used in composting on the land:
 - (i) mulched green organic waste
 - (ii) Biosolids classified as Class 1 or Class 2 as defined in the *Tasmanian Biosolids Reuse Guidelines, August 1999*, or as updated from time to time.
 - (iii) Poultry mortalities
 - (iv) Fish waste
 - (v) Fish food waste
 - (vi) Yeast waste
 - (vii) Blackcurrant pulp
 - (viii) Leaves from Council street sweeping operations
 - (ix) Sawdust
 - (x) Scallop shell waste
 - (xi) Cardboard

- (xii) Taste of Tasmania waste – food waste, compostable plates and cutlery
(xiii) Glucose waste

- (h) Where waste, as listed above is received at the composting site and that material is a controlled waste, the quantity, source, transporter, and composition of the waste must be accurately recorded and forwarded to the Director at least annually.
- (i) Putrescible material stored or stockpiled on the site must be in a sealed covered area and for no more than 7 days.
- (j) The composting operation must be maintained in such a manner that odours do not cause environmental nuisance beyond the boundary of the premises.
- (k) Trucks leaving the site and travelling by public roads and carrying loads containing material which may blow or spill out of the vehicle must utilise effective measures to prevent loss of the material by windage or spillage, such as tarpaulins or load dampening.
- (l) Airborne dust must be controlled such that dust is not visible crossing the boundary of the land on any more than 3 days in any calendar year.
- (m) Machinery capable of spreading, mixing and covering the compost must be kept on site at all times. A person capable of operating the machinery must be available for an adequate period of time to spread, mix and cover all compost on a weekday basis and on any weekend days that putrescible waste is to be delivered to the composting operation.
- (n) A composting site operations manual must be submitted to the Director for information by 2 November, 2004. Compost site personnel must be made aware of its contents to the extent necessary to secure compliance with these conditions. The manual must provide detailed information relating to training programs, induction in management of composting operations, etc as detailed in the EMP section 4.1.9.

LFG 1 Landfill gas extraction at the waste depot

- (a) The landfill gas extraction and flaring system for McRobies Gully Landfill must be installed as specified in Hobart City Council McRobies Road Tip Compiled Plan no: A – 913 – 146.
- (b) The raw landfill gas must be sampled and analysed to ascertain the concentration of the following parameters on at least three occasions during the feasibility study of the proposed power generation facility. The following appropriate components, as a minimum shall be given as a percentage:
- Methane;
 - Carbon dioxide;
 - Nitrogen;
 - Oxygen;
 - Total silicon
 - Total chlorine
 - Total fluorine
 - Total sulphur;
 - Ammonia; and
 - Relative humidity
- (c) The gases emitted following flaring must be sampled at commissioning and annually on the anniversary of commissioning thereafter and analysed to ascertain

the concentration of the following parameters, unless otherwise agreed by the Director:

Oxides of Nitrogen;
Sulphur dioxide; and
Carbon monoxide or oxygen.

- (d) Total stack emissions are to be modelled based on the volume of landfill gas extracted (calculated from flow monitoring data), the degree of combustion achieved, and the composition of the raw landfill gas as determined in accordance with paragraph (b). The results of such modelling shall be provided to the Director annually and within three months of the sampling of the emitted gases.
- (e) Landfill gas must not present a source of odour beyond the premises boundary or an explosion or toxicity hazard.
- (f) Environmental aspects of the flaring of landfill gas are to be addressed as outlined in Section 3.9 of the *McRobies Gully Refuse Disposal Site: Environmental Management Plan, August 2002* and any reviews of same.
- (g) If required by the Planning Authority, a fresh development application is to be made in respect of any proposal to generate electricity by burning landfill gas. In any event, such a proposal is to be referred to the Director as required by condition G4 of this notice.

HAZARDOUS SUBSTANCES**Controlled Waste Conditions****H1**

- (a) Where there is doubt concerning the classification of waste as "controlled waste", clarification must be sought from the Director.
- (b) After June 30, 2004 controlled waste must not be accepted for disposal at the waste depot without the prior written approval of the Director, with the exception of the following low level controlled wastes:
 - (i) Asbestos waste;
 - (ii) Shredded scrap tyre waste;
 - (iii) Suitably treated and dried sewage sludge, including grit, silt and screening provided that total and leachable concentration values do not exceed those specified as Class 2 in the *Tasmanian Biosolids Reuse Guidelines*;
 - (iv) Sharps in an approved sealed sharps container and,
 - (v) Quarantine waste in accordance with the procedures prescribed by Quarantine Tasmania, until alternative treatment technologies are established.
 - (vi) Waste listed in SO13 (g)
- (c) Low level controlled waste as defined in H1 (b) (with the exception of tyres described under H2) must be disposed of in area at least 100 metres away from tipping face which is accessible by the public, and must be covered within two hours of receipt with a minimum of 300 mm of compacted clay soil to protect public and worker health.

H2 Tyres must be disposed of in accordance with the following, unless otherwise approved by the Director:

- (a) No whole motorcycle, passenger, light truck and whole truck tyres are to be disposed of in the landfill.
- (b) No more than 600 tyres may be stored on the land and such storage may only occur as an interim measure while awaiting removal to a site authorised to receive tyres for storage and reprocessing or disposal.
- (c) Scrap tyres must be stored on a clean, hard stand area that has all weather access, and is secure.
- (d) Tyres, other than motorcycle, passenger, light truck and truck tyres, may only be disposed of at the waste depot where no other approved disposal option exists. Earthmoving vehicle tyres must be individually buried and be filled completely, to remove any voids, with an inert and non-degradable material such as soil or sand.

H3 Batteries and Waste Oil

- (a) Any used motor vehicle lead acid batteries received at the waste depot must be stored in a facility that conforms to Australian Standard 3780; The Storage and Handling of Corrosive Substances.
- (b) Used oil must be received and stored in accordance with the following:

- (i) The tank must be of suitable volume (eg. 500 – 1,500 Litres) to store the volumes of used oil that are likely to be received on a regular basis (e.g. 4 weeks storage);
 - (ii) The tank must be placed in a suitable bunded containment area, constructed of suitable impervious materials, designed to contain not less than 110% of the volume of the storage tank.
 - (iii) Storage areas must be designed in accordance with relevant Australian Standards (AS-1940) and the requirements of the relevant Dangerous Goods legislation.
 - (iv) The bunded area must be covered to prevent ingress of rainwater.
 - (v) The bunded area must contain appropriate valves to allow drainage and recovery of materials in the bund.
 - (vi) These valves must contain suitable locking mechanisms such that the valves can only be operated by authorised personnel.
 - (vii) A spill kit and spill response procedures must be developed and retained at the depot.
- (c) Any waste oil accumulated in the bunded containment area must be emptied into a used oil storage tank on a regular basis.
- (d) Only operators or contractors authorised by the Hobart City Council shall be permitted to empty used oil into the used oil storage tank and handle lead acid batteries for storage purposes.

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Rehabilitation Conditions

- R1** Progressive rehabilitation must be conducted in accordance with the following:
- (a) Waste capping must commence at the rate of approximately 10,000m² per annum commencing in 2004 and be in accordance with SO6.
 - (b) Rehabilitation must include planting or seeding with appropriate species endemic to the locality, if the area is not intended to be used for alternative purposes.
- R2** If permanent cessation of disposal operations on the land is planned then the Director must be notified of the planned cessation of operations at least six (6) months prior to the planned date of cessation, or as soon as reasonably practicable after a decision is taken to cease disposal operations in less than six (6) months. A detailed site closure and rehabilitation plan must be prepared and submitted to the Director.
- R3** An audit of the capping thickness of the areas of the site which are at their final height must be undertaken within twelve months of issuing of these conditions.
- R4** No less than two months prior to commencement of site closure and final rehabilitation:
- (a) A site closure and final rehabilitation plan for the waste depot must be submitted to the Director for approval, in accordance with the Division's Guide for the rehabilitation of waste depots, and any other written requirement of the Director.
 - (b) Site closure and final rehabilitation work on the site must not take place without the Director's written approval of the site closure and final rehabilitation plan. Suitable materials may be stockpiled on the site for rehabilitation purposes prior to approval.
 - (c) Site closure and final rehabilitation must be carried out in accordance with the site closure and final rehabilitation plan approved in writing by the Director and must be substantially commenced within 12 months of cessation of landfilling operations.

Monitoring Conditions**Sampling Methodology**

M1 All samples required to be obtained by these permit conditions must be subject to the following:

- (a) All samples must be tested in a laboratory accredited by the National Association of Testing Authorities (NATA) for the specified test, or a laboratory approved in writing by the Director;
- (b) All samples must be collected and analysed in accordance with the following Australian Standards or other standard(s) approved by the Director: Groundwater Sampling Australian Standards/New Zealand Standards 5667.11:1998 and Pump Testing Australian Standards 2368-1990.
- (c) All records of sampling and analysis (including an estimate of flow of effluent/water at the time of sampling) must be retained for at least 10 years after the date of sampling and made available for public inspection upon request.
- (d) All water samples must be taken by a person experienced in the methodology used for taking and transporting water samples.

Monitoring, Record Keeping and Reporting

M2 (a) Unless otherwise directed in writing by the Director, monitoring must be carried out at the following points:

- (i) Groundwater monitoring will be undertaken four times per year from bores 1996/1, 1996/2 and 1996/3, which are located in the McRobies Gully up valley from the controlled waste area, in the northern gully upstream of the landfill and down valley from the leachate dam.
- (ii) The location of any additional bore(s) must be determined in consultation with the Director and Mineral Resources Tasmania.
- (iii) Surface water sampling points upstream of the landfill in the original valley watercourse, the stormwater manhole immediately below the leachate pond, the Hobart Rivulet 5 metres above the 1500mm stormwater pipe and 5 metres below the 1500mm stormwater pipe.
- (iv) The leachate dam referred to condition C2.
- (b) Unless otherwise directed in writing by the Director, monitoring and the frequency of monitoring, must be conducted in accordance with Tables 1 and 2.
- (c) The results of all monitoring must be forwarded to the Director within 14 days of completion of analysis. These must be forwarded to the Director in electronic form in an approved format.
- (d) A record of all controlled waste disposed of at the waste depot must be kept that includes the:

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- (i) Quantity of waste;
- (ii) Description of the waste;
- (iii) The identity of the waste generator where possible and;
- (iv) Date of disposal.

M3 Groundwater investigations of any new and existing bores must be carried out as follows:

- (i) Any new groundwater monitoring bore(s) must have an approved installation and development record as outlined in condition M4. Pump testing must also be carried out.
- (ii) Any new groundwater monitoring bore(s) must be monitored quarterly for one year. Monitoring must be for chemical analytes outlined in Table 2. After this period of initial monitoring, and dependent upon results, the frequency of monitoring may be reviewed.
- (iii) Groundwater monitoring results and interpretation must be included in the annual review prepared in accordance with G6 (a).
- (iv) The monitoring of the groundwater bores must be carried out as defined in M1.

Groundwater Bores

M4 (a) All groundwater bores must have an installation and development record that includes, at least, the following:

- (i) Description of materials used for construction;
- (ii) Initial field water parameters (conductivity, TDS, pH and temperature);
- (iii) Details of slot screens installed, and to what depth;
- (iv) Depth of gravel packing;
- (v) Depth of bentonite cap;
- (vi) Details of bore development during pumping (removal of drilling contamination);
- (vii) Aquifer levels; and
- (viii) A detailed geological log.

(b) Sampling of all bores must be recorded on a pre-drafted recording sheet which includes, at least, the following:

- (i) Standing water level;
- (ii) Bore volume (purging should be 3 times the bore volume);
- (iii) Time for purging;
- (iv) Sampling time and number; and

Director of Environmental Management: *Frank Critch*

Date of Issue: - 9 AUG 2016

- (v) Field water parameters (such as conductivity, TDS, pH and water temperature).
- (c) Bore and piezometer placement must be carried out in consultation with and under supervision of a professional person with suitable expertise in hydrogeology.

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Table 1 SURFACE WATER AND LEACHATE MONITORING

	MONITORING PARAMETERS	MONITORING FREQUENCY
Group 1	pH	Quarterly
	Conductivity	Quarterly
	Total Dissolved Solids	Quarterly
	Redox potential (Eh)	Quarterly
	Total Suspended Solids	Quarterly
	Turbidity	Quarterly
	Alkalinity (as CaCO ₃)	Quarterly
	Total Nitrogen	Quarterly
	Ammonia	Quarterly
	Nitrate	Quarterly
	Nitrite	Quarterly
	Total phosphorus	Quarterly
	Orthophosphate	Quarterly
	Dissolved Organic Carbon	Quarterly
	Chemical Oxygen Demand	Quarterly
	E. coli	Quarterly
	Total CN (as CN)	Quarterly
Group 2	Total Iron (Fe)	Quarterly
	Aluminium (Al)	Quarterly
	Copper (Cu)	Quarterly
	Zinc (Zn)	Quarterly
	Chromium (Cr)	Quarterly
	Manganese (Mn)	Quarterly
	Nickel (Ni)	Quarterly
	Lead (Pb)	Quarterly
	Cadmium (Cd)	Quarterly
	Chloride	Quarterly
Group 3	Sulphate	Quarterly
	Sodium (Na)	Quarterly
	Potassium (K)	Quarterly
	Magnesium (Mg)	Quarterly
	Arsenic (As)	Yearly
Group 4	Mercury (Hg)	Yearly
	Selenium (Se)	Yearly
	Total Petroleum Hydrocarbons (TPH) and Benzene Toluene Ethyl-Benzene, and Xylene (BTEX)	Yearly
	polynuclear aromatic hydrocarbons	Yearly
	organophosphate pesticides	Yearly
	organochlorine pesticides	Yearly
	polychlorinated biphenyls	Yearly

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Table 2 GROUNDWATER MONITORING

	MONITORING PARAMETERS	MONITORING FREQUENCY
Group 1	bore depth	Quarterly
	ground water depth	Quarterly
	static hydraulic head	Quarterly
	pH	Quarterly
	Conductivity	Quarterly
	Total Dissolved Solids	Quarterly
	Redox potential (Eh)	Quarterly
	Total Nitrogen	Quarterly
	Ammonia	Quarterly
	Nitrate	Quarterly
	Nitrite	Quarterly
	Total phosphorus	Quarterly
	Orthophosphate	Quarterly
	Dissolved Organic Carbon	Quarterly
Group 2	Chemical Oxygen Demand	Quarterly
	Total CN (as CN)	Quarterly
	Total Iron (Fe)	Quarterly
	Copper (Cu)	Quarterly
	Zinc (Zn)	Quarterly
	Chromium (Cr)	Quarterly
	Manganese (Mn)	Quarterly
	Nickel (Ni)	Quarterly
	Lead (Pb)	Quarterly
	Cadmium (Cd)	Quarterly
	Chloride	Quarterly
	Sulphate	Quarterly
	Sodium (Na)	Quarterly
	Potassium (K)	Quarterly
Group 3	Magnesium (Mg)	Quarterly
	Arsenic (As)	Yearly
	Mercury (Hg)	Yearly
	Selenium (Se)	Yearly
Group 4	Total Petroleum Hydrocarbons (TPH) and Benzene Toluene Ethyl-Benzene, and Xylene (BTEX)	Yearly
	polynuclear aromatic hydrocarbons	Yearly
	organophosphate pesticides	Yearly
	organochlorine pesticides	Yearly
	polychlorinated biphenyls	Yearly

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SCHEDULE 4**Additional Information****1 General requirements**

The activity must be conducted in accordance with the requirements of the *Environmental Management and Pollution Control Act 1994* and Regulations thereunder, and in accordance with the principles of Best Practice Environmental Management. The requirements of this permit must not be construed as an exemption from any of those requirements or principles.

2. Notification of incidents under s.32 of EMPCA

- (1) A person responsible for an activity that is not a level 2 activity or a level 3 activity must notify the relevant council, as soon as reasonably practicable but not later than 24 hours, after becoming aware of the release of a pollutant occurring as the result of any incident in relation to that activity, including an emergency, accident or malfunction, if this release causes or may cause an environmental nuisance.
- (2) A person responsible for an activity that is a level 2 activity or a level 3 activity must notify the Director, as soon as reasonably practicable but not later than 24 hours, after becoming aware of the release of a pollutant occurring as a result of any incident in relation to that activity, including an emergency, accident or malfunction, if this release causes or may cause an environmental nuisance.
- (3) A person responsible for an environmentally relevant activity must notify the Director, as soon as reasonably practicable but not later than 24 hours, after becoming aware of the release of a pollutant occurring as a result of any incident in relation to that activity, including an emergency, accident or malfunction, if this release causes or may cause serious or material environmental harm.

The Director can be notified by telephoning 1800 005 171 (a 24-hour emergency telephone number).

- (4) Any notification referred to in subsection (1), (2) or (3) must include details of the incident, its nature, the circumstances in which it occurred and any action that has been taken to deal with it.

This notification can be faxed to the Director on 62 333 800, or delivered by hand.

- (5) Any notification given by a person in compliance with this section is not admissible in evidence against the person in proceedings for an offence or for the imposition of a penalty (other than proceedings in respect of the making of a false or misleading statement).

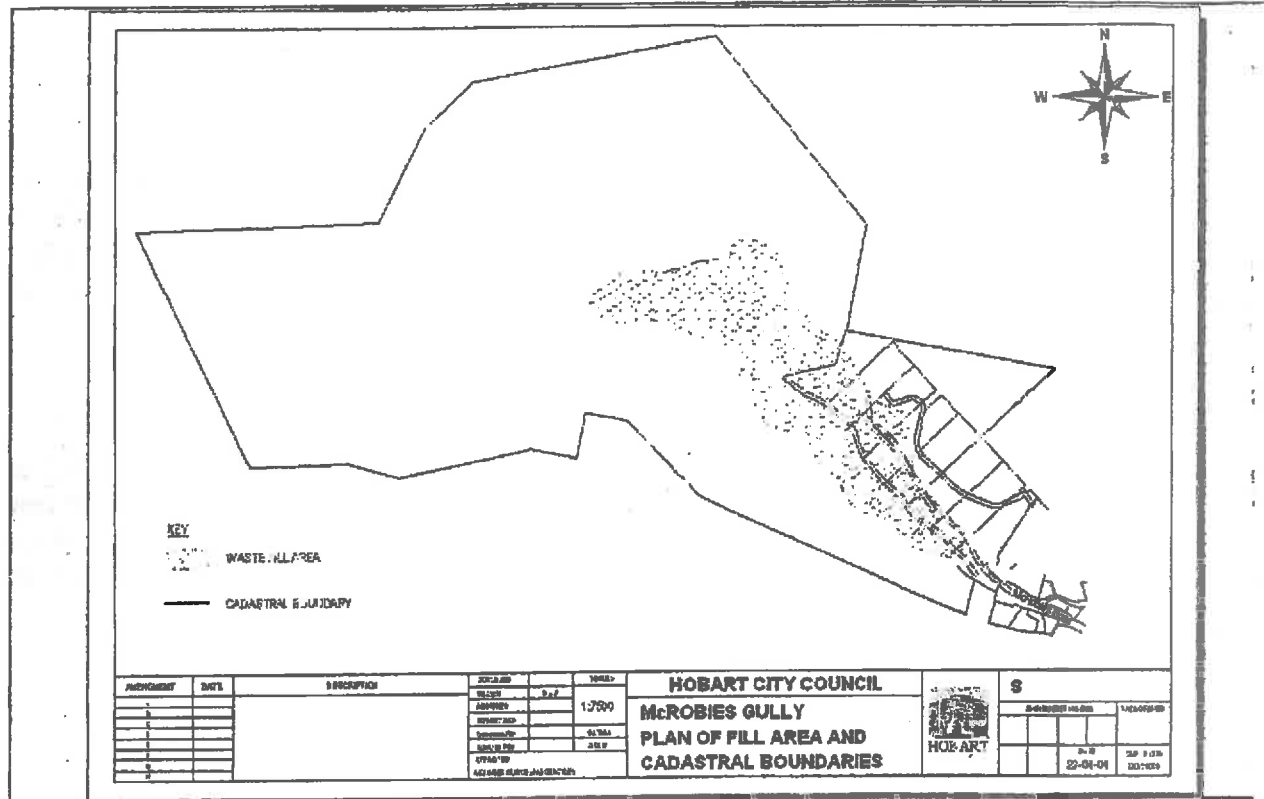
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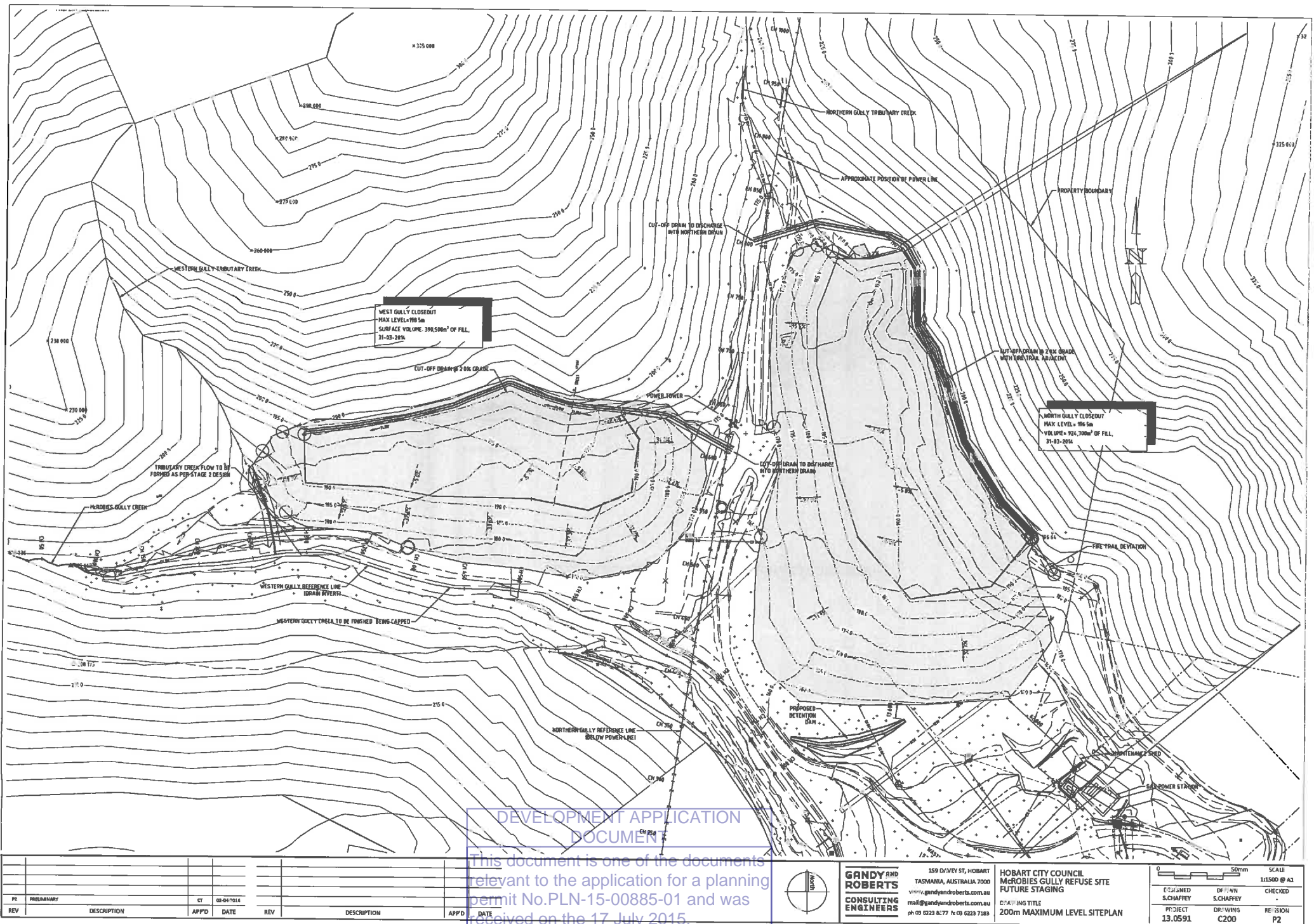
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Attachment 1

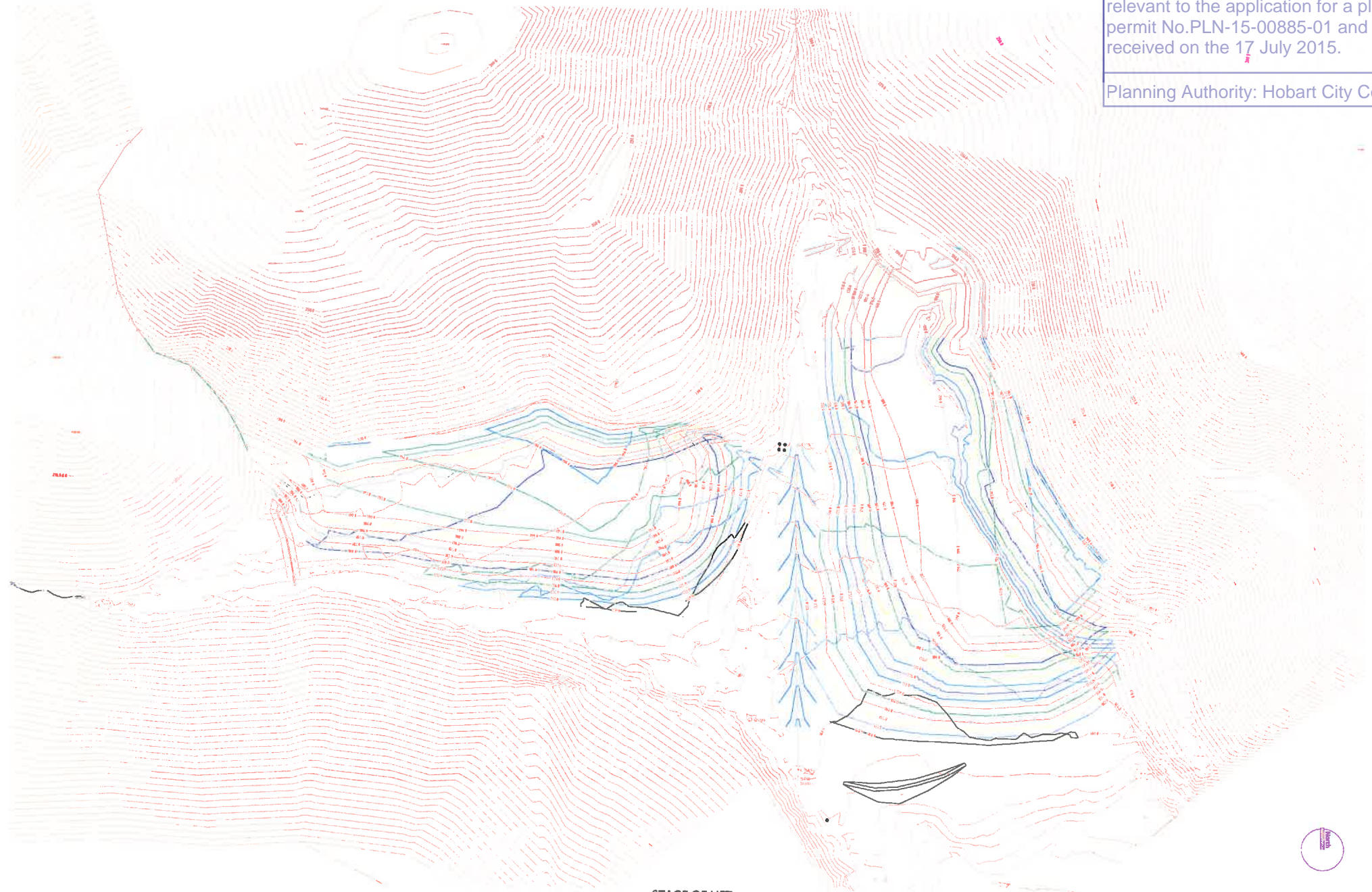
Director of Environmental Management: *Frank Cottrell*

Date of Issue: - 9 AUG 2006



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STAGE OF LIFT
SCALE 1:1500 @ A1

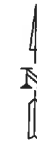


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combined all surface volume:
1 400 000m³ of fill

NORTH GULLY DRAIN DIVERTS
AROUND TOWER
EXTENT OF FILL MEETS NEAR THE
BASE OF THE POWER TOWER



CURRENT FILL PLAN TO 184m MAX.


REV	DESCRIPTION	APP'D	DATE	REV	DESCRIPTION	APP'D	DATE

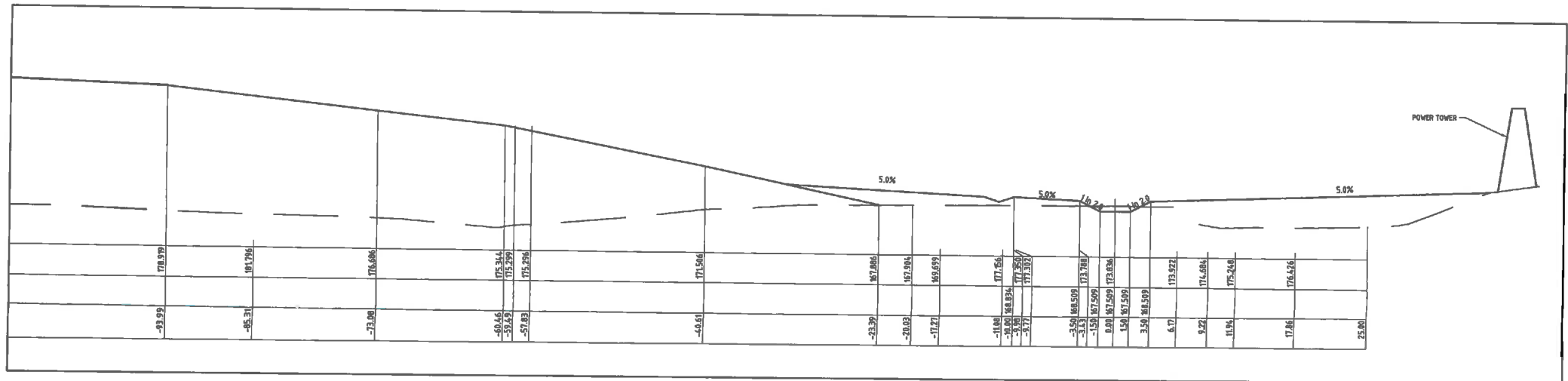


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HOBART CITY COUNCIL
McROBIES GULLY TIP SW DRAIN
STAGE 2 PRELIM OPTION 2

DRAWING TITLE
GENERAL LAYOUT

			
Designed SOC	Drawn SOC	Checked CT	Scale 1:2000 @ A1
Plot Date 21-May-09	Project No. 6604	Drawing No. P1	Revision P1



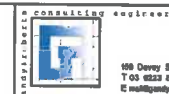
SECTION AT TOWER LOOKING SOUTH

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REV	DESCRIPTION	APP'D	DATE	REV	DESCRIPTION	APP'D	DATE



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T 03 6823 8877 F 03 6823 7883
E mail@gandyandpartners.com.au

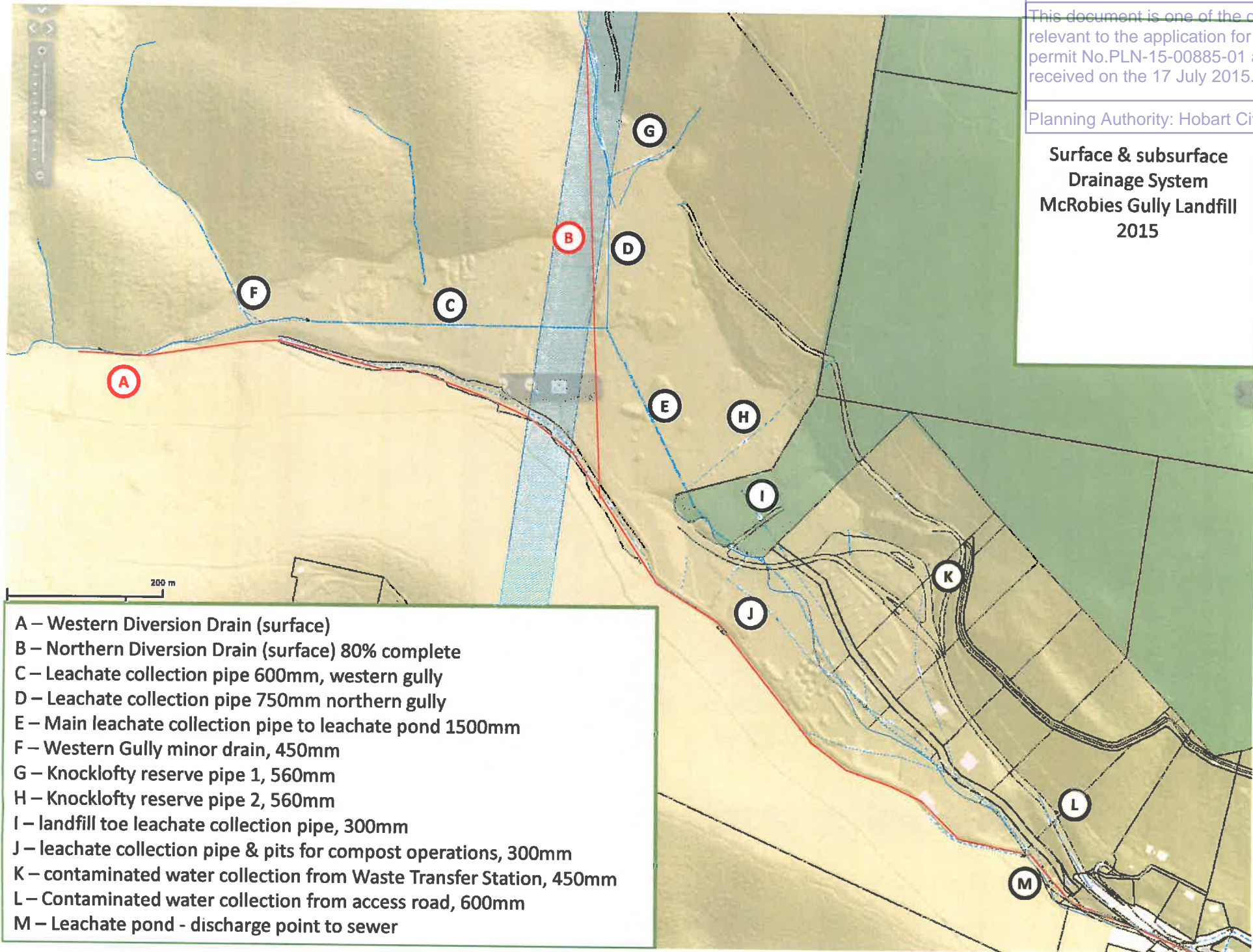
HOBART CITY COUNCIL
McROBIES GULLY TIP SW DRAIN
STAGE 2 PRELIM OPTION 2
DRAWING TITLE
TOWER SECTION

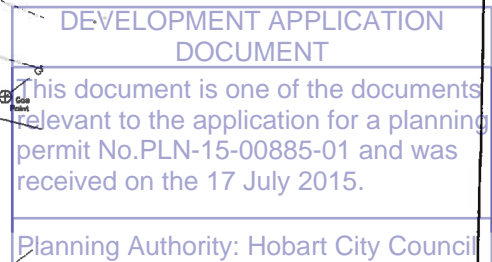
0	50mm	75mm
Designed SCC	Drawn SCC	Checked CT
Plot Date 21-May-09	Project No. 6604	Drawing No. P1
		Revision P1

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

**Surface & subsurface
Drainage System
McRobies Gully Landfill
2015**





1. All words shall be in accordance with the relevant clauses of the Municipal Standard Specification and Municipal Standard Drawings.
2. All set out dimensions to be run on site prior to commencing work.
3. The maximum concentration of runoff with sediment, litter or brooms of oil from machinery shall be controlled by the use of a good collection system.
4. In practice, which shall include, stormwater diversion drains, all traps and appropriate disposal arrangements for water which is discharged from the site and other measures shall be employed by the contractor to ensure that it is made to prevent any damage occurring to private property, water courses or stormwater systems due to water flowing from the works.
5. The embankment material shall be EITHER a well graded coarse mixture of sand, gravel and fines with a maximum of 10% silt or clay (BS 589 Part 1) OR a well graded mixture of sand, gravel and clayey fines, where the fines consist of inorganic clay with a Pl+12 and 10% plastic tough clay with a Pl+12 or greater content (BS 589 Part 2) 85% to 40%. Test results shall be discussed with HCC Manager Engineering Projects prior to starting embankment construction.
6. Avoid the use of acidic soils (depressive soils) for embankment material. These soils are generally derived from the sandstones and Permian mudstones and are highly susceptible to tunneling action.
7. The existing embankment shall be removed prior to construction of the new embankment, removal shall be to nominally the old surface level. The existing surface shall be covered with a 100mm layer of hardcore.
8. The surface area where the new embankment is to be constructed shall be scarified to ensure that the first fill is properly joined to the surface so that no natural paths are created.
9. Embankment material shall be placed with sufficient moisture to ensure proper compaction. The moisture content should be in the range of -1% to +3% of the optimum moisture content of the material. If the material is too dry it should have water added, the material is too wet it should be spread and mixed.
10. Embankment material shall be placed in layers no thicker than 150mm.
11. Each layer shall be compacted before the next layer is placed.
12. The minimum compaction shall be BS 2688 Method D.
13. The compaction varies throughout the embankment it may lead to differential settlement which may lead to cracking.
14. Compaction should be achieved using a tamper foot roller as will be used on the city material giving more uniform compaction.
15. Before each additional layer is added to the embankment the preceding layer shall be scarified.
16. All joints in the embankment shall be properly joined so that no natural paths for seepage are present.



T: (03) 6238 2711
F: (03) 6234 9757
E: hcc@hobartcity.com.au

AMENDMENT A Replaces A2's SW-1/3 and SW-1/4 with bands 5/8" H JH B			SCALES SCALE 1 1:200 SCALE 2 DATUM State DATE 21/11/2013 ACAD FILE McArthur_SML_C10 GEODCOMP FILE 488448		DESIGN Tony Halseman CHECKED JH/TH J. Holmes 22/11/2013		FORM Tony Halseman PROJECT MANAGER PROJECT DESCRIPTION McArthur WIND SURFACE WATER MANAGEMENT CLIENT ORGANISATION HOBART CITY COUNCIL ENVIRONMENTAL SERVICES		ASHP-01-010 LAYOUT PLAN REFERENCE DRAWINGS A 913 - 263A P & B 263B, 263A, 263B 13-067-001A SHEET NUMBER Sheet 1 of 1	
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This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

Supporting Information for Planning Permit Application

Increase to Final Landfill Height McRobies Gully Landfill.

The City of Hobart is seeking to increase the final fill height of the McRobies Gully landfill. The currently permitted maximum level as regulated by the Environment Protection Authority (EPA) under Environmental Protection Notice (EPN 715/1) is 184m, and the proposal is to increase the height to 200m maximum final level (an increase of 16m).

It should be noted that the height increase request only applies to the Northern and Eastern boundaries of the landfill, with the Western and Southern levels to remain at current levels.

To achieve this proposal, the permit is required to be varied by an EPN issued under Section 44(1)(d) of EMPCA. The EPA advise that before they can consider the proposal further they require confirmation that the planning authority has been consulted to determine whether any other approvals are required for the proposed height increase to proceed. Discussions with the Planning Authority have resulted in this Application for a Planning Permit being lodged.

The Planning Application contains the following documentation;

- A Planning Application Form
- Certificate of Titles and folio plans for all associated land parcels at the McRobies Gully Waste Management Centre.
- Plans detailing final contours for the existing permitted fill height, and the proposed fill height.
- A summary of the water management plan for the site.
- A plan of the surface and subsurface drainage system for the site.
- A copy of the current Environmental Protection Notice (EPN 715/1).

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

Water Management Plan – McRobies Gully Landfill

The City has been undertaking capital works to manage the surface water entering the site to reduce the hydraulic load on the leachate system, reduce the number of leachate overflows, and ensure clean water stays clean as much as possible. Works are based on a design specification of handling a 1 in 20 year annual recurrence interval rainfall event before overflow to stormwater occurs.

In 2014 the City completed the construction of a surface water drain to carry McRobies Creek around the landfill and into the Hobart Rivulet, uncontaminated. This drain around the western boundary of the landfill will greatly reduce the number and volume of leachate contaminated overflows. This western drain is now complete, and early indications are that it is reducing flow rates to the leachate pond by around 60%. The drain has been constructed over a 3 year timeframe, and prior its construction all water flowing from the McRobies Gully catchment was piped under the landfill and to the leachate pond.

The City is currently completing stage 2 of the drain works, which involves construction of a surface water drain to transport flows from the Pottery Creek catchment across the landfill (uncontaminated) and into the western drain. Water from the Pottery Creek catchment is currently piped under the landfill to the leachate pond. Works are scheduled for completion in August 2015. This will further reduce the load on the leachate pond, and reduce the instances of leachate overflows from the site.

Stage 3 works will involve the construction of a surface water drain to capture a small gully from the Knocklofty Reserve side of the landfill (towards the north end of the site in proximity to the Pottery Creek surface water drain). This drain will transport water into the Pottery creek surface drain, and ultimately to the Hobart Rivulet via the western drain. The location of this drain is in an area yet to be filled. At present, water from this catchment is piped into the main leachate collection pipe through a 560mm stormwater pipe and directed to the leachate pond. If the increased fill height is approved, this area can be filled to enable construction of the drain as a priority.

As McRobies Gully WMC approaches the design levels the final profile established in the western and northern reaches will be convex in shape to prevent any surface water ponding. The proposed final profile provides for increased height in the central part of the site, in order to prevent ponding after settlement of the deepest fill, along with allowance for future settlement.

Whilst in operation, the runoff from the landfill footprint will be subject to some contamination, albeit much less than water seeping through the fill, so it will still be directed to the leachate pond. After final close out, it will be feasible to keep the runoff free of contamination and direct it to the storm water system, further reducing the load to the leachate system.

The environmental objective of the water management works being undertaken are to manage stormwater in accordance with best practice environmental management and to a level which enables the achievement of the protected environmental values of receiving waters.

The fire trail above the eastern side of the landfill has been developed into a perimeter drain. Due to the nature of the soil, underlying bedrock and the relatively healthy understory, the proportion of overland flow on this side of the landfill is lower than the western face. This drain is inspected on a quarterly basis, with more frequent inspections following periods of heavy rainfall. Litter patrols are undertaken to reduce gross litter in the storm water runoff from the site. However, windy weather

rapidly distributes litter and this often occurs in conjunction with rainfall, but the impact of this issue has been significantly reduced since the WTS commenced operation in late 2013.

A surface water retention basin will be constructed at the site in 2015/16. This basin will capture all surface water from the active landfill area situated in the centre area of the landfill, and prevent run-off from flowing down to the lower sections of the landfill (Waste transfer station and organics areas). The water collected will be fed into the leachate network, and directed to sewer. This system will remain in place whilst the landfill is active, upon closing of the landfill it will become redundant, and surface waters able to be directed to the stormwater system through surface water drainage channels.

Collection of storm water from roofed areas of the WTS and recycling area is currently occurring, further improving the storm water capture at the site. Included with this documentation is a plan of the site detailing the various surface and subsurface drainage system at the McRobies Gully landfill.

DEVELOPMENT APPLICATION DOCUMENT
This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.
Planning Authority: Hobart City Council

Return to: G. Doyle**Doyle, Glenn**

From: Holmes, Jeff
Sent: Tuesday, 16 June 2015 9:36 AM
To: Doyle, Glenn
Cc: Holman, David
Subject: Landfill height increase

**DEVELOPMENT APPLICATION
DOCUMENT**

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

Following is a summary of the process of formalising a height increase to McRobies Gully landfill.

City Officers met with EPA staff about the way forward for getting a height increase approved. They advised that a height increase could be considered through updating the EPN for the site. The EPA advised the City to develop an updated EMP for the site that covered all environmental issues, plus drawings and documentation that proposed raising the landfill height. Approval of the EMP would ultimately approve a new filling height, and the development of a new EPN (based largely on the EMP) would follow in due course.

The City then engaged a consultant to develop an EMP, and a final height of 200m (increased from the currently permitted 184m) was arrived at. The City wrote to the EPA, to request the height of 200m be approved. The intent was to have EPA approval in time to allow changes to the rates levy for 15/16 & beyond.

The EPA response reiterated the need to vary the EPN to formalise any changed condition, and asked for a range of information to be provided. Most of the conditions are able to be covered through the new EMP or on site works currently occurring, but one item not expected was they also asked for "confirmation that the planning authority has been consulted to determine if any approvals are required for the proposal to proceed". This issue was not previously identified.

Further discussions were then had with both the EPA and the City's Planning officers. The advice from the EPA was as follows:

- As far as EPA concerned the ball is in Council's court - respond to the letter, & provide a response from the planners as to whether any approvals were required, or not. If no planning approvals or amendments are required, EPA would commence drafting a new EPN immediately, a 3-6 month process that would require input from the City's EMP.
- If planning approvals or amendments are required, the City needs to go through that formal process (5-8 weeks) including advertising etc, with the planning application to be forwarded to the EPA for input into the planning permit (because it's a level 2 activity under EMPCA - landfill accepting more than 100 tonnes per year). This would then progress the writing of the new EPN, after the planning permit approval process.

Discussion with City Planners resulted in no original permit being able to be found, which means that there is no existing permit we can check to see if we are still operating within its parameters for this proposal, or amendment to the existing permit cannot be done. Planners re-iterated the EPA view that if planning permit is required it needs to go to EPA for comment during the application process. Cleansing & Waste Officers reviewed the planning scheme to see if there are any valid exemptions, and whilst some codes of the scheme could be exempt, advice from the Planners is that a planning permit is required.

A planning permit application has been completed and relevant information to satisfy the content of the EPA's letter has been included. It is intended to lodge the Application ASAP to limit the impact of this delay in the process as much as possible. It is intended to write to the EPA once the application is lodged, to advise them its under way & they'll be contacted in due course by the planning area for input.

Cheers, Jeff.

City of Hobart

Jeff Holmes | Cleansing & Waste Policy Coordinator | Parks & City Amenity

T: (03) 6238 3272

16 Elizabeth Street, Hobart, Tasmania 7000 Australia | hobartcity.com.au

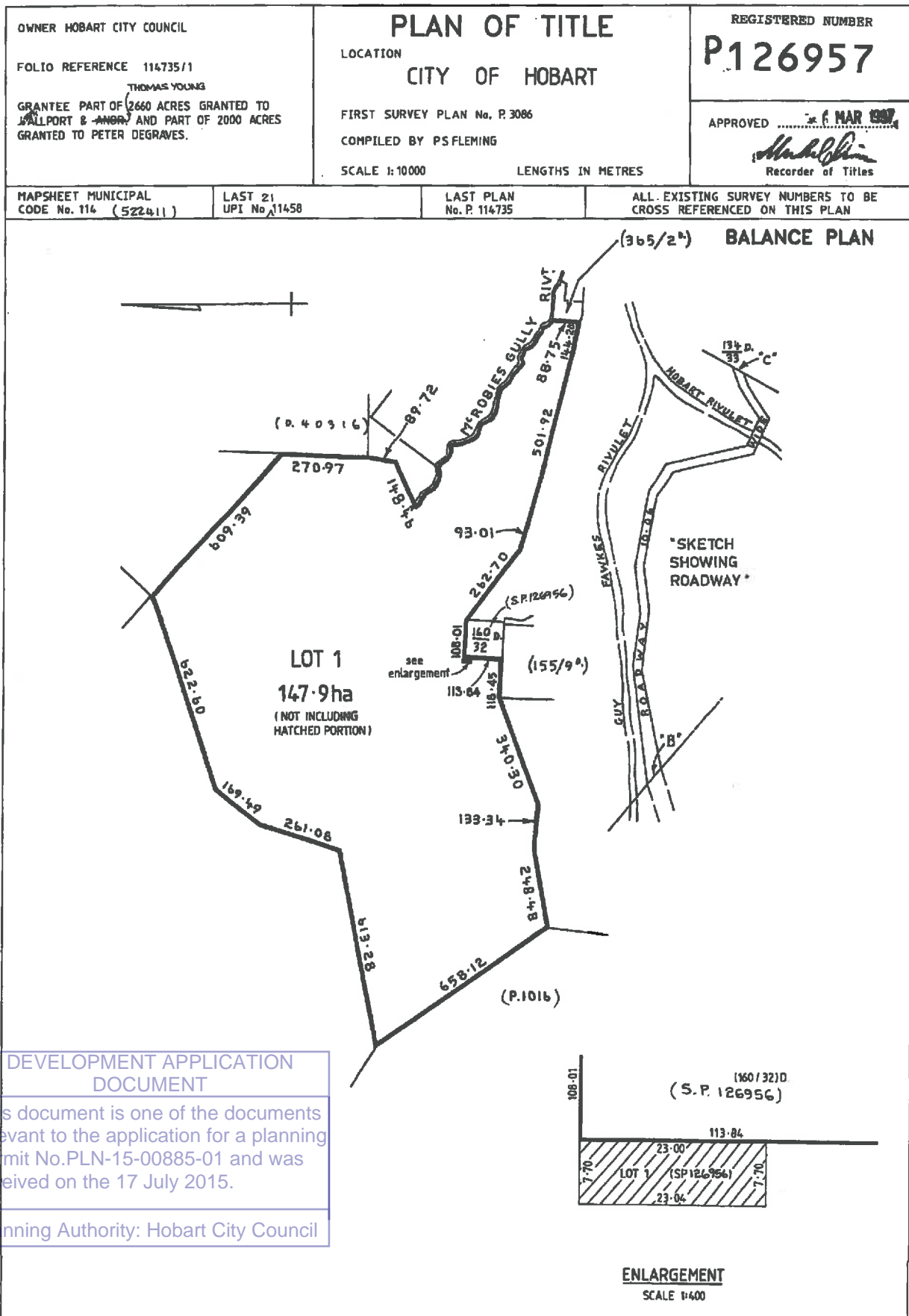
Please note that I work part time, and am not in the office on Wednesdays.



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***SEARCH OF TORRENS TITLE**

VOLUME 40238	FOLIO 25
EDITION 2	DATE OF ISSUE 27-Jan-2005

**DEVELOPMENT APPLICATION
DOCUMENT**

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

SEARCH DATE : 09-Jun-2015

SEARCH TIME : 02.07 PM

DESCRIPTION OF LAND

City of HOBART

Lot 25 on Diagram 40238

Derivation : Part of Lot 25 (4A-3R-29Ps.) - Gtd. to J. Regan.

Prior CT 4590/86

SCHEDULE 1

THE LORD MAYOR ALDERMEN AND CITIZENS OF THE CITY OF HOBART

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C570764 BURDENING WAYLEAVE EASEMENT with the benefit of a restriction as to user of land in favour of Aurora Energy Pty Ltd over the Wayleave Easement 12.00 wide shown passing through the said land within described Registered 27-Jan-2005 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

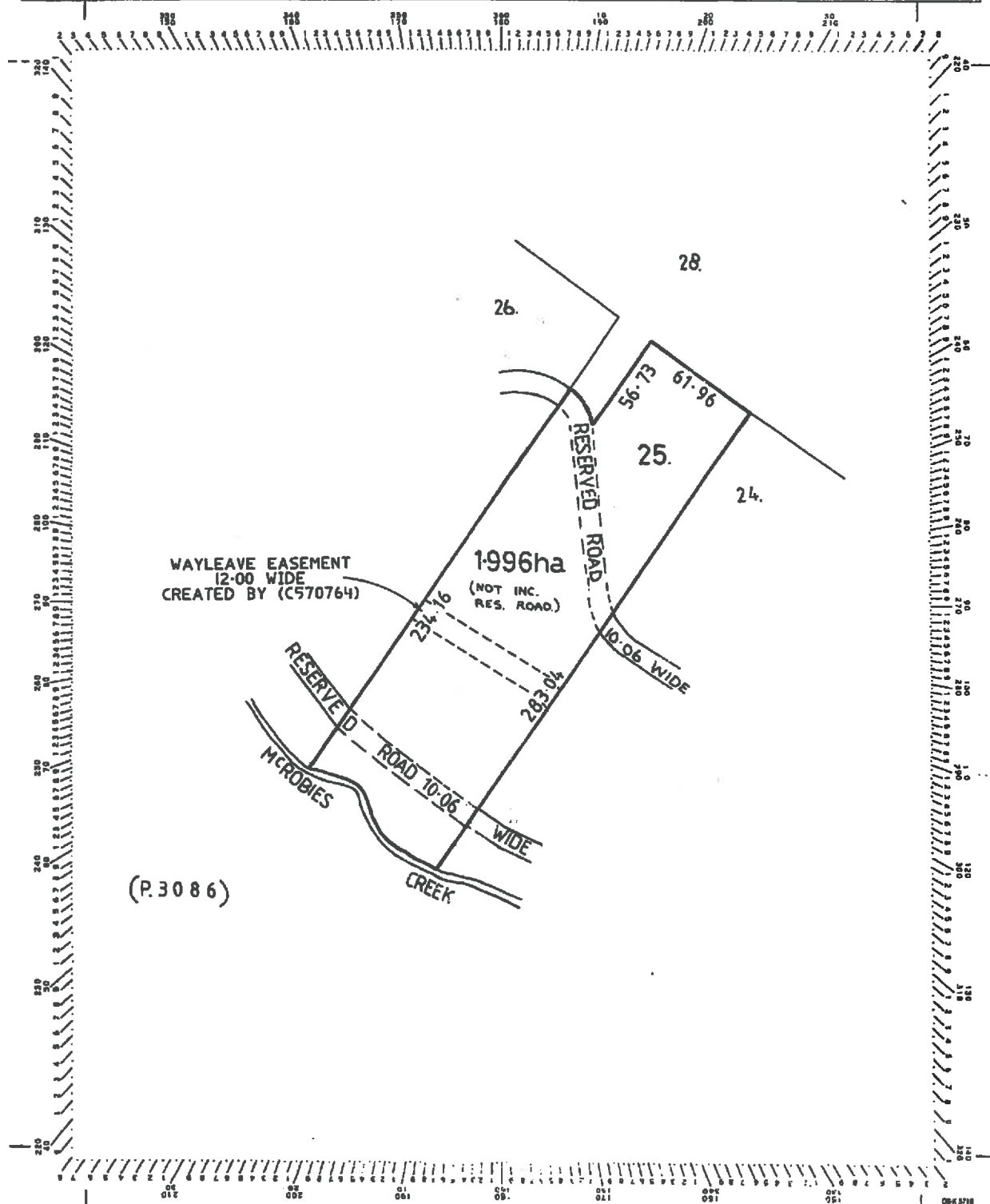
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

Owner: L. T. ACT 1980	PLAN OF SURVEY of land situated in the CITY OF HOBART (SEC A)	Registered Number: D.40238
Title Reference: A.7854	COMPILED FROM P.93 BUCK. L.O.	Approved: 24 AUG 1989 <i>[Signature]</i> Recorder of Titles
Grantee: PART OF LOT 25, 4-3-29 GTD. TO JOHN REGAN.	SCALE 1:2000 MEASUREMENTS IN METRES	



RESULT OF SEARCH

RECORDER OF TITLES

*Issued Pursuant to the Land Titles Act 1980***SEARCH OF TORRENS TITLE**

VOLUME 166085	FOLIO 3
EDITION 2	DATE OF ISSUE 20-Feb-2014

DEVELOPMENT APPLICATION DOCUMENT

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

SEARCH DATE : 09-Jun-2015

SEARCH TIME : 02.00 PM

DESCRIPTION OF LAND

City of HOBART

Lot 3 on Diagram 166085 (Section 27A of the Land Titles Act.)

Derivation : Whole of Lot 3 on Diagram 166085 Gtd. to The Crown

SCHEDULE 1

D111992 TRANSFER to HOBART CITY COUNCIL Registered
20-Feb-2014 at noon

SCHEDULE 2

M435821 Land is limited in depth to 15 metres, excludes minerals and is subject to reservations relating to drains sewers and waterways in favour of the Crown

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

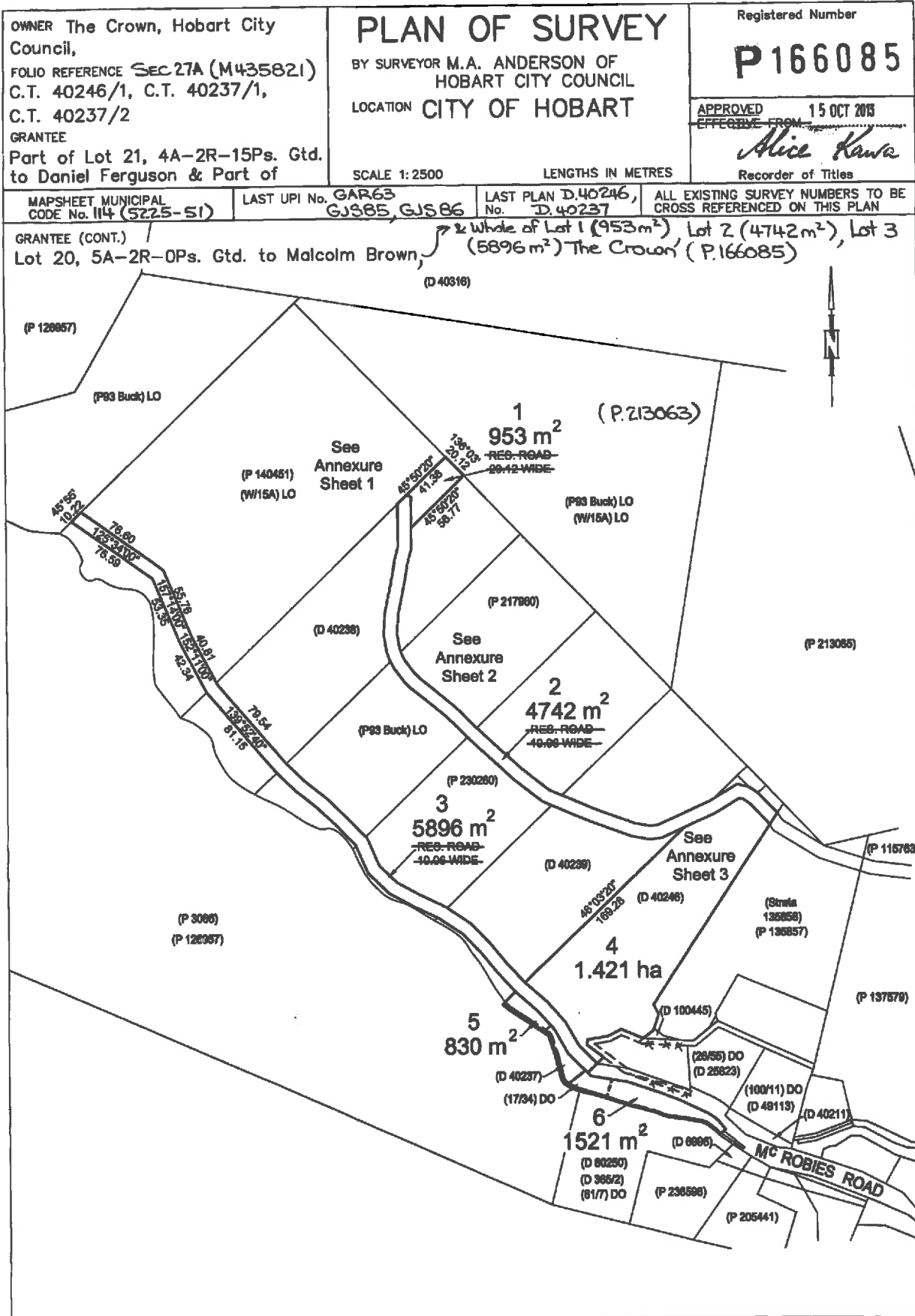
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

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Planning Authority: Hobart City Council



FOLIO PLAN

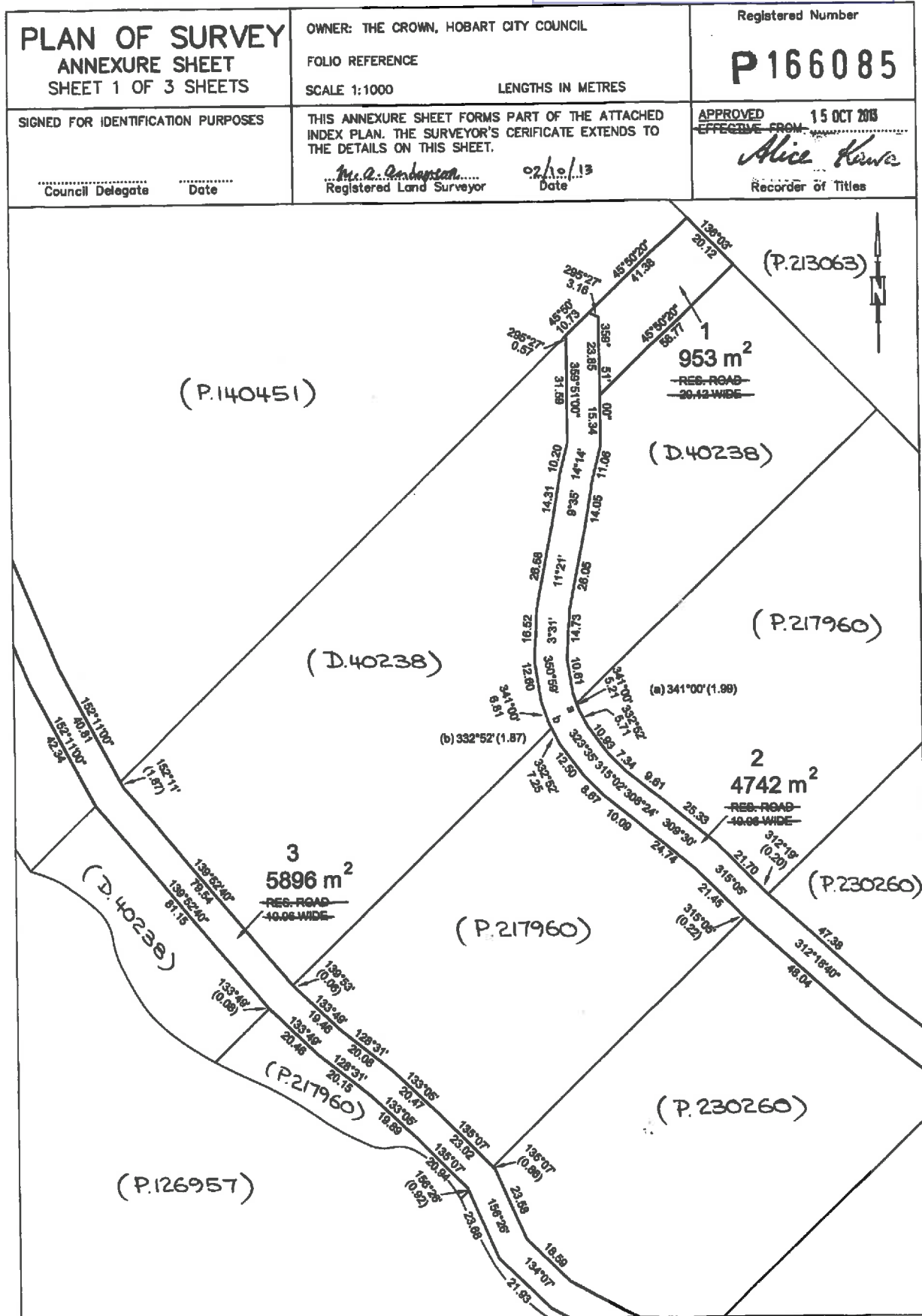
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.



Planning Authority: Hobart City Council



FOLIO PLAN

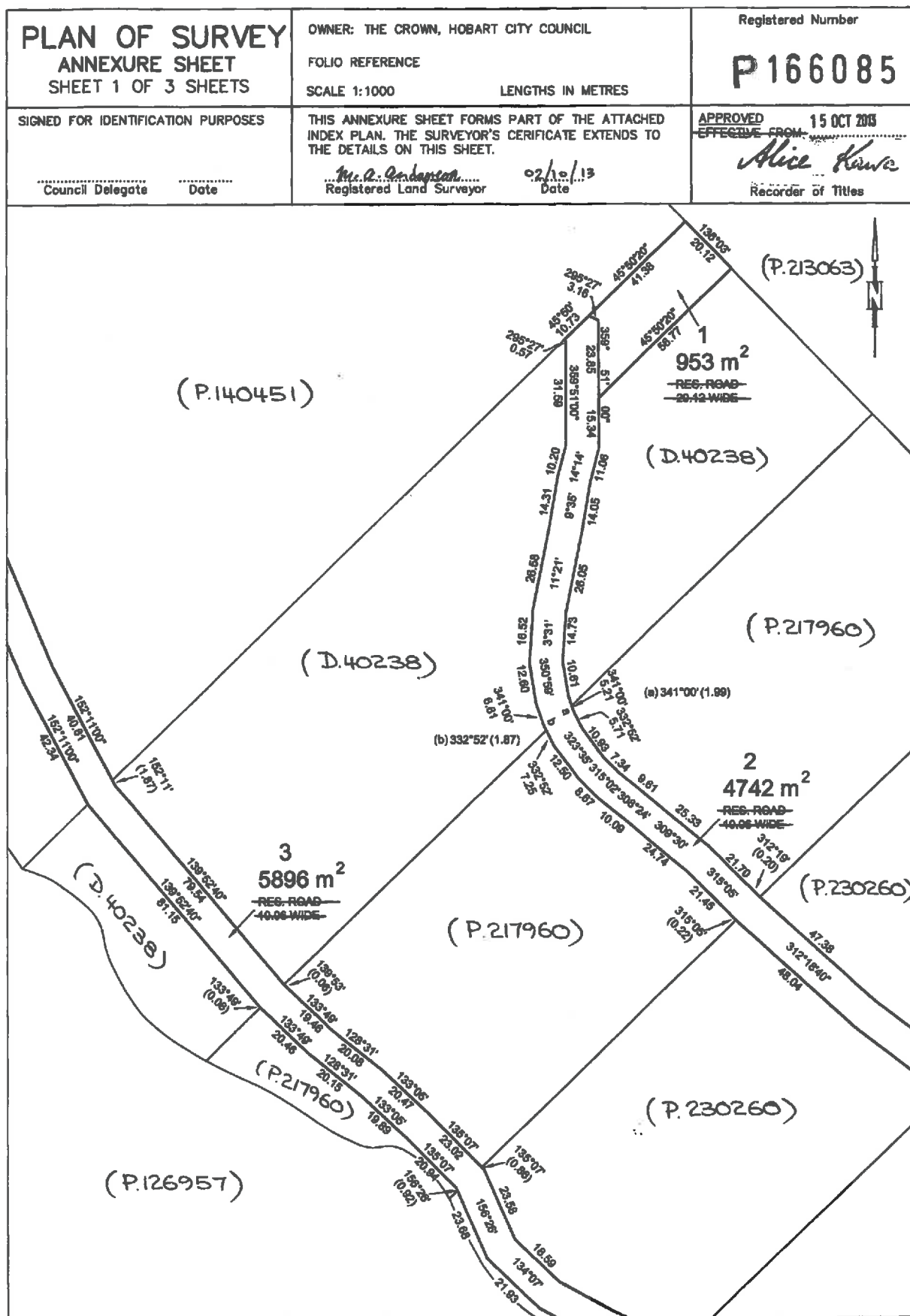
RECORDER OF TITLES

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Planning Authority: Hobart City Council



FOLIO PLAN

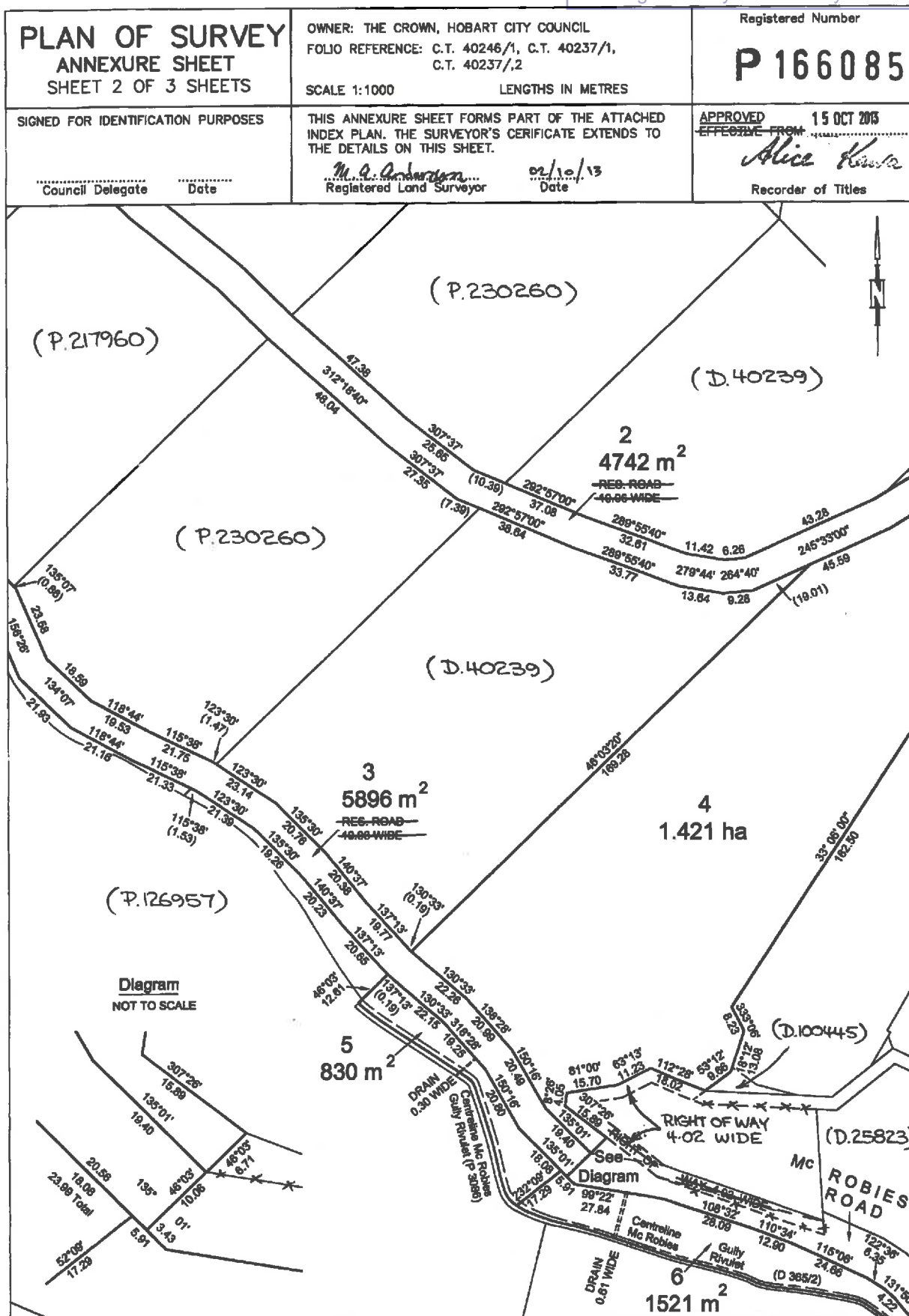
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Tasmanian
Government

Planning Authority: Hobart City Council



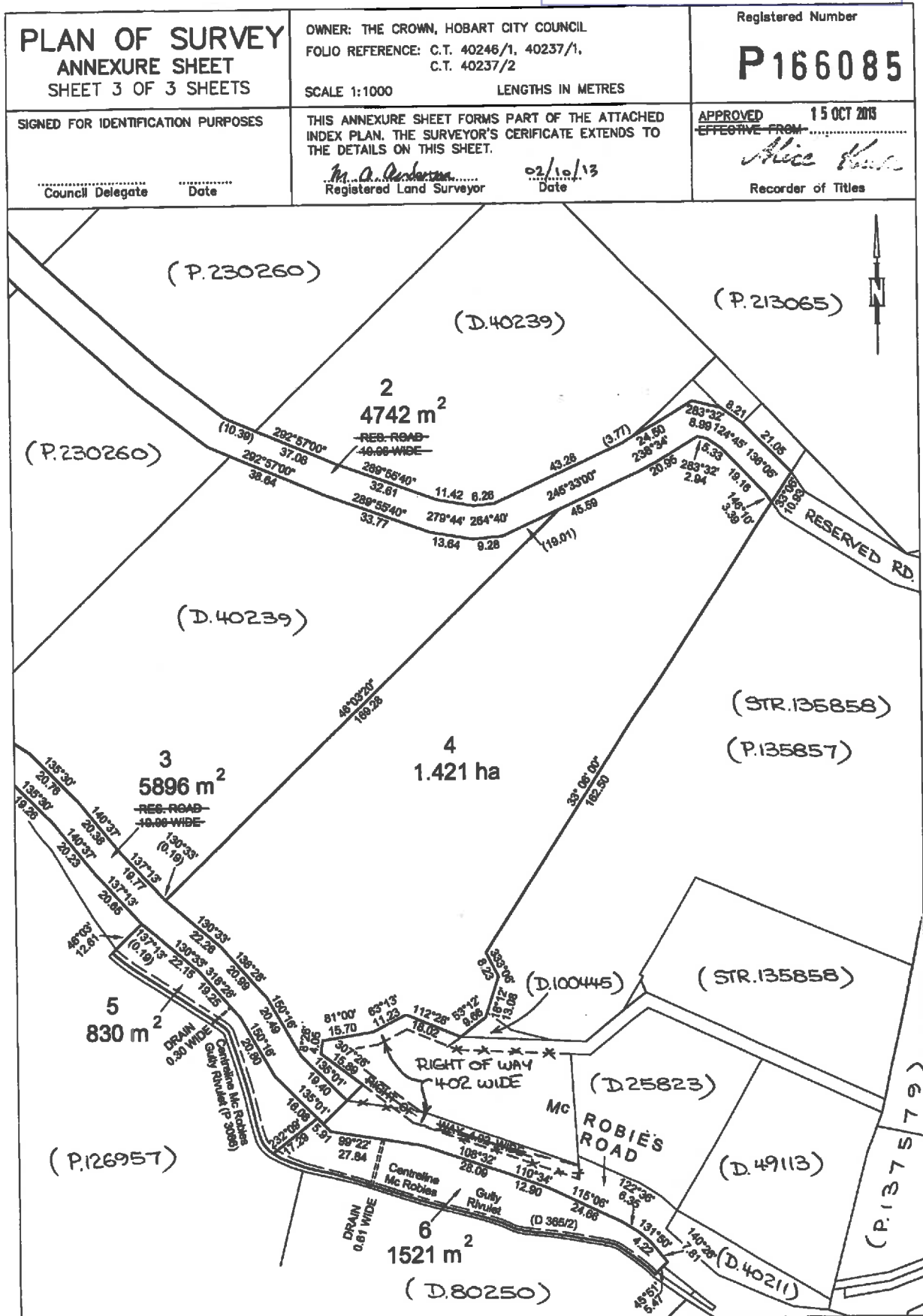
FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

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Planning Authority: Hobart City Council



FOLIO PLAN

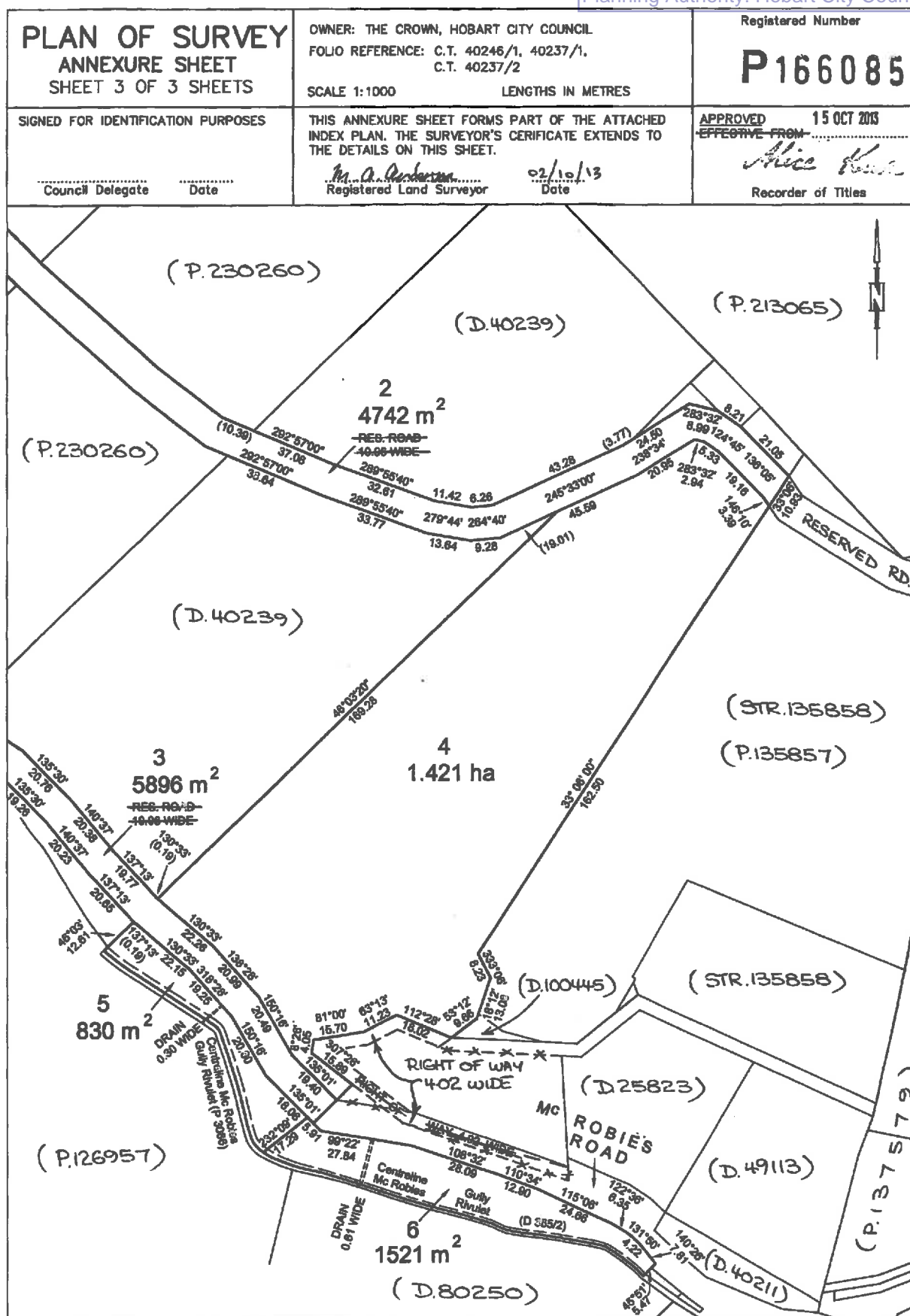
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

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Planning Authority: Hobart City Council





RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

DEVELOPMENT APPLICATION DOCUMENT		VOLUME	FOLIO
This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.		230260	1
		EDITION 2	DATE OF ISSUE 27-Jan-2005
Planning Authority: Hobart City Council			

SEARCH DATE : 09-Jun-2015

SEARCH TIME : 04.17 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 230260

Derivation : Lot 23 Section A. - Gtd. to M. Sullivan.

Prior CT 2992/38

SCHEDULE 1

A74366 HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

C555513 BURDENING WAYLEAVE EASEMENT with the benefit of a restriction as to user of land in favour of Aurora Energy Pty Ltd over the Wayleave Easement 12.00 wide shown passing through the said land within described Registered 27-Jan-2005 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council

OWNER FOLIO REFERENCE 2992/38 GRANTEE		PLAN OF TITLE LOCATION CITY OF HOBART FIRST SURVEY PLAN No. P93 L.O. COMPILED BY LDRB SCALE 1: 2000 LENGTHS IN METRES		Registered Number P.230260 APPROVED 24 JAN 2005 <i>Alice Kawa</i> Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 114 (5225-51)	LAST UPI No GAR66	LAST PLAN No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN	

NEW PLAN PREPARED
FOR
OFFICE CONVENIENCE

NJD

SURVEY NOTES

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

1.5 This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.



Planning Authority: Hobart City Council

IDENTIFICATION PLAN OF WAYLEAVE EASEMENT

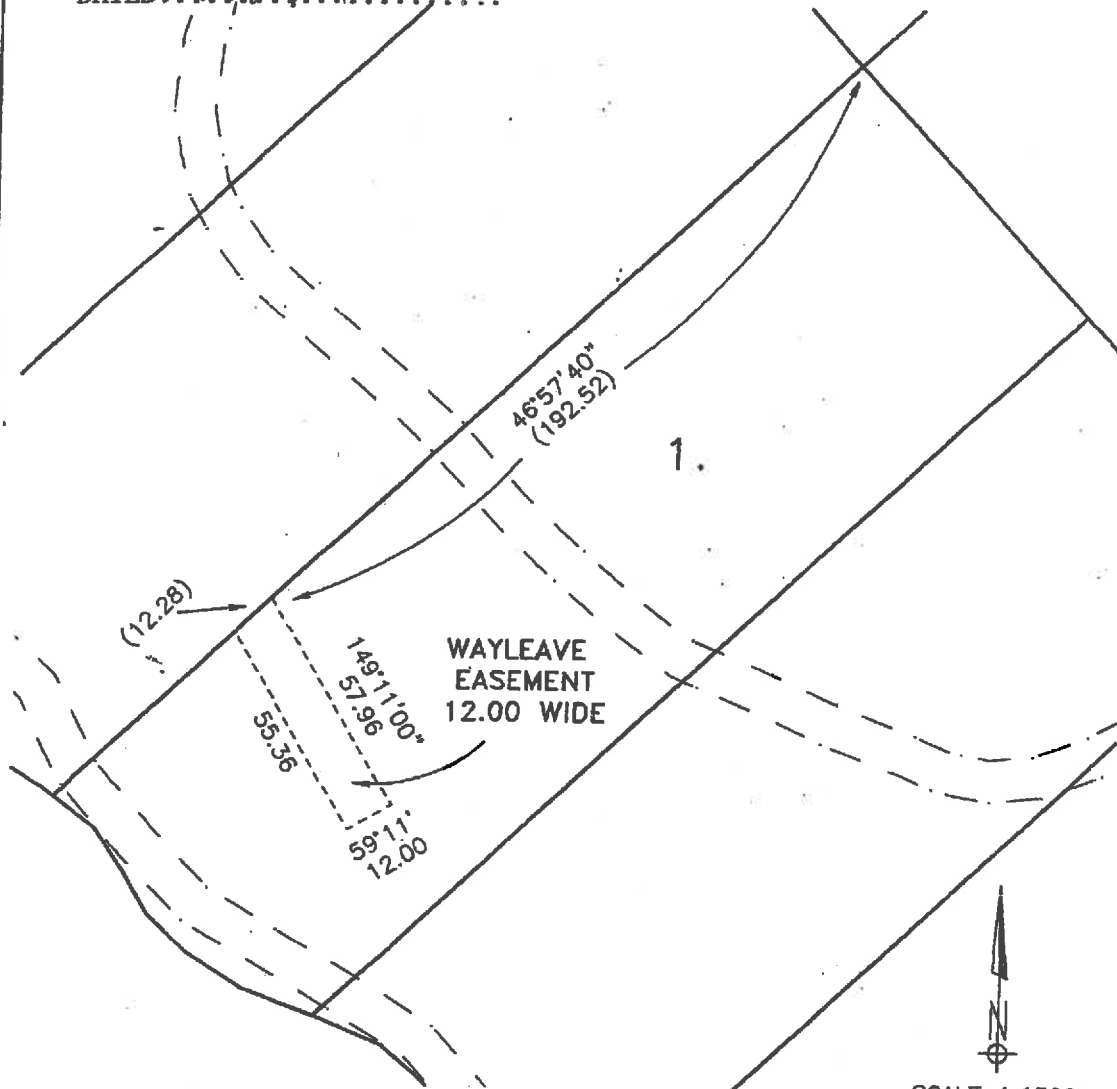
ANNEXURE PAGE TO SURVEY NOTES

VOL: 230260

FOLIO : 1

~~SIGNED BY HEBART CITY COUNCIL~~

DATED: 25.11.04.....



SCALE 1:1500
CREATED BY (C555513)

CITY OF HOBART

OWNER : Hobart City Council

PLAN No: 230260

Electricity Entity No. 5065-01

SURVEYORS REPORT

The wayleave easement shown in this plan has been surveyed in accordance with Clause 16 of the Land Surveyors (Survey Practice) By Laws 1982, for identification by the Electricity Entity for the purpose of registering an easement in gross.

The easement to be created extends 6 metres either side of the centre of the electricity powerline.

The accuracy of this easement survey is insufficient for title boundary determination.

Registered Surveyor:
David A. Hurd

Date: 25/Jun/2003

CNGS-OF-9084 Rev 2 19-98

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.



Planning Authority: Hobart City Council

SEARCH OF TORRENS TITLE

VOLUME 140451	FOLIO 1
EDITION 1	DATE OF ISSUE 07-Jan-2004

SEARCH DATE : 05-Apr-2011

SEARCH TIME : 02.52 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 140451

Derivation : Lot 26 Sec. A. - Gtd. to A.A. Rolling & Anor. and
Whole of Lot 1000 on Diagram 140451 Gtd. to The Crown

Prior CTs 228336/26 and 140451/1000

SCHEDULE 1

A42897 C492674 TRANSFER to HOBART CITY COUNCIL

SCHEDULE 2

C517501 Land is limited in depth to 15 metres, excludes
minerals and is subject to reservations relating to
drains sewers and waterways in favour of the Crown

C555516 BURDENING WAYLEAVE EASEMENT with the benefit of a
restriction as to user of land in favour of Aurora
Energy Pty Ltd over the Wayleave Easement 12.00 Wide
shown passing through the said land within described
Registered 05-Jan-2006 at noon

C492674 BOUNDARY FENCES AND OTHER CONDITIONS in Transfer

UNREGISTERED DEALINGS AND NOTATIONS

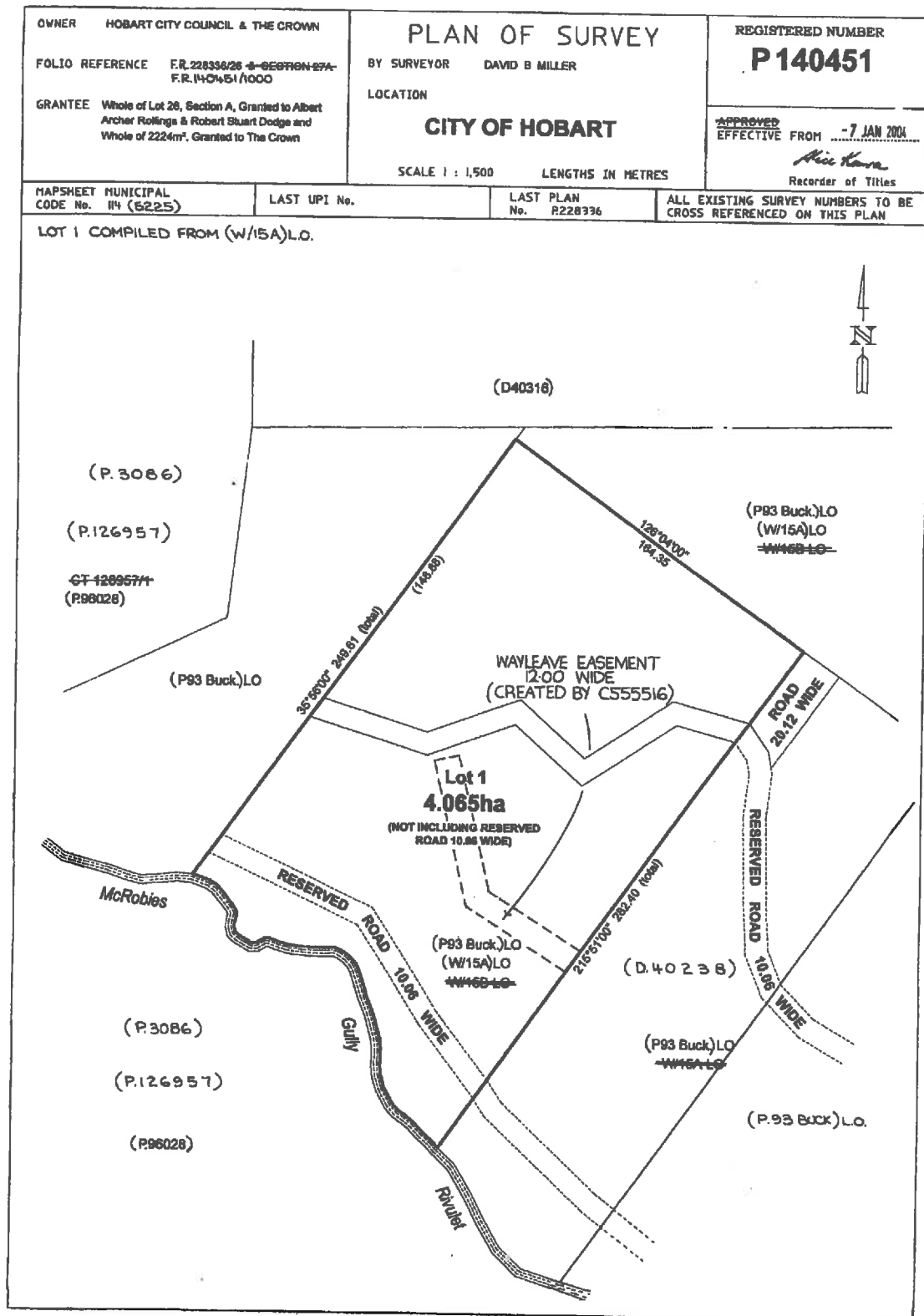
No unregistered dealings or other notations

the **LIST.****FOLIO PLAN**
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents
relevant to the application for a planning
permit No. PLN-15-00885-01 and was
received on the 17 July 2015.Tasmania
Explore the possibilities

Planning Authority: Hobart City Council





RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH DATE : 09-Jun-2015

SEARCH TIME : 02.11 PM

DEVELOPMENT APPLICATION DOCUMENT		SEARCH OF TORRENS TITLE	
This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.		VOLUME	FOLIO
		40239	22
Planning Authority: Hobart City Council		EDITION	DATE OF ISSUE
		1	18-Nov-1993

DESCRIPTION OF LAND

City of HOBART

Lot 22 on Diagram 40239

Derivation : Whole of Lot 22 (4A-2R-12Ps.) - Gtd. to E. & J. Hurd.

Prior CT 4590/88

SCHEDULE 1

THE LORD MAYOR ALDERMEN AND CITIZENS OF THE CITY OF HOBART

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

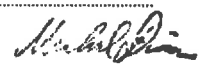
FOLIO PLAN

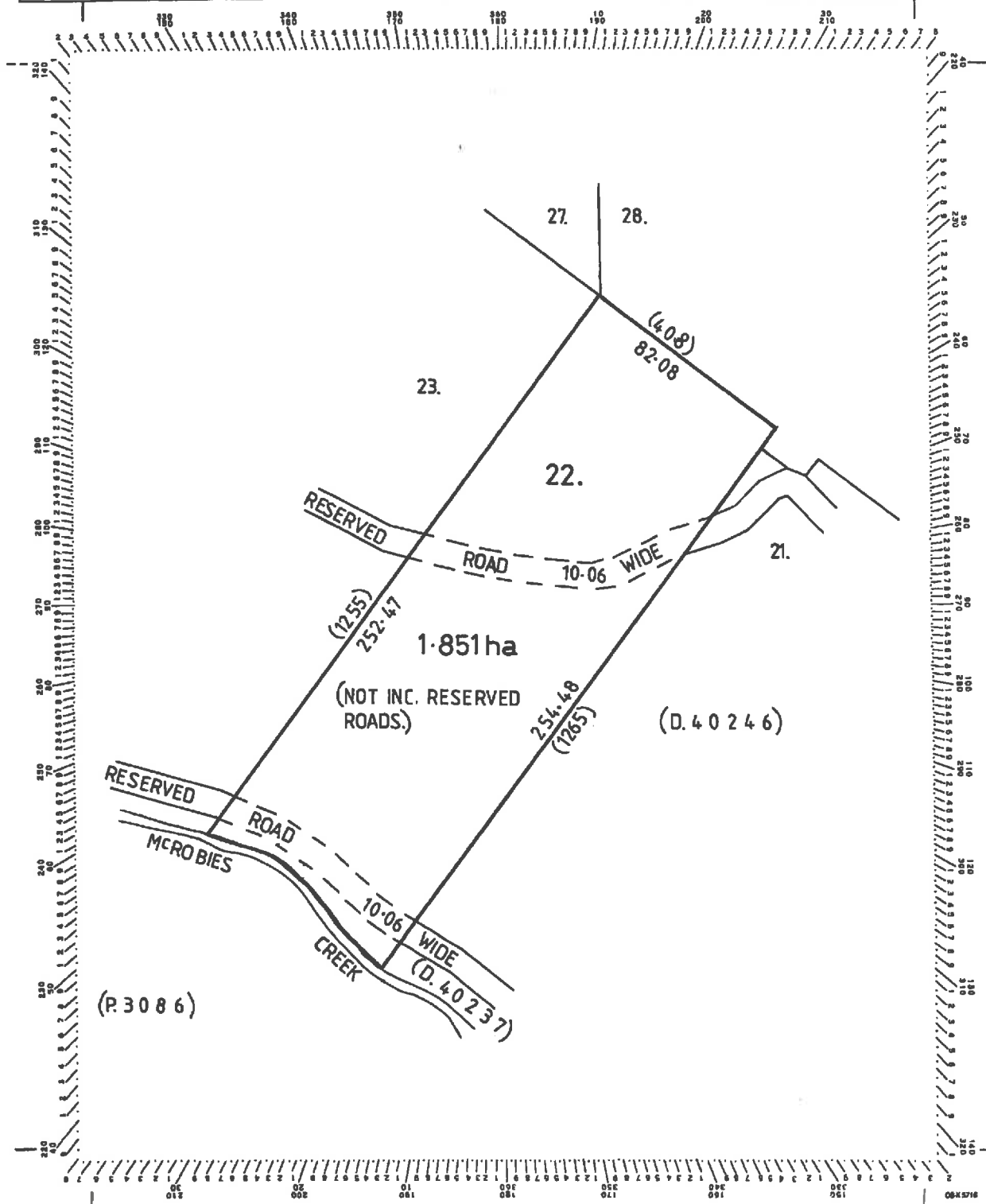
RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was recorded on the 17 July 2015.

Planning Authority: Hobart City Council

Owner: L.T. ACT. 1980	PLAN OF SURVEY of land situated in the CITY OF HOBART (SEC. A.)	Registered Number: D.40239
Title Reference: A.7854	COMPILED FROM P. 93 BUCK. I.O.	Approved 24 AUG 1989 
Grantee: WHOLE OF LOT 22, 4-2-12 GTD TO ELLEN HURD & JOSEPH HURD.	SCALE 1:1500 MEASUREMENTS IN METRES	Recorder of Titles



**RESULT OF SEARCH****RECORDER OF TITLES***Issued Pursuant to the Land Titles Act 1980*

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: **SEARCH OF TORRENS TITLE**

VOLUME 217960	FOLIO 24
EDITION 2	DATE OF ISSUE 27-Jan-2005

SEARCH DATE : 09-Jun-2015

SEARCH TIME : 02.09 PM

DESCRIPTION OF LAND

City of HOBART

Lot 24 on Plan 217960

Derivation : The Whole of Lot 24 Gtd. to B. Kakes.

Prior CT 2639/39

SCHEDULE 1

A43905 HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

C555510 BURDENING WAYLEAVE EASEMENT with the benefit of a restriction as to user of land in favour of Aurora Energy Pty Ltd over the Wayleave Easement 12.00 wide shown passing through the said land within described Registered 27-Jan-2005 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.



Tasmanian Government

Planning Authority: Hobart City Council

ORIGINAL - NOT TO BE REMOVED FROM TITLES OFFICE

R.P. 1489
TASMANIA

REAL PROPERTY ACT, 1862, as amended

NOTE: REGISTERED FOR OFFICE
CONVENTION TO REPLACE



CERTIFICATE OF TITLE

Register Book

Vol. Fol.

2639 39

Cert. of Title Vol. 561 Fol. 57.

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.

M. Hutchinson

Recorder of Titles.



DESCRIPTION OF LAND

CITY OF HOBART

FIVE ACRES TEN PERCHES on the Plan hereon

FIRST SCHEDULE (continued overleaf)

THE LORD MAYOR ALDERMEN AND CITIZENS OF THE CITY OF HOBART.

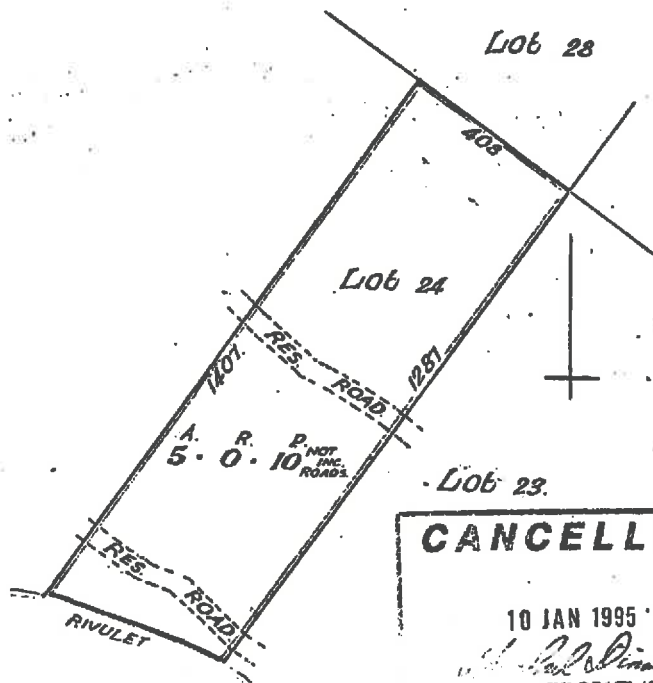
SECOND SCHEDULE (continued overleaf)

NIL.

Let 2.4 of this plan consists of all the land comprised in the above-mentioned cancelled folio of the Register.

REGISTERED NUMBER

217960



CANCELLED

10 JAN 1995

M. Hutchinson
RECORDER OF TITLES
HOBART

The whole of Lot 24 - Gtd. to B.Kakes. Meas. in Links.

FIRST Edition. Registered

1970

Derived from C.T. Vol. 561 Fol. 57.

Transfer A43905 G. Bowler.

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00885-01 and was received on the 17 July 2015.

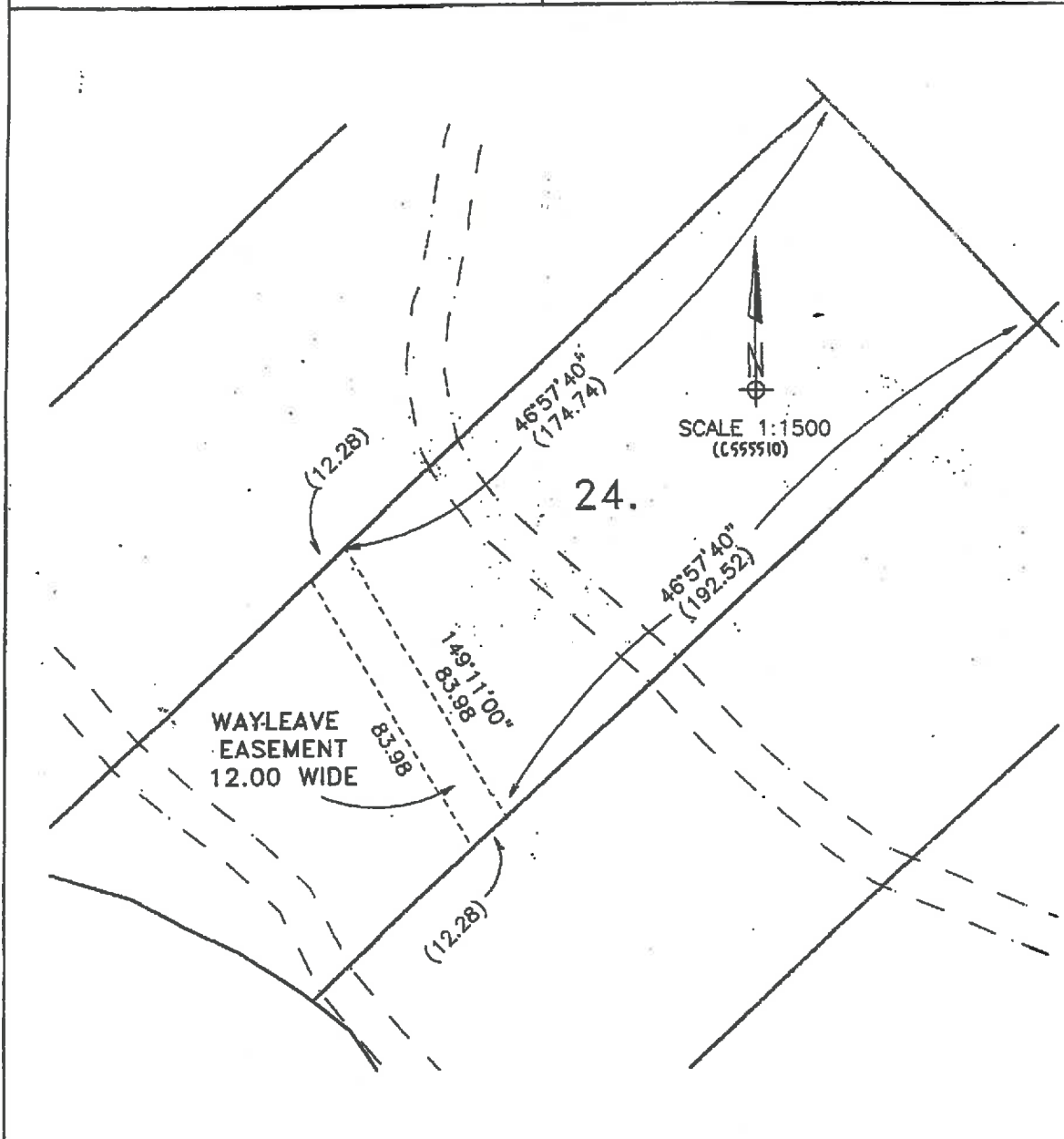
Planning Authority: Hobart City Council

**IDENTIFICATION PLAN OF
WAYLEAVE EASEMENT**

ANNEXURE PAGE TO FOLIO PLAN

VOL : 217960

FOLIO : 24

**CITY OF HOBART**

OWNER : Hobart City Council

PLAN No: 217960

Electricity Entity No. 5065-02

SURVEYORS REPORT

The wayleave easement shown in this plan has been surveyed in accordance with Clause 16 of the Land Surveyors (Survey Practice) By Laws 1982, for identification by the Electricity Entity for the purpose of registering an easement in gross.

The easement to be created extends 6 metres either side of the centre of the electricity powerline.

The accuracy of this easement survey is insufficient for title boundary determination.

Registered Surveyor:
David A. Hurd

Date: 25/Jun/2003

CNGS-QF-9084 Rev 2 1/9/98

**IDENTIFICATION PLAN OF
WAYLEAVE EASEMENT**

ANNEXURE PAGE TO FOLIO PLAN

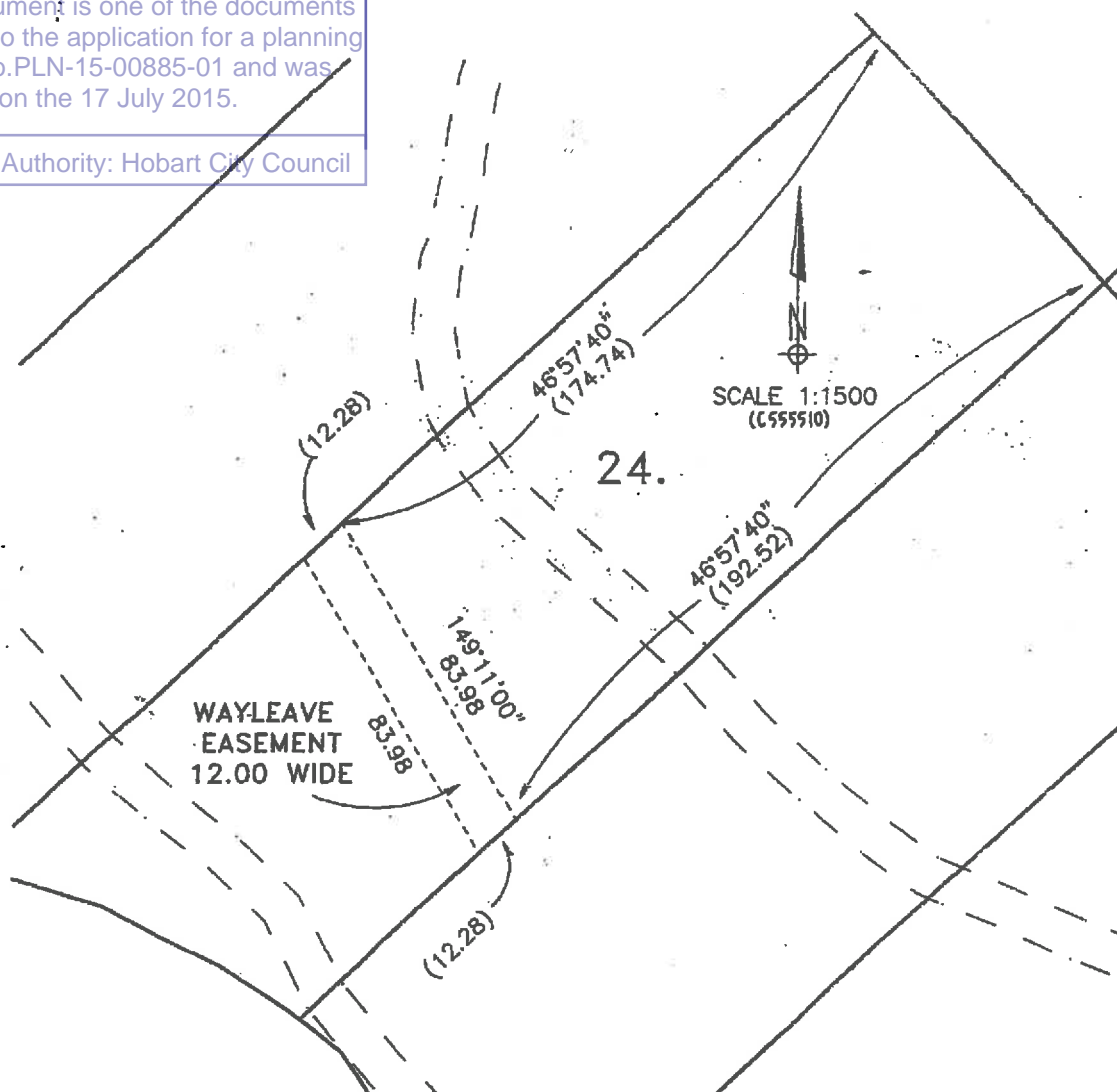
VOL : 217960

FOLIO : 24

**DEVELOPMENT APPLICATION
DOCUMENT**

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 17 July 2015.

Planning Authority: Hobart City Council


CITY OF HOBART

OWNER : Hobart City Council

PLAN No: 217960

Electricity Entity No. 5065-02

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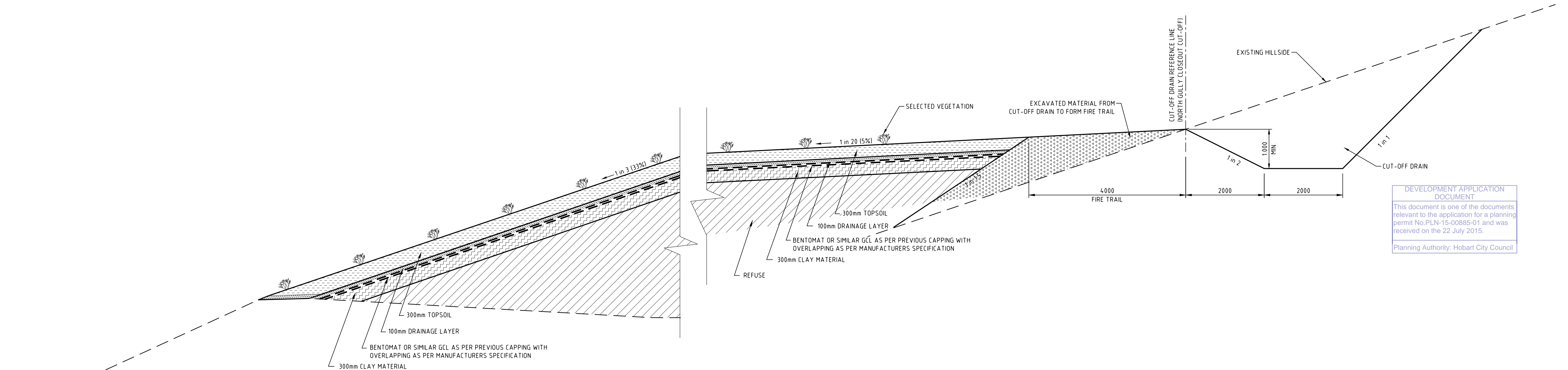
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David A. Hurd

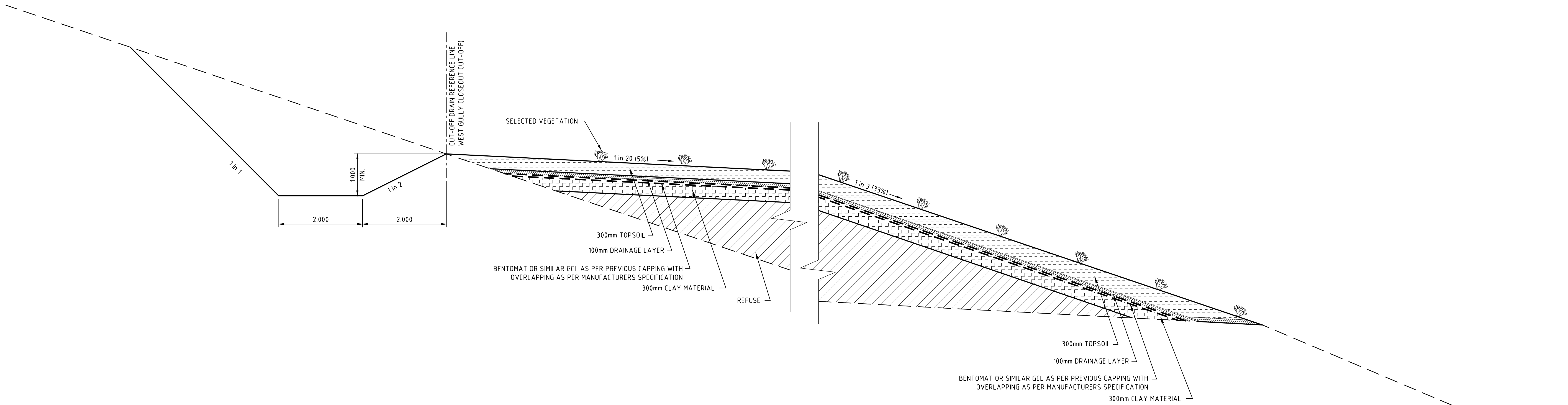
Date: 25/Jun/2003

CNGS-QF-9084 Rev 2 1/9/98



NORTHERN CLOSEOUT CAPPING & NORTHERN GULLY CUT-OFF DRAIN
SCALE 1:50

DEVELOPMENT APPLICATION DOCUMENT
This document is one of the documents relevant to the application for a planning permit No.PLN-15-00885-01 and was received on the 22 July 2015.
Planning Authority: Hobart City Council



WESTERN CLOSEOUT CAPPING & WESTERN GULLY CUT-OFF DRAIN
SCALE 1:50

P2	PRELIMINARY	CT	02-04-2014				
REV	DESCRIPTION	APP'D	DATE	REV	DESCRIPTION	APP'D	DATE

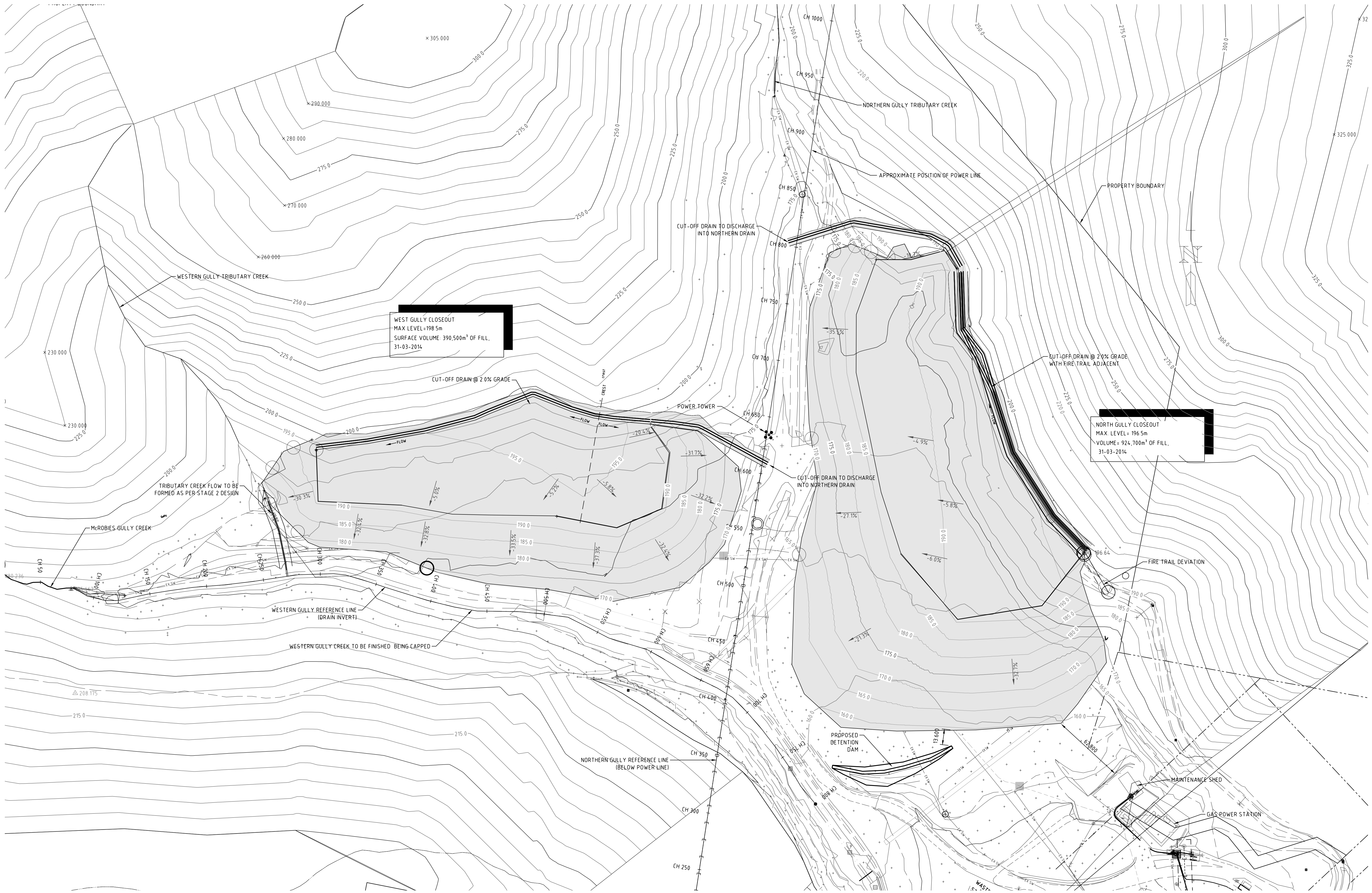
GANDY AND ROBERTS CONSULTING ENGINEERS

159 DAVEY ST, HOBART TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 8877 fx 03 6223 7183

HOBART CITY COUNCIL
McROBIES GULLY REFUSE SITE
FUTURE STAGING

DRAWING TITLE
TYPICAL CROSS SECTIONS

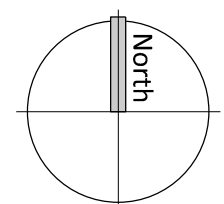
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DESIGNED S.CHAFFEY	DRAWN S.CHAFFEY	CHECKED -
PROJECT 13.0591	DRAWING C100	REVISION P2



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P2	PRELIMINARY	CT	02-04-2014				
REV	DESCRIPTION	APP'D	DATE	REV	DESCRIPTION	APP'D	DATE

DEVELOPMENT APPLICATION DOCUMENT
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GANDY AND ROBERTS CONSULTING ENGINEERS

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ph 03 6223 8877 fx 03 6223 7183

HOBART CITY COUNCIL McROBIES GULLY REFUSE SITE FUTURE STAGING
DRAWING TITLE
200m MAXIMUM LEVEL SITEPLAN

SCALE
1:1500 @ A1

DESIGNED S.CHAFFEY	DRAWN S.CHAFFEY	CHECKED -
PROJECT 13.0591	DRAWING C200	REVISION P2

PCE 9322 (r1)

PERMIT PART B
PERMIT CONDITIONS - ENVIRONMENTAL No. 9322

Issued under the *Environmental Management and Pollution Control Act 1994*

Activity: **The operation of an extended landfilling area at a waste depot (ACTIVITY
TYPE: Other (non-inert) Waste Depots)
MCROBIES GULLY WASTE DEPOT, MCROBIES GULLY
SOUTH HOBART TAS 7004**

The above activity has been assessed as a level 2 activity under the *Environmental Management and Pollution Control Act 1994*.

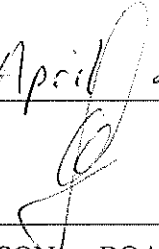
Acting under Section 25(5)(a)(i) of the EMPCA, the Board of the Environment Protection Authority has required that this Permit Part B be included in any Permit granted under the *Land Use Planning and Approvals Act 1993* with respect to the above activity.

Municipality: **HOBART**
Permit Application Reference: **PLN-15-00885-01**
EPA file reference: **244875**

Date conditions approved:

19 April 2016

Signed:



CHAIRPERSON, BOARD OF THE ENVIRONMENT
PROTECTION AUTHORITY

DEFINITIONS

Unless the contrary appears, words and expressions used in this Permit Part B have the meaning given to them in **Schedule 1** of this Permit and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Permit Part B, the EMPCA prevails to the extent of the inconsistency.

ENVIRONMENTAL CONDITIONS

The person responsible for the activity must comply with the conditions contained in **Schedule 2** of this Permit Part B.

INFORMATION

Attention is drawn to **Schedule 3**, which contains important additional information.



CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY

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Attachments

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Attachment 2: Location of surface water monitoring points (modified: 14/04/2016 10:09).....	1 page
Attachment 3: Location of groundwater monitoring bores (modified: 14/04/2016 10:11).....	1 page
Attachment 4: Commitments (modified: 14/04/2016 10:12).....	1 page



Schedule 1: Definitions

In this Permit Part B:-

Aboriginal Relic has the meaning described in section 2(3) of the *Aboriginal Relics Act 1975*.

Activity means any environmentally relevant activity (as defined in Section 3 of EMPCA) to which this document relates, and includes more than one such activity.

AHD means the Australian Height Datum, a geodetic datum for altitude measurement that sets mean sea level as zero elevation.

Authorized Officer means an authorized officer under section 20 of EMPCA.

Capping means the placement of one or more layers to form a permanent covering above landfilled waste and includes a reference to such a layer

Classification And Management Of Contaminated Soil For Disposal means the document *Information Bulletin No. 105 Classification and Management of Contaminated Soil for Disposal* published by the Department of Primary Industries, Parks, Water and Environment in November 2012, and includes any subsequent versions of this document

Clean Fill means soil, rock, concrete, bituminised pavement or similar non-putrescible and non-water-soluble material that is not contaminated by other waste; and that does not contain contaminant levels exceeding limits for 'fill material' set by the Director in *Classification and Management of Contaminated Soil for Disposal*.

Conservation Covenant means a covenant established under the *Tasmanian Nature Conservation Act 2002* for the purposes of mitigating potential impact of proposed activities on natural values.

Controlled Waste has the meaning described in Section 3(1) of EMPCA.

Director means the Director, Environment Protection Authority holding office under Section 18 of EMPCA and includes a person authorised in writing by the Director to exercise a power or function on the Director's behalf.

EMPCA means the *Environmental Management and Pollution Control Act 1994*.

Environmental Harm and **Material Environmental Harm** and **Serious Environmental Harm** each have the meanings ascribed to them in Section 5 of EMPCA.

Environmental Nuisance and **Pollutant** each have the meanings ascribed to them in Section 3 of EMPCA.

Environmentally Hazardous Material means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.

Inert Waste means waste that does not undergo environmentally significant physical, chemical or biological transformations and has no potentially hazardous content and is not contaminated with non-inert material, such as putrescible waste, and includes clean fill.

Landfill means a waste depot as described in Schedule 2 of EMPCA

Landfill Gas means gaseous emissions arising from the decomposition of waste in a landfill

Landfill Sustainability Guide means the document of this title published by the Department of Primary Industries, Water and Environment in September 2004, and includes any subsequent versions of this document.

Leachate means any liquid that is either released by or has percolated through waste.

Liquid Waste means any waste that is in liquid form or is substantially comprised of free liquids or is not spadeable (able to be lifted and moved in heaps with a spade).

Permeability means the level of saturated hydraulic conductivity also known as the K-value.

Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Putrescible Waste means waste containing materials that are capable of rapid biological decay or rotting

Recycling means a set of processes (including biological) for converting recovered materials that would otherwise be disposed of as wastes, into useful materials and/or products

Reporting Period means the financial year.

Sewage Sludge means concentrated solids separated from wastewater during the wastewater treatment process.

Stormwater means water traversing the surface of the land as a result of rainfall.

Tasmanian Noise Measurement Procedures Manual means the Noise Measurement Procedures Manual referred to in regulation 4 of the *Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2014*.

The Land means the land on which the activity to which this document relates may be carried out, and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The Land falls within the area defined by:

- 1 The areas marked in Attachment 1, where landfilling is to occur up to a maximum filling height of 200 metres Australian Height Datum; and
- 2 Within the 'HCC DISPOSAL AREA' - 30 McRobies Road, South Hobart, TASMANIA, 7004, PID 3273346.

Waste has the meaning ascribed to it in Section 3 of EMPCA.

Wastewater means spent or used water (whether from industrial or domestic sources) containing a pollutant and includes stormwater which becomes mixed with wastewater.

Weed means a declared weed as defined in the *Weed Management Act 1999*.

Weed And Disease Management Plan means the Weed and Disease Management Plan dated 10 February 2016, submitted as Appendix L of Version 2.0 of the *Development Proposal and Environmental Management Plan (DPEMP), Extension of Landfill Area - McRobies Gully Landfill*, November 2015.



Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits

- 1 The activity must not exceed the following limits (annual fees are derived from these figures):
 - 1.1 85,000 tonnes per year of waste received or likely to be received (excluding materials for recycling)

General

G1 Access to and awareness of conditions and associated documents

A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G2 Incident response

If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G3 No changes without approval

- 1 The following changes, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the activity if such changes have been approved in writing by the EPA Board following its assessment of an application for a permit under the *Land Use Planning and Approvals Act 1993*, or approved in writing by the Director:
 - 1.1 a change to a process used in the course of carrying out the activity; or
 - 1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity; or
 - 1.3 a change in the quantity or characteristics of materials used in the course of carrying out the activity.

G4 Change of responsibility

If the person responsible for the activity ceases or intends to cease to be responsible for the activity, he or she must notify the Director in writing of the full particulars of any person succeeding him or her as the person responsible for the activity.

G5 Change of ownership

If the owner of The Land upon which the activity is carried out changes or is to change, then, as soon as reasonably practicable but no later than 30 days after becoming aware of the change or intended change in the ownership of The Land, the person responsible must notify the Director in writing of the change or intended change of ownership.



G6 Complaints register

- 1 A public complaints register must be maintained and made available for inspection by an Authorized Officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:
 - 1.1 the time at which the complaint was received;
 - 1.2 contact details for the complainant (where provided);
 - 1.3 the subject-matter of the complaint;
 - 1.4 any investigations undertaken with regard to the complaint; and
 - 1.5 the manner in which the complaint was resolved, including any mitigation measures implemented.
- 2 Complaint records must be maintained for a period of at least 3 years.

G7 Landfill area

- 1 Deposition of waste must be confined to the areas specified in Attachment 1.
- 2 The maximum height of waste deposition must not exceed 200 metres AHD.

G8 Permitted waste types

- 1 Unless otherwise approved by the Director, no wastes may be deposited or stored on The Land other than wastes of the following types:
 - 1.1 General Wastes:
 - 1.1.1 inert waste;
 - 1.1.2 clean fill; and
 - 1.1.3 putrescible waste; and
 - 1.2 Controlled wastes (subject to Hazardous Substances conditions):
 - 1.2.1 asbestos;
 - 1.2.2 tyres;
 - 1.2.3 medical sharps from non-commercial sources;
 - 1.2.4 sanitary waste;
 - 1.2.5 animal effluent and residues;
 - 1.2.6 sewage sludge;
 - 1.2.7 low level contaminated soil (as defined in *Classification and Management of Contaminated Soil for Disposal*)
 - 1.2.8 batteries (where stored for recycling); and
 - 1.2.9 waste oil (where stored for recycling).

G9 Non-permitted waste types

- 1 The following waste types must not be accepted for disposal on The Land:
 - 1.1 controlled wastes unless otherwise approved under these conditions; and
 - 1.2 liquid waste.

G10 Annual Environmental Review

- 1 Unless otherwise specified in writing by the Director, a publicly available Annual Environmental Review for the activity must be submitted to the Director each year within three months of the end of the reporting period. Without limitation, each Annual Environmental Review must include the following information:

- 1.1 a statement by the General Manager, Chief Executive Officer or equivalent for the activity acknowledging the contents of the Annual Environmental Review;
- 1.2 subject to the *Personal Information Protection Act 2004*, a list of all complaints received from the public during the reporting period concerning actual or potential environmental harm or environmental nuisance caused by the activity and a description of any actions taken as a result of those complaints;
- 1.3 details of environment-related procedural or process changes that have been implemented during the reporting period;
- 1.4 a summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Initiatives or programs planned to avoid, minimise, re-use, or recycle such wastes over the next reporting period should be detailed;
- 1.5 details of all non-trivial environmental incidents and/or incidents of non compliance with permit or environment protection notice conditions that occurred during the reporting period, and any mitigative or preventative actions that have resulted from such incidents;
- 1.6 a summary of the monitoring data and record keeping required by these conditions. This information should be presented in graphical form where possible, including comparison with the results of at least the preceding reporting period. Special causes and system changes that have impacted on the parameters monitored must be noted. Explanation of significant deviations between actual results and any predictions made in previous reports must be provided;
- 1.7 identification of breaches of limits specified in these conditions and significant variations from predicted results contained in any relevant DPEMP or EMP, an explanation of why each identified breach of specified limits or variation from predictions occurred and details of the actions taken in response to each identified breach of limits or variance from predictions;
- 1.8 a list of any issues, not discussed elsewhere in the report, that must be addressed to improve compliance with these conditions, and the actions that are proposed to address any such issues;
- 1.9 a summary of fulfilment of environmental commitments made for the reporting period. This summary must include indication of results of the actions implemented and explanation of any failures to achieve such commitments; and
- 1.10 a summary of any community consultation and communication undertaken during the reporting period.

Atmospheric

A1 Control of dust emissions

Dust emissions from The Land must be controlled to the extent necessary to prevent environmental nuisance beyond the boundary of The Land.

A2 Odour management

The person responsible must institute such odour management measures as are necessary to prevent odours causing environmental nuisance beyond the boundary of The Land.

Construction

CN1 Construction of extended landfill areas

- 1 The extended landfill area must be designed, constructed, and operated in a manner that ensures leachate emanating from deposited waste will not contaminate soils, groundwater or surface waters.

- 2 Unless otherwise approved in writing by the Director, the extended landfill area must be designed and constructed in accordance with the acceptable standards described in Section 3.1 of the *Landfill Sustainability Guide*.

CN2 Quality assurance

- 1 Unless otherwise approved in writing by the Director, a suitably qualified person with sound knowledge and relevant experience in landfill construction and management must be present during earthworks in the extended landfill area, to supervise works quality control and ensure compliance with these conditions. The person must be directly responsible for:
 - 1.1 Supervision of technical staff involved in earthworks;
 - 1.2 Recording of any engineering construction and quality assurance activities undertaken; and
 - 1.3 Full testing of clay material (where used) using methods outlined in the relevant Australian Standard for methods of testing soils for engineering purposes.
- 2 Unless otherwise approved in writing by the Director, quality assurance specifications must be prepared for construction and testing of any landfill engineering works which may be undertaken as part of the landfill extension, including of any liners, capping, and drainage management systems that may be in place. In particular:
 - 2.1 Testing and certification must be performed by a person who is independent of both the person responsible and the construction contractor; and
 - 2.2 A report documenting the works and testing undertaken must be prepared on completion of the works, and submitted to the Director within 30 days of such completion.

Decommissioning And Rehabilitation

DC1 Notification of cessation

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

DC2 Temporary suspension of activity

- 1 Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.
- 2 During temporary suspension of the activity:
 - 2.1 The Land must be managed and monitored by the person responsible for the activity to ensure that emissions from The Land do not cause serious environmental harm, material environmental harm or environmental nuisance; and
 - 2.2 If required by the Director a Care and Maintenance Plan for the activity must be submitted, by a date specified in writing by the Director, for approval. The person responsible must implement the approved Care and Maintenance Plan, as may be amended from time to time with written approval of the Director.
- 3 Unless otherwise approved in writing by the Director, if the activity on The Land has substantially ceased for 2 years or more, rehabilitation of The Land must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

DC3 Progressive rehabilitation

- 1 Progressive rehabilitation must be carried out during the operational phase of the activity and in accordance with the following:
 - 1.1 rehabilitation of each completed area of the landfill must commence immediately after capping following final waste deposition; and
 - 1.2 rehabilitation must include planting or seeding compatible with the proposed end use of the The Land.
- 2 Maintenance and monitoring of rehabilitated areas must continue until the potential for environmental harm resulting from the deposition of waste in those areas has been mitigated to the satisfaction of the Director.

DC4 Decommissioning and Rehabilitation Plan

- 1 At least 12 months prior to the planned cessation of waste deposition, or by a date specified in writing by the Director, a Decommissioning and Rehabilitation Plan for the activity must be prepared in accordance with the Acceptable Standards provisions of Section 5 of the *Landfill Sustainability Guide* and must specify, without limitation, the following:
 - 1.1 the closure date;
 - 1.2 redundant site structures and equipment to be removed;
 - 1.3 details relating to interim cover and final capping;
 - 1.4 details of signs to be erected to inform the public that the site has closed;
 - 1.5 perimeter fences to be installed or maintained and other security measures to be implemented to prevent unauthorised access to waste deposition areas on The Land;
 - 1.6 post-closure management procedures for the leachate collection and containment system;
 - 1.7 post-closure maintenance procedures for stormwater drains and landfill capping;
 - 1.8 intended final profile of The Land;
 - 1.9 revegetation plans, including details of planting of *Eucalyptus globulus*;
 - 1.10 proposed post-closure groundwater and surface water monitoring program; and
 - 1.11 any other details requested in writing by the Director.

DC5 Rehabilitation upon cessation

- 1 Unless otherwise approved in writing by the Director, following permanent cessation of the activity land disturbed or used in the carrying out of the activity must be rehabilitated in accordance with:
 - 1.1 the measures set out in the Decommissioning and Rehabilitation Plan for The Land approved in writing by the Director; or
 - 1.2 where an approved Decommissioning and Rehabilitation Plan is not available, the Acceptable Standards provisions of Section 5 of the *Landfill Sustainability Guide*.



Effluent Disposal**E1 Perimeter drains**

- 1 Perimeter cut-off drains must be constructed at strategic locations on The Land to prevent surface run-off from entering the area used or disturbed in carrying out the activity. All reasonable measures must be implemented to ensure that sediment transported along these drains remains on The Land. Such measures may include provision of strategically located sediment fences, appropriately sized and maintained sediment settling ponds, vegetated swales, detention basins and other measures designed and operated in accordance with the principles of Water Sensitive Urban Design.
- 2 Drains must have sufficient capacity to contain run-off that could reasonably be expected to arise during a 1 in 20 year rainfall event. Maintenance activities must be undertaken regularly to ensure that this capacity does not diminish.

E2 Stormwater to be excluded

Stormwater must be prevented as far as practicable from mixing with deposited waste.

E3 Contamination of stormwater

- 1 In the event that stormwater becomes polluted by leachate, measures must be implemented immediately to prevent pollutants from discharging beyond the boundaries of The Land. Polluted stormwater may be either:
 - 1.1 transferred to the leachate collection system, providing that the leachate dam has adequate capacity; or
 - 1.2 irrigated over the landfill cells; or
 - 1.3 removed to an approved Wastewater Treatment Plant.

E4 Leachate management

- 1 Leachate on The Land must be managed such that:
 - 1.1 it does not pollute groundwater, soils, or surface waters;
 - 1.2 it does not cause an odour nuisance beyond the boundary of The Land; and
 - 1.3 human contact with leachate is minimised.

Flora And Fauna**FF1 Disturbance of threatened flora**

Where Tall wallabygrass (*Rytidosperma indutum*) or any other flora species listed under the *Threatened Species Protection Act 1995* is likely to be impacted by the activity, the potential impact must be brought to the attention of the Department that administers the *Threatened Species Protection Act 1995* and the relevant permits must be obtained, prior to such impact occurring.

FF2 Swift parrot habitat offset

- 1 Unless otherwise approved in writing by the Director, a Vegetation Removal Management Plan must be submitted to the Director within 6 months of the issue of these conditions, for approval.
- 2 The Vegetation Removal Management Plan must include, but is not limited to, details of the following:

- 2.1 A program, developed in consultation with the Department of Primary Industries, Parks, Water and the Environment, to achieve the objective of offsetting the impacts of the activity on the Swift Parrot (*Lathamus discolor*) habitat of *Eucalyptus globulus* wet forest, which may include the reservation of habitat through a Private Conservation Covenant and/or the installation of Swift Parrot nesting boxes;
 - 2.2 A timetable for implementation of key aspects of the Vegetation Removal Management Plan; and
 - 2.3 A review and reporting program to regularly advise the Director of the results of the implementation of the Vegetation Removal Management Plan.
- 3 The activity must be undertaken in accordance with the Vegetation Removal Management Plan, as approved in writing by the Director.

Hazardous Substances

H1 Storage and handling of hazardous materials

- 1 Unless otherwise approved in writing by the Director, environmentally hazardous materials held on The Land must be:
 - 1.1 located within impervious bunded areas, spill trays or other containment systems; and
 - 1.2 managed to prevent unauthorised discharge, emission or deposition of pollutants:
 - 1.2.1 to soils within the boundary of The Land in a manner that is likely to cause serious environmental harm;
 - 1.2.2 to groundwater;
 - 1.2.3 to waterways; or
 - 1.2.4 beyond the boundary of The Land.

H2 Spill kits

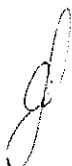
Spill kits appropriate for the types and volumes of materials handled on The Land must be kept in appropriate locations to assist with the containment of spilt environmentally hazardous materials.

H3 Record of controlled wastes

- 1 A record of all controlled waste deposited at the landfill must be kept and provided to the Director as part of the Annual Environmental Review. This record must include:
 - 1.1 the composition and description of the waste;
 - 1.2 the quantity of controlled waste deposited;
 - 1.3 where available, the person or organisation which generated the waste.

H4 Sanitary waste

- 1 Sanitary waste from non-patient areas, commercial premises, aged care facilities, geriatric and maternity wards, child care centres, restaurants, and other public places must be buried immediately under supervision and covered with 300mm of cover material in a designated area of the landfill.
- 2 Untreated sanitary waste from patient areas and sanitary waste that is saturated with or contains free flowing blood or other body fluids and sanitary waste from those receiving chemotherapy treatment must not be deposited at the landfill.



H5 Lead acid batteries

Used motor vehicle lead acid batteries may only be received at the landfill if stored in a facility that conforms to Australian Standard 3780 (*Storage and Handling Of Corrosive Substances*).

H6 Scrap tyres

- 1 Scrap tyres must be managed in accordance with the following:
 - 1.1 no more than 500 whole tyres may be stored on The Land unless otherwise approved in writing by the Director. Such storage may only occur as an interim measure while awaiting disposal or removal to another site;
 - 1.2 tyre stockpiles must contain no greater than 200 tyres per stockpile;
 - 1.3 tyre storage must be on a clean, hard stand area that has all weather access;
 - 1.4 no whole tyres except earthmoving tyres may be disposed in the landfill. Where cut tyres are disposed in the landfill the size of the pieces must not exceed 250 mm in any dimension; and
 - 1.5 earthmoving vehicle tyres must be individually buried and must be filled completely, to remove any voids, with an inert and non-degradable material such as soil or sand.

H7 Waste oil

- 1 Waste oil may only be received on The Land in sealed containers placed in a dedicated receival area.
- 2 The receival area must be enclosed within an impervious bund and must have a roof to exclude rain.
- 3 Waste oil accumulated in the receival area must be regularly emptied into a waste oil storage tank to ensure adequate space is available for foreseeable oil deliveries.
- 4 The used oil storage tank must conform with the following requirements:
 - 4.1 the tank must be of sufficient volume to store at least the volumes of used oil that are likely to be received over 4 weeks;
 - 4.2 the tank must be enclosed within a roofed, impervious bund designed to contain not less than 110% of the volume of the storage tank; and
 - 4.3 the tank and bund must be secured against unauthorised access.

Monitoring**M1 Dealing with samples obtained for monitoring**

- 1 Any sample or measurement required to be obtained under these conditions must be taken and processed in accordance with the following:
 - 1.1 Australian Standards, NATA approved methods, the American Public Health Association Standard Methods for the Analysis of Water and Waste Water or other standard(s) approved in writing by the Director;
 - 1.2 samples must be tested in a laboratory accredited by the National Association of Testing Authorities (NATA), or a laboratory approved in writing by the Director, for the specified test;
 - 1.3 results of measurements and analysis of samples and details of methods employed in taking measurements and samples must be retained for at least three (3) years after the date of collection;

- 1.4 measurement equipment must be maintained and operated in accordance with manufacturer's specifications and records of maintenance must be retained for at least three (3) years; and
- 1.5 noise measurements must be undertaken in accordance with the Tasmanian Noise Measurement Procedures Manual.

M2 Monitoring, record keeping and reporting

Unless otherwise approved in writing by the Director, the results of laboratory analysis of samples collected in the course of monitoring in accordance with these conditions must be submitted to the Director in the Annual Environmental Review, following completion of those analyses by the laboratory.

M3 Signage of monitoring points

With the exception of open water sampling, all monitoring points must be clearly marked to indicate the location and name of the monitoring point.

M4 Reporting of waste tonnage

- 1 The person responsible must submit to the Director a report on the quantity of waste (measured as tonnes) disposed of at the landfill during each financial year. The report must be submitted by 30 September each year and must, as a minimum, contain details of:
 - 1.1 the total quantity of waste disposed of at the facility, measured as tonnes using a methodology approved by the Director; and
 - 1.2 the method by which the quantity disposed of has been calculated.

M5 Waste data reporting

- 1 The person responsible must submit to the Director a report on the destination and source of waste received while carrying on the activity as follows:
 - 1.1 By 30 September each year the person responsible must submit to the Director a report detailing the Processing Route, the Primary Source and Secondary Source for all waste received in the preceding financial year. The report must break down the total tonnage disposed using the categories listed in the tables below.
 - 1.2 Processing Route for waste received may be broken down into any of the following categories:

Processing Route
1 Recycling
2 Composting
3 Incineration
4 Landfill
5 Other



- 1.3 Source of waste received may be broken down into any of the following categories:

Primary Source	Secondary Source
A Municipal	1 Domestic Waste
	2 Other Domestic
	3 Other Council
	X Waste Processing Facility
B Commercial & Industrial	0 Unknown
	X Waste Processing Facility
C Construction & Demolition	0 Unknown
	2 Other Domestic
	3 Other Council
	X Waste Processing Facility

- 1.4 For the purposes of this condition the following definitions apply:

- 1.4.1 'Commercial & Industrial' means the component of waste stream originating from wholesale, retail or service establishments and the waste stream arising from industrial processes and manufacturing operations;
- 1.4.2 'Construction and Demolition' means materials in the waste stream which arise from construction, refurbishment or demolition activities and includes bricks, tiles, concrete, steel, glass, plastics, and soil or naturally occurring excavated material;
- 1.4.3 'Domestic waste' means all household waste placed on the kerbside for collection by council or council contractors;
- 1.4.4 'Municipal' means waste arising from domestic premises and Council activities largely associated with servicing urban areas; such as street sweeping, street tree lopping, park and garden maintenance, and litter bins. (For waste data purposes, Municipal waste = Domestic Waste + Other Domestic waste + Other Council waste.)
- 1.4.5 'Other Council' means waste collected by council or council contractors from the clean-up of municipal parks and gardens, street sweepings, council engineering works, litter bins, and other clean-up resulting from large festivities organised within the council's jurisdiction;
- 1.4.6 'Other Domestic' means waste collected by council or council contractors from irregular residential clean-ups at the kerbside; and other wastes transported by residents (e.g. in cars, vans or utes) directly to a waste management facility;
- 1.4.7 'Waste Processing Facility' means a facility approved to receive waste and includes a waste transfer station

M6 Surface water monitoring

- 1 Unless otherwise approved in writing by the Director, representative samples of surface water must be collected at the following surface water monitoring points (as shown in Attachment 2):

- 1.1 McRobies Creek;



- 1.2 Hobart Rivulet 5 metres above the 1500 mm stormwater pipe entering the Hobart Rivulet near Degraes Street; and
- 1.3 Hobart Rivulet 5 metres below the 1500 mm stormwater pipe entering the Hobart Rivulet near Degraes Street.
- 2 Unless otherwise approved in writing by the Director, the parameters listed in Table 1 must be monitored by sampling and analysis, or by field measurement, at 3 monthly intervals. If there is no flow at time of sampling then the sample must be collected at the next occurrence of flow.
- 3 If leachate has become mixed with the surface water, or if required in writing by the Director, additional sampling of the parameters listed in Table 1 must be undertaken in accordance with the requirements of the Director.

Table 1: Surface Water Monitoring

SURFACE WATER MONITORING PARAMETER
pH
Alkalinity (as CaCO ₃) (mg/L)
Biological Oxygen Demand (mgO ₂ /L)
Total Suspended Solids (TSS) (mg/L)
Conductivity (dS/m)
Total Nitrogen (mg/L)
Ammonium (ug-N/L)
Oxides of nitrogen (ug-N/L)
Total phosphorus (mg/L)
Dissolved Free Phosphorus (ug - P/L)

M7 Groundwater monitoring

- 1 Unless otherwise approved in writing by the Director, monitoring of groundwater must be carried out at the following groundwater monitoring bores (as shown in Attachment 3):
 - 1.1 2007/1;
 - 1.2 2007/2; and
 - 1.3 1996/3.
- 2 Unless otherwise approved in writing by the Director, the parameters listed in Column 1 of Table 2 must be monitored in accordance with the frequency specified in Column 2 of Table 2.
- 3 Sampling of all groundwater bores undertaken in accordance with this condition must be recorded on a pre-drafted recording sheet which includes, as a minimum, the following information:
 - 3.1 Standing water level;
 - 3.2 Volume of water in litres within the installed casing before purging;
 - 3.3 Volume of water in litres purged before sampling;
 - 3.4 Time required to purge the bore casing before sampling;
 - 3.5 Method of purging the casing water column;
 - 3.6 Flow rate of the purging method used for sampling;

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- 3.7 Time, date and identification code of the water sample; and
- 3.8 Field primary water quality parameters, including at least, conductivity, pH and temperature.
- 4 Any new groundwater monitoring bore(s) must have an approved installation and development record as outlined in these conditions. A hydraulic pump test must be carried out within 7 (seven) days after the installation and development of any new bore(s) and the results forwarded to the Director within 7 days of receipt.
- 5 Any new groundwater monitoring bore(s) must be monitored quarterly for one year. Monitoring bore(s) must be monitored for the chemical analytes outlined in Table 2 (Groundwater Monitoring). After this period of initial monitoring, and dependent on results, the range of parameters and frequency of monitoring may be reduced with the Director's approval.

- 6 Groundwater monitoring results and interpretation must be included in the Annual Environmental Review prepared in accordance with these conditions.

Table 2: Groundwater Monitoring

Column 1	Column 2
MONITORING PARAMETERS	FREQUENCY
Bore depth (m)	Within 6 weeks of issue of these conditions, 6 months intervals
Ground water depth (m)	Within 6 weeks of issue of these conditions, 6 months intervals
Co ordinates, GDA 94 Zone 55 - Easting, Northing, AHD	Within 6 weeks of issue of these conditions
pH	Within 6 weeks of issue of these conditions, annually
Conductivity (uS/cm)	Within 6 weeks of issue of these conditions, annually
Total Dissolved Salts (TDS) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Redox potential (Eh) (mV)	Within 6 weeks of issue of these conditions, 6 months intervals
Total Nitrogen (ug-N/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Ammonia (ug-N/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Nitrate (ug-N/L)	Within 6 weeks of issue of these conditions, annually
Nitrite (ug-N/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Total phosphorus (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Orthophosphate (ug-P/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Dissolved Organic Carbon (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Biochemical Oxygen Demand (mO ₂ /L)	Within 6 weeks of issue of these conditions, 6 months intervals
Total CN (as CN) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Total Iron and dissolved (Fe) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Copper (Cu) (mg/L)	Within 6 weeks of issue of these conditions, annually
Zinc (Zn) (mg/L)	Within 6 weeks of issue of

Column 1	Column 2
	these conditions, annually
Chromium (Cr) (mg/L)	Within 6 weeks of issue of these conditions, annually
Manganese (Mn) (mg/L)	Within 6 weeks of issue of these conditions, annually
Nickel (Ni) (mg/L)	Within 6 weeks of issue of these conditions, annually
Lead (Pb) (mg/L)	Within 6 weeks of issue of these conditions, annually
Cadmium (Cd) (mg/L)	Within 6 weeks of issue of these conditions, annually
Chloride (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Sulphate (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Sodium (Na) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Potassium (K) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Magnesium (Mg) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Arsenic (As) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Mercury (Hg) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
Selenium (Se) (mg/L)	Within 6 weeks of issue of these conditions, 6 months intervals
TPH	Within 6 weeks of issue of these conditions, 6 months intervals

Note: Parameters in bold must be monitored annually.

M8 Leachate monitoring

- 1 If required in writing by the Director, results of analyses of leachate water collected as a requirement of any Trade Waste Agreement, including the location of leachate sampling points, must be supplied within 14 days of receipt of the Director's request.
- 2 If required in writing by the Director, leachate pond water must be sampled for the monitoring parameters listed in Table 3 at the frequency required by the Director.



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- 3 All metals are to be tested for total content, but also for filtered content on written request.

Table 3: Leachate Monitoring

MONITORING PARAMETERS
pH
Conductivity (uS/cm)
Total Suspended Solids (TSS) (mg/L)
Alkalinity (as CaCO ₃) (mg/L)
Total Nitrogen (mg/L)
Ammonia (ug-N/L)
Nitrate (ug-N/L)
Nitrite (ug-N/L)
Total phosphorus (mg/L)
Orthophosphate (ug-P/L)
Dissolved Organic Carbon (mg/L)
Biochemical Oxygen Demand (mgO ₂ /L)
Dissolved Oxygen (mg/L)
Total CN (as CN) (mg/L)
Total Iron (Fe) (mg/L)
Aluminium (Al) (mg/L)
Copper (Cu) (mg/L)
Zinc (Zn) (mg/L)
Chromium (Cr) (mg/L)
Manganese (Mn) (mg/L)
Nickel (Ni) (mg/L)
Lead (Pb) (mg/L)
Cadmium (Cd) (mg/L)
Chloride (mg/L)
Sulphate (mg/L)
Sodium (Na) (mg/L)
Potassium (K) (mg/L)
Magnesium (Mg) (mg/L)
Arsenic (As) (mg/L)
Mercury (Hg) (mg/L)



CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY

MONITORING PARAMETERS
Selenium (Se) (mg/L)
TPH

M9 Final Capping Monitoring Plan

- 1 Unless otherwise approved in writing by the Director, a Final Capping Monitoring Plan must be submitted to the Director within 6 months of the issue of these conditions. The Final Capping Monitoring Plan must include a proposed methodology for the monitoring of the permeability of final landfill capping.
- 2 Monitoring of the permeability of final landfill capping must be undertaken in accordance with the approved Final Capping Monitoring Plan, or any amendments as approved in writing by the Director.

Operations**OP1 Hours of operation**

- 1 Subject to the following paragraph the landfill facility must not be open for the reception of waste outside the hours of 0730 hours to 1615 hours Monday to Friday, 0800 hours to 1630 hours on Saturday, and 0900 hours to 1630 hours on Sunday and public holidays.
- 2 The site must remain closed on Christmas Day and Good Friday.
- 3 The responsible person may allow deposition of waste on The Land outside the normal operating hours specified in the above paragraph where a specific prior arrangement has been made with the Director, providing all other conditions are complied with.

OP2 Site staff

While The Land is open for reception of waste, The Land must be attended by a person or persons whose duties must include supervising the management of waste deposition and ensuring compliance with these conditions.

OP3 Tipping faces

- 1 The person responsible may choose to operate separate tipping faces for inert and putrescible materials.
- 2 Active tipping face(s) for putrescible waste must not exceed 50 metres in combined length, and public access to the tipping face must be kept to a minimum.
- 3 Each successive landfilling lift must not exceed 2 metres in height, excluding cover material.

OP4 Waste cover

- 1 Machinery capable of spreading, compacting and covering deposited waste must be kept on The Land at all times. A person competent in operating the machinery must be available for an adequate period of time to spread, compact and cover all waste deposited on a daily basis.
- 2 Waste must be covered at the end of each day of operation. Clean material to a depth of 300 mm must be used for daily cover material unless otherwise approved by the Director.

- 3 The area of exposed waste without intermediate cover must not exceed 7,000 m². Intermediate cover comprised of low permeability (hydraulic conductivity $< 1 \times 10^{-7}$ m/s unless otherwise approved by the Director) materials must be applied to a depth of 300 mm to areas in excess of 7,000 m² except where further waste deposition or final capping material will be applied within 90 days.
- 4 Daily cover and intermediate cover may be provided simultaneously by a single 300mm layer.

OP5 Litter management

- 1 Measures must be implemented and maintained throughout the operational life of the landfill to control and monitor the escape of litter from The Land.
- 2 Litter control measures, for example mobile litter fences of sufficient height to capture airborne litter, must be employed around and close to active landfilling areas. Fences must be regularly cleared of litter in order to maintain their effectiveness (i.e. the fences must remain permeable to wind).
- 3 Neighbouring properties within a one half kilometre radius of The Land and the access road, and areas of The Land outside active tipping face(s), must be inspected and all visible litter must be collected on a weekly basis, or more frequently when litter is readily visible on neighbouring properties. A record of the dates of inspections and litter collection activities must be kept and provided to an Authorized Officer upon request. The responsible person must notify the Director if any owner of adjoining land refuses to allow staff to undertake litter removal on their land.
- 4 Waste compaction and covering must be carried out immediately after waste deposition if wind conditions are such that litter cannot be contained within the active landfill area.
- 5 During times of gale force wind and at any other time when wind strength is such that litter cannot be contained within the boundaries of The Land utilizing all other measures, the landfill must not receive putrescible waste. The person responsible must keep a record of all such occasions and provide a copy to an Authorized Officer upon request.

OP6 Vehicle wash facilities

Facilities must be provided for cleaning vehicles to remove waste and mud.

OP7 Signage

- 1 Signs must be erected and maintained in legible condition to convey the following important operational and safety information:
 - 1.1 all drivers are responsible for ensuring that remnant waste and mud are not carried onto public roads;
 - 1.2 hours of operation and tipping fees (to be installed at the gate or gatehouse);
 - 1.3 wastes that are accepted at the landfill;
 - 1.4 items accepted for recycling and the locations within The Land where recyclable items should be deposited for collection / processing; and
 - 1.5 contact staff / organisation and relevant telephone numbers to report any fire or other emergency on The Land.

OP8 Fire management

- 1 Fire control measures on The Land must be to the satisfaction of the Tasmania Fire Service (TFS). Correspondence from the TFS indicating the suitability of fire control measures must be submitted to the Director within 6 months of the date on which these conditions take effect.

- 2 Fires occurring on The Land must be extinguished as soon as possible using all practical means available.
- 3 The lighting of fires on The Land is not permitted.
- 4 The person responsible must make all reasonable efforts to prevent unauthorised ignition of green waste stockpiles.

OP9 Landfill gas management

- 1 If waste deposition on The Land, excluding cover material, exceeds 20,000 tonnes per annum in any three consecutive years, landfill gas management infrastructure must be installed progressively as final capping is installed.
- 2 Following installation of landfill gas management infrastructure landfill gas must either be collected and reused, or flared.

OP10 Potential disease vectors

A management plan to actively discourage the presence of nuisance animals to the extent necessary to ensure that they do not present an unacceptable public health risk must be developed and implemented to the satisfaction of the Director.

OP11 Materials received for recycling

- 1 Materials received on The Land for recycling must not be disposed in the landfill except where the following circumstances exist:
 - 1.1 materials have become contaminated and cannot be recycled; and
 - 1.2 reasonable efforts have been made to remove the contamination; and
 - 1.3 written approval has been received from the Director.

OP12 Waste capping

- 1 Unless otherwise approved by the Director areas to which intermediate cover has been applied must have final capping applied within 2 years unless further waste deposition occurs within 90 days.
- 2 Unless otherwise approved by the Director, final capping must comply with Table 5.1 of the *Landfill Sustainability Guide*.

OP13 Weed management

- 1 The Land must be kept substantially free of weeds to minimise the risk of weeds being spread from The Land.
- 2 Unless otherwise approved in writing by the Director, operations on The Land must be undertaken in accordance with the *Weed and Disease Management Plan* dated 10 February 2016, or any subsequent revisions of the Plan.

Waste Management**WM1 Controlled waste transport**

Transport of controlled wastes to and from The Land must be undertaken only by persons authorised to do so under EMPCA or subordinate legislation.

WM2 Controlled Waste Register

- 1 A Controlled Waste Register must be maintained and made available for inspection by an Authorized Officer upon request.
- 2 The Controlled Waste Register must:
 - 2.1 keep an accurate record of type and quantity of Controlled Wastes stored on The Land; and

- 2.2 record the following detail in relation to Controlled Waste removed from The Land:
 - 2.2.1 the type of Controlled Waste;
 - 2.2.2 the quantity of Controlled Waste;
 - 2.2.3 the Controlled Waste Transporter who moved the Controlled Waste;
 - 2.2.4 the date the Controlled Waste was moved;
 - 2.2.5 the recipient of the Controlled Waste; and
 - 2.2.6 The destination address of the Controlled Waste.
- 3 Controlled Waste records must be maintained for a period of at least 3 years.



Schedule 3: Information

Legal Obligations

LO1 EMPCA

The activity must be conducted in accordance with the requirements of the *Environmental Management and Pollution Control Act 1994* and Regulations thereunder. The conditions of this document must not be construed as an exemption from any of those requirements.

LO2 Storage and handling of dangerous goods, explosives and dangerous substances

- 1 The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:
 - 1.1 *Work Health and Safety Act 2012* and subordinate regulations;
 - 1.2 *Explosives Act 2012* and subordinate regulations; and
 - 1.3 *Dangerous Goods (Road and Rail Transport) Act 2010* and subordinate regulations.

LO3 Aboriginal relics requirements

- 1 The *Aboriginal Relics Act 1975*, provides legislative protection to Aboriginal heritage sites in Tasmania regardless of site type, condition, size or land tenure. Section 14(1) of the Act states that; Except as otherwise provided in this Act, no person shall, otherwise than in accordance with the terms of a permit granted by the Minister on the recommendation of the Director of National Parks and Wildlife:
 - 1.1 destroy, damage, deface, conceal or otherwise interfere with a relic;
 - 1.2 make a copy or replica of a carving or engraving that is a relic by rubbing, tracing, casting or other means that involve direct contact with the carving or engraving;
 - 1.3 remove a relic from the place where it is found or abandoned;
 - 1.4 sell or offer or expose for sale, exchange, or otherwise dispose of a relic or any other object that so nearly resembles a relic as to be likely to deceive or be capable of being mistaken for a relic;
 - 1.5 take a relic, or permit a relic to be taken, out of this State; or
 - 1.6 cause an excavation to be made or any other work to be carried out on Crown land for the purpose of searching for a relic.
- 2 If a relic is suspected and/or identified during works then works must cease immediately and the Tasmanian Aboriginal Land and Sea Council and the Aboriginal Heritage Tasmania be contacted for advice before work can continue. In the event that damage to an Aboriginal heritage site is unavoidable a permit under section 14 of the *Aboriginal Relics Act 1975* must be applied for. The Minister may refuse an application for a permit, where the characteristics of the relics are considered to warrant their preservation.
- 3 Anyone finding an Aboriginal relic is required under section 10 of the Act to report that finding as soon as practicable to the Director of National Parks and Wildlife or an authorized officer under the *Aboriginal Relics Act 1975*. It is sufficient to report the finding of a relic to Aboriginal Heritage Tasmania to fulfil the requirements of section 10 of the Act.



Other Information**OI1 Waste management hierarchy**

- 1 Wastes should be managed in accordance with the following hierarchy of waste management:
 - 1.1 waste should be minimised, that is, the generation of waste must be reduced to the maximum extent that is reasonable and practicable, having regard to best practice environmental management;
 - 1.2 waste should be re-used or recycled to the maximum extent that is practicable; and
 - 1.3 waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

OI2 Notification of incidents under section 32 of EMPCA

Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning 1800 005 171 (a 24-hour emergency telephone number).

OI3 Commitments

The person responsible for the activity has a general environmental duty to conduct the activity in accordance with the commitments contained in Attachment 4.



ATTACHMENT 1

THE LAND

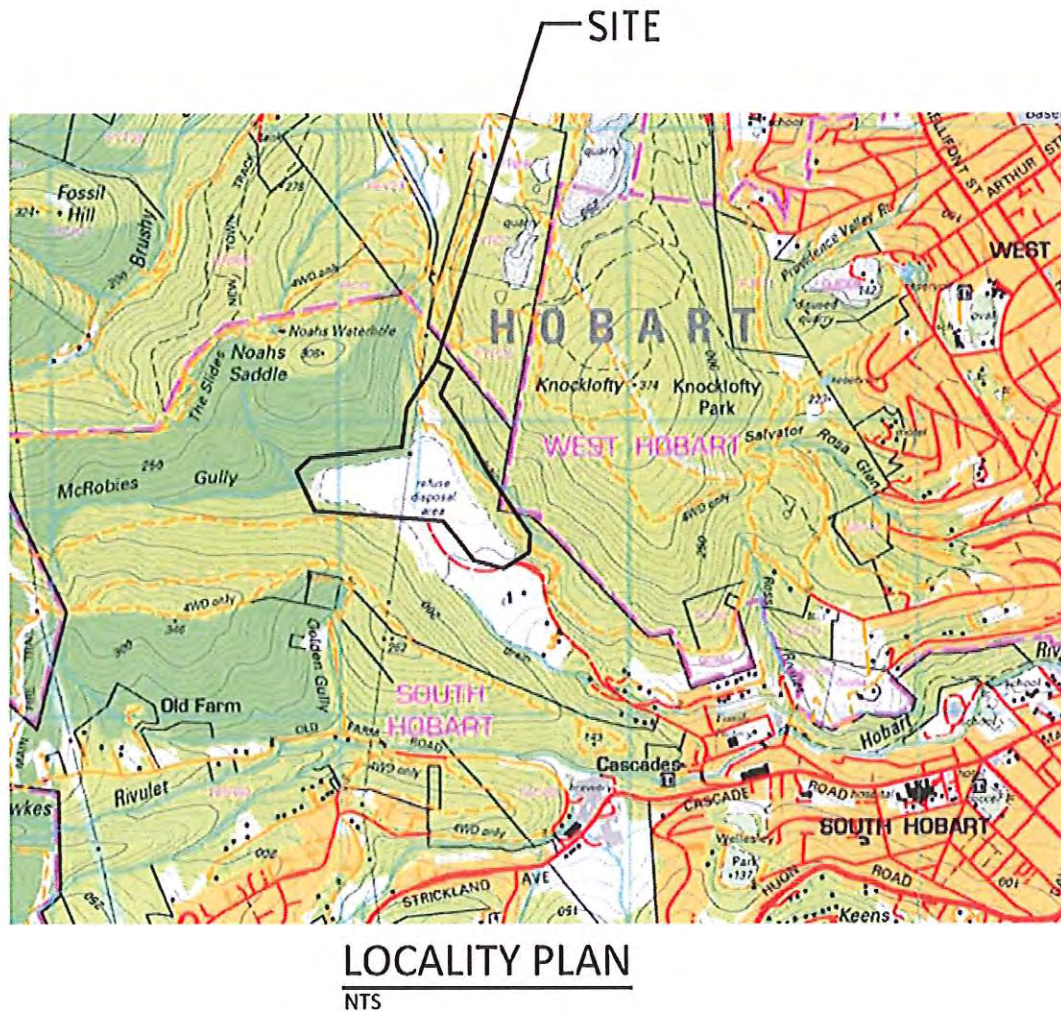


Figure 1.1: Locality plan and boundary of activity (landfilling between 184 m AHD and 200 m AHD).

Source: Hobart City Council, Pers. Comm: Email from Jeff Holmes, Hobart City Council, to Kate Düttmer, EPA Division, 14/04/2016 1:34pm, Document One file H533886.

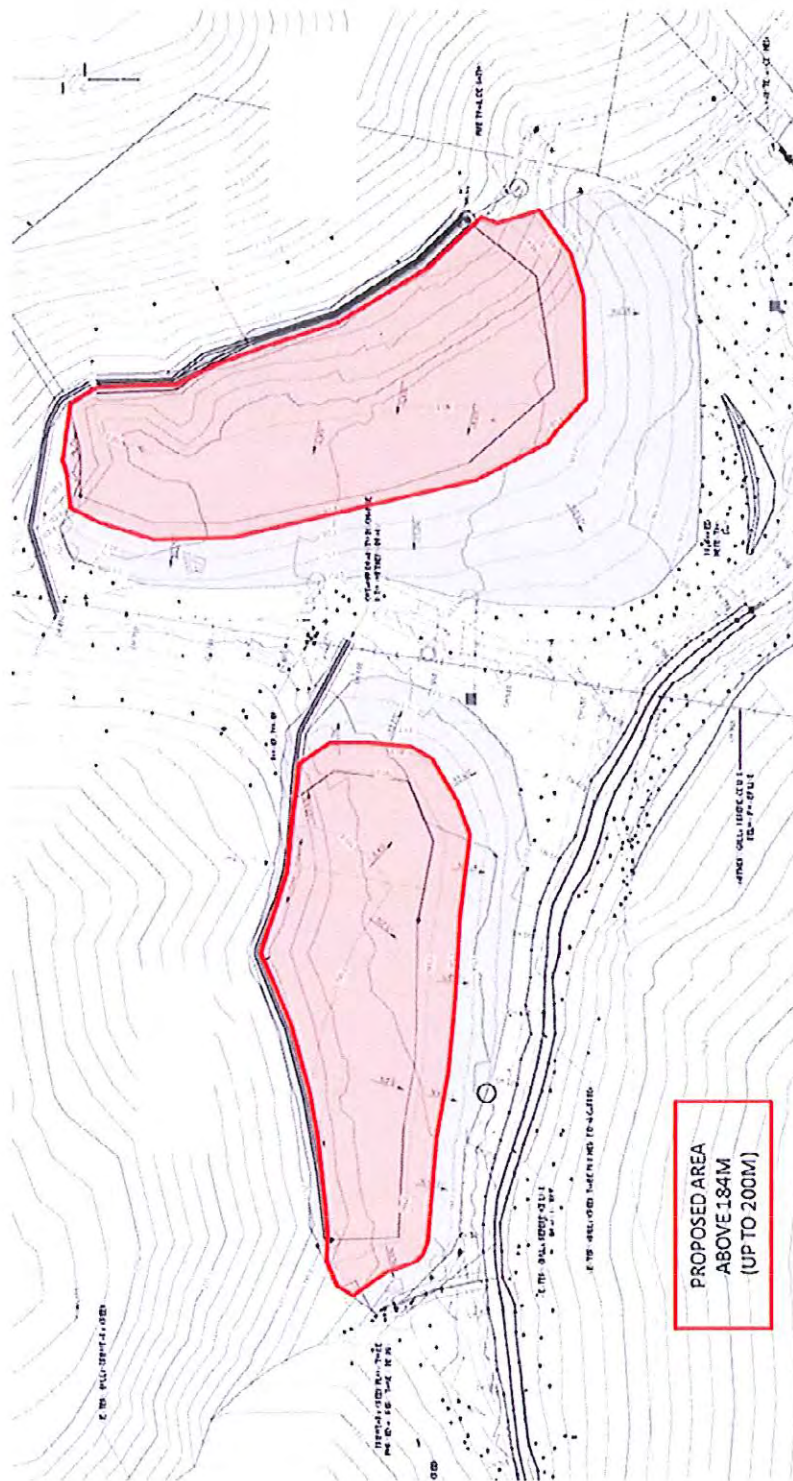


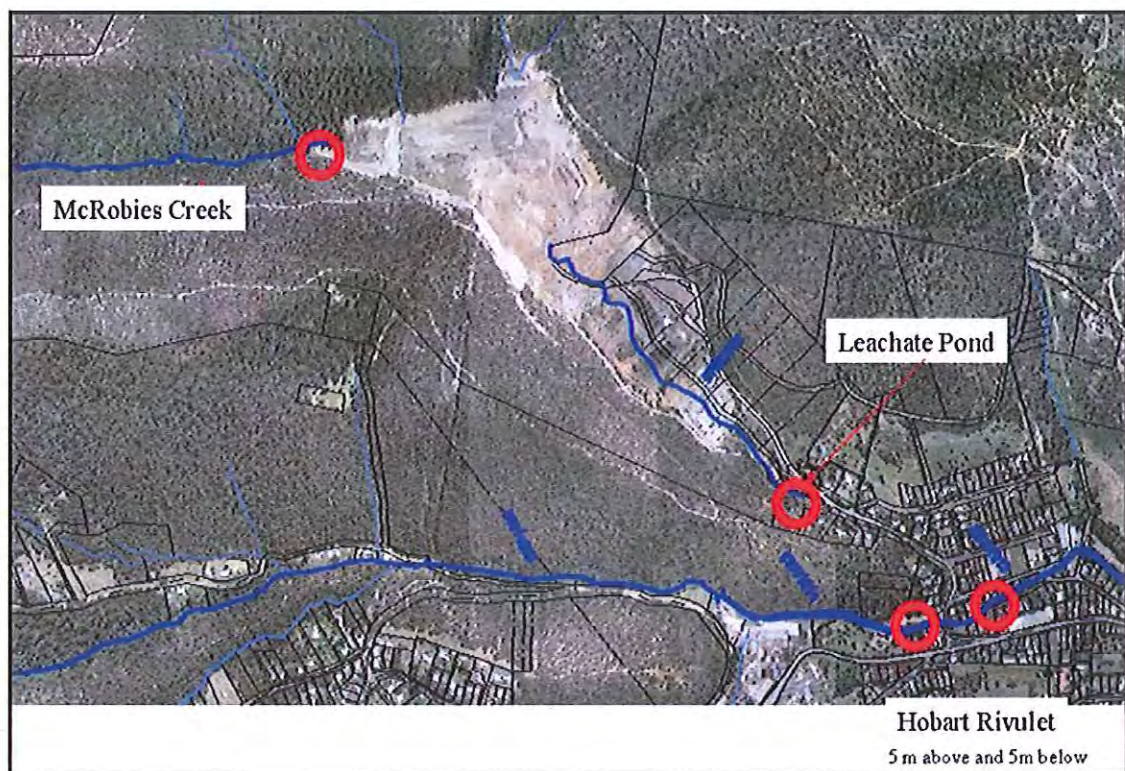
Figure 1.2: Site plan showing area of maximum landfilling height to 200 m AHD (grey) and expanded landfill footprint (red).

Source: Hobart City Council, Pers. Comm: Email from Jeff Holmes, Hobart City Council, to Kate Düttmer, EPA Division, 14/04/2016 1:34pm, Document One file H533886.



ATTACHMENT 2

LOCATION OF SURFACE WATER MONITORING POINTS



Hobart Rivulet Points	Easting	Northing
5m above outfall	147 16' 45"	42 53' 8"
5m below outfall	147 16' 55"	42 53' 5"



Figure source: Figure 16, City of Hobart, Development Proposal & Environmental Management Plan (DPEMP), Extension of Landfill Area – McRobies Gully Landfill, Version 2.0, submitted 12 February 2016; and personal communication from Hobart City Council filed as H528893 in Document One.

ATTACHMENT 3

LOCATION OF GROUNDWATER MONITORING BORES



Figure source: Figure 8, City of Hobart, Development Proposal & Environmental Management Plan (DPEMP), Extension of Landfill Area – McRobies Gully Landfill, Version 2.0, submitted 12 February 2016.

ATTACHMENT 4

COMMITMENTS

No.	COMMITMENT	RESPONSIBILITY	TIMEFRAME
1	Complete the construction of major surface water drains to capture clean water from the catchments upstream of the site, in the Western Gully (McRobies Creek) and Pottery Gully areas	Civil Construction Personnel	End 2016
2	Reduce the number of leachate overflows, through capital works program of creek diversions	Civil Construction Personnel	End 2016
3	Investigate stormwater harvesting for the site, to replace the use of potable water at the site. The City will also aim to divert clean storm water from hard surface areas to the stormwater system, rather than to the leachate system	Site Staff	Ongoing
4	Develop a filling plan, and identification of appropriate rehabilitation to fulfil site closure requirements and in accordance with the fill plan contained within this DPEMP, including provision of adequate funds	Manager Cleansing & Waste	2016
5	Development of a Good Neighbour Agreement with the South Hobart Community	Manager Cleansing & Waste	2016
6	Monitor landfill compaction and settlement by undertaking 6-monthly surveys	Survey Unit	Ongoing 6-monthly
7	Cover waste on a daily basis, and apply intermediate cover to completed areas prior to rehabilitating	Site Staff	Daily
8	Conduct operations in accordance with the filling sequence.	Site Staff	Daily
9	Extend the Landfill Gas extraction network as needed.	Landfill Gas contractor	As required
10	Ensure that buffer distances to residences are maintained.	Site Staff	Ongoing
11	Investigate systems to improve gross litter collection at the entrances to the stormwater system	Site Staff	Ongoing
12	Manage nuisance complaints (odour, noise) and implement remedial actions where required	Site Staff	Ongoing
13	Continue to conduct regular and un-programmed surface and ground water monitoring programs	Environmental consultant	Quarterly & as required
14	Undertake methane monitoring events periodically.	Environmental Consultant	Annually
15	Install an on-site electronic weather station	Site Staff	2016

Source: Table 5 (Section 9. Commitments), City of Hobart, Development Proposal & Environmental Management Plan (DPEMP), Extension of Landfill Area – McRobies Gully Landfill, Version 2.0, submitted 12 February 2016.

6. COMMITTEE ACTING AS PLANNING AUTHORITY

6.1 APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 2015

6.1.6 40-44 MONTPELIER RETREAT, ADJACENT ROAD RESERVATION - DEMOLITION AND REDEVELOPMENT FOR 31 DWELLINGS - PLN-15-00971-01 – FILE REF: 5669846 & P/40-44/683 114x's (Council)

The General Manager reports:

“In accordance with the provisions of Part 2 Regulation 8(6) of the Local Government (Meeting Procedures) Regulations 2015, this supplementary matter is submitted for the consideration of the Committee.

Pursuant to Regulation 8(6), I report that:

- (a) information in relation to the matter was provided subsequent to the distribution of the agenda;
- (b) the matter is regarded as urgent; and
- (c) advice is provided pursuant to Section 65 of the Act.”



5669846 P/40-44/683

RP

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10 May, 2016

**MEMORANDUM: LORD MAYOR
DEPUTY LORD MAYOR
ALDERMEN**

**40-44 MONTPELIER RETREAT, ADJACENT ROAD RESERVATION -
DEMOLITION AND REDEVELOPMENT FOR 31 DWELLINGS
APPLICATION NO: PLN-15-00971-01**

At its meeting of 11 April 2016, the Council resolved as follows in relation to the abovementioned planning application:

That the application be deferred at the request of the applicant, to allow them to obtain further legal advice on the proposal, noting that an extension of time has been provided to the Council to extend the application expiry date to 26 May 2016.

The applicant has sought legal advice and has provided that advice to the Council for review by the Council's own solicitors. The advice from the proponent's solicitor simply confirmed that the proposal was discretionary under the heritage provisions of the *Hobart Interim Planning Scheme 2015* and that the Council had the discretion to approve or refuse the proposal. The response from the Council's solicitors concurred with this position. This legal advice has been circulated to Aldermen under a separate memorandum dated 10 May 2016 from the Council's Legal Officer.

The Council's solicitors also recommended that prior to the matter being reconsidered by the Council, that Council officers evaluate two documents circulated in support of the application at the City Planning Committee meeting of 4 April 2016.

Those documents are titled:

- 40-44 Montpelier Retreat Battery Point Heritage Assessment, prepared for Circa Morris-Nunn Architects by Paul Davies, Architect and Heritage Consultant (3 pages, **Attachment B** to this memo)
- 40-44 Montpelier Retreat, by Kate Loveday B Arch, dated 4 April 2016 (8 pages, **Attachment C** to this memo)

The Council's Senior Cultural Heritage Officer has reviewed those documents and provides the following advice:

Paul Davies states: "It would be naïve and simplistic to ... apply the Battery Point provisions without any further nuance or discernment."

He also suggests that part of the subject block does not fit within the concept of a 'heritage precinct' but the fact is that it is within a Heritage Precinct under the present planning scheme.

He continues: 'For the site to be successfully developed in terms of providing built form that responds to the context [here he is referring to the unsympathetic 1960s and 1970s buildings across the road within the Sullivans Cove planning area] the development will move outside the standard Battery Point controls that are only aimed at retaining the small principally residential scale of the area.'

The development does NOT move outside the standard Battery Point controls. The development is located within the planning area of the *Hobart Interim Planning Scheme 2015* and is located within the Battery Point Heritage Precinct. The development is subject to the relevant controls of the planning scheme and does not move outside those controls.

Kate Loveday relies on Paul Davies' assumption that the proposed development is subject to different controls 'outside' those relating to Battery Point. She also states (incorrectly) that the proposal will be barely visible from Sandy Bay Road and that it will not diminish the values of buildings such as Portsea Terrace and the Battery Point precinct as a whole. While the James Street component of the proposed development is considered sympathetic, the proposed corner building will detract from the values of the heritage precinct in the vicinity of the site, including buildings such as Portsea Terrace.

The proposal does not adequately address the requirements of the Heritage Code of the Planning Scheme for the reasons stated in the original report.

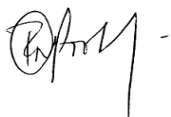
While the proposed development may sit happily with the adjacent office buildings on the opposite sides of the streets, the development is required to not detract from the pattern of development that is a characteristic of the cultural heritage significance of Heritage Precinct BP1 in the vicinity of the site.

In light of that advice, the recommendation of refusal of the proposal, as detailed in the officer report dated 30 March 2016 (**Attachment A** to this memo) remains. That recommendation is as follows:

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council refuse the application for demolition and redevelopment for 31 dwellings at 40-44 Montpelier Retreat and adjacent road reservation, Battery Point on the following grounds:

1. The proposed development does not meet performance criterion E13.8.2 P1, because the design and siting of the buildings and works will result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2.

2. The proposed development does not meet performance criterion E13.8.2 P2 as the design and siting of buildings and works does not comply with relevant design criteria / conservation policy listed in Table E13.2.
3. The proposed development does not meet performance criterion E13.8.4 P1 as the scale and form of the proposed development will detract from the pattern of development that is a characteristic of the cultural heritage significance of Heritage Precinct BP1 precinct in the vicinity of the site.
4. The proposed development does not meet performance criterion E13.8.4 P3 because the height of the proposed development is obtrusive in the streetscape and detracts from the pattern of development that is a characteristic of the cultural heritage significance of Heritage Precinct BP1 in the vicinity of the site.
5. The proposed development does not meet performance criterion E13.8.4 P6 as the height and form of the proposed building detracts from the pattern of development that is a characteristic of the cultural heritage significance of the Heritage Precinct BP1 in the vicinity of the site.



(Rohan Probert)

MANAGER DEVELOPMENT APPRAISAL

Attachments:	Attachment A	Hobart Interim Planning Scheme 2015 Planning Assessment Report dated 30 March 2016
	Attachment B	40-44 Montpelier Retreat Battery Point Heritage Assessment, prepared for Circa Morris-Nunn Architects by Paul Davies, Architect and Heritage Consultant
	Attachment C	40-44 Montpelier Retreat, by Kate Loveday B Arch., dated 4 April 2016



APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015

Attachment A

Type of Report	Council
Committee:	4 April 2016
Council:	11 April 2016
Expiry Date:	14 April 2016
Application No:	PLN-15-00971-01
Address:	40-44 Montpelier Retreat, Adjacent Road Reservation, Battery Point
Applicant:	Circa Morris Nunn Architects, IXL Atrium, 27 Hunter Street, Hobart
Proposal:	Demolition and Redevelopment for 31 Dwellings
Representations:	77 plus petition (302 signatures)
Performance criteria:	Development standards and historic heritage code

1. Executive Summary

1.1. Planning approval is sought for demolition and redevelopment for 31 dwellings. The proposal includes:

- Demolition of the existing buildings on the site.
- Two new buildings containing 31 dwellings - one on the corner of Montpelier Retreat and Knopwood Street and the other one fronting James Street.
- The dwellings are comprised of one one-bedroom apartment, 25 two-bedroom apartments, and five three-bedroom apartments.
- The proposal extends over six levels, including basement, ground and floors 1 to 4. The upper level occupies only part of the overall development.
- The Montpelier Retreat/Knopwood Street building is at its highest point at the corner of the respective streets. The building then tapers down to four storeys in height facing Montpelier Retreat and three storeys plus basement facing Knopwood Street.
- The James Street building is two storeys with a pitched roof facing James Street.
- The basement level provides parking spaces for up to 34 vehicles. Bicycle parking is also provided.
- Minor encroachment of a section of 'user road' footpath on Montpelier Retreat which is within the developer's title, and minor encroachment over the Montpelier Retreat and Knopwood Street road reservations for external window shutters are also proposed.

- 1.2. The proposal relies on performance criteria to satisfy the following standards and codes.
 - 1.2.1. Residential Density for multiple dwellings - Clause 11.4.1 P1.
 - 1.2.2. Setbacks and Building Envelope - Clause 11.4.2 P1
 - 1.2.3. Site coverage and private open space - Clause 11.4.3 P1 and P2.
 - 1.2.4. Sunlight and overshadowing - Clause 11.4.4 P1, P2 and P3.
 - 1.2.5. Privacy Clause - 11.4.6 P2 (windows).
 - 1.2.6. Sign - Clause E17.6.1 P4
 - 1.2.7. Historic Heritage Code Clause E.13.8.2: P1, P2, P3
 - 1.2.8. Historic Heritage Code Clause E.13.8.4 P1, P2, P3, P4, P5, P6, P7, P8, P9
- 1.3. A total of 77 objections and a petition (302 signatures) objecting to the proposal, were received within the statutory period 12 to 26 February 2016.
- 1.4. The proposal is recommended for refusal on heritage grounds.
- 1.5. The final decision is delegated to the Council.

2. Site Detail



3. Proposal

- 3.1. Planning approval is sought for demolition and redevelopment for 31 dwellings.
- Demolition of the existing buildings on the site.
 - Two new buildings, containing 31 dwellings - one on the corner of Montpelier Retreat and Knopwood Street and the other one fronting James Street.
 - The dwellings are comprised of one one-bedroom apartment, 25 two-bedroom apartments, and five three-bedroom apartments.
 - The proposal extends over six levels, including basement, ground and floors 1 to 4.
 - The Montpelier Retreat/Knopwood Street building is at its highest point at the corner of the respective streets. The building then tapers down to four storeys in height facing Montpelier Retreat and five storeys facing Knopwood Street.

- The James Street building is two storeys with a pitched roof facing James Street.
- The basement level provides parking spaces for up to 34 vehicles. Bicycle parking is also provided.
- Minor encroachment of a section of 'user road' footpath on Montpelier Retreat which is within the developer's title, and minor encroachment over the Montpelier Retreat and Knopwood Street road reservations for external window shutters are also proposed..

4. Background

- 4.1. Council landlord (General Manager) consent was issued dated 17th September 2015 to grant permission for the making of the development application only. A separate approval will be required under Section 14 of the Local Government (Highway) Act 1982 for the closure of the footpath on Montpelier Retreat prior to the commencement of any works (if approved).
- 4.2. As stated, Council landlord (General Manager) consent is required with respect to the proposed minor encroachment of Montpelier Retreat 'user road' footpath which is within the developer's title, and minor encroachment for external shutters on windows that will be over the Montpelier Retreat and Knopwood Street road reservations.

5. Concerns raised by representors

- 5.1. A total of 77 representations plus a petition containing 302 signatures were received to the latest of three rounds of advertising. The following table outlines the issues raised by representors over all periods of advertising. Concerns raised with respect to the discretions invoked by the proposal will be addressed in Section 6 of this report.

Scale and height, and density

- Size and height of great detriment to adjacent pub (Preachers): loss of sunny open area with mountain views from courtyard;
- too high;
- too large;
- overdevelopment of site
- density too much
- 'development of this magnitude will greatly impact the area';
- 'Negative visual impact caused by scale, bulk and proportions of the dwelling when viewed from Preachers';
- Loss of mountain views from Preachers;
- Would create precedent;
- Conflict with height and style;
- Objected to on grounds of scale, form and streetscape relationship;
- Far in excess of scale and height of existing development under the Hobart Interim Planning Scheme 2015;
- Do not reflect established character of single and two storey development in the vicinity under the Hobart Interim Planning Scheme 2015;

- While some transition in scale from Hobart Interim Planning Scheme 2015 to the two larger office buildings may be appropriate, those buildings are within a different planning scheme area and not reflective of the intended scale of development on this site;
- The proposal does not 'scale down' from those larger office buildings, and in fact surpasses the height of Knopwood House;
- 'completely out of scale';
- Comparison with density in lower Montpelier Retreat and Salamanca Place is not relevant, as a different scheme applies;
- Density would have detrimental effect on amenity of neighbouring properties and within the site itself;
- Height excessive compared to scale and height south along Montpelier Retreat;
- Building would make uncharacteristic 'strong statement' on exposed corner site;
- 'This is the gateway to Battery Point. Such a large structure should not be envisaged on this piece of land in this historic precinct';
- 'This is the tourist trail to Narryna and Battery Point. No building higher than two storeys should be countenanced on the parcel of land under consideration';
- Too massive;
- Only a low density development should be considered;
- 'will extremely dominate and distort the streetscape';
- Will 'ruin' the gateway to Battery Point';
- The number of units is excessive;
- 'It is important to preserve the integrity of Battery Point and two storeys max is preferable';
- Concern it could create a wind tunnel and it could be oppressive;
- 'black monolith on Montpelier Retreat';
- 'will set precedent well above the two storey limit and destroy the beauty of Battery Point';
- 'high rise precedent';
- Increases number of high rise buildings;
- 'oppressive';
- 'too grandiose for site';
- Would impose 'high density' living on Hobart;
- Do not want to make 'canyons of our streetscapes';
- 'Density and height far too great for site and the height of nearby office buildings should not provide an argument that it has set a precedent for this and future developments'.

Privacy

- Loss of privacy;
- 'great reduction in privacy';
- Would not meet Clause 10.4.2 of the Scheme: unreasonable loss of sunlight and overshadowing on the Preachers lawn dining area and bus';
- Would 'destroy all privacy' to rear of my property (James Street);
- Balconies of proposal would overlook neighbours bathroom.

Overshadowing

- Loss of natural light to neighbouring property;
- Overshadowing of neighbouring property;
- Loss of light and solar heat to neighbouring property;
- Loss of sunshine to Preachers;
- Loss of light all year round;
- Do not believe shade drawings supplied are accurate;
- Small cottages deserve the limited light we get from our small windows;
- 'will totally block out our sun';
- Garden will die through lack of sun';
- Loss of sun to surrounding houses;
- Loss of sun to rear deck;
- Overshadowing will make neighbouring property less attractive to tenants resulting in significant losses to the owner.

Visual intrusion

- Loss of mountain view to neighbouring property;
- Light and privacy must be protected;
- 'we will be looked down on from new development';
- Would ruin views and sunlight for a number of surrounding houses;
- 'disaster for Preachers'.

Traffic and pedestrian flow

- James and Knopwood Streets will not be able to cope with increased population;
- excessive traffic;
- James Street already has enough traffic problems;
- Do not see how James Street can cope with increased demand by so many people;
- Traffic noise will detrimentally effect resident amenity;
- Insufficient parking space provided;
- Proposal will create undue traffic issues;
- Increase in traffic flows on narrow streets adjacent to Narryna;
- Safety concerns due to additional traffic;
- Adding an 'apartment building will add to the chaos';
- Huge traffic impact.

Impact on adjacent business

- 'Preachers Restaurant (No.5 Knopwood Street) derives almost all of its income from the outdoor alfresco area'. 'The proposed development on the adjacent block would have a catastrophic impact on Preachers and would not only destroy the business (and livelihood of its operators) but would also ruin something that has become such a fantastic spot to relax in the sun and enjoy Tasmanian produce with a view of our beautiful mountain';
- 'My understanding is the current interim planning code for the site is two storeys high. We considered this information when deciding to spend \$50,000 upgrading the outdoor area. I would have no issue with a two storey development as it would (have a) minor impact on the business, not destroy it'.

Heritage impact

- Does not fit in with heritage buildings in the area;
- Totally out of character with historic Battery Point area;
- Concern at loss of heritage building on site (the corner building). Existing building and fabric remain;
- Possible damage to historic property from traffic vibrations;
- Exterior finishes not sympathetic to surrounding character;
- 'We believe that the development should be assessed in the context of the Battery Point Heritage precinct in accordance with the local community's wishes'.
- Inconsistent with established pattern within the Precinct and would detract from cultural heritage significance;
- Dramatic impact on Montpelier Retreat and Knopwood Street streetscapes; particularly the building proposed on the corner of those streets;
- Angled roof form uncharacteristic of hipped roof forms prevailing, would detract from heritage values;
- Encroachment of James Street apartments on historic stone boundary wall of Narryna and Narryna itself;
- Severe effect on Narryna complex;
- Will spoil tourist enjoyment of Narryna;
- 'nearby historic sites such as Narryna will be compromised';
- 'Proposal fails any test on height, density and, particularly, heritage';
- Increased traffic on narrow streets adjacent to Narryna will impact on heritage setting;
- Building finishes not compatible with nearby heritage;
- Loss of visual curtilage to Narryna due to unsympathetic development;
- Loss of visual curtilage to Narryna as viewed from Hampden Road and within the northern part of the Narryna property;
- The Construction Environmental Management Plan does not include data relating to the geological assessment of the site, concerns at potential blasting and drilling in dolerite: concern at impact on surrounding heritage buildings.

Loss of character

- Proposal 'totally lacks respect for any aspects of Battery Point history, quirkiness and destroys my home';
- 'No longer will one of Hobart's premier tourist meccas be safe from rapacious developers hell-bent on maximising profit at the expense of the community';
- At odds with the character of one of the main 'entry portals' to Battery Point for tourists;
- Adjacent tall buildings not an excuse for allowing further intrusion;
- Design does not reflect neighbourhood character;
- Angled roof form would be unsympathetic to hipped roof forms found elsewhere in the precinct;
- Proposal is not at all sympathetic with residential Battery Point;
- Small cottages in James Street will be compromised by both the scale and increased traffic flow, as will Preachers Cottage in Knopwood Street;
- Will damage Battery Point character;

- Materials, density, massing all non compliant;
- 'proposal fails on all grounds';
- Will impact negatively aesthetically;
- 'eyesore';
- 'totally inconsistent with integrity and cultural heritage' of surroundings;
- 'will greatly diminish the beauty and heritage values that make Battery Point special';
- 'our city will start to look like other cities (and) will lose its special appeal to tourists';
- Loss of Battery Point character;
- 'People live in this area because of the houses and the small community atmosphere. (They) want the exclusivity, the character and the history. (Please) do not take away from what makes Battery Point unique. Please leave Battery Point as it is, beautiful in its rich history, quaint homes and narrow windowing streets';
- 'more aesthetic and imaginative scheme required';
- Angled roof form uncharacteristic of hipped roof form in vicinity;
- Would ruin authenticity of this significant area;
- Site is gateway to historic Battery Point village and 'should not be an overpowering bulky structure which is out of context for residential Battery Point';
- Timber cladding design; would better suit the slopes of kunanyi or the gloomy rainforest hills of the west coast'.

Parking

- Impact on limited parking in this area;
- Lack of visitor parking;
- Increase in demand for street parking;
- Parking impact on Narryna visitors.

Planning Scheme provisions

- Proposal does not comply with heritage provisions under E13.8.2; in terms of values of dwellings on their own allotments;
- Proposal does not comply with heritage provisions under E13.8.4; proposal is more than 7 times the required 350sqm per dwelling, at 46sqm only;
- Proposal does not comply with height provisions under E13.8 A3; up to 6 storeys proposed in a one to two storey area; incompatible with pattern of development within the heritage precinct;
- Proposal does not comply with site coverage provisions under E13.8 A6; 75% as opposed to a 40% allowance;
- Historic Heritage Code E13.8.4 P1: makes reference to 'attached' dwellings, which is considered to be the 'terrace style, conjoined dwellings found elsewhere in the Precinct, rather than the multi storey, modern apartment form proposed';
- Individual dwellings with their own private open space are the preferred form;
- Does not comply with planning provisions on height, heritage or density;
- 'well outside of Planning Scheme provisions';
- 'It's unique planning has preserved the character of this historic precinct'.

Noise impact

- Impact from traffic noise, also general noise (air conditioners, garage door operation etc).

Tourism and employment

- 'our city will start to look like other cities (and) will lose its special appeal to tourists, (and) will thereby undermine the State economy';
- Loss of employment given overshadowing of adjacent business;
- Loss of casual employment at 'Preachers';
- 'Will ruin one of the best bars in Hobart';
- Detriment to 'Preachers': 'not just a bar but a social hub for so many young Tasmanians';
- Detriment to family restaurant (loss of sun to 'Preachers');
- Detriment to 'great beer garden' (loss of sun to 'Preachers');
- 'don't jeopardise a locally owned business' ('part of Hobart's evolving food and drink culture') ('Preachers');
- Loss of tourism potential (detriment to 'Preachers');
- Proposal will broaden the commercial region of Salamanca Place into Battery Point;
- Potential to impact negatively on Narryna as a listed heritage item and tourist destination.

Other

- 'What is there at the moment is an eyesore. However, we would prefer a 4 storey development. On the other hand, anything would be better than what's there';
- We don't want any more apartment blocks in Battery Point;
- Structural concern from proposed excavation near boundary;
- Concern at no geologist report stating nature of underlying rock and how it will be excavated;
- Excavation setback should be minimum of 1.2 metres;
- The Construction Environmental Management Plan does not include data relating to the geological assessment of the site, concerns at potential blasting and drilling in dolerite;
- 'Concern that Council should request more detailed analysis regarding maximum total concentration and leachable concentration values permitted for waste classification on this site that has been used for heavy industrial machinery for over 100 years'.

Other comment

- 'The current proposal is inappropriate and should be rejected by Council'.
- 'Please ask the applicant and their architect to respect and read your document' (*Hobart Interim Planning Scheme 2015 2015*).
- Precedent of Empress Towers led to former *Battery Point Planning Scheme 1979*, concern at proposed 'despoliation of the area'.

- Proposal is inappropriate and should be rejected by the Council.
- that 6 storey development has 'the potential to minimise sunlight into the surrounding areas'.
- 'Height limits are in place for a good reason, and to think that this could be relaxed by the HCC for a developer whose purpose is to make as much profit as possible, is unthinkable'.
- 'Density and height far too great for site and the height of nearby office buildings should not provide an argument that it has set a precedent for this and future developments';

Suggestions

- 'The building development in order to comply should be two storey near adjacent terraces to James Street, leading down to storey and a half to that side of James and Knopwood Street, single storeyed to the corner of Montpelier Retreat and leading up to a storey and a half as it returns back up Montpelier Retreat. Or a maximum of two storeys, with forms and types sympathetic to those already existing structures'.
- 'Although some degree of exceedance may be acceptable in the context of existing larger Knopwood and Kirksway House buildings in the vicinity, those buildings are within a different planning scheme area. In my opinion any reliance on the scale of those buildings would only be relevant to the extent that the proposal would transition down in scale. The proposal however is in fact substantially higher than those buildings and in my opinion is at least two storeys too high'.
- 'A low density housing development has never been opposed by the local community, (but) this ambit claim is outrageous and should be refused'.
- 'We believe that the development should be assessed in the context of the Battery Point Heritage precinct in accordance with the local community's wishes'.
- Historic Heritage Code E13.8.4 P1: makes reference to 'attached' dwellings, which is considered to be the 'terrace style, conjoined dwellings found elsewhere in the Precinct, rather than the multi storey, modern apartment form proposed'.
- 'What is there at the moment is an eyesore. However, we would prefer a 4 storey development. On the other hand, anything would be better than what's there';
- 'If it must be built, limit it to the 2 storey limit, as elsewhere in Battery Point'.
- 'Anything over 3 storeys would ruin the historical appeal of this village precinct'.
- 'Expect a minimum 1.2 metre side setback from No. 46 Montpelier Retreat and a similar building height to No.46'.

Consultation

There has been ongoing applicant and representor consultation.

The applicant has granted extensions of time to allow for the Council to consider the proposal.

6. Assessment

- 6.1. The site is located within the Inner Residential Zone of the *Hobart City Interim Planning Scheme 2015*.
- 6.2. The proposed use is residential which is permitted within the Zone.
- 6.3. The development has been assessed against:
 - 6.3.1. E13.0 Historic Heritage Code
 - 6.3.2. Part D-11 Inner Residential Zone
- 6.4. The proposal relies on the following performance criteria to comply with the applicable standards.
 - 6.4.1. Residential Density for multiple dwellings - Clause 11.4.1 P1.
 - 6.4.2. Setbacks and Building Envelope - Clause 11.4.2 P1
 - 6.4.3. Site coverage and private open space - Clause 11.4.3 P1 and P2.
 - 6.4.4. Sunlight and overshadowing - Clause 11.4.4 P1, P2 and P3.
 - 6.4.5. Privacy Clause - 11.4.6 P2 (windows).
 - 6.4.6. Sign - Clause E17.6.1 P4
 - 6.4.7. Historic Heritage Code Clause E.13.8.2: P1, P2, P3
 - 6.4.8. Historic Heritage Code Clause E.13.8.4 P1, P2, P3, P4, P5, P6, P7, P8, P9
- 6.5. Each performance criteria is dealt with separately below.
- 6.6. Residential Density for multiple dwellings - Clause 11.4.1 A1: site area 200sqm to 400sqm per dwelling (46.77sqm proposed).
 - 6.6.1. Performance Criteria P1 states site area per dwelling may be less than 200sqm if any of the following applies:
 - (i) The development contributes to a range of dwelling types and sizes appropriate to the locality;
 - (ii) The development provides to a specific accommodation need, such as aged care, special needs of student accommodation.
 - 6.6.2. The proposed development would be for dwellings serving general rather than specific accommodation needs. The applicant submission (Planning Consultant Town Planning Report) states as follows.

To meet the Acceptable Solution only seven dwellings could be built. This is simply untenable economically on an inner city site of this value. There is no standard in the Scheme as to how large each of these dwellings could be and therefore the number of dwellings does not ultimately equate to an actual bulk of building.

The proposal contributes to the range of dwelling types available in Battery Point/ Salamanca Place/Sullivans Cove. There is a shortage of residential accommodation in the area and the services and community facilities in the area are more than adequate to accommodate 31 additional households. The apartments are designed with a variety of floor areas, layouts, orientation, outdoor spaces and facilities and will contribute to the range of apartments available in the locality. They will also have the highest environmental credentials so setting a new standard for apartments in Hobart city. The Performance Criteria P1 (a) (i) of Clause 11.4 are therefore met. It is noted that in the vicinity (specifically in Battery Point) the following site area per dwellings exists:

- 13-21 James Street - 5 houses on site area 553m² = 110.6 m² per dwelling
- Hampden Road Terraces – 4 houses on site area 401m² = 100 m² per dwelling
- Portsea Terrace in Montpelier Retreat – 5 houses (1xtwo storeys and 4 each 3 storeys) on 609m² = 121m² per dwelling.

- 6.6.3. The site is at the northern edge of the Inner Residential Zone under the *Hobart Interim Planning Scheme 2015* (to the other side of Montpelier Retreat and Knopwood Street is the Sullivans Cove Planning Scheme 1997). Multiple level and multi dwelling development exists in close proximity within that Planning Scheme area (Salamanca Square, Salamanca Mews). The site to a degree is considered a transitional one, in terms of an upward change of scale and density at the Scheme boundary towards Salamanca Place and the more distant City Centre. The distance of the site to Salamanca Place itself, is of the order of 200 metres.
- 6.6.4. The proposal would provide for and enhance the range of dwelling types and sizes available within this reasonably central neighbourhood. The proposal is considered acceptable in terms of performance Criteria P1.

6.7. Clause 11.4.2 Setbacks and Building Envelope Objectives state as follows:

'To control the siting and scale of dwellings to:

- (a) provide reasonably consistent separation between dwellings on adjacent sites and a [dwelling](#) and its [frontage](#); and*
- (b) provide consistency in the apparent scale, bulk, massing and proportion of dwellings; and*
- (c) provide separation between dwellings on adjacent sites to provide reasonable opportunity for daylight and sunlight to enter habitable rooms and [private open space](#)'.*

6.8. Setbacks and building envelope Clause 11.4.2 A1: states a front setback of 3 metres, or, not less than neighbouring frontage setbacks. A front setback of 0.5m is proposed to the Montpelier Retreat and Knopwood Street frontages, and 2.0 metres to James Street (this being level 00 on DA04 rev B dated 28/8/2015, comprising the lowest level of proposed dwellings). The carpark level on DA03 ref F dated 14/9/2015 would have nil setback to the James Street frontage but would be effectively underground with relation to that frontage. Note: Council landlord (General Manager) consent has been obtained for a section of 'user road' footpath in Montpelier Retreat which is within the developer's title and for external shutters on windows that would be over the Montpelier Retreat and Knopwood Street road reservations.

- 6.8.1. Clause 11.4.2 P1 states the front setback of a dwelling must (a) be compatible with the relationship of existing buildings to the road in terms of setback in response to slope or other physical constraints of the site, and (b) have regard to streetscape qualities or assist in the integration of the new development into the streetscape.
- 6.8.2. The applicant submission (Town Planning Report P13) states *'The proposal meets these criteria as the dwellings and other buildings in the block are all (with only slight variations) built to the street alignment or close to the street'*.
- 6.8.3. The existing former Elliot's building on site is built to the respective Montpelier Retreat and Knopwood Street frontages. The neighbouring building at 5 Knopwood Street is built to the James Street frontage.
- 6.8.4. Buildings in the vicinity are generally sited at or close to street frontages in this inner residential/fringe city centre location. Office buildings built close to or on the site frontage (the multi storey Kirksway House and Knopwood House) are sited immediately to the north and west within the area of the Sullivans Cove Planning Scheme 1997.
- 6.8.5. The proposal is considered acceptable in terms of the front setback provision.

- 6.9. Setbacks and building envelope Clause 11.4.2 A3 states 'The Acceptable Solution does not apply to Heritage Precinct BP1'. Council legal advice is that Clause 11.4.2 A3 is not applicable, as the site is located within BP1.

Consideration of the proposal with respect to setbacks and building envelope is therefore solely under the provisions of the Historic Heritage Code.

- 6.10. Site coverage and private open space Clause 11.4.3 A1 (a), (b) and (c): respectively; site coverage exceeds 50%, private open space less than 50sqm per dwelling, site area free of impervious surfaces less than 25%.

- 6.10.1. Site coverage and private open space: Performance Criteria 11.4.3 P1 states as follows:

Dwellings must have:

(a) private open space that is of a size and dimensions that are 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 communal open space provided for this purpose within the development; and

(ii) operational needs, such as clothes drying and storage;

unless the projected requirements of the occupants are considered to be satisfied by public open space in close proximity; and

(b) reasonable space for the planting of gardens and landscaping.

- 6.10.2. Nearly all dwellings on site would have outdoor private space. Dwellings 1 to 18 facing Montpelier Retreat would all have decks facing west/northwest with a size of generally upwards of 10 square metres. Dwelling 18 would have a deck area of 50 square metres. In the James Street building, dwellings 19 to 22 would each have a ground level private open area of from 15 to 18 square metres in area. Dwellings 23 to 30 would have west/northwest facing decks again generally upwards of 10 square metres. The sole dwelling with no external space would be No.31 on level 2 of the James Street building. It would be of single bedroom size, with windows/shutters facing east/southeast over James Street.

The applicant submission (Town Planning Report P15) states the proposed central courtyard would be a shared green space. The applicant states the open areas would be suited for operational needs including clothes drying. As an inner city residential development, it is noted that there would be a high degree of site coverage. This would result from the basement carpark covering a large portion of the site beneath both proposed buildings. The 'shared green space' for the use of all residents, would be above (at the lowest residential level).

There is substantial public open space existing in the vicinity, comprising Salamanca Place lawns and nearby open waterfront areas, St David's Park and Princes Park.

- 6.10.3. The proposal is considered acceptable in terms of Performance Criteria with regard to site coverage and private open space.
- 6.11. Site coverage and private open space Clause 11.4.3 A2 (a): dwelling 31: no private open space.
- 6.11.1. Clause 11.4.3 P2 states as follows:

A dwelling must have private open space that:

(a) includes an area that is capable of serving as an extension of the dwelling for outdoor relaxation, dining, entertaining and children's play that is:

(i) conveniently located in relation to a living area of the dwelling; and

(ii) orientated to take advantage of sunlight;

unless the projected requirements of the occupants are considered to be satisfied by communal open space or public open space in close proximity.

- 6.11.2. As stated previously, the sole dwelling with no external space would be No.31 on level 2 of the James Street building. It would be of single bedroom size, with windows/shutters facing east/southeast over James Street. As stated previously, there is substantial public open space in the vicinity, and some communal open space would be provided on site. Flat 31 is likely to maintain a reasonable standard of amenity.
- 6.11.3. The proposal is considered acceptable in terms of Performance Criteria with regard open space amenity for dwelling 31.
- 6.12. Sunlight and overshadowing Clause 11.4.4 A1: habitable rooms facing north.

- 6.12.1. Sunlight and overshadowing Acceptable Solution A1 states a dwelling must have at least one habitable room window (other than a bedroom) facing within 30 degrees west and 30 degree east of north. Performance Criteria P1 states *'A dwelling must be sited and designed so as to allow sunlight to enter at least one habitable room (other than a bedroom).'*

- 6.12.2. The applicant submission (Town Planning Report P 17) states as follows:

If the apartments were to be designed to meet the Acceptable Solutions, the building would face away from the main streets being James and Montpelier Retreat. This would be contrary to the streetscape and heritage requirements of the Scheme.

The site is also overshadowed by the tall building to the north across Knopwood Street, so facing apartments to the north would be counterproductive and would not ensure sunlight was achieved.

Facing the apartments to the east and west respectively ensures they can maximise the sunlight penetration to the living areas either morning or afternoon and retain a relationship to their surroundings.

- 6.12.3. Performance criterion 11.4.4 P1 states:

A dwelling must be sited and designed so as to allow sunlight to enter at least one habitable room (other than a bedroom).

- 6.12.4. The dwellings in the main building (Nos. 1 to 18) and those in the James Street building (Nos. 19-30) would all have living room windows and decks facing west/northwest at the alignment of Montpelier Retreat and James Street. The angle to north would be 58 degrees. The remaining dwelling 31 in the James Street building, would face that frontage in an easterly/south easterly direction with an angle to north of 122 degrees. Dwellings 1 to 30 would capitalise on afternoon sun, although to a degree obscured by the nearby 4 and 6 storey office buildings. Dwelling 31 would face morning sun only. The degree of sun exposure is to a degree considered inevitable with any multiple storey dwelling development of an inner city site, constrained by the surrounding road system and built environment.
- 6.12.5. The likely amenity of the proposed dwellings is considered to be within reasonable limits. The proposal is considered acceptable in terms of 11.4.4 P1.
- 6.13. Sunlight and overshadowing Clauses 11.4.4 P2 and P3: state respectively as follows:.
- 6.13.1. *P2: A multiple dwelling must be designed and sited to not cause unreasonable loss of amenity by overshadowing a window of a habitable room (other than a bedroom), of another dwelling on the same site, that faces between 30 degrees west of north and 30 degrees south of north.*
- P3: A multiple dwelling must be designed and sited to not cause unreasonable loss of amenity by overshadowing the private open space, of another dwelling on the same site, required in accordance with A2 or P2 of 11.4.3.*
- 6.13.2. With relation to P2, the applicant submission (Town Planning Report P17) states as follows:
- The dwellings are apartments. They are in alignment. They have been designed to catch morning or afternoon sun across the site as best they can when the site is already overshadowed to the north. No one apartment causes a loss of amenity to another apartment in terms of overshadowing.
- 6.13.3. With relation to P3, the applicant submission (Town Planning Report P17) states as follows:
- The east/west orientation of the two buildings with the open space between them maximises the sunlight available to not only the living areas of the apartments but also the open spaces which are directly appurtenant to those living areas.

- 6.13.4. As previously stated, the dwellings in the main building (Nos. 1 to 18) and those in the James Street building (Nos. 19-30) would all have living room windows and decks facing west/northwest at the alignment of Montpelier Retreat and James Street. Dwelling 31 would face morning sun only. The degree of sun exposure is to a degree considered inevitable with any multiple storey dwelling development of an inner city site, constrained by the surrounding road system and built environment. The standard of amenity to habitable rooms and open space of dwellings within the proposed complex are considered likely to be reasonable, given the constraints of the site, the nature of the proposed development and built surroundings.
- 6.14. The likely amenity of the proposed dwellings is considered to be within reasonable limits. The proposal is considered acceptable in terms of Clauses 11.4.4 P2 and P3.
- 6.15. Privacy Clause 11.4.6 P2 (windows): requirement - 3 metres; proposed - less than 3 metres.

6.15.1. Clause 11.4.6 P2 states:

A window or glazed door, to a habitable room of a dwelling, that has a floor level more than 1 m above the natural 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; and

(c) an adjoining vacant residential lot.

6.15.2. The applicant submission (Town Planning Report P18) states as follows.

- (a) There are specific points within the complex where second bedrooms have windows into the same light - well/hanging garden as windows of adjoining units. In all these cases the hanging garden and offset of the windows ensures no direct privacy issues.
- (b) The design has ensured that no window of any dwelling looks into the private open space of another dwelling. This is done principally by orientation of the apartments and secondarily by screens and landscaping. Therefore (b) is satisfied.

- (c) The site has no adjacent vacant blocks (and is) therefore not applicable. As previously stated the distance between the two apartment buildings is in excess of 8 metres and the balconies and windows all have movable screens to maximise privacy when needed while still maintaining ventilation and outdoor space.

- 6.15.3. With regard to the main building, dwelling windows would face the respective Montpelier Retreat and Knopwood Street frontages. Facing the neighbouring site at No.5 Knopwood Street (the restaurant) would be screened communal lobby and walkway areas. There would be no side windows facing the neighbouring property at Nos. 46-48 Montpelier Retreat. This section of the proposal is therefore compliant with acceptable solution 11.4.6 A2 and does not rely on any performance criteria.
- 6.15.4. With regard to the James Street building, main windows would face the street and rearwards. The rear facing windows on the James Street buildings would be set back well in excess of the required 6 metre setback to the rear of the dwellings in the main building. The street and rear-facing windows within the James Street building are therefore compliant with acceptable solution 11.4.6 A2 and do not rely on any performance criteria.
- 6.15.5. To the part of the north facing wall of the James Street building (facing the neighbouring site at No.5 Knopwood Street (the restaurant/bar)), would be 'vertical timber battens in front of a glazed wall'. It is unclear whether acceptable solution 11.4.6 A2 is intended to have regard to the relationship between habitable room windows overlooking commercial neighbours. However, looking at the wording of that provision, which states:

A window or glazed door, to a [habitable room](#), of a [dwelling](#), that has a floor level more than 1 m above the [natural ground level](#), must be in accordance with (a), unless it is in accordance with (b):

- (a) *the window or glazed door:*
 - (i) *is to have a [setback](#) of at least 3 m from a side or rear boundary; and*
 - (ii) *if the [dwelling](#) is a multiple [dwelling](#), is to be at least 6 m from a window or glazed door, to a [habitable room](#), of another [dwelling](#) on the same [site](#); and*
 - (iii) *if the [dwelling](#) is a multiple [dwelling](#), is to be at least 6 m from the [private open space](#) of another [dwelling](#) on the same [site](#).*
- (b) *the window or glazed door:*

- (i) *is to be offset, in the horizontal plane, at least 1.5m from the edge of a window or glazed door, to a habitable room of another dwelling; or*
- (ii) *is to have a sill height of at least 1.7 m above the floor level or has fixed obscure glazing extending to a height of at least 1.7 m above the floor level; or*
- (iii) *is to have a permanently fixed external screen for the full length of the window or glazed door, to a height of at least 1.7 m above floor level, with a uniform transparency of not more than 25%.*

it is arguable that the north-facing glazed wall behind vertical timber battens doesn't meet the acceptable solution and therefore warrants assessment against performance criteria 11.4.6 P2 (stated above). Adopting a precautionary approach is recommended and assessment against the performance criterion follows.

- 6.15.6. There may be some overlooking of the neighbouring commercial property. That building is built up to the side property boundary with a one to two storey side wall abutting the applicant site. There is unlikely to be any excessive impact. Noting that the timber battens will provide a reasonable degree of screening and that the intent of clause 11.4.6 is to *reduce the potential for loss of privacy for dwellings*, this glazing meets performance criterion 11.4.6 P2.
- 6.15.7. Lastly, with regard to the James Street building, there would be south/southwest facing side windows, facing in the direction of Nos.9-11 James Street. The windows would be over three levels opening from the living and/or bedroom areas of three separate dwellings. The neighbouring dwelling at No.9 James Street has three side facing windows of small size, two at the lower level and one at the upper dormer level. The separation between the applicant and neighbouring walls would be over 5.2 metres. Clause 11.4.6 A2 (b)(i) states a 1.5 metre offset requirement. Based on the submitted plans showing proposed window openings in this wall, there would appear to be an offset of windows although not likely to be as much as 1.5 metres. These windows therefore require assessment against performance criterion 11.4.6 P2.
- 6.15.8. There may be some overlooking of the neighbouring property at Nos.9-11 James Street. On the other hand, given the likely offset and the overall 5.2 metre separation between walls (given the intervening right of way), impact is not considered likely to be excessive. It is noted that the lower level dwelling on level 01, would have a floor level of less than one metre above ground facing this neighbour. The level 01 windows would therefore comply with 11.4.6 A2.

- 6.15.9. The proposal is considered acceptable with regard to Privacy Clause 11.4.6.

6.16. Clause E17.6.1 P4 - Sign.

- 6.16.1. The applicant states the sole sign would be a wall sign facing Knopwood Street, 'backlit', stating 'Elliotts Apartments', with dimensions 150mm (0.15 of a metre) high by approximately two metres long.
- 6.16.2. Clause E17.3 of the Signs Code defines the proposal as a wall sign.
- 6.16.3. Clause E.17.6.1 A4 states an illuminated sign must not be located within 30 metres of a residential use.
- 6.16.4. Clause E.17.6.1 P4 then states:
- An illuminated sign within 30 metres of a residential use must not have an unreasonable impact upon the residential amenity of that use caused by light shining into windows of habitable rooms.*
- 6.16.5. The proposal is considered to meet Performance Criteria P4 as it would be of low key design and illumination, and would face a multi level office building.
- 6.16.6. Table 17.2 Sign standards states for a wall sign: message on front face only minimal projection from face or height of wall, and sign area no more than 2 square metres.
- 6.16.7. The proposal would meet the Sign Standards and is considered acceptable.

6.17. Heritage.

- 6.17.1. The following heritage criteria have been assessed by Council's Senior Cultural Heritage Officer:
- 6.17.1.1. Historic Heritage Code Clause E.13.8.2: A1, A2, A3: no acceptable solution.
- 6.17.1.2. Historic Heritage Code Clause E.13.8.4: buildings and works in Heritage Precinct BP1: A1: site area per dwelling not less than 350sqm (46.77sqm proposed).

- 6.17.1.3. Historic Heritage Code Clause E.13.8.4: buildings and works in Heritage Precinct BP1: A2, A4 and A7: no acceptable solution.
- 6.17.1.4. Historic Heritage Code Clause E.13.8.4: buildings and works in Heritage Precinct BP1: A3: maximum height 2 storeys (6 storeys).
- 6.17.1.5. Historic Heritage Code Clause E.13.8.4: buildings and works in Heritage Precinct BP1: A5: rear setback requirement of 5 metres (nil proposed).
- 6.17.1.6. Historic Heritage Code Clause E.13.8.4: buildings and works in Heritage Precinct BP1: A6: lot coverage would exceed 40%.

6.17.2. The comment of the Council's Senior Cultural Heritage Officer is as follows:

The proposal is similar to the previous application reviewed in 2015. Assessment of the various modifications to that earlier proposal has been undertaken. The conclusion is that, in terms of the Historic Heritage Code, the proposal still fails to meet requisite performance criteria.

There is nothing in the revised scheme which requires modification to the previous appraisal. The comments apply equally to the revised proposal.

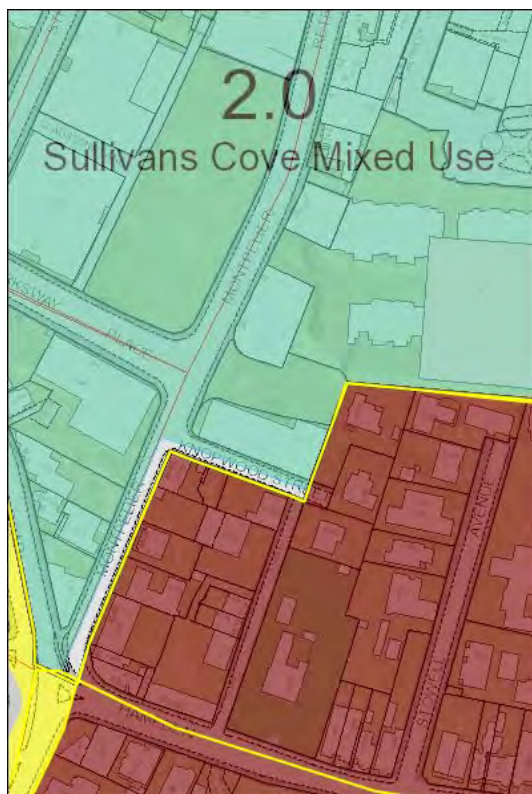


Fig. 1

Fig. 1 shows the planning scheme and zoning boundary; the green is Sullivans Cove Planning Scheme 1997 – Mixed Use Zone, and the brown is Hobart Interim Planning Scheme 2015 – Inner Residential Zone.



Fig. 2

Fig. 2 shows the boundary of the Heritage Precinct BP1.

The proposed development is located within the planning area of the Hobart Interim Planning Scheme 2015. The site of the proposed development is wholly contained within the Heritage Precinct BP1.

The application is therefore subject to consideration under the E13.8 of the Historic Heritage Code of the planning scheme (Development Standards for Heritage Precincts) – specifically E13.8.2 (Buildings and Works other than Demolition) and E13.8.4 (Buildings and Works in Heritage Precinct BP1).

The following relevant provisions apply to **Heritage Precincts**:

E13.8.2

Objective:

To ensure that development undertaken within a heritage precinct is sympathetic to the character of the precinct.

Acceptable Solutions

A1

No Acceptable Solution

A2

No Acceptable Solution

A3

No Acceptable Solution

Performance Criteria

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.

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.

P3

Extensions to existing buildings must not detract from the historic cultural heritage significance of the precinct.

A4

New front fences and gates must accord with original design, based on photographic, archaeological or other historical evidence.

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.

A5

Areas of landscaping between a dwelling and the street must be retained.

P5

The removal of areas of landscaping between a dwelling and the street must not result in the loss of elements of landscaping that contribute to the historic cultural significance or the streetscape values and character of the precinct.

The significance of the Heritage Precinct is described in Table E13.2:

BP1

Battery Point

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 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.*

Specific development standards apply in **Heritage Precinct BP1**:

*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.

Acceptable Solutions**A1**

Site area per dwelling unit in Heritage Precinct BP1 must be not less than 350m².

A2

No acceptable solution.

A3

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.

Performance Criteria**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.

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.

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.

A4

No acceptable solution.

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.

A5

The rear setback of the principal building must be at least:

- (a) 6 m for lots of up to 14 m in width;*
- (b) 5 m for lots greater than 14 m in width.*

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.

A6

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%.*

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.

A7

No acceptable solution.

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.

A8

No acceptable solution.

P8

Each lot must have not more than one crossing over the footpath per frontage and have a maximum width of 3m 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.*

A9

Maximum of 1 parking space per dwelling.

P9

*Parking must not detract from the cultural heritage significance or the setting of existing dwellings.***Characteristics of Precinct**

The planning scheme articulates the significance of the Heritage Precinct BP1 (see above). The present suburb of Battery Point evolved from a series of subdivisions in the mid nineteenth century.

The area contains several large houses from the 1830s such as Secheron, Narryna and Stowell, which were built on large estates with access from the primary roadway, Hampden Road, which runs as a spine through the centre of the suburb. When these larger estates were subdivided, the smaller streets such as Kelly Street, South Street and many others were established, with many Georgian style (though Victorian period) cottages, conjoined townhouses and terraces springing up. This pattern of evolution continued into the twentieth century.

The block bounded by Knopwood Street, James Street, Hampden Road and Montpelier Retreat has always been part of Battery Point, and its buildings relate to the pattern of development within the neighbouring streets of Battery Point. The buildings within this block are either single or two-storey, and the majority date from the nineteenth or early twentieth century – much like the remainder of Battery Point. The tallest building within the block, Portsea Terrace, is essentially a two storey structure with a basement.

The characteristics of the precinct and this particular block are starkly contrasted with the nature of the adjoining precinct (and planning area). On the opposite side of Montpelier Retreat is a six storey office structure, while on the opposite side of Knopwood Street is a four storey office building. These buildings represent a dramatic departure from the low level residential scale buildings within the block of the proposed development.

The proposed development relies on the existence of these incompatible structures across the road to justify a significant departure from the standards applying to the subject site.

The development requires an assessment against the criteria applicable to the relevant site, which is within the Battery Point Heritage Precinct (BP1) of the *Hobart Interim Planning Scheme 2015*.

Assessment

E13.8.2

The Objective of E13.8.2 is *“To ensure that development undertaken within a heritage precinct is sympathetic to the character of the precinct.”*

Performance criterion P1 states:

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 proposed development will result in detrimental impact upon the significance of the precinct by virtue of the height, scale and building form of the proposed structure. The proposed building is far higher than anything nearby within the Heritage Precinct.

Performance criterion P2 states:

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.

The proposed development represents a significant departure from the design and siting of buildings typically found within the Heritage Precinct.

The significance of the Heritage Precinct is described in Table E13.2:

As stated previously, specific development standards apply in **Heritage Precinct BP1**:

The objective of E13.8.4 (Buildings and Works in Heritage Precinct BP1) is stated as:

To ensure that development undertaken within Heritage Precinct BP1 is sympathetic to the character of the precinct.

The proposed development must be assessed against Performance Criteria including the following:

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.

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.

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.

Does the development detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site? (P1) The development represents a significant departure from the pattern of development within the Heritage Precinct. The extent to which it detracts is somewhat reduced by the proximity of incongruous buildings across the road in the Sullivan Cove planning area. However, considering the development site as part of the Battery Point Heritage Precinct BP1 (which it is), the proposed development clearly detracts from the pattern of development within this particular block and the precinct generally within the local vicinity of the site.

Is the height of development obtrusive in the streetscape or does it detract from the pattern of development that is a characteristic of the cultural heritage significance of the precinct in the vicinity of the site? (P3) The height of the proposed development, accentuated by the geometry of the building form, marks a dramatic departure from the pattern of development in the precinct, within the vicinity of the site. In terms of height, the proposed building takes its cues from existing incompatible structures outside the Heritage Precinct, and extends beyond them. The proposed building on the corner of Knopwood [Street] and Montpelier Retreat will be prominent and conspicuous, especially when viewed from those public streets. The photomontages included within the application documents are somewhat deceptive, as the wide camera angle has the effect of reducing the visual impact of distant buildings.

P6 arises from consideration of building height also:

A6

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%.*

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 proposed development does not meet the acceptable solutions (A6). Does the building detract from the pattern of development that is a characteristic of the cultural heritage significance of the Precinct in the vicinity of the site? (P6) The proposed development is significantly higher than neighbouring buildings within the block and within the Heritage Precinct. The proposed development, by virtue of its height and form detracts from the pattern of development that is a characteristic of the cultural heritage significance of the Precinct in the vicinity of the site.

Conclusion

The proposed development fails to meet critical performance criteria relevant to the location of the subject site within Heritage Precinct BP1. It is as though the application assumes that the development standards associated with the nearby incongruous office buildings apply to the subject site. They don't. This site is within a different planning area, and within a Heritage Precinct. There are specific standards within the planning scheme to protect the character of the Heritage Precinct – which is one of the earliest developed parts of Hobart.

With an understanding of the relevant heritage provisions relating to the subject site, approval of the proposed development in its current form is not warranted.

Reasons for refusal:

1. The proposed development does not meet performance criterion E13.8.2 P1, because the design and siting of the buildings and works will result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2
2. The proposed development does not meet performance criterion E13.8.2 P2 as the design and siting of buildings and works does not comply with relevant design criteria / conservation policy listed in Table E13.2.
3. The proposed development does not meet performance criterion E13.8.4 P1 as the scale and form of the proposed development will detract from the pattern of development that is a characteristic of the cultural heritage significance of Heritage Precinct BP1 precinct in the vicinity of the site.
4. The proposed development does not meet performance criterion E13.8.4 P3 because the height of the proposed development is obtrusive in the streetscape and detracts from the pattern of development that is a characteristic of the cultural heritage significance of Heritage Precinct BP1 in the vicinity of the site.
5. The proposed development does not meet performance criterion E13.8.4 P6 as the height and form of the proposed building detracts from the pattern of development that is a characteristic of the cultural heritage significance of the Heritage Precinct BP1 in the vicinity of the site.

- 6.18. Historic Heritage Code Clause E.13.8.4: buildings and works in Heritage Precinct BP1: A8 : no acceptable solution.

- 6.18.1. Clause E.13.8.4 P8 states:

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.*

- 6.18.2. A single entrance is proposed.

- 6.18.3. The Council's Senior Cultural Heritage Officer raises no concern with regard to vehicular access to the site.

- 6.19. Historic Heritage Code Clause E.13.8.4 A9 requires a maximum of 1 parking space per dwelling. 34 spaces would be provided on site for 31 dwellings.

- 6.19.1. Clause E13.8.4 P9 states:

Parking must not detract from the cultural heritage significance or the setting of existing dwellings.

- 6.19.2. The Council's Senior Cultural Heritage Officer raises no concern with regard to car parking provision at the site.

7. Discussion

- 7.1. The proposal is recommended for refusal by the Council's Senior Cultural Heritage Officer under the Historic Heritage Code of the *Hobart Interim Planning Scheme 2015*.
- 7.2. Setbacks and building envelope Clause 11.4.2 A3 states 'The Acceptable Solution does not apply to Heritage Precinct BP1'. Council legal advice is that Clause 11.4.2 A3 is not applicable, as the site is located within BP1.

Consideration of the proposal with respect to setbacks and building envelope is therefore solely under the provisions of the Historic Heritage Code.

- 7.3. With relation to the Parking and Access Code (E6), the Council's Development Engineer states conditional acceptance. The officer recommends conditional approval of the proposal overall.

8. Conclusion

- 8.1. The proposed demolition and redevelopment for 31 dwellings at 40-44 Montpelier Retreat and adjacent road reservation, Battery Point does not satisfy the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommend for refusal.

9. Recommendations

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council refuse the application for a demolition and redevelopment for 31 dwellings at 40-44 Montpelier Retreat and adjacent road reservation, Battery Point on the following grounds:

1. The proposed development does not meet performance criterion E13.8.2 P1, because the design and siting of the buildings and works will result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2
2. The proposed development does not meet performance criterion E13.8.2 P2 as the design and siting of buildings and works does not comply with relevant design criteria / conservation policy listed in Table E13.2.
3. The proposed development does not meet performance criterion E13.8.4 P1 as the scale and form of the proposed development will detract from the pattern of development that is a characteristic of the cultural heritage significance of Heritage Precinct BP1 precinct in the vicinity of the site.
4. The proposed development does not meet performance criterion E13.8.4 P3 because the height of the proposed development is obtrusive in the streetscape and detracts from the pattern of development that is a characteristic of the cultural heritage significance of Heritage Precinct BP1 in the vicinity of the site.

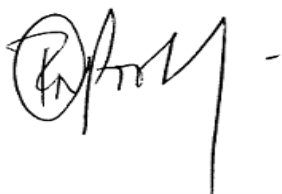
5. The proposed development does not meet performance criterion E13.8.4 P6 as the height and form of the proposed building detracts from the pattern of development that is a characteristic of the cultural heritage significance of the Heritage Precinct BP1 in the vicinity of the site.



(Richard Bacon)

DEVELOPMENT APPRAISAL PLANNER

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Rohan Probert)

SENIOR STATUTORY PLANNER

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 30 March 2016

Attachment(s) Attachment A – Documents and Drawings List
Attachment B – TasWater form Reference No. TWDA 2015/01258-HCC dated 26/8/2015.
Attachment C – Documents and Drawings (including drawings, shadow diagrams, montages)
Attachment D – Amended Proposal Consultant Planners Report - Kate Loveday, January 2016
Attachment E – Architectural Report to Accompany DA Proposal – Circa Morris Nunn, Architects, February 2016

Supporting Document(s) Attachment 1 – photomontage from direction of Sandy Bay Road, submitted 16 March 2016.

ATTACHMENT A

**Documents and Drawings that comprise
Planning Application Number - PLN-15-00971-01**

DEVELOPMENT ADDRESS: **40-44 Montpelier Retreat, Adjacent Road
Reservation, BATTERY POINT**

LIST OF DOCUMENTATION:

Description	Drawing Number/Revision/Author/Date, Report Author/Date, Etc	Date of Lodgement to Council
Application Form and owner notification, and Council General Manager consent		17/9/15
Titles		13/8/15
Location Plan	Drawing No: 1413 DA00 Revision No: Drawn by: Date of Drawing: 5/2/16	9/2/16
Site plan	Drawing No: 1413 DA01 Revision No: B Drawn by: Date of Drawing: 5/2/16:	9/2/16
Demolition plan	Drawing No: 1413 DA02 Revision No: D Drawn by: Date of Drawing: 5/2/16	9/2/16
Carpark plan	Drawing No: 1413 DA03 Revision No: G Drawn by: Date of Drawing: 5/2/16	9/2/16
Level 00 plan	Drawing No: 1413 DA04 Revision No: D Drawn by: Date of Drawing: 5/2/16	9/2/16
Level 01 plan	Drawing No: 1413 DA05 Revision No: D Drawn by: Date of Drawing: 5/2/16	9/2/16
Level 02 plan	Drawing No: 1413 DA06 Revision No: D Drawn by: Date of Drawing: 5/2/16	9/2/16
Level 03 + 04 plan	Drawing No: 1413 DA07 Revision No: D Drawn by: Date of Drawing: 5/2/16	9/2/16
Roof plan	Drawing No: 1413 DA08 Revision No: D Drawn by:	9/2/16

	Date of Drawing: 5/2/16	
North elevations	Drawing No: 1413 DA09 Revision No: B Drawn by: Date of Drawing: 5/2/16	9/2/16
East elevation building one	Drawing No: 1413 DA10 Revision No: C Drawn by: Date of Drawing: 5/2/16	9/2/16
South elevation	Drawing No: 1413 DA11 Revision No: C Drawn by: Date of Drawing: 5/2/16	9/2/16
West elevation	Drawing No: 1413 DA12 Revision No: E Drawn by: Date of Drawing: 5/2/16	9/2/16
East elevation building two	Drawing No: 1413 DA13 Revision No: B Drawn by: Date of Drawing: 5/2/16	9/2/16
Cross 01-03	Drawing No: 1413 DA14 Revision No: B Drawn by: Date of Drawing: 5/2/16	9/2/16
Shadow diagrams	Drawing No: 1413 DA15 Revision No: B Drawn by: Date of Drawing: 5/2/16	9/2/16
Montage Knopwood Street	Drawing No: 1413 DA16 Revision No: B Drawn by: Date of Drawing: 5/2/16	9/2/16
Montage James Street	Drawing No: 1413 DA22 Revision No: A Drawn by: Date of Drawing: 5/2/16	9/2/16
Montage corner of Kirksway Place and Montpelier Retreat	Drawing No: 1413 DA17 Revision No: B Drawn by: Date of Drawing: 5/2/16	9/2/16
Detailed section	Drawing No: 1413 DA18 Revision No: A Drawn by: Date of Drawing: 11/2/16	11/2/16
Shadow diagrams	Drawing No: 1413 DA19 Revision No: B B Drawn by: Date of Drawing: 5/2/16	9/2/16
Montage up Montpelier Retreat	Drawing No: 1413 DA20 Revision No: A Drawn by: Date of Drawing: 5/2/16	9/2/16

Montage down Montpelier Retreat	Drawing No: 1413 DA21 Revision No: A Drawn by: Date of Drawing: 5/2/16	9/2/16
Town planning report	Kate Loveday, Planning Consultant, January 2016	28/1/16
Architectural report	Circa Morris Nunn Architects February 2016	11/2/2016
Hydraulic Drawings	Project No: 15E19-3 Drawing No: H50 Revision No: 0 Drawn by: SL Date of Drawing: 28/7/2015	10/8/2015
Hydraulic Drawings	Project No: 15E19-3 Drawing No: H51 Revision No: 1 Drawn by: SL Date of Drawing: 25/8/2015	25/8/2015
Traffic Impact Assessment	Midson Traffic P/L August 2015	10/8/2015
Construction Environmental Management Plan	GES Geo-Environmental Solutions July 2015	18/8/2015
Project Note No.01: sign	Sign detail Job 1413 Project Note: No.01.	13/8/2015
Documentation	Applicant email 10.35am 28/8/2015	28/8/2015
Project Note No.02: shutters	Shutters detail and explanation Job No: 1413 Project note No.02	28/8/2015
Detail Survey	Project No: - Drawing No: Q763U-1 Revision No: - Drawn by: AC/MK PDA Surveyors Date of Drawing: 19/12/2012	28/8/2015
3 x Photograph/photomontages - existing and proposed, including seat, Montpelier Retreat frontage		17/9/2015
Project Note No.3: road reservation	Road reservation explanation Job No: 1413 Project note No.03	14/9/2015
Flythrough animation 1	40-44 Montpelier Retreat - flythrough_1 - 050216	5/2/2016
Flythrough animation 2	40-44 Montpelier Retreat - flythrough_2 - 050216	5/2/2016
Flythrough animation 3	40-44 Montpelier Retreat - flythrough - 3 100216	10/2/2016
Flythrough animation 4	40-44 Montpelier Retreat - flythrough_4 100216	10/2/2016
Flythrough animation 5	40-44 Montpelier Retreat - flythrough_5 100216	10/2/2016



Submission to Planning Authority Notice

Council Planning Permit No.	PLN-15-00971	Council notice date	13/08/2015
TasWater details			
TasWater Reference No.	TWDA 2015/01258-HCC		Date of response
TasWater Contact	Anthony Cengia	Phone No.	(03) 6237 8243
Response issued to			
Council name	HOBART CITY COUNCIL		
Contact details	Development@hobartcity.com.au		
Development details			
Address	40-44 MONTPELIER RTT, BATTERY POINT	Property ID (PID)	5669846
Description of development	31 New apartment + car spaces		
Schedule of drawings/documents			
Prepared by	Drawing/document No.	Revision No.	Date of Issue
Aldanmark Pty Ltd	15E19-3 Sheet H51	1	25-08-15
Conditions			
<p>SUBMISSION TO PLANNING AUTHORITY NOTICE OF PLANNING APPLICATION REFERRAL</p> <p>Pursuant to the <i>Water and Sewerage Industry Act 2008 (TAS)</i> Section 56P(1) TasWater imposes the following conditions on the permit for this application:</p> <p>CONNECTIONS, METERING & BACKFLOW</p> <ol style="list-style-type: none"> 1. A suitably sized water supply with metered connections / sewerage system and connections to the development must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit. 2. 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. 3. Prior to commencing construction / use of the development, a boundary backflow prevention device and water meter must be installed to the satisfaction of TasWater. <p>DEVELOPMENT ASSESSMENT FEES</p> <ol style="list-style-type: none"> 4. The applicant or landowner as the case may be, must pay a development assessment fee to TasWater for this proposal of: <ol style="list-style-type: none"> a. \$629.00 for development assessment as approved by the Economic Regulator and the fees will be indexed as approved by the Economic Regulator from the date of the Submission to Planning Authority Notice for the development assessment fee until the date they are paid to TasWater. Payment is required within 30 days from the date of the invoice. 			

**Advice**

For information on TasWater development standards, please visit

<http://www.taswater.com.au/Development/Development-Standards>

For application forms please visit <http://www.taswater.com.au/Development/Forms>

The developer is responsible for arranging to locate existing TasWater infrastructure and clearly showing it on any drawings. Existing TasWater infrastructure may be located by TasWater (call 136 992) on site at the developer's cost, alternatively a surveyor and/or a private contractor may be engaged at the developers cost to locate the infrastructure.

Declaration

The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.

Authorised by

A handwritten signature in black ink, appearing to read "Jason Taylor".

Jason Taylor

Development Assessment Manager

TasWater Contact Details

Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au

Elliott's Apartments

Attachment C

Drawings List

- 1413 - DA00 Location Plan
- 1413 - DA01 Site Plan
- 1413 - DA02 Demolition Plan
- 1413 - DA03 Car-park
- 1413 - DA04 Level 00
- 1413 - DA05 Level 01
- 1413 - DA06 Level 02
- 1413 - DA 07 Levels 03 + 04
- 1413 - DA08 Roof Plan
- 1413 - DA09 North Elevation
- 1413 - DA10 East Elevation Building 1
- 1413 - DA11 South Elevation
- 1413 - DA12 West Elevation
- 1413 - DA13 East Elevation Building 2
- 1413 - DA14 Cross Sections
- 1413 - DA15 Shadow Diagrams
- 1413 - DA16 Montage
- 1413 - DA17 Montage
- 1413 - DA18 Detailed Section
- 1413 - DA19 Shadow Diagrams
- 1413 - DA20 Montage
- 1413 - DA21 Montage
- 1413 - DA22 Montage



1 Context plan
plan

for planning only

A1

1:10
1:50
1:100
1:200

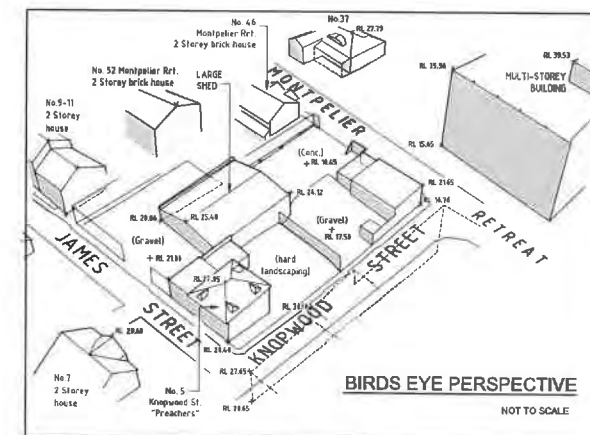
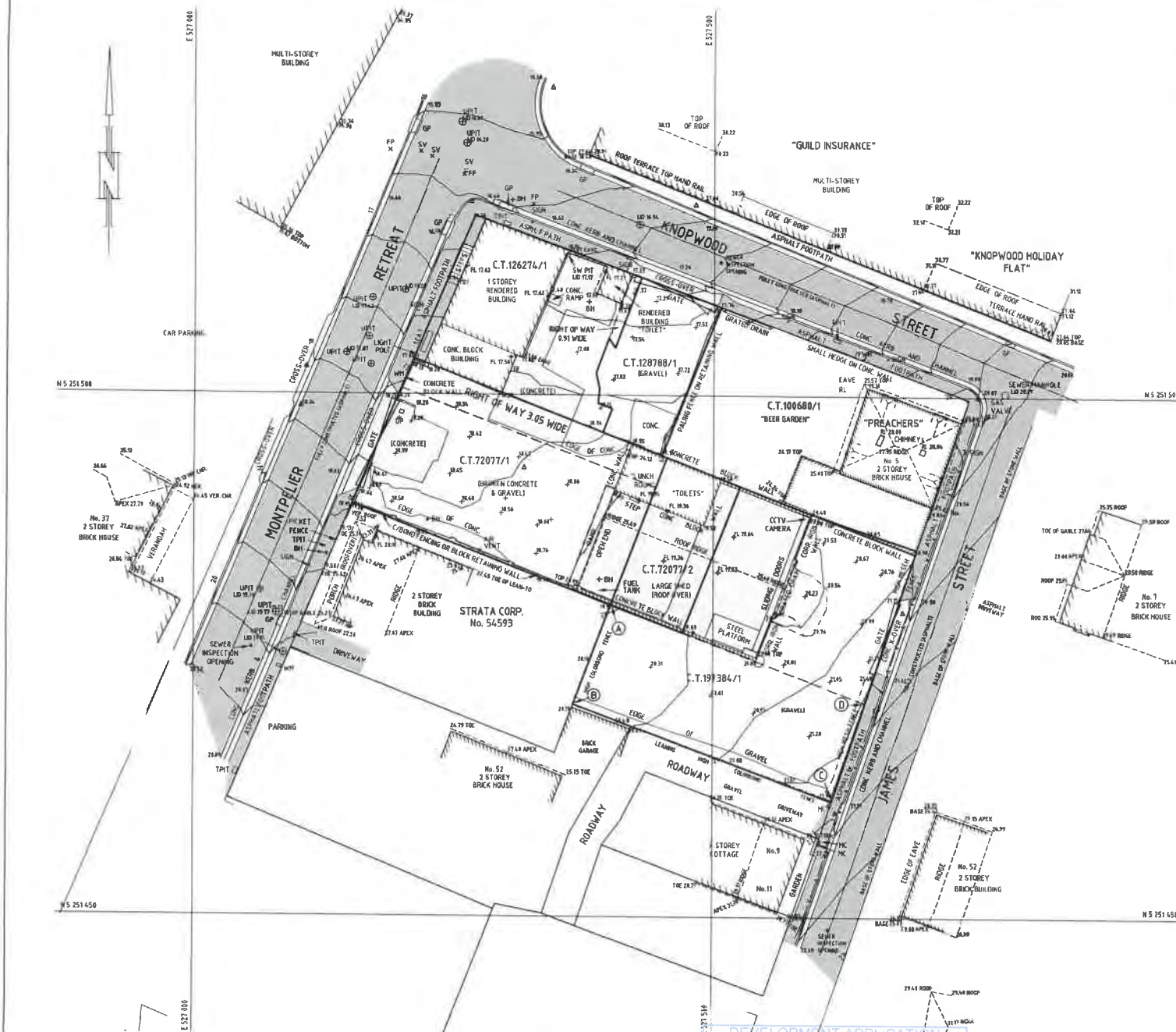
Elliott's Apartments

40-44 Montpellier Retreat,
Battery Point TAS.

area morris-mum architects
Contact

location plan
plan

Development Application
Friday, 5 February 2016
1413 DA00



LEGEND

- | | |
|--|------------------------------|
| | Title boundary |
| | Surrounding boundary |
| | Top/toe of bank |
| | Fence (description as shown) |
| | Roof lines |
| | Overhead powerline |

LEGEND continued

- | | |
|------|----------------------|
| GP | Grated Pit |
| UPIT | Unclassified pit |
| Δ | Survey Mark |
| BH | Monitoring bore hole |
| FL | Floor level |
| EP | Power pole |
| SV | Stop valve |
| FP | Fire plug |

NOTES:

Date of Survey: 10 & 11 December 2012.

Bearing Datum is GDA94 per SPM 972 & SPM 974.

Horizontal Datum is MGA94 per SPM972, with coordinates of
E 526952.012

All other coordinates have been treated as plane from this point.

Vertical datum is AHD per SPM 972 with reputed RL 23.467m.

While reasonable effort has been made to locate all visible above ground services, there may be other services which were not located during survey.

Only those features/points specifically requested by Sam Issa of Issa Group have been located and subsequently shown on this plan.

Prior to any demolition, excavation, final design or construction on this site, a comprehensive site investigation should be undertaken to locate all above and below ground service infrastructure.

All coordinates within this file, although stated to the nearest 0.001 metre, are approximate only and are only within 0.015m of the stated coordinate (horizontally and vertically). As heights of surrounding builds have been located by indirect measurements Accuracy of these points are $\pm 0.100\text{m}$ Horizontally & vertically.

The boundaries shown on this plan are compiled from various old surveys and, as such, are approximate only. The "Preachers" building fronting on to James Street encroaches onto the subject property by up to 470mm also there are some discrepancies between titles at the south-west corner of "Preachers" and subject land. If any works are to be conducted on or near the boundary a re-establishment survey will be required.

The land marked "ABCD" on C.T.197384/1 has a right of carriage way over the ROADWAY adjoining the southern boundary.

Contour Interval 0.250m

Any DTM modeling that is to be done from the accompanying 3D digital file must be done using only the layer **TRIANGLE_1 SURFACE** to ensure that surface matches that verified by Peacock, Darcey & Anderson. No responsibility is taken for the use or interpretation of this data in any other format.

Some feature levels are not shown on this plan for clarity. These can be found turned on in model space or on the OFF Levels layer.

E				
D				
C				
B				
A				
REV	AMENDMENTS			

NOTES:

SCALE 1"=200' (A1) 1"=400' (A3)

Feet

SURVEYOR	AC	GEODETIC	Q763U
LABORER	AC / MK	CHIEF	HC
DATE	12 DECEMBER 2012		

DETAIL SURVEY
40 - 44 MONTEPELIER RETREAT, BATTERY POINT
for ISSA GROUP



PDA Surveyors

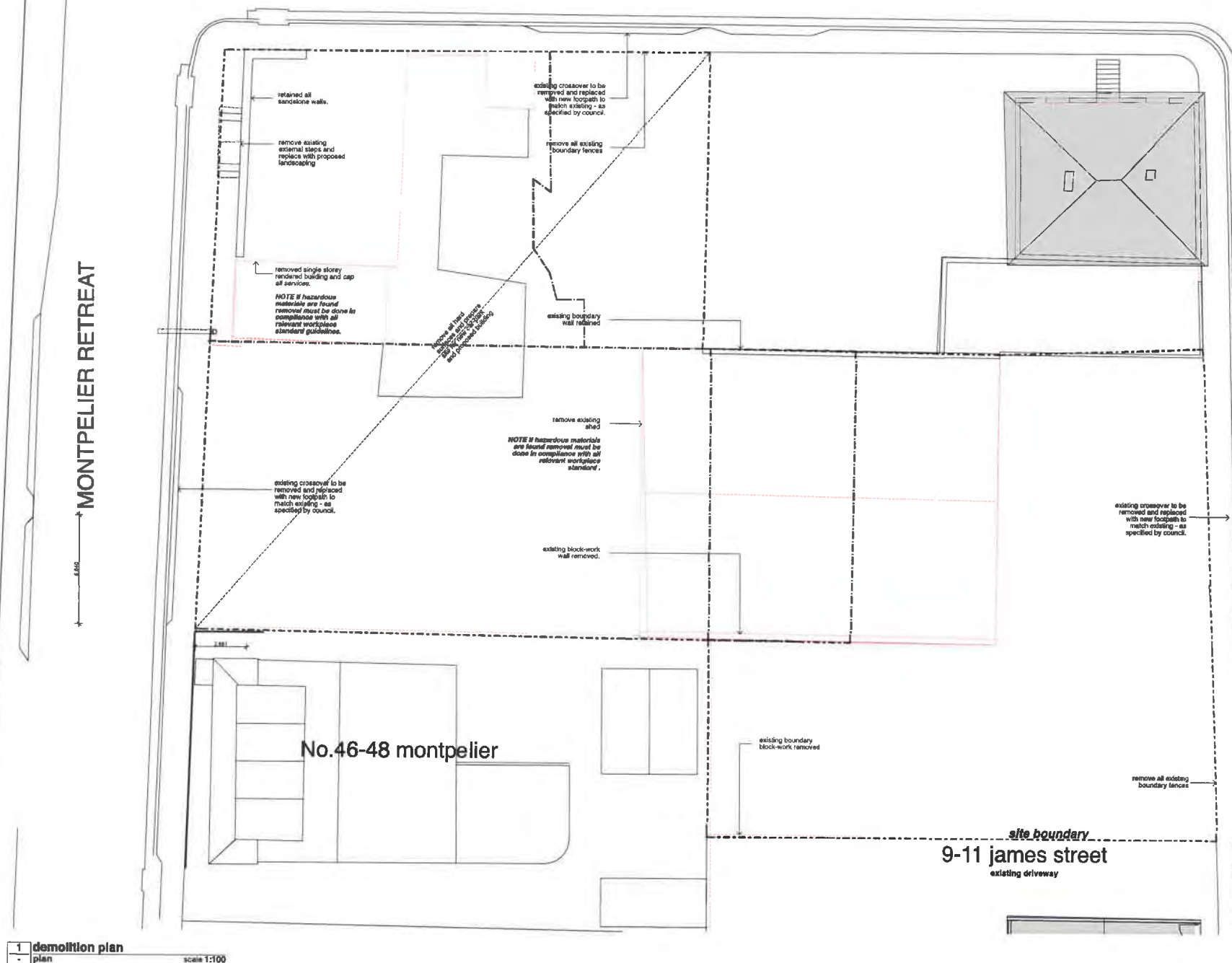
127 Bathurst Street
Hobart, Tasmania, 7000
www.pda.com.au
Also at Kingston, Launceston & Burnie

PHONE: +61 03 6234 3217
FAX: +61 03 6234 5065
EMAIL: info@mda.com.au

SCALE	PAPER
1 : 200	(A1)
JOB NUMBER	DRAWING
036211	1

Q763U - 1

for planning only



Project drawing title: **A1**

1:100	1:200	1:500	1:1000	1:1500	1:2000	1:3000	1:5000
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Elliott's Apartments

40-44 Montpelier Retreat, Battery Point TAS.

circa morris-mum architects

Contact: **08 8333 1111**

Demolition Plan

plan

date: **Friday, 5 February 2016**

1412 DA02 ID1

for planning only



A1

1:100	1:200	1:500	1:1000	1:2000
1:100	1:200	1:500	1:1000	1:2000
1:100	1:200	1:500	1:1000	1:2000

40-44 Montpelier Retreat, Battery Point T&E

circus morris-nunn architects
Contact
01274 200000
01274 200000
01274 200000

site plan

Development Application
Friday, 5 February 2016
1412 DA01 101



1115 2002 12

MONTPELIER RETREAT



for planning only

Original drawing size		A1	
3000	1500	500	1:1
3000	900	2000	1:2
3000	1500	4000	1:4

**Elliott's
Apartments**

40-44 Montpelier Retreat,
Battery Point T&E.

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circa mortis-runn architect

Contact

These drawings show design intent and are suitable as a guide only. The builder must check accuracy of dimensions and verify all general conditions in the finished job. Do not scale off the drawings. Drawings are not to be used for construction purposes until signed by the American Road & Builders Builders.

Level 00

plan

doi:10.1017/S0022292412001614

Friday, 5 February 2010

Drinking of _____

1.1.2 1.1.2 1.1.2

— **Service A**



ORIGINAL DRAWING 15.79

A1

Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
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Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300	5400	5500	5600	5700	5800	5900	6000	6100	6200	6300	6400	6500	6600	6700	6800	6900	7000	7100	7200	7300	7400	7500	7600	7700	7800	7900	8000	8100	8200	8300	8400	8500	8600	8700	8800	8900	9000	9100	9200	9300	9400	9500	9600	9700	9800	9900	10000
Price	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	4200	4300	4400	4500	4600	4700	4800	4900	5000	5100	5200	5300</																																															

**Elliott's
Apartments**

40-44 Montpelier Retreat,
Battery Point T.A.B.

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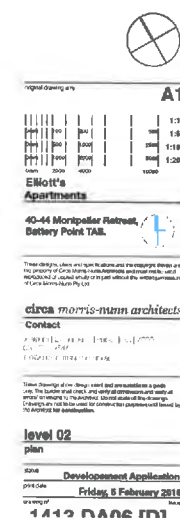
These drawings show design + print as well as suitable as a guide only. The paper used is 100% recycled and all components are printed on 100% recycled paper. The paper used is 100% recycled and all components are printed on 100% recycled paper. The paper used is 100% recycled and all components are printed on 100% recycled paper.

Level 01

plan	
name	Development Application

Friday, 6 February 2010
1118 DA05 [P1]

for planning only



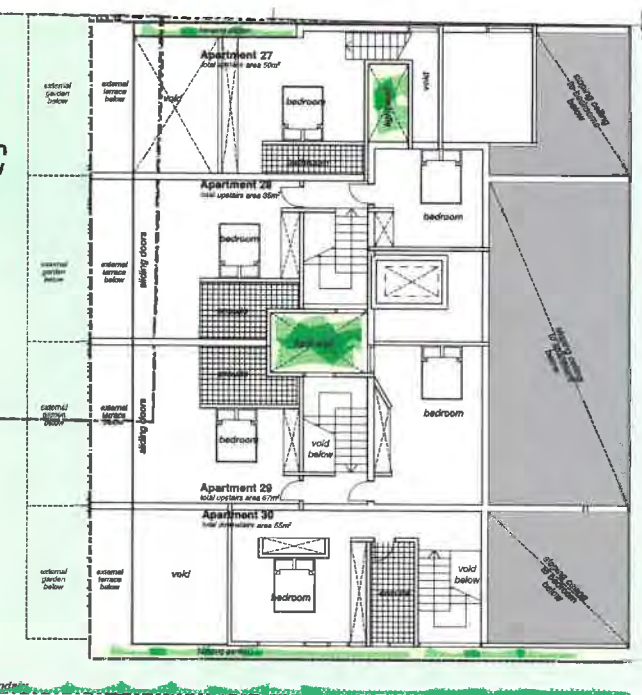
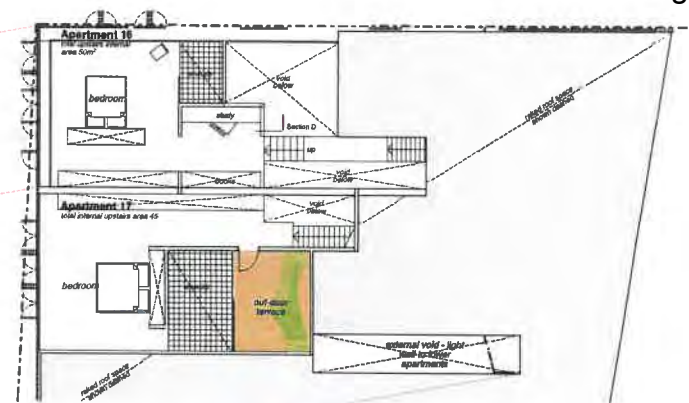
for planning only

1 3. thirdfloor
- plan

scale 1:100

2 4. four floor
plan

scale 1:100



Section A-A

level heights

level	height	1:100
00	0.00	0.00
01	1.00	1.00
02	2.00	2.00
03	3.00	3.00
04	4.00	4.00

Elliott's

Apartments

40-44 Montpellier Road,

Battery Point Trail.

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Level 03 + 04

plan

date

Development Application

date

Friday, 6 February 2016

drawing of 1412 DA07 (M)

for planning only



1	5. Roof
-	plan

scale 1:100

original drawing size				A1	
1:1	100	100	100	1:100	1:100
1:2	200	200	200	1:200	1:200
1:3	300	300	300	1:300	1:300
1:4	400	400	400	1:400	1:400
1:5	500	500	500	1:500	1:500
1:6	600	600	600	1:600	1:600
1:8	800	800	800	1:800	1:800
1:10	1000	1000	1000	1:1000	1:1000

EMott's Apartments

40-44 Montpelier Retreat,
Battery Point T&E.

Cluster designs, plots, and 3D locations are illustrated through an

The property of Cerebrotendinase Anhydride are similar to (9) which represents a typical activity of HSA without the action pattern of HSA. (Cerebrotendinase Anhydride) (10)

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5. 50000 [0. 000000 0. 000000] [0. 000000
 0. 000000 0. 000000
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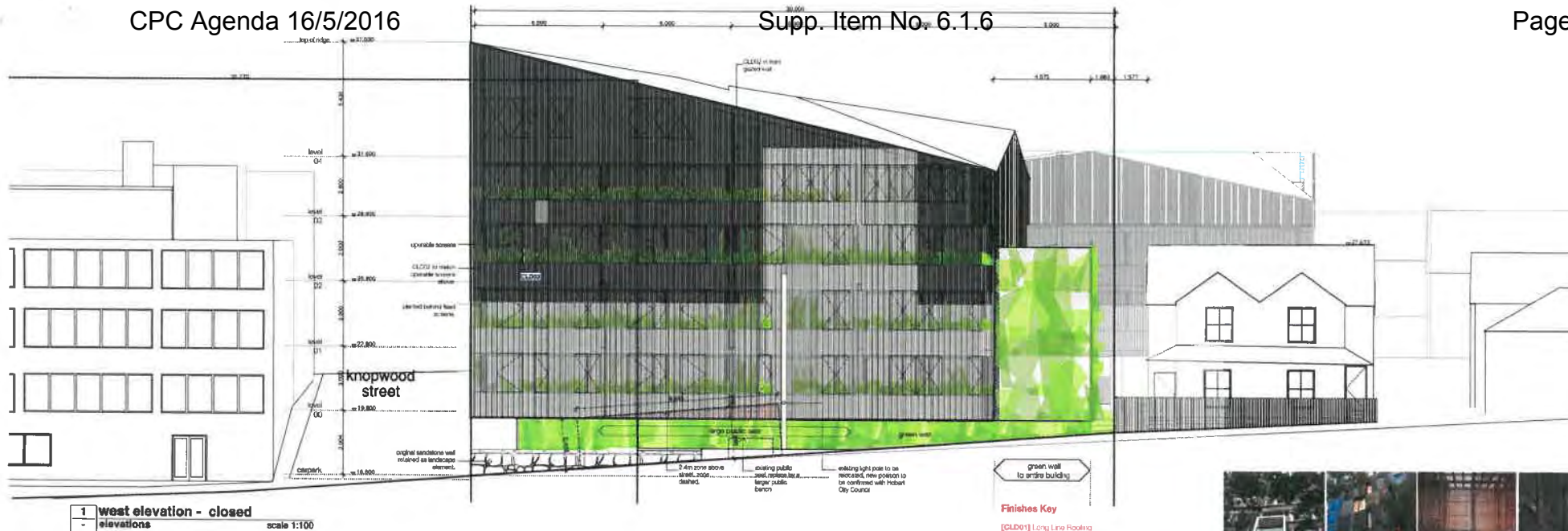
roof plan
plan

State	Development Application
Print Date	Printed on 05/04/2014 10:04:00 AM

Friday, 6 February 2016

09:40 AM

1112 DALGO RD



green wall
to entire building

Finishes Key

- [CLD01] Long Line Roofing
- [CLD02] Vertical Timber Battens, Finen, Chained
- [CLD03] perforated sheet metal
- [CLD05] X-Tend Mesh - Tension cable system to support vertical plant growth (transparent when no vegetation is there)



Examples of [CLD02] Timber Battens Screens



Examples of [CLD05] Green Walls



green wall
to entire building

A1

Scale	1:100	1:200	1:500	1:1000	1:2000
Sheet	1	2	3	4	5
Drawn	2000	4000	8000	16000	32000

Elliot's Apartments

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08 1300 1300 1300

1300 1300 1300

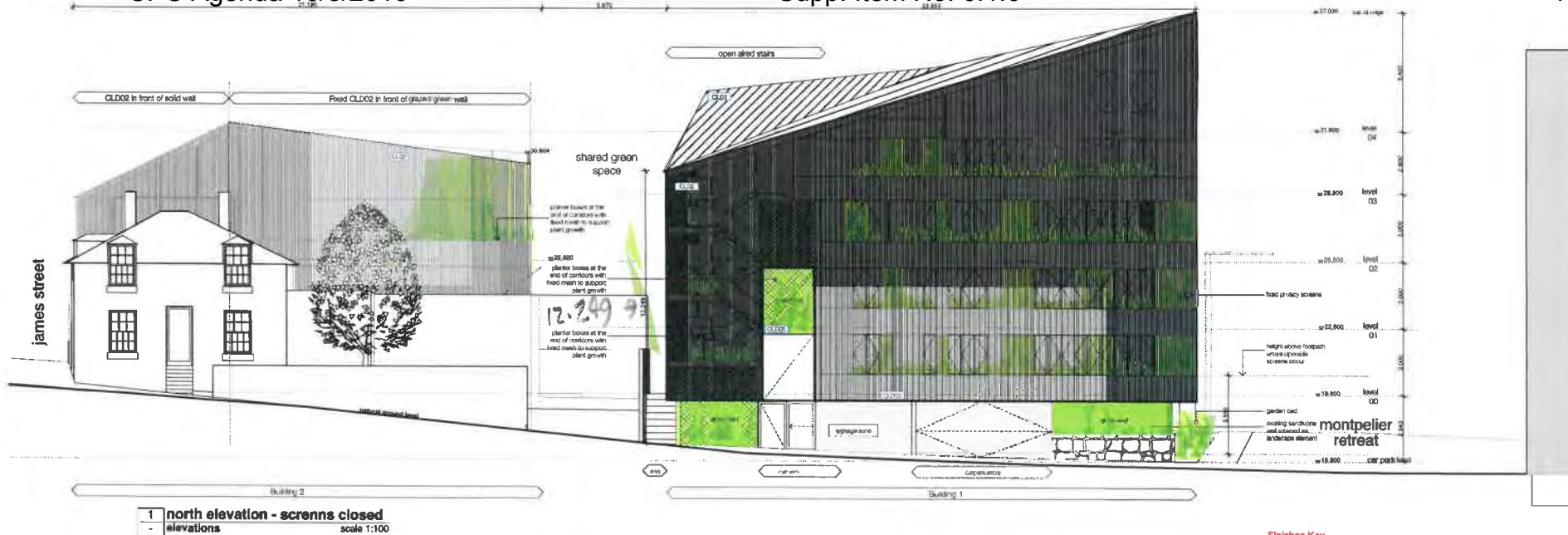
west elevation elevations

Development Application

Friday, 5 February 2016

1412 DA12 EC1

for planning only



Finishes Key

[CLD01] Long Line Roofing
[CLD02] Vertical Timber Battens,
Finish, Charred
[CLD03] perforated sheet metal with solid
wall behind
[CLD04] X-Tend Mesh - Tension cap-o
system to support vertical plant growth.
(Transparent when no vegetation is there)



original drawing size		A1	
width	700	500	1:1.41
height	500	350	1:1.41
width	700	500	1:1.41
height	500	350	1:1.41

Elliott's Apartments

40-44 Montpellier Retreat,
Battery Point T&E.

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Contact
x.4088 | c. 408.84.1.005 | 1.313.677.0

These elements which, though not strictly mathematical, are indispensable only if the reader should care to understand the elementary and easily accessible elements of the Algebra. The only use of the elements of geometry is for the use of the elements of geometry. The only use of the elements of geometry is for the use of the elements of geometry.

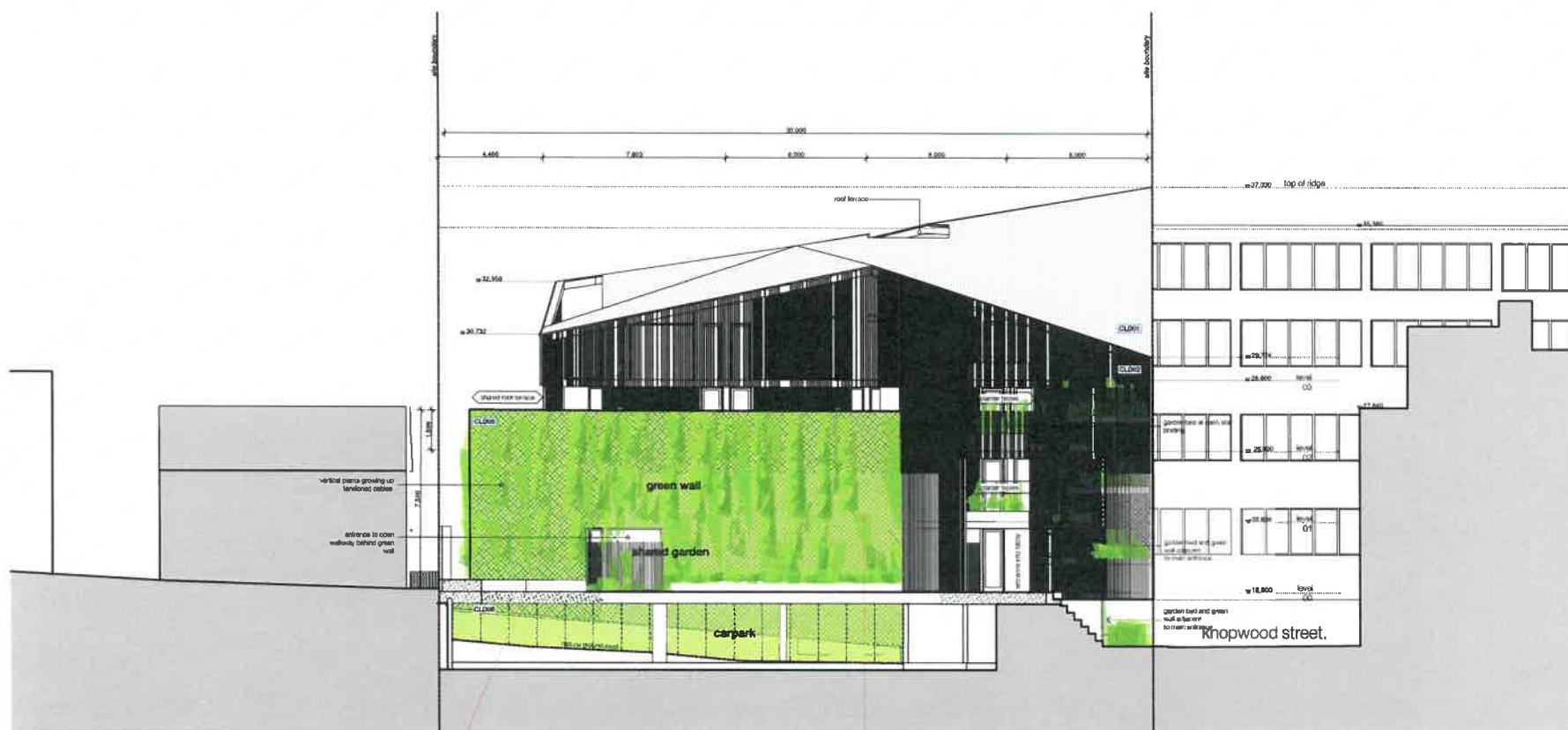
north elevations
elevations

status **Development Application**

1412 HALLOUZI

for planning only

for planning only



1 east elevation building 1
elevations scale 1:100

Finishes Key

- [CLD01] Long Line Hoisting
- [CLD02] Vertical Timber Battens, Fission, Chained
- [CLD03] perforated sheet metal
- [CLD04] x-Steel Mesh - Tension Cable columns to support vertical growth
- (Tree square when no vegetation is there)



Example of [CLD02] Timber Battens Screens



Example of [CLD03] Green Walls

Original drawing size: **A1**

Scale	Width	Height
1:100	1189	841
1:200	594	421
1:500	238	168
1:1000	119	84
1:2000	59	42

Elliott's Apartments

40-44 Montpelier Road, Battersby Point TAIL.

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08 8361 1111 or 08 8361 1112

1111 1111 1111 1111

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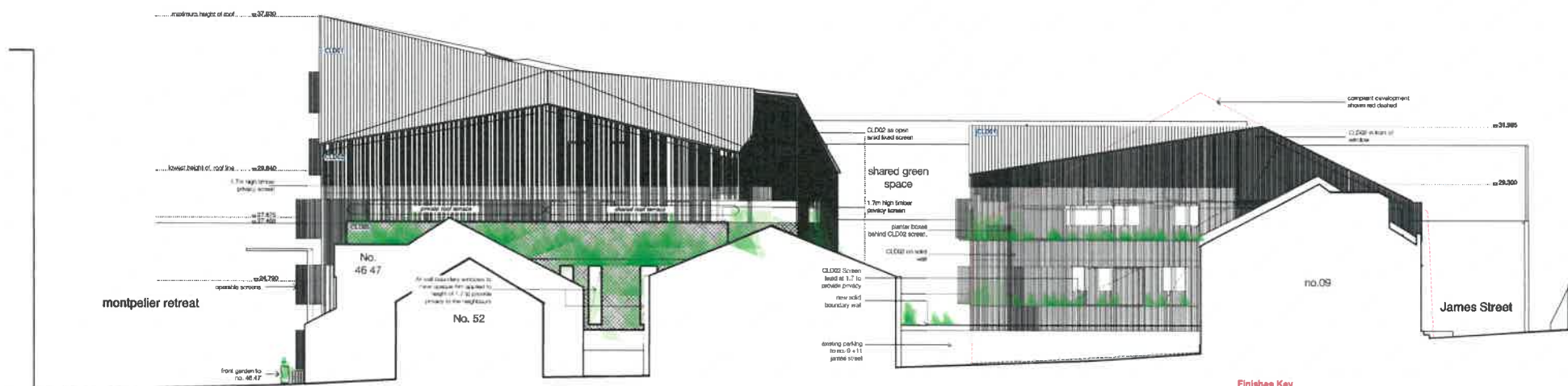
east elevation building one elevations

Development Application

Friday, 6 February 2016

1413 DA10 (C)

for planning only



1	south elevation - with context
-	elevations scale 1:100



CLD05 Vertical Green Wall Examples



CLD02 Timber screen wall examples

[illegible]

for planning only



original drawing size

A1

1000	1414
707	1000
500	707
354	500
250	354
177	250
125	177
89	125
63	89
45	63
32	45
22	32
16	22
11	16
8	11
6	8
4	6
3	4
2	3
1	2

**Elliott's
Apartments**



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From drawings of the design races and are suitable as a guide:

only. The judge shall check and verify if the answers and work of persons answering is in accordance, do not scale off the answers. Drawings are not to be used for construction purposes and limited by the Architect for representation.

east elevation building two
elevations

Development Application

1413 DA13 [BI]

FILE DATE [5]



01 cross section C-C
elevations scale 1:100



02 cross section A-A
elevations scale 1:100

for planning only

original only size

A1	1:100	1:200	1:300	1:400	1:500	1:600	1:700	1:800	1:900	1:1000
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

Elliot's
Apartments
40-44 Montpelier Retreat,
Battery Point TAS.

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circa morris-mum architects
Contact
David Morris - 081 111 1111
david@circa-morris-mum.com.au

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cross 01-03
elevations

Development Application
Priority 6 February 2015
1413 DA14 [B]



09



12



3



09

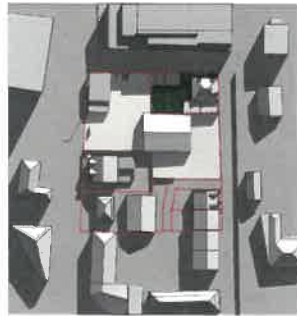


12



3

June



09



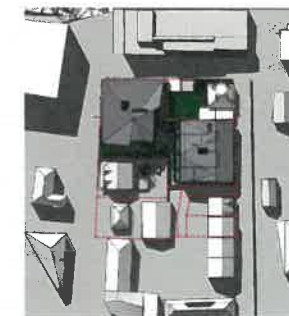
12



3



09

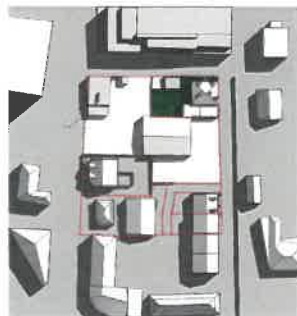


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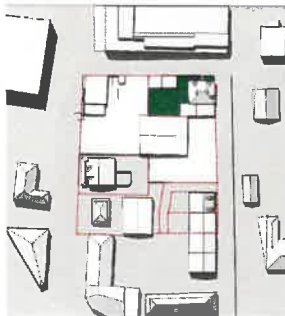


3

Sep



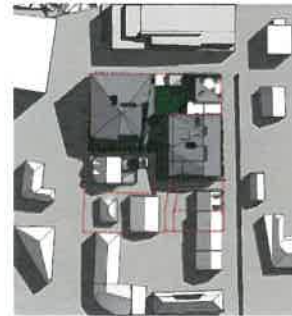
09



12



3



09



12



3

Dec

existing

proposed

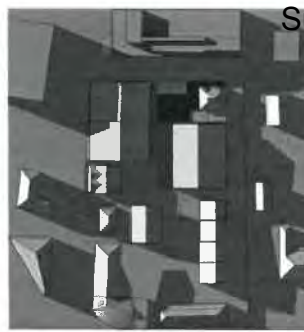
for planning only



09



12



3



09



12



3

June



09



12



3



09

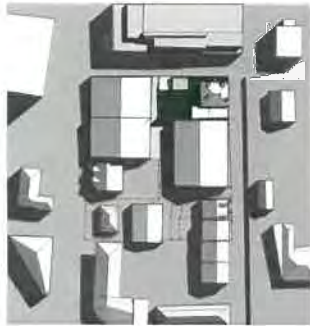
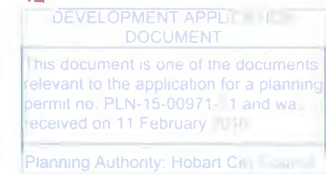


12



3

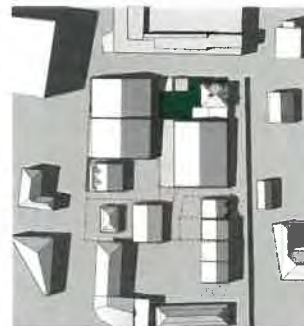
Sep



09



12



3



09



12



3

Dec

2 storey compliant development

proposed

for planning only

Original at Council Office

A1

1:10	1:10
1:50	1:50
1:100	1:100
1:200	1:200

Elliott's Apartments

40-44 Montpelier Street, Battery Point TAS.

cira morris-munn architects

Contact

Shadow Diagram elevations

Development Application

Thursday, 11 February 2016

1412 DA10 (B)

revisionsDEVELOPMENT APPLICATION
DOCUMENT

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00971-01 and was received on the 09 February 2016

Planning Authority: Hobart City Council

Preliminary



view down knopwood street

original drawing size

A3

0mm	100	200	500	1:10
1000	500	1000	2500	1:50
2000	1000	2000	5000	1:100
4000	2000	4000	10000	1:200

**Elliott's
Apartments**

**40-44 Montpellier Retreat,
Battery Point TAS.**

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C3 6236 3544
info@circamorrisnunn.com.au

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**Montages
elevations**

status **Development Application**
print date **Friday, 5 February 2016**
drawing n° **1413 DA16 [B]** issue

revisionsDEVELOPMENT APPLICATION
DOCUMENT

This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 09 February 2016

Planning Authority: Hobart City Council

Preliminary

View down James Street

original drawing size

A3

1:10	100	200	500
1:50	500	1000	2500
1:100	1000	2000	5000
1:200	2000	4000	10000

**Elliott's
Apartments**

**40-44 Montpellier Retreat,
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**Montage
elevations**

status **Development Application**
print date **Friday, 5 February 2016**
drawing n° **1413 DA22 [A]** issue



View from the corner of kirksway place
and montpelier retreat

Preliminary

original drawing size

A3

0mm	100	200	500	1:10
0mm	500	1000	2500	1:50
0mm	1000	2000	5000	1:100
0mm	2000	4000	10000	1:200

Elliott's

Apartments

**40-44 Montpelier Retreat,
Battery Point TAS.**

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Montages

elevations

status	Development Application
print date	Friday, 5 February 2016
drawing n°	issue

1413 DA17 [B]

revisions	DEVELOPMENT APPLICATION DOCUMENT
	This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 09 February 2016
	Planning Authority: Hobart City Council

Preliminary

original drawing size

A3

0mm	100	200	500	1:10
1000	500	1000	2500	1:50
2000	1000	2000	5000	1:100
4000	2000	4000	10000	1:200

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**Montages
elevations**

status	Development Application
print date	Friday, 5 February 2016
drawing n°	1413 DA20 [A]

1413 DA20 [A]



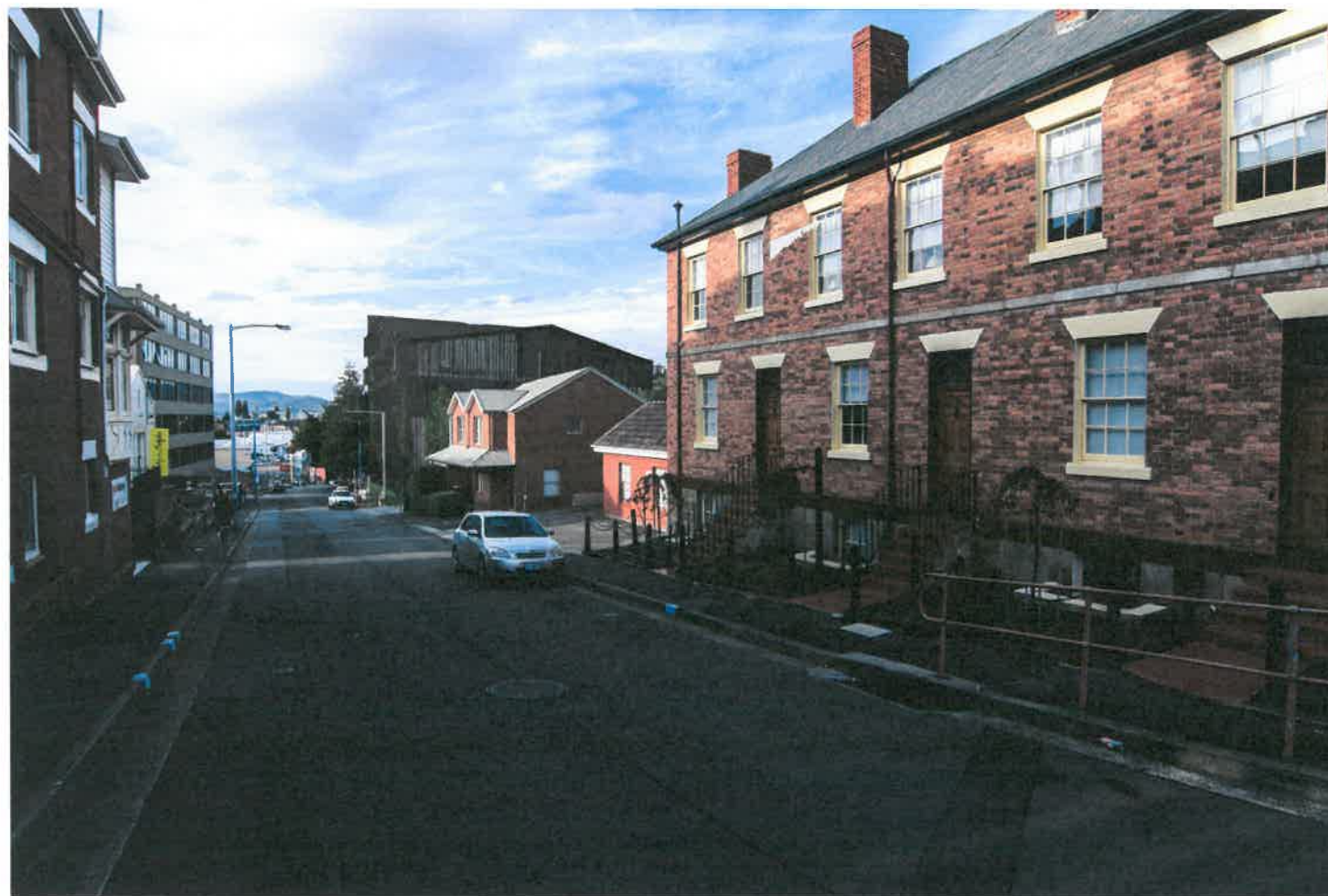
View up montpelier retreat

revisionsDEVELOPMENT APPLICATION
DOCUMENT

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00971-01 and was received on the 09 February 2016

Planning Authority: Hobart City Council

Preliminary



View down montpelier retreat

original drawing size

A3

0mm	100	200	500	1:10
1000	500	1000	2500	1:50
2000	1000	2000	5000	1:100
4000			10000	1:200

**Elliott's
Apartments****40-44 Montpelier Retreat,
Battery Point TAS.**

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**Montages
elevations**

status **Development Application**
print date **Friday, 5 February 2016**
drawing n° **1413 DA21 [A]** issue

C^a elliott's apartments

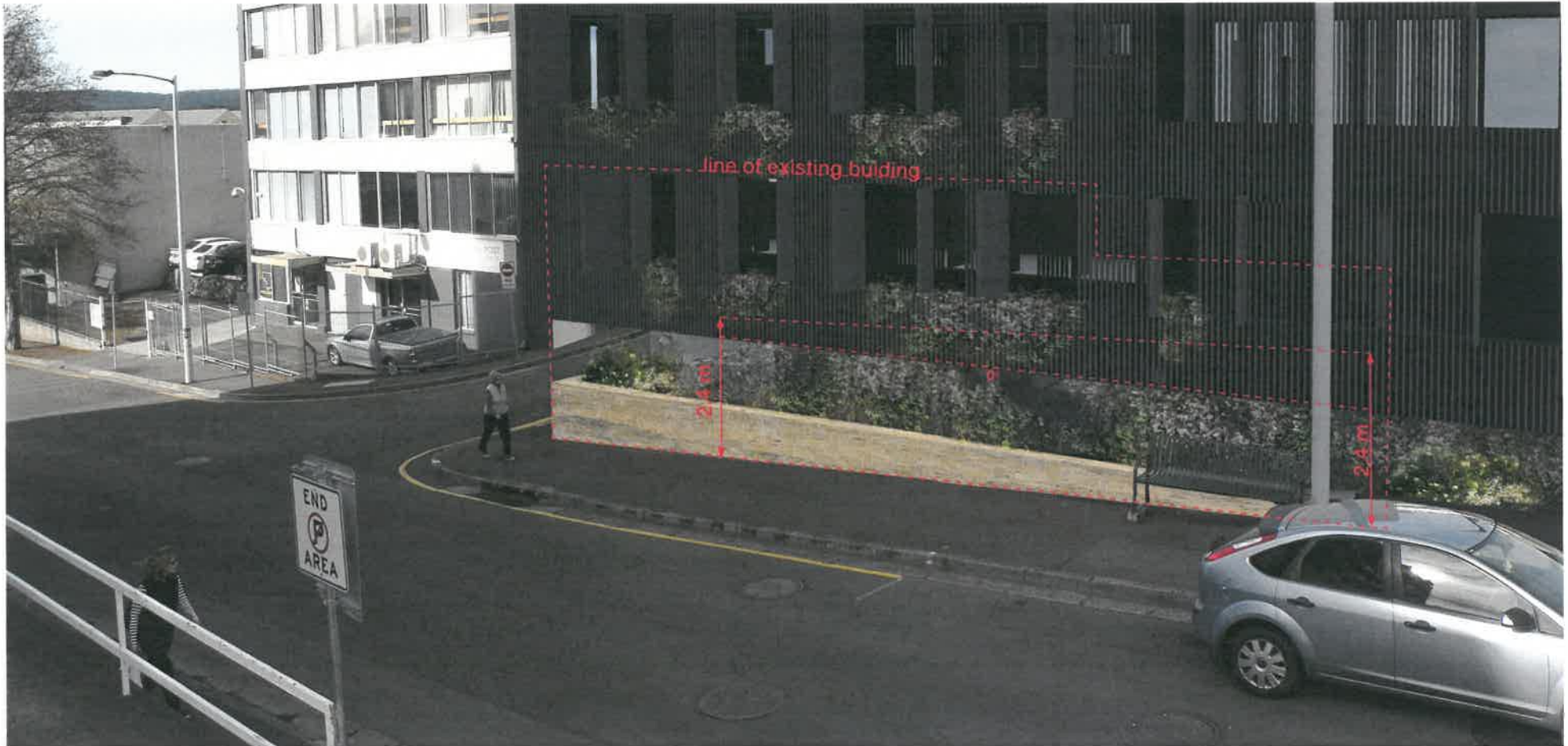
montpelier retreat, hobart, tas

This document is one of the documents relevant to the application for a planning permit No. PLN-15-00971-01 and was received on the 17 September 2015

Planning Authority: Hobart City Council



existing



proposed with existing bench/setback

C^a elliott's apartments

montpelier retreat, hobart, tas

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proposed with new bench

AMENDED PROPOSAL : 40-44 MONTPELIER RETREAT

The amendments

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The applicant has submitted amended plans following the previous two advertising periods of the application. The design has been modified for the amenity of the immediate adjoining neighbours at 46-48 Montpelier Retreat and 9-11 James Street and to reduce the visual bulk of the building as viewed from Montpelier Retreat adjacent to 46 Montpelier Retreat.

The amendments made are:

- A 5 metre setback from the rear corner boundary of the James Street building to comply with Clause E 13.8.4 A5;
- A 6.318 metre setback of the Montpelier Retreat building from its rear boundary to comply with Clause 13.8.4 A5;
- A 2.476 metre setback of the western corner of the Montpelier Retreat building to reduce visual bulk as viewed along Montpelier Retreat;
- A 1.352 metre setback of the Montpelier building from the dwelling at 46 Montpelier Retreat to reduce visual bulk as viewed from the rear garden;
- Redesign of the Montpelier building to become no higher than two storeys where it is adjacent to 46 Montpelier Retreat; and
- Modification to the architectural screening treatments of the western facades of both buildings to increase visual depth and articulation while maximising screening and plantings to maintain mutual privacy between properties. The whole of the western wall of the Montpelier building will be a green wall with plants grown on tension cables.

The following report provides comment on the Clauses applicable under the Hobart Interim Planning Scheme 2015. The Stormwater Management Code and Potentially Contaminated Land Code are not revisited here as the application relative to these codes remains the same.

This is an abbreviated assessment only. Even without the above-mentioned Codes, there are 9 applicable clauses and 29 sub-clauses that apply.

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The Hobart Interim Planning Scheme 2015

CLAUSE	SUBCLAUSE	DESIGN RESPONSE
11.4.1	A1 and P1 – Density <i>P1 - Site area per dwelling may be:</i> <i>(a) less than 200m² if any of the following applies:</i> <i>(i) the development contributes to a range of dwelling types and sizes appropriate to the locality;</i> <i>(ii) the development provides for a specific accommodation need, such as aged care, special needs or student accommodation;</i>	COMPLIES The proposal provides apartments of high quality with various floor plans and floor areas in an inner city location where apartments are appropriate and necessary.
11.4.2	A1 and P1 – front setback <i>A1 - Unless within a building area, a dwelling, excluding protrusions (such as eaves, steps, porches, and awnings) that extend not more than 0.6 m into the frontage setback, must have a setback from a frontage that is:</i> <i>(b) if for a vacant site with existing dwellings on adjoining sites on the same street, not more than the greater, or less than the lesser, setback for the equivalent frontage of the dwellings on the adjoining sites on the same street.</i>	COMPLIES with A1
	A2 and P2 – garage setbacks	Complies with A2 (if applicable)
	A3 and P3 – Building envelope – Not applicable in BP1 <i>The siting and scale of a dwelling must:</i> <i>(a) not cause unreasonable loss of amenity by:</i> <i>(i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining lot; or</i>	NOT APPLICABLE BUT COMPLIES with P3 The design of the James Street apartments has been undertaken with the principle that the impact of the side view of the building would be no greater in visual bulk than that of a compliant two storey dwelling with a pitched roof.

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- (ii) *overshadowing the private open space of a dwelling on an adjoining lot; or*
- (iii) *overshadowing of an adjoining vacant lot; or*
- (iv) *visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining lot; and*

- (b) *provide separation between dwellings on adjoining lots that is compatible with that prevailing in the surrounding area.*

Although the applicant is of the view that this clause does not apply in the BP1 precinct as its standards would conflict with those of the Code for BP1 addressed below, the amenity of the neighbouring houses has been considered. Their amenity at present relative to the subject site is low. This is due to the site being an unsealed public car park.

James Street

The adjacent pair of dwellings in James Street are a contemporary pair dwellings of one storey with a second storey partially in the roof made to appear to be of older style.

They have a right of way of approximately 4 metres width running along its side boundary that services a number of other properties including a garage for Montpelier Retreat properties. There is no fencing of the rear garden area and it is used for drying of washing and parking of cars. The two dwellings have rear balconies which look to the rear of the site and across to the rear of 52 Montpelier Retreat.

The outlook from the side of these properties across the subject site is from one second level window for No. 9 (which appears to be a secondary window to a room facing the street or the rear). The

Drawing no. DA 11 C shows the outline of such a dwelling on the elevation.

The Scheme permits a rear setback of 5 metres and full "occupancy" of the street frontage.

The apartments have been setback by a minimum of 1.215 metres so creating a 5.26 metre setback in total with the Right of Way. The 5 metre setback has been met. The wall of the apartments has been made of timber screens which will rise to a sill height of 1.7 metres for all windows. There will be planters and landscape systems to soften the appearance of the building and these are not dependent upon the individual owners maintaining them. It will be a landscape system managed for the body corporate as it is an intrinsic part of the architecture.

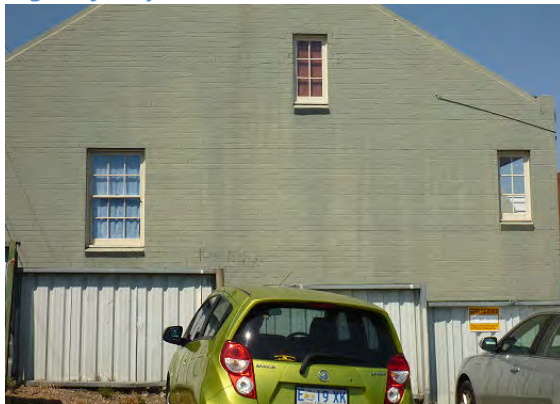
This appearance will be far less in visual bulk than the appearance of for example the site brick walls of the Portsea terraces shown below.



other “window style” opening is from the open upper level deck. They look over the subject site towards the 4 storey building in Knopwood Street.



Right of way next to 9 James Street



Side wall of 9 James Street

There is no unreasonable overlooking. There is no unreasonable loss of sunlight that is caused on the 21st June as the whole block is affected by the 4 storey building and the dwellings in James Street are oriented east to west.

The Montpelier apartments have been reduced to two storeys and are a complete green wall design. This is a new form of architecture but one that has been proven in other parts of the world far more severe in climate than Hobart. The building will be encased in a fine mesh trellis which will be planted from above and below to form a living structure. The visual bulk of the two storey wall will be mitigated by the vegetation and the unique appearance that results. There are no overlooking issues from any side windows and the terraces all have planter boxes to ensure occupants cannot look down into the courtyards below.

This is a far more sympathetic treatment than a two storey brick wall.

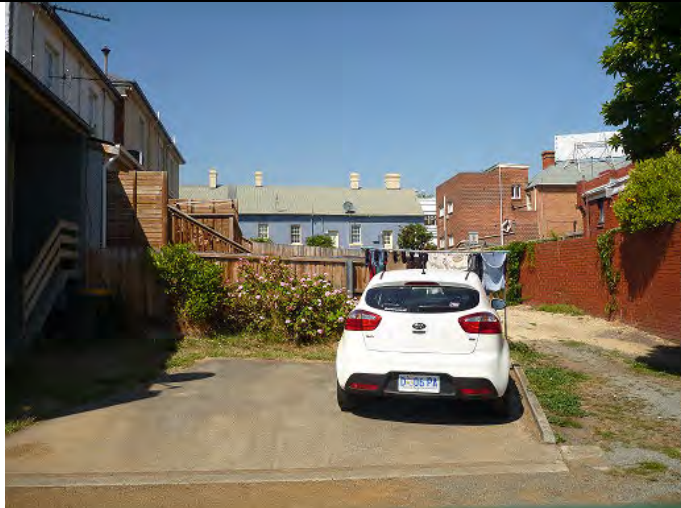


Examples of two storey side walls in Battery Point

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Rear area of 9-11 James Street

The rear area is not planted with any trees or shrubs and is generally flat and open. The vehicular right of way is not sealed and has a sand and gravel surface. The existing subject site is a public carpark which overlooks this rear area. All people who park in it as they come and go from their cars can see the rear of 9-11 James Street. There is no obvious security between the site and the rear of 9-11 James other than a metal fence.



Two storey side wall in James Street



Side wall of 46 Montpelier Retreat

The proposed development in both James Street and Montpelier Retreat provides a setback from its boundaries similar to the setbacks



Existing view from 9 James Street to the subject site

The rear area of these two dwellings is not a private open space- it is mostly a car park. The area shown on the title which may have been proposed as private open space is used for clothes lines and parking cars. If this area where fenced a private open space could be achieved.

The separation between the new building and this area is over 5 metres. This is a generous separation between dwellings and gardens in Battery Point.

In terms of visual impact the new façade has no greater impact than a compliant two storey building with a 30 degree pitched roof. This is shown dotted on elevation DA 11(C).

Montpelier Retreat

46-48 Montpelier Retreat have rear garden areas immediately adjacent to their back porch. The rest of the site is parking area and

found in Battery Point as a whole. In many instances in Battery Point there are no side boundary setbacks while there are tall side boundary brick walls.

The proposed green building will have a preferable appearance than a two storey brick wall when viewed from all vantage points on the adjacent site at 46 Montpelier Retreat. It will also have a preferable appearance to the rundown semi industrial site which is the existing car park.

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is sealed. No. 46 has no fencing of the area identified on the title and it extends into the carpark area behind. No. 48 has walls around its private open space with dense tree and shrub cover.




Rear courtyards of 46 – 48 Montpelier Retreat

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	 <p><i>Example of two storey side walls in Battery Point</i></p>	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">DEVELOPMENT APPLICATION DOCUMENT</p> <p>This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 28 January 2016</p> <p>Planning Authority: Hobart City Council</p> </div>
11.4.3	<p>A1 and P1 – site coverage P1</p> <p><i>Dwellings must have:</i></p> <p>(a) <i>private open space that is of a size and dimensions that are appropriate for the size of the dwelling and is able to accommodate:</i></p> <p>(i) <i>outdoor recreational space consistent with the projected requirements of the occupants and, for multiple dwellings, take into account any communal open space provided for this purpose within the development; and</i></p>	<p>COMPLIES with P1</p> <p>Each apartment has at least one deck, in many cases more than one. All are appropriate to the apartment's size and orientation.</p> <p>The surrounding area has many outdoor recreational opportunities.</p> <p>All apartments will be complete with laundry facilities and drying facilities.</p> <p>The whole complex will be landscaped vertically as well as within the central courtyard as part of the overall design of the building. Each apartment will have balcony and deck planters for individual gardening.</p>

	<p>(ii) <i>operational needs, such as clothes drying and storage;</i></p> <p><i>unless the projected requirements of the occupants are considered to be satisfied by public open space in close proximity; and</i></p> <p>(b) <i>reasonable space for the planting of gardens and landscaping.</i></p>	<div> <div>DEVELOPMENT APPLICATION DOCUMENT</div> <div>This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 28 January 2016</div> <div>Planning Authority: Hobart City Council</div> </div>
	<p>A2 and P2 – POS P2</p> <p><i>A dwelling must have private open space that:</i></p> <p>(a) <i>includes an area that is capable of serving as an extension of the dwelling for outdoor relaxation, dining, entertaining and children’s play that is:</i></p> <p>(i) <i>conveniently located in relation to a living area of the dwelling; and</i></p> <p>(ii) <i>orientated to take advantage of sunlight;</i></p> <p><i>unless the projected requirements of the occupants are considered to be satisfied by communal open space or public open space in close proximity.</i></p>	<p>COMPLIES with P2</p> <p>Each apartment has a balcony or terrace or both. The outdoor areas are accessed from living rooms directly and serve as an extension of the living areas. The outdoor areas have the dimensions to enable outdoor dining, relaxation and children’s play.</p> <p>Each deck is oriented to take advantage of the available sunlight and outlook.</p>
11.4.4	<p>A1 and P1 – sunlight P1</p> <p><i>A dwelling must be sited and designed so as to allow sunlight to enter at least one habitable room (other than a bedroom).</i></p>	<p>COMPLIES with P1</p>
	<p>A2 and P2 – overshadowing P2</p> <p><i>A multiple dwelling must be designed and sited to not cause</i></p>	<p>COMPLIES with P2</p>

	<i>unreasonable loss of amenity by overshadowing a window of a habitable room (other than a bedroom), of another dwelling on the same site, that faces between 30 degrees west of north and 30 degrees east of north (see diagram 11.4.4A)</i>	
	A3 and P3 – overshadowing P3 <i>A multiple dwelling must be designed and sited to not cause unreasonable loss of amenity by overshadowing the private open space, of another dwelling on the same site, required in accordance with A2 or P2 of 11.4.3.</i>	COMPLIES with P3
11.4.5	A1 and P1 – Garage openings A1 <i>A garage or carport within 12m of a primary frontage(whether the garage or carport is free-standing or part of the dwelling) must have a total width of openings facing the primary frontage of not more than 6m or half the width of the frontage (whichever is the lesser).</i>	COMPLIES with A1 - entry to car park area is 6 metres wide.
11.4.6	A1 and P1 - privacy P1 <i>A balcony, deck, roof terrace, parking space or carport (whether freestanding or part of the dwelling) that has a finished surface or floor level more than 1m above natural ground level, must be screened, or otherwise designed, to minimise overlooking of:</i> <i>(a) a dwelling on an adjoining lot or its private open space; or</i> <i>(b) another dwelling on the same site or its private open space;</i> <i>or</i> <i>(c) an adjoining vacant residential lot.</i>	COMPLIES with P1 All balconies are screened to minimise overlooking to all dwellings and private open space be it on the same site or on an adjacent site.
	A2 and P2 – privacy	

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	<p>P2</p> <p><i>A window or glazed door, to a habitable room of a dwelling, that has a floor level more than 1 m above the natural ground level, must be screened, or otherwise located or designed, to minimise direct views to:</i></p> <p>(a) <i>a window or glazed door, to a habitable room of another dwelling; and</i></p> <p>(b) <i>the private open space of another dwelling; and</i></p> <p>(c) <i>an adjoining vacant residential lot.</i></p>	<p>COMPLIES with P2</p> <p>All windows are screened or frosted and designed to minimise any direct views to another dwelling or private open space.</p>
	<p>A3 and P3 – privacy from shared driveways</p>	<p>COMPLIES with A3</p>
11.4.7	<p>A1 and P1 - front fences</p> <p>A1</p> <p><i>A fence (including a free-standing wall) within 3m of a frontage must have a height above natural ground level of not more than:</i></p> <p>(a) <i>1.2m if the fence is solid; or</i></p> <p>(b) <i>1.5m, if any part of the fence that is within 3m of a <u>primary frontage</u> has openings above a height of 1.2m which provide a uniform transparency of not less than 30% (excluding any posts or uprights).</i></p>	<p>COMPLIES with A1</p> <p>There is only one front fence and this is designed to be a modern metal vertical picket fence consistent with the character of Battery Point without mimicking any heritage style. It is low and due to slope of James Street has a maximum height of 1.2 metres.</p>
11.4.8	<p>A1 and P1 – waste storage</p> <p>P1</p> <p><i>A multiple dwelling development must provide storage, for waste and recycling bins, that is:</i></p>	<p>COMPLIES with P1</p> <p>The waste storage is in the car park and is in a separate area from the dwellings and contained in a separate room contained away from any adjoining property or dwelling.</p>

	<p>(a) capable of storing the number of bins required for the site; and</p> <p>(b) screened from the frontage and dwellings; and</p> <p>(c) if the storage area is a communal storage area, separated from dwellings on the site to minimise impacts caused by odours and noise.</p>	<div> <p>DEVELOPMENT APPLICATION DOCUMENT</p> <p>This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 28 January 2016</p> <p>Planning Authority: Hobart City Council</p> </div>
<p>E 13.8.2</p> <p>Heritage Precincts</p> <p>Buildings and works</p>	<p>P1 (no acceptable solution)</p> <p>P1</p> <p><i>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.</i></p>	<p>COMPLIES with P1</p> <p>Montpelier Retreat – The amended plans have the greatest impact on the character of the development when viewed from Montpelier Retreat. The green building creates a modern insert separating 46-48 Montpelier from the new apartments. It creates a strong visual space between the two sites. It is important to keep in mind that the dwellings at 46-48 Montpelier Retreat are not in themselves heritage buildings and their character and architectural merit is not exemplary of the architecture of the Portsea Terrace further up the road. The proposed building is not seen in conjunction with or adjacent to any heritage listed site in Montpelier Retreat and is balanced in scale and form with all the buildings, heritage listed or otherwise in the street which are outside Battery Point and within Sullivans Cove.</p> <p>James Street - The apartments as viewed from James Street have a “low profile”. The building will be a darker recessive tone and will have timber and black metal detailing with extensive planting on its walls. This will ensure the wall of Narryna remains the dominate streetscape feature and is balanced by the terrace house grouping of 13-17 James Street. The finishes of the new building will be of the highest quality.</p> <p>Knopwood Street – The only streetscape feature of any heritage significant in Knopwood Street is No. 5 Knopwood. It sits on the corner of the block as one proceeds to and from James Street. Its visual</p>

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presence is not disturbed by the proposed James Street apartments as they sit behind a two storey wall at the back of No. 5.



Wall of building on subject site adjacent to 5 Knopwood.



Rear wall of 5 Knopwood Street as viewed from James Street

	<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center; margin: 0;">DEVELOPMENT APPLICATION DOCUMENT</p> <p style="margin: 0;">This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 28 January 2016</p> <p style="margin: 0;">Planning Authority: Hobart City Council</p> </div>	<p>The amenity of 5 Knopwood Street and its setting will be improved by the development. It is presently impaired by a concrete block wall on the subject site. This will become a courtyard with landscaping set with timber slatted facades and hanging gardens.</p> <p>The bus and beer barrel storage and waste bin area is part of the beer garden area and is not part of the subject site.</p>
	<p>P2 (no acceptable solution) P2</p> <p><i>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.</i></p>	<p>See Clauses E 13.2 and E 13.4 : BP1 : Same requirement</p>
	<p>P3 (no acceptable solution) – extensions to existing buildings</p>	<p>Not applicable</p>
	<p>A 4 and P4 – front fences A4</p> <p><i>New front fences and gates must accord with original design, based on photographic, archaeological or other historical evidence.</i></p> <p>P4</p> <p><i>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.</i></p>	<p>See Clause 11.4.7 above - COMPLIES</p>
	<p>A5 and P5 – front landscaping</p>	<p>Not applicable</p>
<p>E 13.8.4 Battery Point</p>	<p>A1 and P1 – site area per dwelling A1</p> <p><i>Site area per dwelling unit in Heritage Precinct BP1 must be not less</i></p>	<p>COMPLIES with P1 – The density of the development has no impact on the on the pattern of development that is characteristic of the cultural heritage significance of the precinct. The bulk of the building is not</p>

	<p><i>than 350m².</i></p> <p>P1</p> <p><i>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.</i></p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center; color: blue;">DEVELOPMENT APPLICATION DOCUMENT</p> <p style="color: blue;">This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 28 January 2016</p> </div>	<p>viewed from within Battery Point and it cannot be seen or appreciated from the streets of Battery Point. The building is set within an area that is severely compromised by the buildings in Sullivans Cove and a townscape and form balance is created by the proposed buildings.</p> <p>The aim of the architect was to create a strong statement on the corner of the site facing into Sullivan's Cove, delineating and creating a full stop spatially to the area, behind which Battery Point is presented and unfolds as one approaches either along Knopwood Street or along Montpelier Retreat. This site will separate Battery Point and assist to delineate it from its surroundings where at present its boundaries and parameters are not easily defined and are blighted by the existing car park and industrial buildings on site.</p>
	<p>P2 (no acceptable solution) Planning Authority: Hobart City Council</p> <p>P2</p> <p><i>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.</i></p>	<p>COMPLIES</p>
	<p>A3 and P3 - Building height</p> <p>A3</p> <p><i>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.</i></p> <p>P3</p> <p><i>The height of development must neither be obtrusive in the streetscape nor detract from the pattern of development that is a</i></p>	<p>COMPLIES with A3</p> <p>The building is not obtrusive when viewed from any of the streets within the heritage Precinct BP1. The building has been designed to transition to meet the scale of development in both James Street and Montpelier Retreat.</p> <p>The character of Knopwood Street is dominated by a four storey building within Sullivans Cove. It has no streetscape that is characteristic of the "cultural heritage significance" of Battery Point.</p>

	<i>characteristic of the cultural heritage significance of the precinct in the vicinity of the site.</i>	
	<p>P4 – (no acceptable solution) building width P4</p> <p>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.</p>	<p>COMPLIES with P4</p> <p>The proposed two buildings occupy the width of the frontages on all frontages with a setback in James Street and a setback in Montpelier Retreat to minimise impact on adjoining residences. This arrangement is characteristic of the surrounding streets.</p>
	<p>A5 and P5 – rear setback A5</p> <p><i>The rear setback of the principal building must be at least:</i></p> <p>(a) 6 m for lots of up to 14 m in width;</p> <p>(b) 5 m for lots greater than 14 m in width.</p> <p>P5</p> <p><i>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.</i></p>	<p>COMPLIES with A5 and P5</p> <p>The rear setback is a complex issue when one considers a site which has 3 street frontages. If one looks at the pattern of lots that exist both on site and on adjacent sites, the assessment is further complicated. It is possible there are no rear boundaries from which the rear setback can be assessed.</p> <p>It is however clear that the lots have frontages greater than 14 metres width therefore A5 (b) applies.</p> <p>The rear setback of the two principle buildings has been shown on the plans drawing no DA 01 C with a setback from the rear boundary of the two main lots where they would meet the adjacent lots in Montpelier Retreat and James Street</p>
	<p>A6 and P6 – site coverage A6</p> <p><i>A site where the principal building, excluding the basement, in part or</i></p>	<p>COMPLIES with P6</p> <p>In the vicinity of the site there is a mixed pattern of development, the</p>

	<p><i>whole is:</i></p> <p>(a) <i>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%;</i></p> <p>(b) <i>two or more storeys must have a site coverage of not more than 40%.</i></p> <p>P6</p> <p><i>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.</i></p>	<p>majority of which is not of heritage significance. There are a number of elements – 5 Knopwood, Narryna and the James St terraces and Portsea Terrace only which contribute to this heritage significance and they do not represent a strong pattern as such.</p> <p>The pattern is in the street layout and orientation of the buildings and their bold and solid form and bulk within narrow streets. The proposed development repairs the subject site to fit in with this pattern with a modern architectural form and similar positioning, also creating a new laneway through the site.</p>
	<p><i>P7 (no acceptable solution)</i></p> <p>P7</p> <p><i>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.</i></p>	<p>COMPLIES</p>
	<p><i>P8 (no acceptable solution)</i></p> <p>P8</p> <p><i>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:</i></p> <p>(a) <i>not detract from the historic cultural heritage significance of the precinct;</i></p>	<p>COMPLIES</p> <p>The 6 metres width is essential and replaces various crossovers already in existence across the total site therefore creating a net benefit and reduction in crossovers.</p>

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	<i>(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.</i>	
	<p>A9 and P9 – parking</p> <p>A9</p> <p><i>Maximum of 1 parking space per dwelling.</i></p> <p>P9</p> <p><i>Parking must not detract from the cultural heritage significance or the setting of existing dwellings.</i></p>	<p>COMPLIES with A9</p> <p>31 parking spaces provided for 31 apartments.</p>

Kate Loveday B Arch

January 2016

DEVELOPMENT APPLICATION DOCUMENT
This document is one of the documents relevant to the application for a planning permit No.PLN-15-00971-01 and was received on the 28 January 2016
Planning Authority: Hobart City Council

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DOCUMENT

This document is one of the documents relevant to the application for a planning permit no. PLN-15-00971-01 and was received on 11 February 2016.

Planning Authority: Hobart City Council

Elliott's Apartments

An Architectural Report to Accompany the DA Proposal



Circa Morris Nunn, Architects
February 2016

This document is one of the documents relevant to the application for a planning permit no. PLN-15-00971-01 and was received on 11 February 2016.

Planning Authority: Hobart City Council

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Summary of the Proposal

This proposal is to create a new premier residential development in the upper part of Montpelier Retreat, at the edge of central Hobart and Battery Point.

The proposal is centred on the idea that it is possible to create a very 'green' quality residential development on the former Elliott Bros crane hire depot, which is currently used as a carpark in the interim period.



View looking up the middle of Montpelier Retreat from Salamanca Place (with the Sultan Holdings Development included)

The design approach is to create an overall building form that responds to both the scale of the two office buildings on the opposite sides of the street, and conversely also relate to the low scale traditional urban fabric of James Street with its row houses and historic wall which runs along as the side boundary to Narryna, a historic property on Hampden Rd now used as a museum, and a historic cottage on the corner of Knopwood and James, now operating as a wine bar, Preachers.

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Planning Authority: Hobart City Council

The logo for C.A. (Circa Morris-Nunn) is displayed in white text on a red rectangular background.

View of the project from the intersection of Montpelier with Kirksway Place, showing the adjacent office blocks

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The proposed development comprises two separate buildings above a podium, which is formed by a semi basement carpark. It comprises:

CARPARK (Ground level Knopwood St Access)

- Main Entry lobby, with stair and lift to upper levels, main building
- Bike Store
- Bin Store
- 34 Carparks, including 3 tandem carparks and two disabled carparks
- Secure storage lockers for each apartment
- Lift and stair access to James St apartments

GROUND FLOOR:

- 5 two bedroom apartments, main building
- 4 two bedroom apartments accessed off central open space between buildings, with rear semi basement courtyard adjacent James St.

FIRST FLOOR:

- 5 two bedroom apartments, main building
- 2 two bedroom apartments accessed off directly off James St
- 2 two bedroom apartments accessed off lobby from James St

SECOND FLOOR:

- 5 two bedroom apartments, main building
- lower level of 2 two bedroom apartments accessed off directly from James St lobby
- lower level of 2 three bedroom apartments accessed off directly from James St lobby
- 1 one bedroom studio apartment accessed off James St lobby
- shared outdoor terrace with BBQ facilities, main building

THIRD FLOOR:

- lower floor of penthouse apartment, main building
- main ground floor of three bedroom apartment, main building
- 1 three bedroom apartment, main building
- upper level of 2 two bedroom James St apartments with internal stairs
- upper level of 2 three bedroom James St apartments with internal stairs

FOURTH FLOOR:

- upper levels of penthouse apartment, main building
- upper storey, three bedroom apartment with outdoor terrace, main building

In summary there are 31 residential apartments (in total) in the proposed complex, comprising:

3 three bedroom apartments and 15 two bed apartments in the main building

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Planning Authority: Hobart City Council

The logo for Circa, featuring a stylized 'C' and 'a' in white on a red background.

2 three bedroom apartments and 10 two bed apartments and 1 single bed studio in the James St building

Each apartment has one carpark, three have 2, and there is a large secure bicycle store to be used by all residents.



The historic cottage (now Preachers) in relation to the existing offices and the proposed apartments

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Description of the Proposed New Building

The basic tenet of the design was to try and create a new, high quality residential apartment building at the edge of the Hobart CBD, at the city end of Battery Point that respected its neighbours.

One of the main factors affecting the design was how it could be a visual foil to all its near neighbours, which has perhaps the greatest contrast that any Hobart development could ever have to deal with.

The site is one of extremes, as it is the very edge of Battery Point, with its heritage residential character, and also located on the opposite side of both Montpelier Retreat and Knopwood St are two very banal large commercial office buildings, with absolutely no aesthetic or grace whatsoever.

There is also the historic Georgian house on the corner of Knopwood and James Sts, which had been converted many decades ago into a famous seafood restaurant, initially known as Mures, and currently operated as a boutique pub / wine bar (Preachers), (and as such, it is a commercial property), and slightly further away, with its side boundary on James St is the very important historic property Narryna, now run as a museum.

The difference between the massive looming bulk of Kirksway House, which has no relation to anything other than corporate greed (with an extra story having been added illegally by the developer) and the two-storey scale of Battery Point is the challenge we as architects have tried to apply ourselves to. We have sought to create a development that relates in its massing and overall scale to the change between these two extremes, realizing that whatever the planning guidelines, the physical bulk of the commercial buildings and the historic buildings will always be there, and creating a project that responds to this reality is of paramount importance.

The answer for us was to create a development that comprised two buildings on a podium that is the carparking level. Because of the slope across the site in two directions, the entry to the carpark is on grade at the lowest portion of the site (the corner of Knopwood and Montpelier) and is then cut into the rising hillside.

On top of this podium we have created an inner shared open space. This space is part of a pedestrian route where people can walk through the site from Knopwood St and emerge part way along James St. Above this podium is two separate blocks each with their own lift up from the carpark level. The scale of these two blocks is very different and responds to the immediate surroundings adjacent to each.

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Respecting the cultural / heritage values

THE TWO STREETS AND THEIR DIFFERENT CHARACTERISTICS

Montpelier Retreat

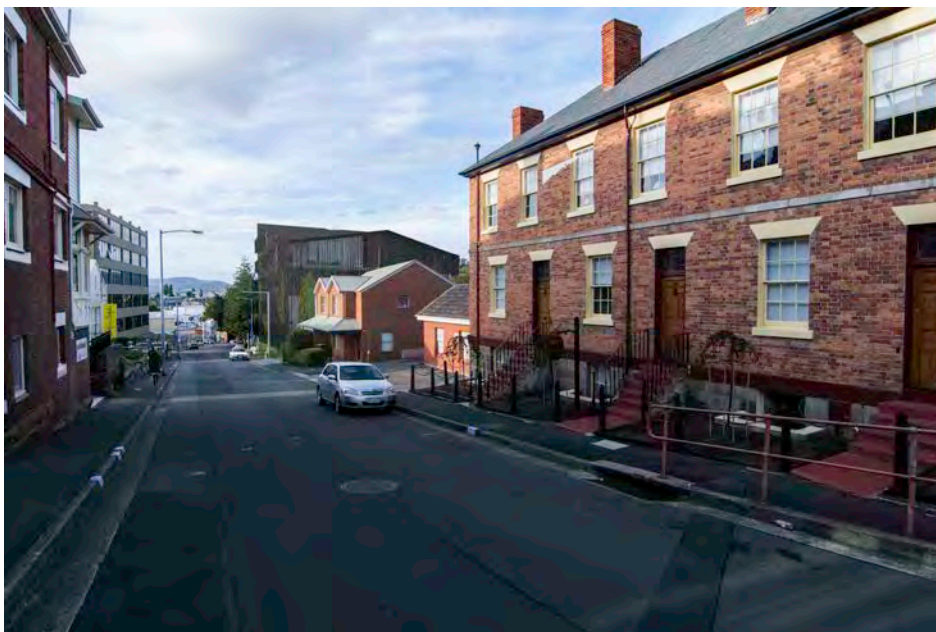
The upper part of the slope of Montpelier Retreat is crowned by a collection of residential structures, dominated on the SE side by the Portsea Terraces, a group of historic Victorian terraces, which both accentuate the fall of the land down to Salamanca and also the perspective up to where Battery Point meets Sandy Bay Road.

James Street

James St slopes gently down towards the north from Hampden Road. The site is almost at the lowest end of the street, and the James St Apartments needs to be seen as a natural end to the row of humble 19th century terraced houses that all sit hard on the street.

THE MAIN BUILDING AND MONTPELIER RETREAT

The mass / bulk of the main building is a response to its two neighbouring properties, the office blocks on opposite sides of both Knopwood St and Montpelier Retreat, and as well, the residential buildings that form the upper part of Montpelier Retreat.



Portsea Terrace (with their external stairs up to the front doors) with Kirksway House and the new apartment block.

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The new apartment building's form and roof line responds to and accentuates this perspective, and in doing so the resulting mass then also balances out the conflicting heights of the two office buildings themselves.

Of the two offices, the bulk of Kirksway House is by far the most significant (and bulky – both in its size and colour). For this reason, the scale of the main building rises up so that at its highest point it is approximately the height of the roof of Kirksway House, but because the roof is pitched rather than flat, it drops away in two directions to be far closer to the height of the adjacent 2 storey house on Montpelier Retreat, assisted as it is by the fact that the street is rising up the hill at the same time. (Montpelier Retreat elevation below)



There is an existing building on the corner of Knopwood and Montpelier, which we understand may be reasonably old, has been very badly altered, to a point where there is now negligible value in the structure, but the foundation plinth is sandstone whereas the upper walls were brick, now rendered. We intend to retain the stone plinth and use it as part of creating a link with history at street level.

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We are firmly of the opinion that if the new urban scale of the area where Montpelier and Knopwood intersect can be made to be visually commensurate with general height/bulk the existing buildings on the opposite sides of each of the aforementioned streets, then a more balanced, overall urban massing in the neighbourhood will be the result, with the new Montpelier Apartments appearing as the crown of the lower portion of Montpelier Retreat, which is wider than the upper portion (and indeed a standard two directional road, as opposed to a one way street).

THE JAMES ST APARTMENTS

The James St Apartments have been specifically designed to respond to the mainly two-storey scale of the cottages which form the remainder of one side of James Street, and on the opposite side, the historic stone wall which is the side boundary to Narryna. Accordingly the profile of the apartments is such that it will look like a series of new 2 storey terrace houses keeping the scale of the facades and most importantly the roof pitch, with the street having a screen/fence and a cantilevered upper storey 'verandah' which aligns with the rest of the cottages.

The James St Apartments are in fact bigger than what they seem. We have used an architectural device that is also found on the historic Portsea Terraces on the upper part of Montpelier Retreat, as a way of giving light and a garden outlook through a rear courtyard garden to the otherwise semi basement Ground Floor apartments in the James Street Building.

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View down James Street with the new apartments in context with the rest of the street.

Portsea Terraces have a semi-basement level, and access to the main Ground Floor of all of these terraces is in fact up an external flight of entry stairs, and this architectural detail is what we propose to use too with the entry to the lobby to the new apartments, and also the separate entries to the two end apartments. We believe that having a similar feeling at street level between the two groups of buildings will very much help reinforce the existing urban character of the Battery Point historic precinct.

The development also tries to respect the historic house on the corner of Knopwood and James Sts, which had been converted many decades ago into a famous seafood restaurant, known as Mures, and currently operated as a boutique pub / wine bar (Preachers), and as such, it is a commercial property. 'Preachers' is a stand-alone and apart from one dormer window in the hipped roof, all its walls to James St are completely blank. There is also a flat roof kitchen wing to the rear of the historic cottage, all of which will mean that our new apartment building, although it is built right up to the boundary, will appear quite separate from the massing of the historic cottage cum restaurant / pub.

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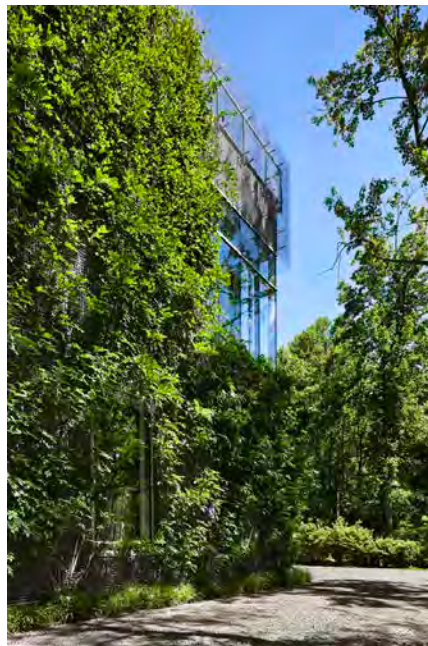
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The External Building Form and Materials

VERTICAL LANDSCAPING

The overall design intent is to produce a high quality urban apartment complex that reflects the natural 'green' values associated with the state. As such we have put great importance on creating a 'living' façade that is animated and variable, with opening and closing shutters, and external decks with integrated planter boxes that will allow vegetation to grow up the exterior of the building, even on upper floors.



We are very conscious that plants grow slowly and unevenly, and different owners will create different results. Some of the planting will be looked after through the 'body corporate' structure, but the planting on the private balconies of the apartments may be the individual owners own responsibility, although there will be automatic watering / nutrient supplement systems installed.

We have had preliminary conversations with Play St, Landscape Architects, and also with Mark Fountain, Royal Tasmanian Botanical Gardens Director, who are in complete agreement that carefully chosen plants can be obtained to be successful in these conditions. We believe the greenery to the extent that it grows and animates the vertical facades will bring 'life' to the building in a subtle but elegant manner.

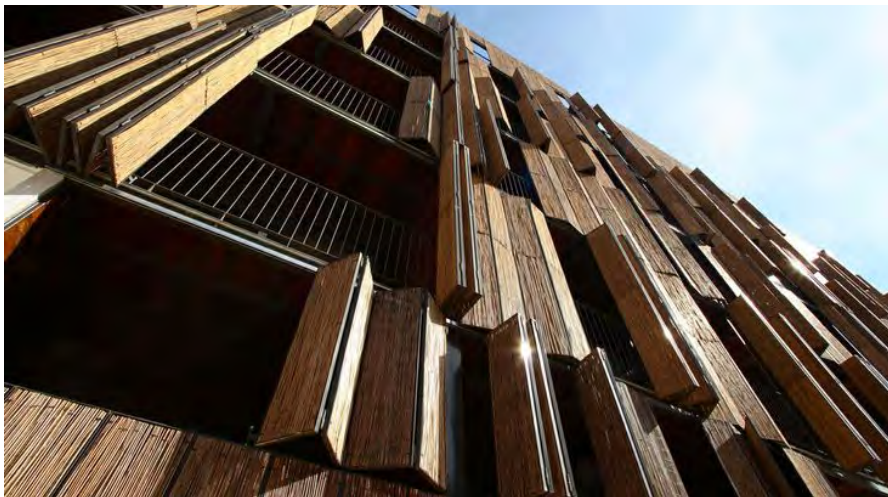
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THE SHUTTERS / SCREENS

We have tried very earnestly to create a building that is not a static, monolithic block. We intend to do this through the extensive use of operable shutters / screens.



In previous centuries before the invention of air conditioning, climate control was naturally achieved by the use of external screens or shutters, which could be opened or closed from the rooms directly behind them. As different owners / tenants will have different personal wishes, the degree of openness will change from apartment to apartment and at different times of the day and vary during each season.

The design of our shutters / screens has evolved from the fact that they will be used for both a privacy screen and also a fixed frame for growing creepers. The form, material and patterning of the screens have been adapted from traditional Japanese timber screens, which give a delicacy and softness to their traditional architecture. Shou-sugi-ban or "the burning of Japanese cypress – sugi" is an age old Japanese practice, but it has become increasingly popular outside of the islands, and even been used by Australian architects, including our own practice. Traditional Japanese cypress, various types of cedar (Western Red Cedar) and larch are the more commonly used timbers for charred cladding although decking experiments has also seen hardwood used in the process.

The process is relatively simple and involves using either an open fire or jet flame to torch the exterior of timber (around 3-5mm) so that it achieves a charred finish. The process forms a carbon layer on the exterior of the boards which protects the lumber inside and is said to render the wood nearly maintenance free. It has also been suggested that it will make the boards more resistant to

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The logo consists of a stylized lowercase 'c' followed by a lowercase 'a', both in a white serif font, set against a red rectangular background.

fire, rot and pests, and will have an expected life span of more than 80 – 100 years.



Traditional Japanese timber building and charred timber façade

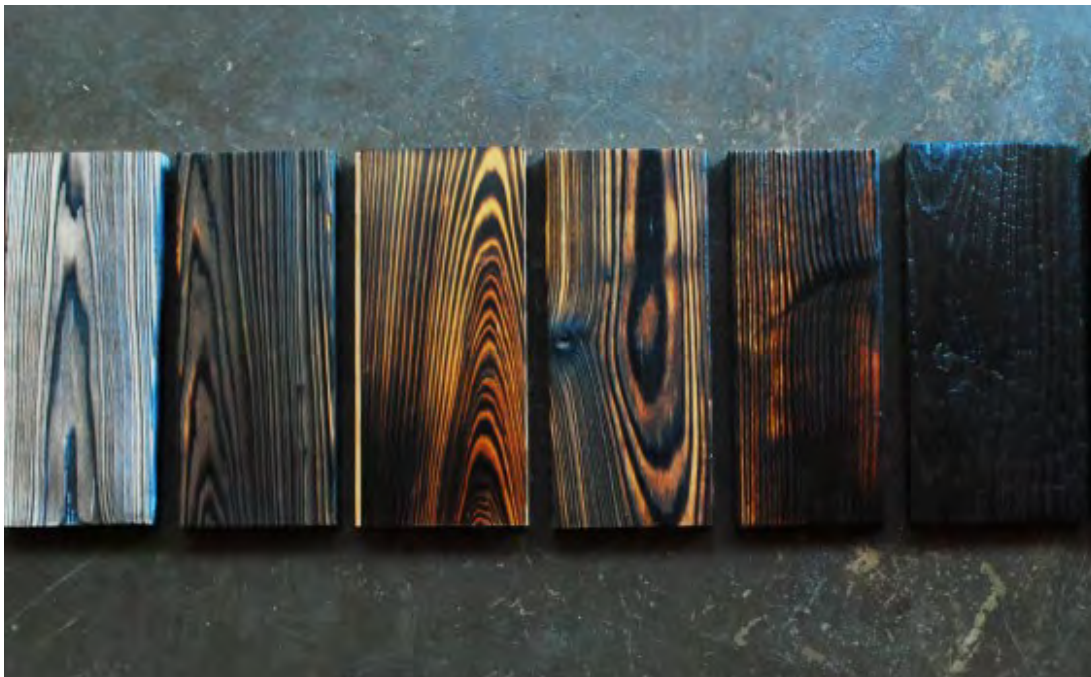
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Proposed Schedule of Finishes

The charred timber will age over time, as it is a natural material. It also will behave differently depending on the species of the timber that is finally chosen. We can therefore only give a guide to the proposed colour palette.



The possible range in colour / texture of different charred timbers.

In Montpelier we have unpainted brick and darker grey roof tones. The new Main Building will essentially have dark grey tones and whites with galvanised prefinished metal as panelling against a background colour of untreated cement sheet. There will be an exposed aggregate / pebble finish on the lower level concrete sections of the new buildings, a palette which we believe will sit well with white painted brick of Preachers and the office buildings.

MAIN BUILDING

Corner Plinth:	Existing sandstone wall revealed by removing render
Carpark wall to Montpelier	Galvanised steel open grille supporting creepers
Entry Folding Door to Carpark	Proprietary mesh Tiltadoor or equal
Signage Wall Adj Carpark	Perforated mesh to match Tiltadoor
Entry Door and Lobby	Clear frameless glass
Low level side walls	Concrete with exposed aggregate

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Main façades

Galvanised steel frame (prefabricated and removable)
Charred timber lattice screens fixed to frame
FC sheet sheeting to external walls

Roof

Colorbond finish metal roof sheeting, Windspray mid grey colour



In James Street we have stone boundary wall of Narryna and painted brick terraces (cream colours and old fashioned blues) with painted metal roofs. .

JAMES ST BUILDING

Plinth / lower ground level:

Precast concrete retaining walls

External stairs

Concrete, trowelled on nonslip, aggregate finish

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The logo for Circa Morris Nunn, Architects, featuring a stylized 'C' and 'a' in white on a red rectangular background.

External fence	Charred timber lattice fixed to steel frame
Entry Door and Lobby	Clear frameless glass
Main façades	Steel frame (prefabricated and removable)
	Charred timber lattice screens fixed to frame
	FC sheet sheeting to external walls
Roof	Colorbond finish metal roof sheeting, mid grey colour

In conclusion, we sincerely believe what we are proposing is achievable for this important site, and we hope this meets with general approval.

We believe this project could help define a new standard in urban apartments in the central Hobart area.

A handwritten signature in black ink, appearing to read 'Prof. Robert Morris-Nunn'.

Prof. Robert Morris-Nunn.
Circa Morris Nunn, Architects.

40-44 Montpelier Retreat Battery Point Heritage Assessment

prepared for

circa morris-nunn architects

by

Paul Davies, Architect and Heritage Consultant

Brief and Background

We have been requested by circa morris-nun to provide a heritage assessment of the proposed development in relation to the planning scheme provisions and within the context and setting of the site.

This report is not intended to be an exhaustive analysis of the planning scheme provisions but rather an overview of whether the development is an appropriate one for this location and setting.

The Elliott's site has had a use that was not consistent with the character or nature of the area and structures that while suitable for the use did not fit with the area. For the purpose of this assessment it is assumed that the various buildings and structures on the site are not significant and that there are no issues related to site fabric. It is also noted that elements of the corner building are incorporated into the proposal. The matters to be discussed are related to form, scale, design, streetscape and the character of the area into which the new building is to be placed.

In the recent past Council proposed rezoning the block in which this development is located to Sullivans Cove rather than the Battery Point Planning Scheme. This was not successful and I opposed that change at the time. Presumably the change was proposed to facilitate the development of this site as there is no other site within the block that would warrant such a change to the planning schemes.

While the location is correctly (as I determine it) within the Battery Point (now Hobart Planning Scheme) area, it is obvious and a matter of fact that it is a transitional site between two very different areas with very different planning scheme regimes. It would be naive and simplistic to view the development site as a standard site within the Battery Point area and apply the Battery Point provisions without any further nuance or discernment. This is one of the very few if not only site within the Battery Point provisions that requires a very specific understanding to achieve an appropriate development outcome.

The Site

The site fronts three streets, Montpelier Retreat and Knopwood and James Streets. No 5 Knopwood Street occupies the corner of Knopwood and James Streets. The site comprises two roughly rectangular offset blocks that form the largest site within the immediate block. The two parts of the site have separate frontages and orientations even though they adjoin at a common boundary.

For the purpose of this report the site is assumed to be vacant.

As noted the site adjoins no 5 Knopwood but also 46-48 Montpelier Retreat which is a late twentieth century infill development mimicking in a loose way colonial forms. Similarly, but not immediately adjacent is 52 Montpelier that is similar in that it is a recent development based on a rough understanding of earlier forms.

James Street contains a series of early cottages built close to the street frontage separated from the subject site by a laneway.

The site falls from south to north towards the waterfront.

The Setting

Outside the immediate block in which the proposal is situated the surrounding developments, even though not all within Battery Point provide the context for this site and the planning scheme requires they be understood and taken into account. There are five aspects to the setting to be considered:

- 1 35 Montpelier Retreat and the rear of buildings fronting Sandy Bay Road
The building fronts Montpelier and is now set between rear yards. It is slightly elevated from the street and its immediate setting is now mixed in character.
- 2 2-8 Kirksway Place and 38 Montpelier Retreat
These are large commercial developments typical of the late twentieth century. They create an abrupt change in scale and form along the boundary between planning schemes. They have a negative impact on the setting to the south as a result of their solid form and their inconsistency with other built forms. This is not just mass and scale it is the solidity and unrelenting rhythm of the buildings that is vastly different to the typical Battery Point building.
- 3 8 Knopwood and 7 James Street
These are twentieth century buildings that are slightly removed from the site by setbacks and level changes, they relate more to 5 Knopwood and 38 Montpelier in terms of context.
- 4 Narryna
The development site is opposite the rear yard and buildings of Narryna. James Street is quite narrow and Narryna is bounded by a stone wall and is set above the street level. The scale of infill development needs to relate to the setting of Narryna. The present streetscape scale is predominantly 2 storey.
- 5 Buildings within the block
At the southern end of the block the buildings are consistent with the general Battery Point character, fronting the street closely mostly two storey, mix of shops and houses with a range of development periods. It is noted that the immediately adjoining buildings are not early buildings but replicas. The northern end of the block, apart from no 5 which has changed use to a bar (which is not consistent with the character and use of Battery Point) is degraded and is not typical of Battery Point development. The use of 5 as a bar indicates its separation from Battery Point as this is a use that would be unlikely to be approved elsewhere in the precinct.

The Planning Scheme

The recent Planning Scheme has adopted much of the former Battery Point Scheme albeit with some change. It is disappointing that the Scheme was not better resolved or more nuanced in its heritage understanding, however, it is the current scheme.

The site is within a heritage precinct. **The Scheme defines a heritage precinct as having particular historic cultural heritage significance because of the collective value of individual places as a group for their streetscape or townscape values.**

This is very specific and under the definition the northern portion of the subject block does not fit within the concept of a precinct as defined. The subject site and 46-52 Montpelier do not have individual or collective historic cultural heritage values and do not add anything to the townscape or streetscape values of the area. Quite the reverse.

The site is also a transitional site. This is not specifically addressed in the Scheme in this location but the abrupt change from the residential form of Battery Point (that is the predominant form) and the commercial development that adjoins this site makes the site transitional irrespective of the Scheme.

The site is larger than most sites within Battery Point, it has had a different use to most sites, it is bounded by much larger scale development and has more traditional Battery Point built forms to the south. It provides an opportunity to create built forms that respond to all of these considerations.

For the site to be successfully developed in terms of providing built form that responds to the context, the development will move outside the standard Battery Point controls that are only aimed at retaining the small principally residential scale of the area.

There was a proposal by Council to relocate this site to the Sullivans Cove Planning Scheme, presumably to allow for greater development. I opposed that move at the time and my submission noted that the site was transitional and while it was capable of greater development it had to be done within the context of moving from Battery Point towards Sullivans Cove and not simply extending the Sullivans Cove controls. I remain of that view and the current proposal is designed within that parameter.

The Proposal

The proposed built form responds well to the specific site conditions that exist around it. It relates to the larger and smaller buildings, it presents well resolved streetscape to Battery Point and an appropriate massing to Sullivans Cove. It screens the rather poorly designed office buildings to the north from Battery Point and provides a physical transition of built form. It does not overwhelm or impact on significant buildings and it fits into the longer views around and past the site.

This form of development is also to be preferred over strictly complying development as small 2 storey residential buildings in this location are inappropriately located and will be overwhelmed by the existing and presumably to be built new developments to the north.

40 -44 Montpelier Retreat

Notes for City Planning Committee Meeting

As Paul Davies has indicated in his summary report, I also supported the site not being rezoned to become a part of Sullivans Cove when the proposed Scheme change was put forward over 2 years ago. I have not changed my views and I am of the opinion that the proposed development achieves the Performance Criteria requirements of the Interim Scheme and the Heritage Precinct.

I think all would agree that the aim of the planning scheme is that the site not remain vacant or a car park and that it be developed for residential purposes.

We then need to look at what are the permitted standards under the scheme for bulk and density. I include height and site coverage in the general subject of bulk. One compares a permitted development to the discretionary proposal being put forward.

The application requests a discretion be given in regard to density (number dwellings). The performance criteria are clearly met in regard to density and the planning officer for Council confirms this.

The main issue raised by objectors is bulk and height combined with heritage impact. Heritage impact has been addressed in part by Paul Davies. Robert Morris-Nunn will address his architectural approach and rationale which is intrinsic to the matter of heritage impact. Robert Morris-Nunn is an architect who has been awarded numerous times for his work on heritage buildings and infill development on heritage listed sites.

There are two buildings proposed: one for James Street, and one fronting Montpelier Retreat and Knopwood Street. This is in response to streetscape, as well as the heritage precinct, which is presently blighted by the site from all perspectives.

James Street

The building is only barely visible from the entry to James Street where it meets Hampden Road. The heritage listed terraces take the visual lead in this view as well as the Narryna wall. The building has been designed to be no higher in its ridge line than the terraces and to take cues from terrace house design in the language of its façade.

This building has no impact on Narryna and would have the same height generally as a set of terrace houses along this section of James Street. It is only immediately adjacent to a pair of more newly built replica residences – no. 9-11 James and it is separated from this building

by a vehicular ROW. The rear garden area of these dwellings is not fenced and is used in part as parking.

The planning scheme permits (E13.8.4) two storey buildings built to the side boundaries for the length of the side boundary to within 5 metres of the rear boundary. There is no side boundary setback minimum. Therefore the permitted standard would be a two storey terrace building with a brick wall and pitched roof possibly a gable end on the side boundary.



Figure 1: 46-48 Montpelier -side view showing height and bulk of a two storey terrace with minimal side setback

The proposed development includes a setback of approximately 1.8 metres from the side boundary and will have no more visual impact than a compliant building such as shown above or below.



Figure 2: Two storey buildings in Hampden Road

The visual bulk of the new building from within Battery Point Precinct will be no more detrimental than the two examples given above which are consistent with the Acceptable Solution.

The building complies with the rear setback standards and therefore its depth cannot be considered discretionary. All windows, glass doors and decks will be screened to meet Council standards and can be further conditioned to ensure this. Therefore privacy will not be any more affected than dwelling to dwelling rear garden and side viewing. Again, one must assume that residential development will take place on the site and that the car park as it stands is an inappropriate use under the Scheme. The existing car park and unfenced ROW also have an existing impact on the privacy of 9-11 James Street.



Figure 3: View from 9-11 James Street across subject site



Figure 4: Diagram showing position of private open space to adjacent properties and side boundary of subject site - ROW area marked in orange

Montpelier Retreat

In Montpelier Retreat a similar situation exists. There is a pair of 2 storey terrace houses of modern design built close to the boundary with small courtyards (this time fenced in part) and rear car parking area. A development of the site meeting the side boundary setback standards and height standards would go all the way along the side boundary of 46 Montpelier and would be two storeys high only stopping 5 metres from the rear boundary corner where the car park is. This could be a completely blank wall of any material even concrete with a gable end.



Figure 5: View from rear of 46-48 Montpelier Retreat

The proposal has a more sensitive approach than the Acceptable Solution permits. The building will be two storeys but will not have a pitched roof – so reducing height. It will be setback from the side boundary by approximately 1 metre and will also be setback from the street frontage by 2.66 metres so giving the side wall of the existing house more light and visual separation from the new development.

The building will be designed to be a series of green walls or screens. Examples are given below. This is not a new device in architecture that is untested rather it is an old method that has found new improved techniques and more flexible solutions.



Again the rear boundary setback standard is complied with therefore the depth of the building cannot be considered a discretionary matter.

All in all the relationship between the proposed building and the existing houses at 46-48 Montpelier Retreat is a more amenable outcome than the Acceptable Solution of the Scheme.

Townscape and height

The proposed development is in part 5 storeys. This is a departure from the 2 storey acceptable solution given in clause E13.8.4. The building is also in part 4 storeys, 3 storeys and 2 storeys.

The Performance Criteria for an increase in height above two storeys is given in clause 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.

Obtrusive means prominent in an unwelcome way.

Paul Davies has given advice on the pattern of development that is characteristic of the cultural heritage of the precinct and why this site is unique in the precinct and in the vicinity. The heritage comments in the officer report only make comment that in some way the 4 and 6 storey buildings across the road are the sole justification for the design as presented. The phrase "significant departure" is repeated throughout with little discussion, qualification or elaboration.

The proposed development of the site is reparation of a long standing inconsistency in terms of use and appearance on the site itself.

The 5 storey portion of the building is not visible from Hampden Road. It is not visible from James Street. It is barely visible from Sandy Bay Rd and this is outside the Battery Point Precinct. Only the 2 to 3 storey building is visible in James Street and this is wholly consistent with the streetscape and does not obstruct or diminish any heritage building or heritage character. The two buildings are not discussed separately by the heritage officer. The James Street building is a half a storey below ground level and the upper level is in the roof form set back from the street.

The sweep of the 5 storey part of the building is visible when one stands in Sullivans Cove in Montpelier Retreat and in Knopwood Street. In all these positions it is read in conjunction with its two neighbouring 4 and 6 storey buildings in the Cove Scheme area. It has no impact on the heritage values of Battery Point as seen or expressed in these streetscapes. There is little if any of Battery Point values in these particular streetscapes and the remnant values there, including Portsea Terraces, Narryna and 5 Knopwood, remain prominent and clearly articulated. At no point does the proposed building obstruct a view of or diminish the values of a heritage building or the values of the Precinct as a whole.

The design also provides a walkway through the site with courtyard and garden. This also better reflects the pattern of development in Battery Point than the existing site.

Amenity of Preachers

The Planning Scheme does not afford Preachers any amenity protection as a “bar”. It is a prohibited use in a residential zone and its amenity to date has been created by the subject site being vacant so creating a buffer between the prohibited use and other permitted residences nearby. The argument that there is a loss of mountain view from the beer garden is simply not an argument that has any weight under the Scheme. The existing view from the beer garden is a graffiti/mural concrete block wall and a carpark. This will change to a residential courtyard space that is fully landscaped. It is clear the proposal is an improvement in setting for the building.



Figure 6: View across subject site to the rear of Preachers



Figure 7: View across Knapwood Street to beer garden

The proposal is a dramatic building as viewed from Sullivans Cove for a site which presently has no characteristics of Battery Point Precinct. It has been designed to “lead into” and “respond to” the Battery Point streetscape with minimal intrusion from any vantage point within Battery Point. It is therefore in my opinion not an obstruction, rather it is a “full stop”, a containment, and a defining building between the two areas.

Paul Davies has itemised why the site and its immediate surroundings have few characteristics of the heritage precinct that are in evidence and that those that are in evidence are retained and not obstructed by the proposal. He is also of the professional opinion that the proposal does not conflict with the Interim Scheme in particular the Battery Point Precinct statement of cultural heritage significance.

The Battery Point Precinct requires high quality architecture which does not replicate or mimic the heritage listed items within it. It requires infill of sites at a higher residential density and requires sites which are occupied by prohibited uses and inappropriate development to be redeveloped for residential uses to the highest standard the society can achieve. The proposal in my opinion achieves this.

Kate Loveday B Arch

4 April 2016