

# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."



Statutory Planning Department  
Boroondara City Council  
8 Inglesby Road  
Camberwell VIC 3124

Sent by email to: boroondara@boroondara.vic.gov.au

22 March 2023

**Re: Application for Review No. P281/2023**  
**979-981 Burke Road, Camberwell**

Dear Sir/Madam

We act on behalf of CW Victoria Hill Development Pty Ltd, with respect to the above matter. An application for review has recently been lodged with the Victorian Civil and Administrative Tribunal. In accordance with the Tribunal's direction, we are required to provide you with the following:

- A copy of the Application by a Permit Holder to Cancel or Amend a Permit (including all attachments), lodged with the Tribunal on 1 March 2023; and
- VCAT Order dated 16 March 2023.

We note that the above-mentioned application has been included in VCAT's Major Cases List. Therefore, we understand that the Tribunal has allocated this application the following hearing dates:

Compulsory Conference (Online Platform)	18 May 2023	10:00am – 1:00pm
Hearing (In Person)	7, 8 & 9 August 2023	10:00am – 4:30pm (3 days)

Should you have any queries regarding this matter, please do not hesitate to contact Genevieve Kour of our Office on 8648 3500.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Jacqui'.

**Jacqui Cottrell**  
PA / Administration Clerk  
jcottrell@upco.com.au  
encl.

LTR App to Council

## STATEMENT OF CHANGES – VCAT REF NO. PL126/2020

**Planning Scheme:** Boroondara Planning Scheme

**Responsible Authority:** City of Boroondara

**Address of the land:** 979-981 Burke Road, Camberwell, VIC 3124

**Date:** 27 February 2023

The following statement should be read in conjunction with amended architectural drawings dated 27 February 2023.

### Executive Summary of Key Changes:

- GROUND FLOOR USES:
  - Removal of office use to Ground / Mezzanine
  - Replacement with two (2) new residential apartments
  - Increase in Food and Beverage tenancy size at street corner owing to updated fire services engineering
- BOUNDARY FENCING
  - Adjusted extent of demolition to southern boundary fence owing to site construction constraints
  - Change from masonry fence to metal palisade fence along western boundary
- BASEMENT
  - Reconfiguration and reallocation of car-parking owing to adjusted building uses
  - Updates to quantity and arrangement of private garages
  - Updates in line with amended Waste Management Plan
  - Deletion of end of trip facilities and reduction in bike parking owing to removal of Office use
- ROOFTOP
  - Provision of private outdoor space to two (2) penthouse apartments
  - Outdoor space includes new stair access up to roof level, and raised private outdoor area / pool
  - Shade structures proposed over private outdoor space
  - Minor change in rooftop floor to floor height owing to site construction constraints
- INTERIOR
  - Apartment interior layout revisions throughout the development
  - Minor adjustments in apartment sizes throughout the development
  - Common spaces to Ground Floor and Mezzanine adjusted

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- **FAÇADE**

- Minor realignments of facades on Level 5 owing to updated apartment layout; setback adjustments do not exceed originally endorsed setbacks
- Realignment of Mezzanine façade on Victoria Road to align more closely with Ground level under; planting removed due to maintenance concerns; updated façade alignment maintains existing minimum setback from Ground level under
- Removal of 'automatic external shading' to East and West facades
- Minor updates to Burke Rd retail shopfront levels to respond to updated site survey information; concrete hobs provided at low-level under shopfront glazing
- Southern boundary wall materiality revised
- Southern boundary wall on boundary extent updated in line with structural advice to achieve curved forms
- Level 03 planter on boundary moved to boundary to align with face of boundary walls under on Levels 01-03

## Apartments

- Increase in the overall number of apartments from 24 to 26.
- Replanning of apartment layouts throughout the development

Apartment Typologies	Endorsed Drawings	Proposed Amendment	Difference
2 bed – 2 bath	3	3	0
2 bed – 2.5 bath	0	0	0
2 bed – 2 bath – study	2	2	0
3 bed – 2.5 bath	4	6	+2
3 bed – 3 bath	1	1	0
3 bed – 3.5 bath	9	9	0
3 bed – 3.5 bath – study	2	2	0
4 bed – 3.5 bath	1	1	0
Total apartments	24	26	+2

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## Car and Bicycle Parking

- Decrease in the overall number of car parks from 92 to 81 (11 spaces).
- Increase in the number of residential car parks from 45 to 52. Parking layout has been adjusted on B2 and B3 to reflect private garaging for all residential apartments.
- Reduction in number of retail / café car parks from 8 to 2. Comprising:
  - Reduction from 5 patron cars to 2
  - Reduction from 3 staff cars to 0
- Reduction in number of supermarket car parks from 25 to 22.
  - Reduction from 22 patron cars to 20
  - Reduction from 3 staff cars to 2
- Reduction of office car parks from 9 to 0 to reflect deletion of this use

Car Parks	Endorsed Drawings	Proposed Amendment	Difference
Residential	45	52	+7
Supermarket	25	22	-3
Food and Beverage	8	2	-6
Office	9	0	-9
Visitor	5	5	0
Total	92	81	-11

## Retail and Commercial Land Uses

- Removal of office uses from Ground and Mezzanine levels; removal of associated storage areas from Ground and Mezzanine levels; area reallocated to residential apartments
- Interior common spaces to Ground and Mezzanine levels updated per developed interior design
- Ground floor Food and Beverage tenancy increase in footprint owing to updated fire services engineering advice



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## Materiality Changes

- Building materiality revised per the below table:

Material Code	Endorsed Drawings	Proposed Amendment
AL01	Aluminium Window Frame Colour: Bronze	Aluminium Window Frame Colour: Bronze
BR01	Brick Balustrade Colour: Cream / Neutral	Brick Balustrade Colour: Cream / Neutral
CN01	Concrete Soffit Colour: Natural Grey	Concrete Soffit Colour: Natural Grey
CN02	Concrete Wall Colour: Natural Grey	Concrete Wall Colour: Natural Grey
CN03	Concrete Wall Colour: Dark Oxide	Concrete Wall Colour: Cream / Neutral with Texture
GL01	Glazing Colour: Neutral	Glazing Colour: Neutral
GL02	Glazing Colour: Spandrel to match GL01	Glazing Colour: Spandrel to match GL01
GL03	Glazed Balustrade Colour: To match GL01	Glazed Balustrade Colour: To match GL01
MF01	Metal Balustrade Colour: Bronze	Metal Balustrade Colour: Bronze
MF02	Metal Cladding: Colour: Bronze	Metal Cladding: Colour: Bronze
MF03	Perforated Metal Screen Colour: Black	Perforated Metal Screen Colour: Black
		Terrace Floor Finish Colour: Travertine
		Rooftop Pool Coping Tile Colour: Travertine
		Rooftop Pool Interior Tile Colour: Blue

## Schedule of Drawing Changes

### TP\_0001\_EXISTING SITE PLAN

No changes

### TP\_0100\_DEMOLITION PLAN

Updated demolition extent to southern boundary wall

### TP\_1000\_PROPOSED SITE PLAN

Rooftop updated to depict private outdoor space, stair connection areas, rooftop pools and shade structures

### TP\_1001\_PROPOSED BASEMENT 03 FLOOR PLAN

Garage numbering updated in line with amended allocations

Building services updated to north-east corner

Demising walls around storage areas updated per new construction method

### TP\_1002\_PROPOSED BASEMENT 02 FLOOR PLAN

Office cars deleted owing to removal of use

Residential visitor cars relocated to Basement 01 from this level

End of Trip facilities deleted owing to removal of office use

Garage numbering updated in line with amended allocations

Demising walls around storage areas updated per new construction method

### TP\_1003\_PROPOSED BASEMENT 01 FLOOR PLAN

Double doors deleted from residential loading area

Car parking allocations across Basement 01 updated to reflect revised retail parking provision

Updates to waste areas in accordance with Waste Management Plan

Demising walls around north-east services areas updated per new construction method

Relocation of staff bicycle parking from Basement 02; quantity of bicycle parks updated to reflect revised retail provision and deletion of office use

## TP\_1004\_PROPOSED GROUND FLOOR PLAN

Western boundary fence updated to provide metal palisade fence in lieu of masonry fence

Brick skin treatment to existing retained fence on western boundary removed

Extent of new wall on boundary to southern side clarified

Minor reconfiguration of internal apartment layouts

Updates to area measurements, including to retail uses

Deletion of office fronting Victoria Road

Deletion of storage area behind office fronting Victoria Road

Provision of new residential apartment facing Victoria Road

Updates to communal interior space, including internal stairs and access arrangements

Reduction in fire pump room; provision of security area; balance of floor area reallocated to Food and Beverage use

## TP\_1005\_PROPOSED MEZZANINE FLOOR PLAN

Visible changes from Ground Floor below noted

Deletion of office fronting Victoria Road

Deletion of storage area behind office fronting Victoria Road

Provision of new residential apartment facing Victoria Road

Realignment of façade fronting Victoria Road to more closely reflect Ground floor arrangement

Deletion of planter box along Victoria Road frontage

Updates to communal interior space, including internal stairs and access arrangements

## TP\_1006\_PROPOSED Level 01 FLOOR PLAN

Minor reconfiguration of internal apartment layouts

Rebalancing of internal floor areas between apartments, cores and corridor areas

## TP\_1007\_PROPOSED Level 02 FLOOR PLAN

Minor reconfiguration of internal apartment layouts

Rebalancing of internal floor areas between apartments, cores and corridor areas

**TP\_1008\_PROPOSED Level 03 FLOOR PLAN**

Minor reconfiguration of internal apartment layouts

Rebalancing of internal floor areas between apartments, cores and corridor areas

Southern landscape zone extended to boundary, with boundary setback deleted

**TP\_1009\_PROPOSED Level 04 FLOOR PLAN**

Minor reconfiguration of internal apartment layouts

Rebalancing of internal floor areas between apartments, cores and corridor areas

**TP\_1010\_PROPOSED Level 05 FLOOR PLAN**

New interior layouts to apartments 501 and 502

Realignment of some facades to north and west facades to suit new layout;

façade alignments maintain previously agreed setback limitations

Stair access up to rooftop level over depicted

Updates to calculations of apartment areas, terrace areas, core areas

**TP\_1012\_PROPOSED ROOF PLAN**

Rooftop level updated to depict stair access to penthouse apartments 501 and

502, private outdoor space, elevated private outdoor space and private pools

Extents of rooftop privacy screening around new private open space highlighted

Setbacks to boundary and building massing updated for clarity

Shading structures over private outdoor space annotated

Upturn structural beam on Victoria Road added

**TP\_1501 TYPOLOGY PLANS 01**

Drawing added to reflect new residential apartment addressing Victoria Road

**TP\_1502 TYPOLOGY PLANS 02**

Minor reconfiguration of internal apartment layouts

**TP\_1503 TYPOLOGY PLANS 03**

Drawing added to reflect new residential apartment addressing Victoria Road

**TP\_1504\_TYPOLOGY PLANS 04**

Minor reconfiguration of internal apartment layouts

**TP\_1505\_TYPOLOGY PLANS 05**

Minor reconfiguration of internal apartment layouts

**TP\_1506\_TYPOLOGY PLANS 06**

Minor reconfiguration of internal apartment layouts

**TP\_1507\_TYPOLOGY PLANS 07**

Minor reconfiguration of internal apartment layouts

**TP\_1508\_TYPOLOGY PLANS 08**

Minor reconfiguration of internal apartment layouts

**TP\_1509\_TYPOLOGY PLANS 09**

Minor reconfiguration of internal apartment layouts

**TP\_1510\_TYPOLOGY PLANS 10**

Minor reconfiguration of internal apartment layouts

**TP\_1511\_TYPOLOGY PLANS 11**

Minor reconfiguration of internal apartment layouts

**TP\_1512\_TYPOLOGY PLANS 12**

Minor reconfiguration of internal apartment layouts

**TP\_1513\_TYPOLOGY PLANS 13**

Minor reconfiguration of internal apartment layouts

**TP\_1514\_TYPOLOGY PLANS 14**

Minor reconfiguration of internal apartment layouts

**TP\_1515\_TYPOLOGY PLANS 15**

Minor reconfiguration of internal apartment layouts

## TP\_1516 TYPOLOGY PLANS 16

Minor reconfiguration of internal apartment layouts

## TP\_1517 TYPOLOGY PLANS 17

Minor reconfiguration of internal apartment layouts

## TP\_1518 TYPOLOGY PLANS 18

Minor reconfiguration of internal apartment layouts

## TP\_1519 TYPOLOGY PLANS 19

Minor reconfiguration of internal apartment layouts

## TP\_1520 TYPOLOGY PLANS 20

Minor reconfiguration of internal apartment layouts

## TP\_1521 TYPOLOGY PLANS 21

Minor reconfiguration of internal apartment layouts

## TP\_1522 TYPOLOGY PLANS 22

Minor reconfiguration of internal apartment layouts

Setbacks adjusted to north and west facades

Rooftop access stair depicted

## TP\_1523 TYPOLOGY PLANS 23

Minor reconfiguration of internal apartment layouts

Rooftop access stair depicted

## TP\_2000 STREETSCAPE ELEVATIONS

Building design updated in street context

## TP\_2001 NORTH ELEVATION

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

Mezzanine level planting deleted

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## TP\_2002\_EAST ELEVATION

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

External operable shading deleted from elevation

Minor changes to ground level shopfront levels to better respond to street levels

## TP\_2003\_SOUTH ELEVATION

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

Clarified new construction of wall on boundary in corner of lot

Materiality of southern boundary revised; wall on boundary alignments updated in line with structural advice; planter box to Level 3 located on boundary

## TP\_2004\_WEST ELEVATION

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

External operable shading deleted from elevation

Wall on boundary adjusted from masonry to metal palisade

## TP\_3000\_SECTION AA

Update to rooftop floor to floor height

Wall on boundary notations updated

Ground / Mezzanine use adjusted from Office to Apartment

## TP\_3001\_SECTION BB

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

## TP\_3002\_SECTION CC

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

Updates to southern boundary wall depicted

## TP\_3003\_SECTION DD

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

Ground / Mezzanine uses adjusted from Office to Apartment

Updates to southern boundary wall depicted

## TP\_3100\_DETAIL SECTION - 01

Ground / Mezzanine uses adjusted from Office to Apartment

## TP\_4000\_OVERLOOKING SECTIONS 01

Update to rooftop floor to floor height

Ground / Mezzanine uses adjusted from Office to Apartment

Wall on boundary notations updated

## TP\_4001\_OVERLOOKING SECTIONS 02

Update to rooftop floor to floor height

## TP\_4002\_OVERLOOKING SECTIONS 03

Update to rooftop floor to floor height

Outdoor pools, terraces, screening devices and shade structures depicted

## TP\_4003\_OVERLOOKING SECTIONS 04

Update to rooftop floor to floor height

## TP\_4100\_DETAIL ELEVATION

Minor changes to ground level shopfront levels to better respond to street levels



# VCAT Directed Plans

APPLICATION BY A PERMIT HOLDER TO  
CANCEL OR AMEND A PERMIT

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023.

VCAT

victorian civil &  
administrative  
tribunal

VCAT reference number (Office use only): P

## WHAT YOU CAN APPLY FOR

If you are a permit holder, owner or occupier of land, or someone entitled to use or develop land, you can apply to cancel or amend a permit under section 87 or 87A of the *Planning and Environment Act 1987*.

An application to amend a permit can only be made under section 87A if the permit, or a previously amended permit, was issued at VCAT's direction.

## WHAT DO YOU WANT VCAT TO DO?

### 1. What do you want VCAT to do?

Amend a permit

### 2. Which section of the *Planning and Environment Act 1987* are you applying under?

Section 87A(2)(a) of the Planning and Environment Act 1987 - Application by the owner or occupier of the land concerned to cancel or amend a permit issued at the direction of the Tribunal

## WHO IS MAKING THIS APPLICATION?

If there is more than one applicant, you can add joint applicant/s at the bottom of this page.

### 3. Who is making this application?

A company

### 4. Full name of the individual, body corporate, company or authority making this application.

CW Victoria Hill Development Pty Ltd

### 5. Are you?

- ☒ Owner of the land
- ☐ Occupier of the land
- ☐ Person entitled to use or develop the land

### 6. Do you wish to be identified as a person of Aboriginal and/or Torres Strait Islander descent?

No

### 7. What is your address?

This will be the address VCAT uses to correspond with you. It must be an address in Victoria. If you have a representative, we will send all our notices to your representative's address instead.

Street address Level 4, 412 St Kilda Road

Suburb

Melbourne

State

VIC

Postcode

3004

# VCAT Directed Plans

Phone number 0386483500

Email gkour@upco.com.au

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8. Is this a joint application?

No

## IS SOMEONE REPRESENTING YOU?

If you nominate a representative, we will send all our correspondences to your representative's address instead of your address. It must be an address in Victoria.

9. Is someone representing you? If No, skip to Question 11.

Yes

10. Details of your representative:

Organisation name (if applicable) Urban Planning Collective

Full name of representative Genevieve Kour

Street address Level 4, 412 St Kilda Road

Suburb Melbourne

State VIC

Postcode 3004

Phone number 0386483500

Email gkour@upco.com.au

## ABOUT THE PERMIT TO BE AMENDED OR CANCELLED

11. Address of the land the permit relates to:

979-981 Burke Road, Camberwell

12. Permit number:

PP19/0843

13. Date the permit was issued:

19/07/2021

14. If relevant, date the permit was previously amended:

15. Name of responsible authority:

Boroondara City Council

16. If relevant, the name of any referral authority that was required to be given a copy of the application for the permit or application to amend the permit:

The Head, Transport for Victoria\*

# VCAT Directed Plans

17. Was the permit, or previously amended permit, issued at the direction of VCAT? If No, skip to Question 19.

Yes

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P881/2020.

18. If yes, what was the VCAT reference number and/or AUSTLII citation?

P126/2020

19. When does the permit expire?

19/07/2025

20. Do you want to cancel the permit as a condition in another permit?

No

21. What is the development's estimated cost (s87A applications only)?

The estimated cost determines the application fee you must pay. For more details, go to [www.vcat.vic.gov.au/planningfees](http://www.vcat.vic.gov.au/planningfees).

Enter the cost in dollars. Do not include commas (,), nor the dollar sign (\$).

\$48,000,000.00

22. If you are applying under section 87 of the *Planning and Environment Act 1987*, do you believe that you are adversely affected by any of the following?

- ☐ a material mis-statement or concealment of fact about the permit application
- ☐ any substantial failure to comply with conditions of the permit
- ☐ any material mistake in the grant of the permit
- ☐ any material change in circumstances
- ☐ any failure to give notice
- ☐ any failure to comply with section 55, 61(2) or 62(1) of the *Planning and Environment Act 1987*

23. Why do you want the permit cancelled or amended?

Please refer to the enclosed cover letter.

24. Give the name and address of other persons who may have an interest in the outcome of this application.

If you need more space, attach another document. You can add any attachments at the bottom of this form.

Name	Email	Address	Phone number

Name	Interest

# VCAT Directed Plans

## HEARING ARRANGEMENTS

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You can ask to have your case heard in the Major Cases List (section 87A only) and/or Short Cases List. You can also ask for a practice day hearing or preliminary hearing. We will decide if it is appropriate to grant your request.

Find out more about the [Major Cases List](#) and [Short Cases List](#).

**25. Are you applying for any of the following? If you select Short Cases List, skip to Question 27.**

- ☒ Major Cases List (section 87A only)  
☐ Short Cases List (section 87A only)

**26. Are you applying for a practice day hearing or preliminary hearing?**

None

If you selected practice day hearing or preliminary hearing, explain why you want this below:

**27. Tell us if there is anything else you want us to consider when we arrange a hearing.**

For example, provide details of any related current VCAT cases or ask for the hearing to take place at a specific VCAT venue.

## PRESENTING YOUR CASE

**28. How much time will you need to present your entire case at a final hearing?**

Estimate the time you need to present, including time needed by any expert witnesses you will call.

3.00

hours

30.00

minutes

**29. How many expert witnesses will you call?**

1

**30. List the areas of expertise for your expert witnesses.**

Traffic and Car Parking

## HEARING ASSISTANCE

If you are concerned about being in the same room as someone who will attend the hearing, we can make special arrangements to ensure your safety.

# VCAT Directed Plans

We can also arrange to have an interpreter for anyone who needs to attend the hearing or assist people with disability (the hearing/docs).

These special arrangements are free  
The hearing/docs are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."

## 31. Does anyone attending the hearing need an interpreter?

No

If yes, tell us who needs an interpreter and in what language/dialect:

## 32. Does anyone attending the hearing require any other type of special assistance?

E.g. Hearing loop, wheelchair access, additional arrangements for personal safety.

No

If yes, tell us who needs any other type of special assistance and what they require:

## ACKNOWLEDGEMENT

By completing this application, I understand and acknowledge that:

- ☒ To the best of my knowledge, all information provided in this application is true and correct.
- ☒ It is an offence under section 136 of the *Victorian Civil and Administrative Tribunal Act 1998* to knowingly give false or misleading information to VCAT.

Full name of person completing this form:

Genevieve Kour

Date of acknowledgement:

1/03/2023

## ATTACH THESE DOCUMENTS TO YOUR APPLICATION

You must attach the following:

- Copy of the title to the land, of not more than 14 days old
- Copy of the permit and a tracked-changed version of amendments asked for, if relevant
- Copy of the current endorsed plans, if relevant
- Copy of the proposed amended plans highlighting changes proposed, if relevant
- Copy of the permit that contains a condition requiring the cancellation or amendment of the permit, if relevant
- Copy of the VicPlan Planning Property Report that details the planning controls that apply to the land (such as zoning and overlays) and whether the land is in an area of Aboriginal Cultural Heritage Sensitivity or is identified as being bushfire prone

# VCAT Directed Plans

- If a cultural heritage management plan (CHMP) under the *Aboriginal Heritage Act 2006* is required, attach the approved CHMP. ~~These approved CHMPs are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref: P281/2023.~~
- If a cultural heritage management plan (CHMP) under the *Aboriginal Heritage Act 2006* is not required, attach a certified preliminary Aboriginal heritage test or other statement of reasons about why a CHMP is not required. This may include a copy of a due diligence statement prepared by an Aboriginal heritage consultant.
- Copy of the VCAT decision relating to the permit, if relevant.

In addition to the above, please attach any other documents in support of your application.

Keep a copy of these documents for your records.

## Attachments to this application:

Title	File Name

## Large files

For any file larger than 128MB a sharing link is required.

Please list (by line) the name of each file that is bigger than 128MB followed by the hyperlink.

[https://upcoau.sharepoint.com/:f/s/UPcoClientShares/EpAodb-7UspElvp-DsUEhbkBPyl5S\\_-9i1H38VowebFyuA?e=OxDcCH](https://upcoau.sharepoint.com/:f/s/UPcoClientShares/EpAodb-7UspElvp-DsUEhbkBPyl5S_-9i1H38VowebFyuA?e=OxDcCH)  
 VicPlan Planning Property Report  
 Tracked Changes Permit  
 Planning Permit PP19/0843  
 Certificate of Title - 979 Burke Road  
 Copy of Plan - 979 Burke Road  
 Certificate of Title - 981 Burke Road  
 Copy of Plan - 981 Burke Road  
 LTR - S87A Submission  
 Statement of Changes  
 Architectural Design Report  
 Architectural Plans  
 Development Summary  
 Finishes Schedule  
 Traffic Engineering Assessment  
 Waste Management Plan  
 Landscape Plan  
 Sustainable Management Plan

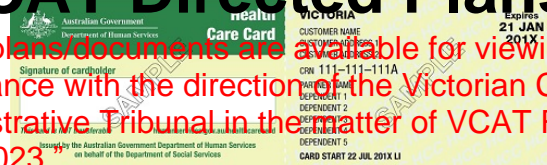
## ABOUT VCAT FEES

VCAT fees are charged according to three levels:

- **corporate fees** for businesses and companies with a turnover of more than \$200,000 in the previous financial year, corporate entities and government agencies
- **standard fees** for individuals, not-for-profit organisations, and small businesses and companies with a turnover of less than \$200,000 in the previous financial year. Companies must provide a statutory declaration to support this claim
- **concession fees** for people who hold the Australian Government Health Care Card. You must provide a copy of your card with your application. We do not accept Pensioner Concession Cards or Department of Veteran Affairs health cards.

# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023.



To find out if you need to pay an application fee and how much it costs, go to [www.vcat.vic.gov.au/fees](http://www.vcat.vic.gov.au/fees).

## Which fee category are you applying for?

Corporate

## FEE RELIEF

We can reduce or not charge (waive) a VCAT fee in certain circumstances.

Some people are automatically entitled to a full fee waiver. You can also apply for fee relief if paying the fee would cause you financial hardship. For more information about fee relief, go to [www.vcat.vic.gov.au/feerelief](http://www.vcat.vic.gov.au/feerelief).

If you are applying for fee relief, complete the [Fee Relief form](#) below. **If there is more than one applicant seeking a fee waiver or reduction, each applicant must fill out a separate form for your fee waiver application to be assessed.**

## Are you applying for fee relief?

No

## WHAT HAPPENS NEXT

If you have provided your email address, you will shortly receive an email from us with instructions about next steps including how to make payment (if applicable). If you have not provided an email address and payment is required, VCAT will contact you by telephone about making payment.

After we receive your application and open a VCAT case, we will send you and all other parties an order setting out what happens next, including dates to come to VCAT. The order will tell you the venue, time and date you must go to VCAT.

The order will also have your VCAT reference number. The number starts with 'P' and ends with the year the application was lodged (eg. P1/2020). Quote the reference number in all correspondences and documents about your case.

Contact us if you do not hear from us within two weeks of submitting your application.

## NEED HELP WITH YOUR APPLICATION?

If you have any questions about completing this form, contact our Customer Service team:

- email [admin@vcat.vic.gov.au](mailto:admin@vcat.vic.gov.au)
- call 1300 01 8228 (1300 01 VCAT) between 9 am and 4.30 pm Monday to Friday
- go to the Victorian Civil and Administrative Tribunal, Ground Floor, 55 King Street, Melbourne VIC 3000. We are open Monday to Friday from 8.30 am to 4.30 pm.

## PRIVACY INFORMATION

For a copy of VCAT's privacy statement, go to [www.vcat.vic.gov.au/privacy](http://www.vcat.vic.gov.au/privacy).

# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in Search of VCAT Ref P281/2023."

**REGISTER SEARCH STATEMENT (Title in Search) Transfer of Land Act 1958**

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VOLUME 08044 FOLIO 007

Security no : 124104203912G  
Produced 24/02/2023 11:40 AM

## LAND DESCRIPTION

Lot 1 on Title Plan 837218R.  
PARENT TITLE Volume 03711 Folio 160  
Created by instrument 5518470R 12/02/1954

## REGISTERED PROPRIETOR

Estate Fee Simple  
Sole Proprietor  
CW VICTORIA HILL PTY LTD of LEVEL 6 189 FLINDERS LANE MELBOURNE VIC 3000  
AV247115A 20/01/2022

## ENCUMBRANCES, CAVEATS AND NOTICES

MORTGAGE AV473388Y 29/03/2022  
MAXCAP SECURITY PTY LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

## DIAGRAM LOCATION

SEE TP837218R FOR FURTHER DETAILS AND BOUNDARIES

## ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 979 BURKE ROAD CAMBERWELL VIC 3124

## ADMINISTRATIVE NOTICES

NIL

eCT Control 19436D KING & WOOD MALLESONS  
Effective from 29/03/2022

DOCUMENT END



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**REGISTER SEARCH STATEMENT (Title in Search) Transfer of Land Act 1958**

Page 1 of 1

VOLUME 10985 FOLIO 950

Security no : 124104204800R  
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## LAND DESCRIPTION

Lot 1 on Title Plan 231062A.  
PARENT TITLE Volume 08086 Folio 657  
Created by instrument AE809735K 28/12/2006

## REGISTERED PROPRIETOR

Estate Fee Simple  
Sole Proprietor  
CW VICTORIA HILL PTY LTD of LEVEL 6 189 FLINDERS LANE MELBOURNE VIC 3000  
AV247112G 20/01/2022

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## DIAGRAM LOCATION

SEE TP231062A FOR FURTHER DETAILS AND BOUNDARIES

## ACTIVITY IN THE LAST 125 DAYS

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-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 981 BURKE ROAD CAMBERWELL VIC 3124

## ADMINISTRATIVE NOTICES

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Document Identification	<b>TP837218R</b>
Number of Pages (excluding this cover sheet)	<b>1</b>
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TITLE PLAN		EDITION 1	TP 231062A						
Location of Land		Notations							
Parish: BOROONDARA									
Township:									
Section:									
Crown Allotment:									
Crown Portion: 94 (PT)									
Last Plan Reference:									
Derived From: VOL 8086 FOL 657		ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN							
Depth Limitation: NIL									
Description of Land / Easement Information		THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT COMPILED: 29/11/1999 VERIFIED: CL							
<p><i>All that piece of Land, delineated and coloured red on the map in the --- margin being part of Crown Portion 94 Parish of Boroondara County of Bourke ----- Together with a right of carriage way over Laughan Place -----</i></p>									
<p>COLOUR CODE R = RED</p> <p>VICTORIA ROAD</p> <p>89°48½'</p> <p>150'</p> <p>1</p> <p>180°15'</p> <p>28'</p> <p>BURKE ROAD</p> <p>130'</p> <p>269°48½'</p> <p>52'</p> <p>180°15'</p> <p>20'</p> <p>269°48½'</p> <p>R</p>									
<table><tr><th colspan="2">TABLE OF PARCEL IDENTIFIERS</th></tr><tr><td colspan="2">WARNING: Where multiple parcels are referred to or shown on this Title Plan this does not imply separately disposable parcels under Section 8A of the Sale of Land Act 1962</td></tr><tr><td colspan="2">PARCEL 1 = CP 94 (PT)</td></tr></table>				TABLE OF PARCEL IDENTIFIERS		WARNING: Where multiple parcels are referred to or shown on this Title Plan this does not imply separately disposable parcels under Section 8A of the Sale of Land Act 1962		PARCEL 1 = CP 94 (PT)	
TABLE OF PARCEL IDENTIFIERS									
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PARCEL 1 = CP 94 (PT)									
LENGTHS ARE IN FEET & INCHES		Metres = 0.3048 x Feet Metres = 0.201168 x Links	Sheet 1 of 1 sheets						

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**IGS** INTEGRATED  
GROUP  
SERVICES

Value | Innovation | Trust

ESD Services  
Sustainable Management Plan



Victoria Hill  
979-981 Burke Road,  
Camberwell

Project No: 22074  
Date: 15/03/2023

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Melbourne VIC 3000  
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## Document Control

Version	Date	Issue	Author		Reviewer	
00	21/01/2022	Issue for Review	Li Huan	LH	Slav Angelovski	SA
01	02/02/2022	General Updates and Issue for Review	Li Huan	LH	Slav Angelovski	SA
02	24/06/2022	Issue for Review	Li Huan	LH	Slav Angelovski	SA
03	23/08/2022	Issue for Review	Li Huan	LH	Slav Angelovski	SA
04	17/02/2023	Issue for Review	Li Huan	LH	Slav Angelovski	SA
05	01/03/2023	General Updates and Issue for Review	Li Huan	LH	Slav Angelovski	SA
06	15/03/2023	Issue for Review and VCAT Submission	Li Huan	LH	Slav Angelovski	SA

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## APPENDICES

**Appendix A – Green Star Scorecard**

**Appendix B – Green Star IEQ 12.1 – Daylight Access Report**

**Appendix C – Apartments NatHERS Modelling Report**

**Appendix D – Stormwater Management Plan**





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## 1 Executive Summary

The proposed mixed-use residential development at 979-981 Burke Road, Camberwell will be designed to benchmark a 5-Star Green Star under Green Star Design & As Built v1.3 which represents an 'Australian Excellence' sustainable design.

All ESD related planning scheme requirements in the City of Boroondara are achieved with the development assessed to meet the Planning Scheme Clause 53.18 Stormwater Management in urban Development, Clause 58 Apartment Developments.

This report provides an overview of the proposed Environmentally Sustainable Design (ESD) strategies for the mixed-use residential development and ensure these will be incorporated through the integrated of sustainable building management practices and sustainable design of architecture, structure and building services to achieve a 5-Star Green Star equivalent sustainable design under Green Star Design & As Built version 1.3, meet Planning Scheme Clause 53.18 Stormwater Management in urban Development and Clause 58 Apartment Developments and is generally in accordance with the Sustainable Management Plan produced by SDC dated June 2020.

A number of key ESD strategies form the basis for the targeted level of sustainable performance. Key initiatives for the base level sustainable design include the following:

- Low energy consumption and greenhouse gases emissions:
  - The use of high-performance glazing and façade to reduce solar loads to the building;
  - Passive solar control devices to vision glazing;
  - Low energy light fittings and lighting control systems;
  - High performance air-conditioning systems; and
  - The use of solar photovoltaic system.
- Low potable water consumption:
  - Water efficient fixtures and fittings; and
  - Diversion of rainwater collected from the buildings to irrigation and toilet flushing.
- Improved indoor environment quality:
  - Optimised use of daylighting to all occupied areas;
  - High performance air-conditioning to provide high thermal comfort and individual comfort control;
  - Low VOC emission paints, adhesives and carpets to minimise VOC emissions.
- Procurement and disposal of materials:
  - Selection of environmentally friendly materials and furniture;
  - Use of PVC manufactured and supplied according to the Green Building Council of Australia's (GBCA's) Best Practice Guidelines; and
  - Provision for waste recycling and reuse.



## 2 Introduction

This Sustainability Management Plan (SMP) has been prepared to assist the design, construction and operation of the proposed mixed-use development on 979-981 Burke Road, Camberwell to benchmark a 5-Star Green Star design under Green Star Design & As Built v1.3 which represents an 'Australian Excellence' sustainable design.

IGS has assessed the proposed development and provided input to the design team, and this SMP summarises EDS initiatives to demonstrate the development exceeds the sustainability requirements of the City of Boroondara.

### 2.1 Site Description

The mixed-use residential development is to be built at 979-981 Burke Road, Camberwell Victoria. It's approximately 9km east of the Melbourne CBD and the site is situated within a well-established inner urban area with convenient access to numerous amenities, workplaces, entertainment, recreational and other facilities.

The total site area is approximately 2,090m<sup>2</sup>.



Figure 1 Site location

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979-981 Burke Road, Camberwell  
Sustainable Management Plan



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The development is located within the City of Boroondara and consists of:

- Basement Level 03: Car Park and Storage
- Basement Level 02: Car Park, Storage and Services
- Basement Level 01: Car Park, Storage, Waste Room, Tanks and Services
- Ground: Residential Apartments, Retail and Communal Facilities
- Ground Mezzanine: Residential Apartment and Communal Facilities
- Level 01 to Level 05: Residential Apartment
- Roof: Solar PV system, Plant, Rooftop Pool and Services Area

In total, the proposed development comprises of 26 residential apartments.

## 2.2 City of Boroondara ESD Requirements

The residential development at 979-981 Burke Road, Camberwell will be designed to meet the objectives of meet the NCC 2019 Section J and Boroondara Planning Scheme Clause 53.18 Stormwater Management in urban Development, Clause 58 Apartment Developments.

- The apartments will not exceed the maximum NatHERS annual cooling load of 21 MJ/m<sup>2</sup> and meet the objectives and application requirement set out in Clause 58.03-1 Energy efficiency Objectives;
- The stormwater will be designed to meet the Best Practice standard for Urban Stormwater Quality to water sensitive urban design (WSUD) requirements; and
- The whole development is to benchmark a 5-Star Green Star equivalent sustainable design under Green Star Design & As Built version 1.3 to Boroondara Planning Scheme Clause 58 Apartment Developments Sustainable requirement.

## 2.3 Sustainable Targets

For the mixed-use residential development at 979-981 Burke Road, Camberwell, a high level of sustainable achievement will be targeted with key drivers being low energy & greenhouse gas emissions, high indoor environmental quality, low water usage and water sensitive urban design.

The Green Star – Design and As Built v1.3 has been adopted to Benchmark 5 Star Green Star for the residential dwellings.

Area	ESD Strategy
Mixed-use Residential Development	<ul style="list-style-type: none"><li>• Benchmark Green Star 5 Star Design under Green Star – Design &amp; As Built v1.3*</li></ul>

\*No Formal certification is targeted for the Residential Apartments.



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## 3 5 Star Green Star Target

### 3.1 What is Green Star?

Green Star is a comprehensive, national, voluntary environmental rating system that evaluates the environmental design and construction of buildings and communities. It is developed by the Green Building Council of Australia and is based on a 1 to 6-star range of performance.

The Green Star rating tools assess against a number of categories. These categories allow for a determination to be made on the environmental impact of a project's site selection, design, construction, maintenance etc.

The nine categories included within the Green Star - Design and As Built rating tool are:

- Management;
- Indoor Environment Quality;
- Energy;
- Transport;
- Water;
- Materials;
- Land Use & Ecology;
- Emissions; and
- Innovation

### 3.2 Benefits of a Green Star Building

#### Lower operating costs

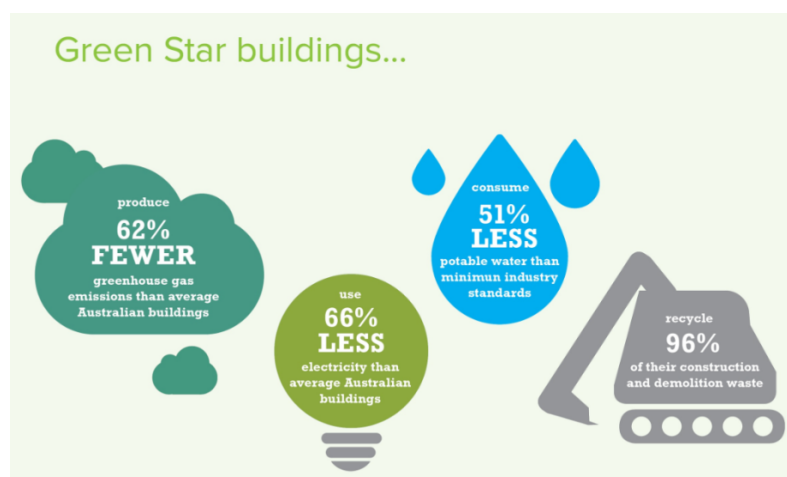
Green buildings are built for high energy and water efficiency, so they are cheaper to operate. Green buildings achieve energy savings of at least 20-30% when compared with industry standards.

#### Energy and Greenhouse Gas Emissions Savings

Green buildings on average use 66% less electricity than average Australian buildings and approximately 62% fewer greenhouse gas emissions. These are significant savings which are reflected not only in operating costs but are also in environmental impacts.

#### Potable Water Use Savings

Green Star buildings use approximately 51% less potable water on average than if they had been built to meet minimum industry requirements.



Source: <https://new.gbca.org.au/green-star/>

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## Productivity benefits

Green buildings consistently outperform non-green buildings in terms of comfort and productivity. Natural light, fresh air and access to views of the outdoors, as well as control over their own individual workspace temperature and lighting, can directly affect productivity.

## Reduced liability and risk

According to the OECD's Environmentally Sustainable Buildings Report (2003), illness from indoor air pollution has become one of our most acute building challenges - with building materials, ranging from paints to carpets, leading to occupational health issues.

On average, we now spend up to 90 per cent of our time indoors, the risks of poor ventilation and air supply, and cross contamination of illnesses, mean tighter controls on indoor environment quality is inevitable. Green Star buildings minimise the use of hazardous materials and volatile organic chemicals, creating healthier spaces for occupants.

## A healthier place to live and work

Green buildings are healthy buildings. Greening America's Schools found that green schools and universities deliver 41.5% improvements in health of students and teachers (such as reduced incidence of asthma, 'flu, respiratory problems and headaches), as much as 15% improvement in student learning and productivity and an impressive 25% improvement on test scores from good lighting and ventilation.

## Demonstration of Community Social Responsibility

Building green is a clear expression to the community of a commitment to the environment.



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## 4 Sustainable Design Initiatives – 5 Star Green Star

A 5-Star Green Star design is targeted under Green Star Design & As Built V1.3 to form the base level of sustainable performance for the residential development.

This section is focusing on implementing Green Star Design and As Built rating tool V1.3 environmental categories throughout the design and construction process to achieve a Benchmark 5-Star Green Star "Australian Excellence" sustainable design for the residential development.

A summary of the proposed development Green Star score is tabulated below.

Green Star Category	Targeted Score
Management	11
Indoor Environment Quality	11
Energy	8
Transport	5
Water	3
Materials	7
Land use & Ecology	4
Emissions	4
Innovation	10
<b>Overall score</b>	<b>63 (60+ for a 5-Star Green Star design)</b>

A minimum 60 Green Star points are targeted to a 5-Star Green Star sustainable design. An alternative assemblage of the Green Star targeted credits is considerable on condition that the performance outcome meets the Planning Permit Condition.

The followings summarise the sustainable design initiatives which the development is targeting to meet 5-Star Green Star sustainable design and a Green Star Scorecard is enclosed as Appendix A for reference.

### 4.1 Management

Design Requirements	Responsibility & Implementation	Project Stage
<b>Green Star Accredited Professional (GSAP) (1.0)</b>		
At least one of the project's engineers is a Green Star Accredited Professional (GSAP). They will advise at all stage of the project through the design and construction phases.	ESD Engineer / GSAP	Design Development
<b>Commissioning and Tuning</b>		
<b>Environmental Performance Targets (2.0)</b>		
Environmental targets e.g., energy and water consumption will be set for metering the actual consumptions against the benchmark	ESD Engineer	Design Development
<b>Commissioning and Tuning (2.1)</b>		
Comprehensive services and maintainability review of the project will be undertaken.	Builder / Services Engineer	Commissioning
<b>Building Commissioning (2.2)</b>		
Comprehensive pre-commissioning, commissioning and quality monitoring will be undertaken and building knowledge transferred from the design team and contractor to the building manager(s) and staff.	Builder	Commissioning



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979-981 Burke Road, Camberwell

Sustainable Management Plan

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<b>Building Systems Tuning (2.3)</b>		
Initial tuning, and ongoing maintenance and monitoring will be undertaken for building systems included in the development. This will ensure that the systems are operating as intended and performing at optimal efficiency.	Builder/ Services Engineer	Commissioning
<b>Building Information (4.1)</b>		
Comprehensive operations and maintenance information is developed and made available to the facilities management team. Relevant and current building user information is also developed and made available to all relevant stakeholders. The information can include descriptions of systems installed in the building, sustainable transport in the area as well as sustainable building operation suggestions relevant to building users. This involves the preparation of information that integrates with existing staff information resources.	Services Contractors / Builder / Architect ESD Engineer	Post Occupancy
<b>Commitment to Performance</b>		
<b>Environmental Building Performance (5.1)</b>		
The building design will have performance targets set for at least two of the following environmental building performance metrics: <ul style="list-style-type: none"> <li>Greenhouse gas emissions – commitment in kg/CO2/m<sup>2</sup>.</li> <li>Potable water usage – kL/person;</li> <li>Operational waste – kg/person; and</li> <li>Indoor environment quality – complete occupant comfort surveys, HVAC systems targets and thermal and lighting comfort.</li> </ul> The selected targets (e.g., energy and water) will be monitored and reported to the building management team.	Building Owner / Operator	Design Development
<b>End of Life Waste Performance (5.2)</b>		
A commitment will be made to reduce demolition waste at the end of life of an interior fit out of the commercial areas or base building components. The intention is to prevent the mandatory “stripping out” of commercial tenancies at the end of a lease period, thereby maximising the opportunity for a subsequent tenant to utilise a previous fit-out.	Building Owner / Building Operator	Design Development
<b>Metering and Monitoring (6.0, 6.1)</b>		
The design will include electronic smart metering systems that will be integrated into the building to monitor and report on energy and water consumption to the relevant parties (e.g., apartment owners or commercial tenants). Apartments, commercial tenancies and common areas will be separately sub-metered to allow occupants to monitor and reduce their consumption.	Services Engineers	Design Development
<b>Responsible Construction Practices</b>		
<b>Environmental Management Plan (7.0)</b>		
As part of the construction process the contractor will implement a project specific Best Practice Environmental Management Plan—this must be in line with NSW EMS Guidelines. This will be in	Builder	Construction Documentation

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979-981 Burke Road, Camberwell

Sustainable Management Plan



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place before starting works and throughout the construction process.		
<b>Environmental Management System (7.1)</b>		
The head building contractor holds a valid ISO 14001 certificate before and throughout construction and manage the construction compliant with the EMP	Builder	Construction Documentation
<b>High quality Staff Support (7.2)</b>		
High quality staff support will be put in place for site workers to promote mental and physical health outcomes and knowledge on sustainable practices. This may be through on-site, off-site and/or online educational programs.	Building Contractor	Construction Documentation
<b>Operational Waste (8.0B)</b>		
<p>The waste management of the development will meet the three criteria: Collection bins will be separated into the following streams:</p> <ul style="list-style-type: none"> <li>• General waste going to landfill;</li> <li>• Recycling streams to be collected by the building's waste collection service, including paper and cardboard, glass, and plastic; and</li> <li>• Organic waste for separate collection and disposal.</li> </ul> <p>These bins will be clearly marked for each stream, to allow for separation of the applicable waste streams. The waste management plan will establish the necessary sizes for bin rooms and access requirements for waste collection trucks.</p>	Waste Engineers	Design Development



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## 4.2 Indoor Environment Quality

Design Requirements	Responsibility & Implementation	Project Stage
<b>Indoor Air Quality (9.0)</b>		
Ventilation System (9.1) Provision of Outdoor Air (9.2) Exhaust of Pollutants (9.3)		
The development's ventilation systems will be designed to mitigate the entry of outdoor pollutants, to be easy to maintain and clean, and be cleaned prior to occupation and use. Pollutants, such as those arising from cooking, vehicle exhaust etc. will be either exhausted directly to the outside, or the source removed. Apartments will be fitted with operable windows to promote natural air movement through the spaces. Natural ventilation can, when weather conditions are suitable, reduce the need for mechanical cooling. It is noted that more than 40% of apartments are provided with cross ventilation opportunities which meets and exceeds the 40% requirement of Clause 58.07-4.	Services Engineer	Design Development
<b>Lighting Comfort (11.0)</b>		
Minimum Lighting Comfort (11.0)		
All lights selected will be flicker free and will accurately address the perception of colour in the space. All luminaires will be installed with high frequency ballast. All main light sources (excluding decorative lights e.g., wall lights, pendants) must have a minimum Colour Rendering Index (CRI) of 80 to ensure the accurate perception of colour indoors.	Lighting Engineer	Construction Documentation
General Illuminance and Glare Reduction (11.1)		
Best Practice lighting levels will be considered to be met in line with AS 1680.1:2006 for different space types. Internal lights will be fitted with baffles, louvers or diffusers to obscure any direct light source so as to cut out glare. Illuminance levels for the different space types in the development will comply with the requirements of AS 1680.1:2006.	Architect / Lighting Engineer	Design Development
Localised Lighting Control (11.3)		
All occupied rooms (bedrooms and living spaces) will be considered with provision of sufficient power outlets to allow for task lighting to be installed.	Architect / Lighting Engineer	Design Development
<b>Visual Comfort</b>		
Glare Reduction (12.0)		
Within the Building User's Guide, Internal blinds installed by building occupiers are required to be with visual light transmittances of less than 10% to all apartments, capable of reducing glare to 95% of the floor area.	Building Contractor	Construction Documentation

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<b>Daylight (12.1)</b>		
Daylight modelling has been carried out and demonstrates that the design will provide the apartments with enough daylight to achieve 2 points in the daylight credit in Green Star. This is considered a best practice outcome. Additional to the daylight modelling, the design has been assessed to comply with the room depth (58.07-2) and Windows (58.07-3) objectives of the planning scheme.	Architect	Design Development
<b>Views (12.2)</b>		
60% of the nominated area shall have a clear line of sight to a high-quality external view.	Architect	Design Development
<b>Indoor Pollutants (13.0)</b>		
<b>Volatile Organic Compounds (VOCs) (13.1)</b>		
Minimum 95% of paints, adhesives and sealants, flooring, and wall and ceiling coverings do not exceed limits. As a stretch target to demonstrate ESD excellence the project will aim to ensure at least 50% of the paint used internally will meet the ultra-low VOC requirements of being less than 5g/L emissions.	Architect	Construction Documentation
<b>Formaldehyde Minimisation (13.2)</b>		
Minimum 95% of the engineered wood products have 'low' formaldehyde, certified as E0 or better. Alternatively, products with no formaldehyde will be specified.	Architect	Construction Documentation
<b>Thermal Comfort (14.1)</b>		
The project will achieve a minimum average energy rating of at least 7 stars which demonstrates excellence in thermal performance. The cooling load requirement of Clause 58.03-1 is also met by the project with no apartment exceeding the relevant cooling load in the sample NatHERS ratings undertaken.	Architect	Design Development

## Credit 13.1 – Paints, Adhesives and Sealants

Product Type Category	Max TVOC Content (g/l of ready-to-use product)
General purpose adhesives	50
Design & As Built wall and ceiling paint, all sheen levels	5*
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

Note: Over 50% of paints (by volume) specified in all buildings within the development will have a maximum TVOC content of 5g/L.

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## Credit 13.1 – Carpets

Test protocol	Limit
ASTM D5116 – Total VOC limit	0.5mg/m <sup>2</sup> /h per hour
ASTM D5116 – 4 – PC (4-Phenylcyclohexene)	0.5mg/m <sup>2</sup> /h per hour
ISO 16000/EN 13419 – TVOC at three days	0.5mg/m <sup>2</sup> /h per hour
ISO 10580/ISO/TC 219 (Document N238) – TVOC at 24 hours	0.5mg/m <sup>2</sup> /h per hour

## Credit 13.2 – Engineered Wood

Test protocol	Emission limit/ Unit of Measurement
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1.0mg/L
AS/NZS 1859.1:2004 – Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5mg/L
AS/NZS 1859.2:2004 – MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.0mg/L
AS/NZS 4357.4 – Laminated Veneer Lumber (LVL)	≤1.0mg/L
Japanese Agricultural Standard MAFF Notification NO.701 Appendix Clause 3 (11) - LVL	≤1.0mg/L
JIS A 5908:2003 – Particle Board and Plywood, with use of testing procedure JISA 1460	≤1.0mg/L
JIS A 5905:2003 – MDF, with use of testing procedure JIS A 1460	≤1.0mg/L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1mg/m <sup>2</sup> hr
ASTM D5116 (applicable to high pressure laminated and compact laminates)	≤0.1mg/m <sup>2</sup> hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1mg/m <sup>2</sup> hr (at 3 days)
ASTM D6007	≤0.12mg/m <sup>3</sup>
ASTM E1333	≤0.12mg/m <sup>3</sup>
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m <sup>3</sup>
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m <sup>3</sup> hr

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## 4.3 Energy

Energy efficiency and low Greenhouse Gas Emissions (GHG) will be a key feature in the development. A significant reduction in greenhouse gas emissions in comparison with standard buildings of this type is targeted.

Design Requirements	Responsibility & Implementation	Project Stage
<b>Greenhouse Gas Emissions (15)</b>		
Greenhouse gas emissions for the development are reduced through efficient lighting, HVAC design and appropriate building fabric. The sample energy ratings achieved a weighted average of above 7.0 Stars. These results are achieved with the nomination of high-quality building fabric elements and the preliminary sample energy report provided as Appendix 2. A minimum 7-star average will be maintained for the development.	Architect / Services Engineer	Design Development
<b>HVAC Systems (15)</b>		
Heating and cooling in the commercial tenancies will be provided by energy efficient air conditioners with EER $\geq$ 3.5 and COP $\geq$ 3.9 or equivalent. Heating and cooling in the apartments will be provided by energy efficient reverse cycle air conditioners (within one star energy rating of the best available based on the required capacity of the unit from tier one manufacturers).	Services Engineer	Design Development
<b>Hot Water (15)</b>		
A highly efficient electric heat pump type domestic hot water system will be installed with COP $\geq$ 3.5.	Hydraulic Engineer	Construction Documentation
<b>Lighting (15)</b>		
Energy consumption from artificial lighting within the apartments, retail spaces and common areas will be reduced by using LED lighting and by optimising the daylight diffusion. The following lighting power densities will not be exceeded: <ul style="list-style-type: none"> <li>• Apartments – 4.0 W/m<sup>2</sup>;</li> <li>• Car park and storage area – 2.0 W/m<sup>2</sup>;</li> <li>• Entry foyers – 9W/m<sup>2</sup>; and</li> <li>• Hallways/Corridor – 4.5W/m<sup>2</sup>.</li> </ul> Independent light switching will be provided to each room of each apartment and communal facilities (where appropriate).	Electrical Engineer	Design Development

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Solar PV (15)		
An onsite roof mounted Solar PV system will be provided to generate clean, greenhouse gas emission free energy for the site. The PV array is maximised by the use of high efficiency and long lasting Solar PV panels which will deliver a 16kW system to the building. This will offset a large portion of the common area and commercial energy use.	Electrical Engineer	Construction Documentation
Building Sealing		
All windows, doors, exhaust fans and pipe penetrations will be constructed to minimise air leakage as required by the provisions outlined in Section J3 of the 2019 BCA. This will include the use of seals around operable windows and doors, as well as caulking to pipe penetrations, and the addition of self-closing louvers or dampers to exhaust fans.	Architect	Design Development

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Sustainable Management Plan



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## 4.4 Transport

One of the key features of this mixed-use residential development is to provide the local residents with proximity and excellent access to retail shops, educational facilities and outdoor recreation facilities. This encourages the use of public transport, cycling and walking.

Design Requirements	Responsibility & Implementation	Project Stage
Sustainable Transport (17.0)		
Access to Public Transport (17.B.1)		
The project is located within a short walk of Camberwell Railway Station which is a major hub on the Belgrave / Lilydale / Alamein lines providing access to all eastern suburbs and the city. A tram stop is located out the front of the development site on Burke Road for the 72 Tram from Camberwell to Melbourne University via St Kilda Road.	N/A – Determined by Development Location	
Low Emission Vehicle Infrastructure (17B.3)		
Minimum 5% of the carpark spaces will be provided with Electric Vehicle Charging infrastructure which all building users will be able to access. This will help future proof the building and promote the use of electric vehicles as a more sustainable transport alternative.	Architect / Services Engineer	Design Development
Walkable Neighbourhoods (17.B.5)		
The Walk Score for the site achieves a score of 94, meaning that occupants can run all errands on foot. Convenience store and local amenities are in such close proximity that they can be reached via a short walk.	N/A – Determined by Development Location	

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## 4.5 Water

Design Requirements	Responsibility & Implementation	Project Stage
<b>Potable Water (18.0)</b>		
<b>Sanitary Fixture Efficiency (18)</b>		
The development will include efficient fittings and fixtures to reduce the volume of mains water used in the building. Fixtures and fittings will be with the following Water Efficiency Labelling Scheme (WELS) star ratings: <ul style="list-style-type: none"> <li>• Toilets – 4 Star minimum;</li> <li>• Taps – 5 Star minimum;</li> <li>• Urinals – 5 Star minimum;</li> <li>• Showerheads – 3 Star minimum not to exceed 9.0L/min; and</li> <li>• Dishwashers – 5 Star minimum.</li> </ul>	Architect / Services Engineer	Construction Documentation
<b>Rainwater Reuse (18)</b>		
A 30kL rainwater tank will be installed to capture runoff from at least 1,083m <sup>2</sup> of roof and terrace area. This will be reused within the building for flushing toilets and irrigating the substantial amount of landscaping.	Hydraulic / Civil Engineer	Design Development
<b>Heat Rejection (18)</b>		
No water-based heat rejection systems will be provided for the development.	Service Engineer	Design Development
<b>Landscape Irrigation (18)</b>		
All landscaping will be irrigated from the rainwater tank ensuring that no mains potable water is used for landscape irrigation.	Hydraulic Engineer	Design Development
<b>Fire System Test Water (18)</b>		
The fire system will not expel water for testing, or the fire system will include temporary storage for 80% of the routine fire protection system test water and maintenance drain-downs for reuse on site. If sprinkler systems are installed, each floor will be fitted with isolation valves for floor-by-floor testing.	Services Engineers	Design Development

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## 4.6 Materials

Design Requirements	Responsibility & Implementation	Project Stage
<b>Dematerialisation</b>		
Where practical, components of the development (e.g. kitchen, bathroom joinery) will be pre-manufactured off-site then delivered during construction. This significantly reduces the generation of material offcuts and subsequent production of waste on the project site.	Builder	Construction Documentation
<b>Life Cycle Impacts (19.0)</b>		
<b>Concrete (19B.1)</b>		
The Portland cement content will be reduced by 30%, by mass, across all concrete in the development, as compared to a reference case. Minimum 50% of the mixing water is via reclaimed water. At least 40% coarse aggregate or 25% fine aggregate will be replaced by other alternative materials.	Builder / Structural Engineer	Construction
<b>Responsible Building Materials (20.0)</b>		
<b>Structure and Reinforcing Steel (20.1)</b>		
At least 95% of all steel used in the building's structure is sourced from an environmentally Responsible Steel Maker. All reinforcing steel will be manufactured from polymer injection technology which significantly reduces the embodied energy of the steel in the concrete.	Builder	Construction
<b>Cables, pipes, floors and blinds (20.3)</b>		
At least 90% of all cable, pipe, floor and blind products installed in the building (by cost) will not contain PVC or will comply with the Best Practice Guidelines for PVC in the Built Environment by being procured from a manufacturer with an equivalent of ISO 14001 EMS for manufacturing processes.	Builder	Construction
<b>Sustainable Products (21.0)</b>		
<b>Product Transparency and Sustainability (21.1)</b>		
The development uses products with Product – Specific and Industry – Wide third party verified EPDs and Level A, B and C Third party certifications defined in the GBCA Framework for Product Certification Scheme.	Architect Building Owner Building Contractor	Design Development Construction
<b>Construction Waste (22B)</b>		
90% of the waste generated during construction will be diverted from landfill.	Builder	Construction



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## 4.7 Land Use and Ecology

Design Requirements	Responsibility & Implementation	Project Stage
Ecological Value (23.0)		
Endangered, Threatened or Vulnerable Species (23.0)		
The land has been previously built on; therefore, there is no environmental degradation of environmental attributes due to the development of the site.	N/A – The land for the proposed development complies	
Ecological Value (23.1)		
The proposed development is providing significant landscaping to help improve the local area amenity. The landscaping will be approximately 60% native and 40% exotic. This will help encourage native species of fauna to use the site providing habitat for birds and helping to provide an increased biodiversity to the Camberwell area.	Architect/ Landscape Architect	Design Development
Sustainable Sites – Conditional Requirement (24.0)		
At the time of purchase, the site did not include old growth forest, or a wetland of “High National Importance”, or did not impact on a Matter of National Significance or have to be referred to the Federal Environment Minister as a “controlled action”.	ESD Engineer	Schematic Design
Reuse of Land (24.1)		
At the date of purchase over 75% of the site was Previously Developed Land.	N/A – The land for the proposed development complies	
Contamination and Hazardous Materials (24.2B)		
A comprehensive hazardous materials survey must be carried out on the existing buildings or structures on site. The survey must be in line with Environmental and Occupational Health and Safety (OH&S) legislation and the survey must identify asbestos, lead or PCB existing on site.		
Heat Island Effect Reduction (25.0)		
With the extensive landscaping proposed, solar panels helping to shade the roof and the top-level roof being of a light colour, the urban heat island effect will be minimised with the development of this site. Given the trend to more significant heat waves and higher annual temperatures in general this is extremely important for new developments to address.	ESD Engineer	Schematic Design

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## 4.8 Emissions

Emissions of solids, liquids and gases that are detrimental to the environment or existing urban infrastructure will be eliminated or minimised where possible. Issues that are considered in the design are:

- Discharge to sewer to be reduced through the use of low flow fittings;
- Stormwater pollutant to be reduced to best practice urban design; and
- Light pollution to be minimised.

Design Requirements	Responsibility & Implementation	Project Stage
<b>Stormwater (26.0)</b>		
<b>Reduced Peak Discharge (26.1)</b>		
A 30kL rainwater tank will be provided to ensure that the post-development peak event discharge from the site shall not exceed the pre-development peak event discharge.	Civil / Hydraulic Engineer	Construction Documentation
<b>Stormwater – Pollution Reduction Target (26.2)</b>		
The proposed development is going to meet the EPA Best Practice stormwater management targets by reducing the pollutants that leave the site in stormwater. Refer to Appendix D for details.	Architect / Services Engineers / Landscape Architect	Design Development / Construction Documentation
<b>Light Pollution (27.0)</b>		
<b>Light Pollution to Neighbouring Bodies (27.0)</b>		
The projects lighting design must comply with AS4282 'Control of the Obtrusive Effects of Outdoor Lighting'.	Architect/ Lighting Designer	Design Development
<b>Light Pollution to Night Sky (27.1)</b>		
No external luminaire on the project will have an Upward light Output Ratio (ULOR) exceeding 5%, relative to its mounted orientation. Direct illuminance from external luminaires on the project produces a maximum initial point illuminance value no greater than: <ul style="list-style-type: none"> <li>• 0.5 Lux to the site boundary, and</li> <li>• 0.1 Lux to 4.5 metres beyond the site into the night sky.</li> </ul>	Architect/ Lighting Designer	Design Development
<b>Microbial Control (28.0)</b>		
There will be no water-based heat rejection systems serving the proposed development, thereby eliminating the potential for a legionella outbreak.	Mechanical Engineer	Construction Documentation
<b>Insulant ODP</b>		
All thermal insulants in the development will be specified to avoid the use of ozone-depleting substances in both their manufacturer and composition.	Architect / Services Engineers	Construction Documentation

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## 4.9 Innovation

The following innovative strategies and / or solutions are considered in the design, construction and building operation.

Design Requirements	Responsibility & Implementation	Project Stage
<b>Ultra-Low VOC paints (30C)</b>		
Over 50% of paints (by volume) specified in all buildings within the development will have a maximum TVOC content of 5g/L.	Owner / Developer	Construction Documentation
<b>Stormwater treatment (30C)</b>		
Stormwater treatment to meet the Column B of pollutants reduction requirement.	Civil Engineer	Design Development
<b>High Performance Site Office (30D)</b>		
The provision of the sustainable site offices (addressing 75% of the 18 sustainability items in the credit checklist) are proposed and used by the majority of the construction workers on site	Builder	Construction
<b>Local Procurement - Skilled Labour (30D)</b>		
High percentage (e.g., 80%) of the services and skilled labour employed for the project come from the local area (e.g., 50km) surrounding the site.	Builder	Construction
<b>Building Occupant Survey (30E)</b>		
A Pre and Post building occupant satisfactory survey will be undertaken by building developer and/or building operator for more than 10% of the future tenants.	Building Owner/Manager	Project Completion
<b>Green Cleaning (30E)</b>		
Building operator is to produce a Green Cleaning Policy or equivalent mechanism for the building performance and the policy must be committed to implement for minimum 10 years	Building Owner/Manager	Design Development
<b>Procurement and Purchasing (30E)</b>		
Building operator is to produce a Sustainable Procurement Framework to set commitment targets and measure results for purchasing consumables during the performance period in line with Green Star Performance Guidelines; and the Framework must be committed to implement for minimum 10 years.	Building Owner/Manager	Design Development
<b>WELL, v2 Air Feature – A01 (30E)</b>		
Building Contractor is to undertake air performance testing as per the WELL V2 Feature A01. <a href="https://www.wellcertified.com/">Standard   WELL V2 (wellcertified.com)</a>	Building Contractor	Construction

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WELL, v2 Air Feature – A04 (30E)		
Building Contractor is to mitigate construction pollution as per the WELL V2 Feature A04.  <a href="https://wellcertified.com">Standard   WELL V2 (wellcertified.com)</a>	Building Contractor	Construction
WELL, v2 Water Feature – W02 (30E)		
Building Contractor is to carry out initial drinking water quality test to WELL rating W02 requirement before practical completion.  <a href="https://wellcertified.com">Standard   WELL V2 (wellcertified.com)</a>	Building Contractor	Construction



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## 5 Implementation

The previous sections of the ESD Statement Report provide principles for the 979-981 Burke Road and summarise a range of ESD initiatives and targets based on the Benchmark 5-Star Green Star for the residential dwellings.

This section outlines the proposed implementation to ensure the development can be set up and managed effectively to meet, maintain and monitor the sustainability initiatives and targets identified for the Development.

An ESD implementation Review Report will be produced at the construction completion summarising how all ESD measures within the SMP have been implemented in accordance with the relevant approved plans and to the satisfaction of the Responsible Authority.

### 5.1 Preliminary considerations and planning

- Meet and discuss with the Client and City of Boroondara to set up the sustainability objectives and targets;
- Organise ESD workshops with the design team to review how to implement the building sustainability objectives in the design;
- Issue final ESD Statement Report for the Planning Endorsement;
- To prepare an ESD initiative summary and checklist; and
- Produce sustainability implementation plan to state how the sustainable targets to be achieved.

### 5.2 Schematic design phase

- Assess design options and sustainability performance outcomes;
- Undertake the energy, daylight and thermal comfort modelling; and
- Quantify sustainability targets and outcome.

### 5.3 Design development and Tender documentation phase

- Review sustainability objectives incorporated into the design;
- Review proposed commissioning approach and design configuration for long term operational performance;
- Review relevant design documentation related to the endorsed SMP; and
- Review and assess the agreed sustainability initiatives to the set targets.

### 5.4 Construction phase

- Ensure the builder implements the sustainability initiatives during the construction process as intended in the design; and
- Compare construction sustainability outcomes to the set targets.
- Undertake overall ESD implementation review outlining how the performance outcomes specified in the amended ESD report been implemented.
- Produce ESD implementation Review Report at the construction completion to the satisfaction of the Responsible Authority.

### 5.5 Occupancy phase

- Develop a Building User's Guide and made available to the Building Owner;
- Energy and water consumption targets are set and monitored, and
- Further improvement strategies are put in place and updated on regular basis, e.g. quarterly.



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## 6 Conclusion

This report provides a summary of sustainable design features, which are integrated into the design of the proposed development. In terms of the building performance, the proposed development will be designed to include the followings:

- Achieve minimum 5.5-Star and 7-Star average NatHERS energy rating for all apartments with maximum cooling load lower than 21 MJ/m<sup>2</sup>;
- Benchmark a 5-Star Green Star sustainable design under the current Green Star Design & As Built rating tool Version 1.3; and
- Meet the Best Practice standard for Urban Stormwater Quality to water sensitive urban design (WSUD) requirements.

Therefore, the proposed development has been designed to meet the objectives of the NCC 2019 Section J and Boroondara Planning Scheme Clause 53.18 Stormwater Management in urban Development, Clause 58 Apartment Developments and generally in accordance with the Sustainable Management Plan produced by SDC dated June 2020 and the project team will ensure the performance outcomes proposed in this SMP be implemented prior to occupancy at no cost to the City of Boroondara and be to the satisfaction of the City of Boroondara and Department of Environment, Land, Water and Planning.

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IGS INTEGRATED  
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SERVICES

## Appendix A – Green Star Scorecard

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## Green Star - Design & As-Built Scorecard

<b>Project:</b>	Terrace at 979-981 Burke Road	<b>Round:</b>	1
<b>Targeted Rating:</b>	5 Star - Australian Excellence		

Points Available (Targeted)	Project Score (Targeted)
100.0	63.0

Green Star and the Green Star certification logo are trade marks owned by Green Building Council of Australia (GBCA). They constitute valuable intellectual property and are protected by law. Any unauthorised use of the trade marks constitutes infringement of our rights and may result in legal action. Projects that are not registered cannot refer to Green Star. Once registered, a project may state they are targeting Green Star. Once certified, a project may promote their certification, and use the certification logo. The Marketing Rules and Style Guide sets out the rules for the use of the trade marks and provides marketing ideas to help promote your Green Star project.

CATEGORY / CREDIT	AIM OF THE CREDIT / SELECTION	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TARGETED
Management				14	
Green Star Accredited Professional	To recognise the appointment and active involvement of a Green Star Accredited Professional in order to ensure that the rating tool is	1.1	Accredited Professional	1	1
Commissioning and Tuning	To encourage and recognise commissioning, handover and tuning initiatives that ensure all building services operate to their full potential.	2.0	Environmental Performance Targets	-	Complies
		2.1	Services and Maintainability Review	1	1
		2.2	Building Commissioning	1	1
		2.3	Building Systems Tuning	1	1
		2.4	Independent Commissioning Agent	1	0
Adaptation and Resilience	To encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters.	3.1	Implementation of a Climate Adaptation Plan	2	
Building Information	To recognise the development and provision of building information that facilitates understanding of a building's systems, operation and maintenance requirements, and environmental targets to enable the optimised performance.	4.1	Building Information	1	1
Commitment to Performance	To recognise practices that encourage building owners, building occupants and facilities management teams to set targets and monitor environmental performance in a collaborative way.	5.1	Environmental Building Performance	1	1
		5.2	End of Life Waste Performance	A. Contractual Agreements	1
Metering and Monitoring	To recognise the implementation of effective energy and water metering and monitoring systems.	6.0	Metering	-	Complies
		6.1	Monitoring Systems	1	1
Responsible Construction Practices	To reward projects that use best practice formal environmental management procedures during construction.	7.0	Environmental Management Plan	-	Complies
		7.1	Environmental Management System	1	1
		7.2	High Quality Staff Support	1	1
Operational Waste	B. Prescriptive Pathway	8A	Performance Pathway: Specialist Plan	0	
		8B	Prescriptive Pathway: Facilities	1	1
Total				14	11

Indoor Environment Quality					17	
Indoor Air Quality	To recognise projects that provide high air quality to occupants.	9.1	Ventilation System Attributes		1	1
		9.2	Provision of Outdoor Air	<input type="checkbox"/> A. Comparison to Industry Standards	2	1
				<input type="checkbox"/> B. Performance Based Approach		
				<input type="checkbox"/> C. Natural Ventilation		
9.3	Exhaust or Elimination of Pollutants	<input type="checkbox"/> A. Removing the Source of Pollutants	1	1		
		<input checked="" type="checkbox"/> B. Exhausting the Pollutants Directly to the Out				
Acoustic Comfort	To reward projects that provide appropriate and comfortable acoustic conditions for occupants.	10.1	Internal Noise Levels		1	0
		10.2	Reverberation		1.00	
		10.3	Acoustic Separation	A. Sound Reduction	1.00	0
Lighting Comfort	To encourage and recognise well-lit spaces that provide a high degree of comfort to users.	11.0	Minimum Lighting Comfort		-	Complies
		11.1 General Illuminance and Glare Reduction	11.1.1 General Illuminance	<input type="checkbox"/> A. Non Residential Spaces	1.00	1
				<input type="checkbox"/> B. Residential Spaces		
				<input checked="" type="checkbox"/> A. Prescriptive Method 1		
				<input type="checkbox"/> B. Prescriptive Method 2		
				<input type="checkbox"/> C. Performance Method		
		11.2	Surface Illuminance	<input type="checkbox"/> A. Prescriptive Method	1.00	0
<input type="checkbox"/> B. Performance Method						
		<input type="checkbox"/> C. Residential Spaces (Prescriptive Method)				
Visual Comfort	To recognise the delivery of well-lit spaces that provide high levels of visual comfort to building occupants.	12.0	Glare Reduction	<input type="checkbox"/> A. Fixed Shading Devices	-	Complies
				<input checked="" type="checkbox"/> B. Blinds or Screens		
				<input type="checkbox"/> C. Daylight Glare Model		
		12.1	Daylight	<input checked="" type="checkbox"/> A. Prescriptive Methodology	2	2
<input type="checkbox"/> B. Compliance Using Daylight Factor						
		<input type="checkbox"/> C. Compliance Using Daylight Autonomy				
Indoor Pollutants	To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	13.1 Paints, Adhesives, Sealants and Carpets	13.1.1 Paints, Adhesives and Sealants	<input checked="" type="checkbox"/> A. Product Certification	1.00	1
				<input type="checkbox"/> B. Laboratory Testing		
				<input type="checkbox"/> C. No Paints, Adhesives or Sealants		
				<input checked="" type="checkbox"/> A. Product Certification		
		13.2	Engineered Wood Products	<input type="checkbox"/> B. Laboratory Testing	1.00	1
<input type="checkbox"/> C. No Carpets						



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Thermal Comfort	To encourage and recognise projects that achieve high levels of thermal comfort	14.1 Thermal Comfort	<div><div><div><input type="checkbox"/> A. Naturally Ventilated Spaces</div><div><input type="checkbox"/> B. Spaces With Mechanical Heating Only</div><div><input type="checkbox"/> C. Residential Spaces</div></div></div>	1	1
		14.2 Advanced Thermal Comfort	<div><div><div><input type="checkbox"/> A. Naturally Ventilated Spaces</div><div><input type="checkbox"/> B. Mechanically Ventilated Spaces</div><div><input type="checkbox"/> C. Residential Spaces</div><div><input type="checkbox"/> D. Industrial spaces</div></div></div>	1	
Total				17	11

Energy				22	
Greenhouse Gas Emissions	B. NatHERS Rating Pathway	15A.0	Conditional Requirement: Prescriptive Pathway	-	Complies
		15A.1	Building Envelope	0	
		15A.2	Wall-Glazing Construction and Retail Display Glazing	0	
		15A.3	Lighting	0.00	
		15A.4	Ventilation and Air Conditioning	0	
		15A.5	Domestic Hot Water	0	
		15A.6	Transition Plan	0	
		15A.7	Fuel Switching	0	
		15A.8	On-Site Storage	0	
		15A.9	Vertical Transportation	0	
		15A.10	Off-Site Renewables	0	
		15B.0	Conditional Requirement: NatHERS Pathway	-	Complies
		15B.1	Thermal and Energy Performance	6	2
		15B.2 Building Services and Appliances	15B.2.1 Lighting	1	1
			15B.2.2 Ventilation and Air Conditioning	2	2
			15B.2.3 Domestic Hot Water	2	1
			15B.2.4 Appliances & Equipment	1	
			15B.2.5 Fuel Switching	1	
			15B.2.6 On-Site Storage	1	
			15B.2.7 Vertical Transportation	1	
			15B.2.8 Passive Laundry Facilities	1	
			15B.2.9 Unoccupied Areas	1	
			15B.2.10 Off-Site Renewables	5	2
		15C.0	Conditional Requirement: BASIX Pathway	-	
		15C.1	BASIX Greenhouse Gas Reductions	0	
		15C.2	Off-Site Renewables	0	
		15D.0	Conditional Requirement: NABERS Pathway	-	
		15D.1	NABERS Energy Greenhouse Gas Emissions Reduction	0	
		15D.2	Off-Site Renewables	0	
		15D.3 Additional Prescriptive Measures	15D.3.1 Transition Plan	0	
			15D.3.2 Fuel Switching	0	
			15D.3.3 On-Site Storage	0	
		15E.0	Conditional Requirement: Reference Building Pathway	-	
		15E.1	GHG Emissions Reduction: Building Fabric	0	
		15E.2	GHG Emissions Reduction	0	
		15E.3	Off-Site Renewables	0	
		15E.4	District Services	0	
		15E.5 Additional Prescriptive Measures	15E.5.1 Transition Plan	0	
			15E.5.2 Fuel Switching	0	
			15E.5.3 On-Site Storage	0	
		15H.0	Conditional Requirement: Industrial Prescriptive Pathway	-	
		15H.1	Building Envelope	0	
		15H.2	Wall-Glazing Construction	0	
		15H.3 Lighting	15H.3.1 Internal Lighting	0	
			15H.3.2 External Lighting	0	
		15H.4	Ventilation and Air Conditioning	0	
		15H.5	Domestic Hot Water	0	
		15H.6	Transition Plan	0	
		15H.7	Fuel Switching	0	
		15H.8	On-site Storage	0	
		15H.9	Provision of Structure for PV	0	
		15H.10	Off-site Renewables	0	
		15I.0	Conditional Requirement: On-site Renewables Pathway	-	

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		15A On-site Renewable Energy	0	
Peak Electricity Demand Reduction	A. Prescriptive Pathway	16A Prescriptive Pathway: On-Site Energy Generation	1	
		16B Modelled Performance Pathway: Reference Building	0	
Total			17	8

Transport					10	
Sustainable Transport	B. Prescriptive Pathway	17A Performance Pathway			0	
		17B.1 Access by Public Transport			3	3
		17B.2 Reduced Car Parking Provision			1	
		17B.3 Low Emission Vehicle Infrastructure	A. Parking for Fuel-Efficient Vehicles		1	1
		17B.4 Active Transport Facilities			1	0
		17B.5 Walkable Neighbourhoods	A. Proximity to Amenities		1	1
		17C.1 Access by Public Transport			0	
		17C.2 Reduced Car Parking Provision			0	
		17C.3 Low Emission Vehicle Infrastructure	<div><input type="checkbox"/> A. Parking for Fuel-Efficient Vehicles</div> <div><input type="checkbox"/> B. Parking for Electric Vehicles</div> <div><input type="checkbox"/> C. Parking for Car Share Vehicles</div> <div><input type="checkbox"/> D. No Parking Spaces Provided</div> <div><input type="checkbox"/> E. Low Emission Facility Transport</div>		0	
		17C.4 Active Transport Facilities			0	
		17C.5 Proximity to Amenities			0	
Total				7	5	

Water					12
Potable Water	B. Prescriptive Pathway	18A	Potable Water - Performance Pathway	0	
		18B.1	Sanitary Fixture Efficiency	1	
		18B.2	Rainwater Reuse	1	
		18B.3	Heat Rejection	2	2
		18B.4	Landscape Irrigation	1	
		18B.5	Fire Protection System Test Water	1	1
Total				6	3

Materials 14				
Life Cycle Impacts	B. Prescriptive Pathway - Life Cycle Impacts	19A.1 Comparative Life Cycle Assessment	0	
		19A.2 Additional Reporting	<input type="checkbox"/> A. Additional Life Cycle Impact Reporting <input type="checkbox"/> B. Material Selection Improvement <input type="checkbox"/> C. Construction Process Improvement <input type="checkbox"/> D. LCA Design Review	0
		19B.1.1 Portland Cement Reduction	2	2
		19B.1.2 Water Reduction	0.5	0.5
		19B.1.3 Aggregates Reduction	A. Course Aggregate Reduction	0.5
		19B.2 Steel	A. Reduced Mass of Steel Framing	A. High Strength Steel
		19B.3 Building Reuse	19B.3.1 Façade Reuse	2
			19B.3.2 Structure Reuse	2
		19B.4 Structural Timber	19B.4.0 Responsible Sourcing	-
			19B.4.1 Reduced Embodied Impacts	3
		19C.1 Concrete	19C.1.1 Portland Cement Reduction	0
			19C.1.2 Water Reduction	0
			19C.1.3 Aggregates Reduction	A. Course Aggregate Reduction
		19C.2 Steel	19C.2.1 Reduced Mass of Steel Framing	A. High Strength Steel
			19C.2.2 Reduced Use of Steel Reinforcement	0
		19C.3 Building Reuse	19C.3.1 Façade Reuse	0
			19C.3.2 Structure Reuse	0
		19C.4 Structural Timber	19C.4.0 Responsible Sourcing	-
			19C.4.1 Reduced Embodied Impacts	0
Responsible Building Materials	To reward projects that include materials that are responsibly sourced or have a sustainable supply chain.	20.1 Structural and Reinforcing Steel	20.1.0 Responsible Steel Maker	-
			A. Responsible Steel Fabricator	1
		20.2 Timber	<input type="checkbox"/> A. Certified Timber <input type="checkbox"/> B. Reused Timber	1
		20.3 Permanent Formwork, Pipes, Flooring, Blinds and Cables	B. Best Practice Guidelines for PVC	1

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Sustainable Products	To encourage sustainability and transparency in product specification.	21.1	Product Transparency and Sustainability	<input type="checkbox"/> A. Reused Products <input type="checkbox"/> B. Recycled Content Products <input type="checkbox"/> C. Environmental Product Declarations (EPDs) <input type="checkbox"/> D. Life Cycle Assessment <input type="checkbox"/> E. Stewardship Programs	3	1
		22.0	Reporting Accuracy	A. Compliance Verification Summary	-	Complies
		22A	Fixed Benchmark		0	
		22B	Percentage Benchmark		1	1
		Total				7

Land Use & Ecology					6	
Ecological Value	To reward projects that improve the ecological value of their site.	23.0	Endangered, Threatened or Vulnerable Species	A. EPBC	-	Complies
		23.1	Ecological Value		3	1
Sustainable Sites	To reward projects that choose to develop sites that have limited ecological value, re-use previously developed land and remediate contaminate land.	24.0	Conditional Requirement		-	Complies
		24.1	Reuse of Land	A. Previously Developed Land	1	1
		24.2	Contamination and Hazardous Materials	<input type="checkbox"/> A. Site Contamination <input checked="" type="checkbox"/> B. Hazardous Materials	1	1
Heat Island Effect	To encourage and recognise projects that reduce the contribution of the project site to the heat island	25.1	Heat Island Effect Reduction		1	1
Total					6	4

Emissions					5	
Stormwater	To reward projects that minimise peak stormwater flows and reduce pollutants entering public sewer infrastructure.	26.1	Stormwater Peak Discharge		1	1
		26.2	Stormwater Pollution Targets		1	1
Light Pollution	To reward projects that minimise light pollution.	27.0	Light Pollution to Neighbouring Bodies		-	Complies
		27.1	Light Pollution to Night Sky	A. Control of Upward Light Output Ratio (ULOR)	1	1
Microbial Control: Legionella Impacts from Cooling Systems	B. Waterless Heat Rejection Systems	28A	Natural Ventilation		0	
		28B	Waterless Heat Rejection Systems		1	1
		28C	Water-Based Heat Rejection Systems		0	
Refrigerant Impacts	To encourage operational practices that minimise the environmental impacts of refrigeration	29.1	Refrigerants Impacts	A. Calculating TSDEI	1	
Total					5	4

Innovation					10	
Innovative Technology or Process	The project meets the aims of an existing credit using a technology or process that is considered innovative in Australia or the world.	30A	Innovative Technology or Process		10	
Market Transformation	The project has undertaken a sustainability initiative that substantially contributes to the broader market transformation towards sustainable development in	30B	Market Transformation			
Improving on Green Star Benchmarks	The project has achieved full points in a Green Star credit and demonstrates a substantial improvement on the benchmark required to achieve full points.	30C	Improving on Green Star Benchmarks			2
Innovation Challenge	Where the project addresses an sustainability issue not included within any of the Credits in the existing Green Star rating tools.	30D	Innovation Challenge			2
Global Sustainability	Project teams may adopt an approved credit from a Global Green Building Rating tool that addresses a sustainability issue that is currently outside the	30E	Global Sustainability			6
Total					10	10

TOTALS	TARGETED
CORE POINTS	53.0
INNOVATION POINTS	10.0
NA POINTS	0.0
POINTS AVAILABLE	100.0
PROJECT SCORE	63.0

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## Appendix B – Green Star IEQ 12.1 – Daylight Access Report

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Green Star IEQ 12.1 – Daylight Access Report



979-981 Burke Road,  
Camberwell  
Date: 01/03/2023

Project No: 22074

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## Document Control

Version	Date	Issue	Author		Reviewer	
00	21/01/2022	Issue for Review	Earnest Joseph	EJ	Li Huan	LH
01	17/06/2022	Issue for Review	Earnest Joseph	EJ	Li Huan	LH
02	23/08/2022	Issue for Review	Earnest Joseph	EJ	Li Huan	LH
03	01/03/2023	Issue for Review	Earnest Joseph	EJ	Li Huan	LH

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# VCAT Directed Plans

979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 1. Executive Summary

IGS was engaged to undertake a daylight simulation on the mixed-use residential development located at 979-981 Burke Road, Camberwell to identify whether 12.1 Daylight credit of Green Star – Design & as Built v1.3 can be targeted.

Green Star 12.1 Daylight requires a percentage of the nominated area receives high levels of daylight with daylight factor (DF) above 2.0% for commercial spaces and communal facilities and daylight factor (DF) above 1.5% for residential spaces.

Up to 2 points are available for commercial spaces and communal facilities as following:

- For 40% of the nominated area with DF above 2.0% - 1 point;
- For 60% of the nominated area with DF above 2.0% - 2 points.

Up to 2 points are available for residential spaces as following:

- For 40% of the nominated area with DF above 1.5% - 1 point;
- For 60% of the nominated area with DF above 1.5% - 2 points.

A daylight modelling was undertaken on commercial spaces, communal facilities and residential spaces under the Uniform Cloudy Sky with a constant value of luminance level of 10,000 lux.

The modelling result has demonstrated 61% of the total nominated spaces comply with Credit 12.1 daylight requirement,

In line with Green Star 12.1 Daylight credit criteria, at least 60% of the total nominated area comply with Green Star 12.1 daylight requirement, and hence 2 points are targeted.





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## 2. Introduction

### 2.1 Key Assumptions

The proposed external windows visible light transmissions (VLTs) for the mixed-use residential development are recommended as:

- |                     |                |
|---------------------|----------------|
| - External Windows: | VLT $\geq$ 55% |
| - Internal Windows  | VLT $\geq$ 80% |

### Finishes Reflectance Values

The following reflectance values are used for the building finishes daylight availability modelling.

- Floor reflectance = 0.4
- Internal Partitions reflectance = 0.8
- External Walls reflectance = 0.3
- Ceiling reflectance = 0.8

### 2.2 Sky Model

The Uniform Cloudy Sky of horizontal external illuminance of 10,000 Lux is used for daylight availability simulation.

A Uniform Cloudy Sky represents a sky with a constant value of luminance. The values are derived from a statistical analysis of outdoor illuminance levels. They represent a horizontal illuminance level that exceeds 85% of the time between the hours of 9am and 5pm throughout the year. Thus, they also represent that the building has been designed to meet the modelled daylight levels for at least 85% of the daytime annually.

### 2.3 Building Shape

The building physical shape is modelled in accordance with the architectural drawings package dated 21/02/2023 Issued for S87A Application.

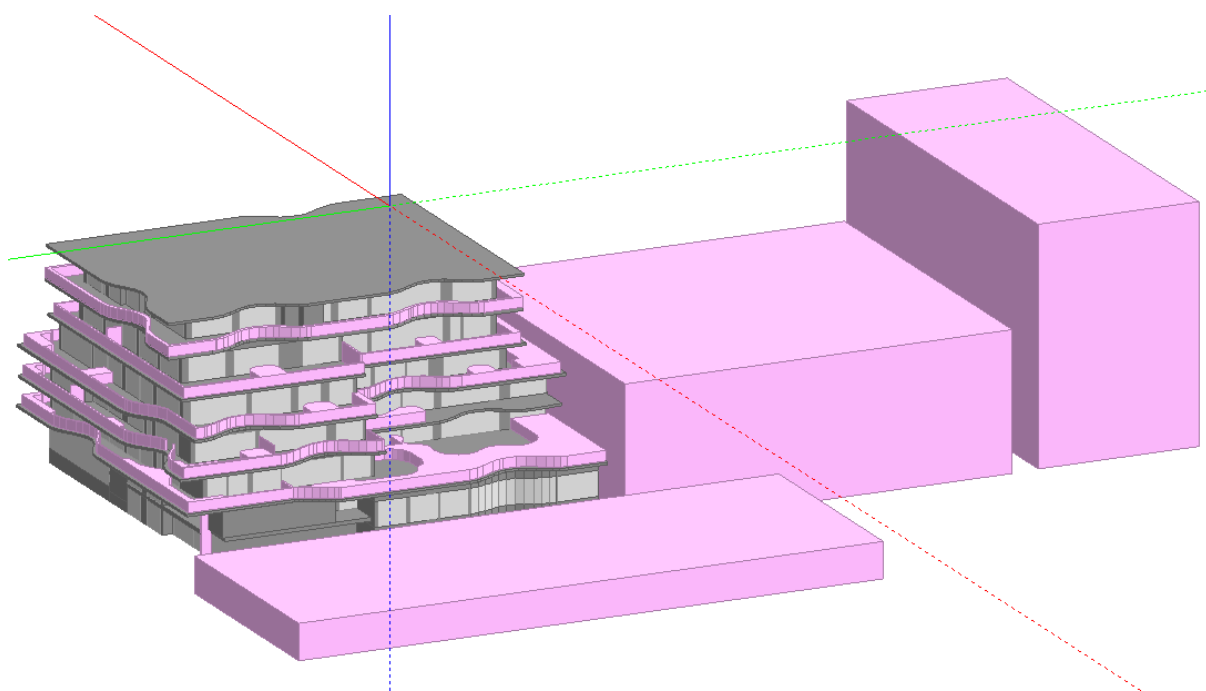


Figure 1 – View of the Building Model

# VCAT Directed Plans

979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 3. Non-Residential Spaces Result Summary

### 3.1 Ground Floor Non-Residential Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across the Ground Floor non-residential spaces.

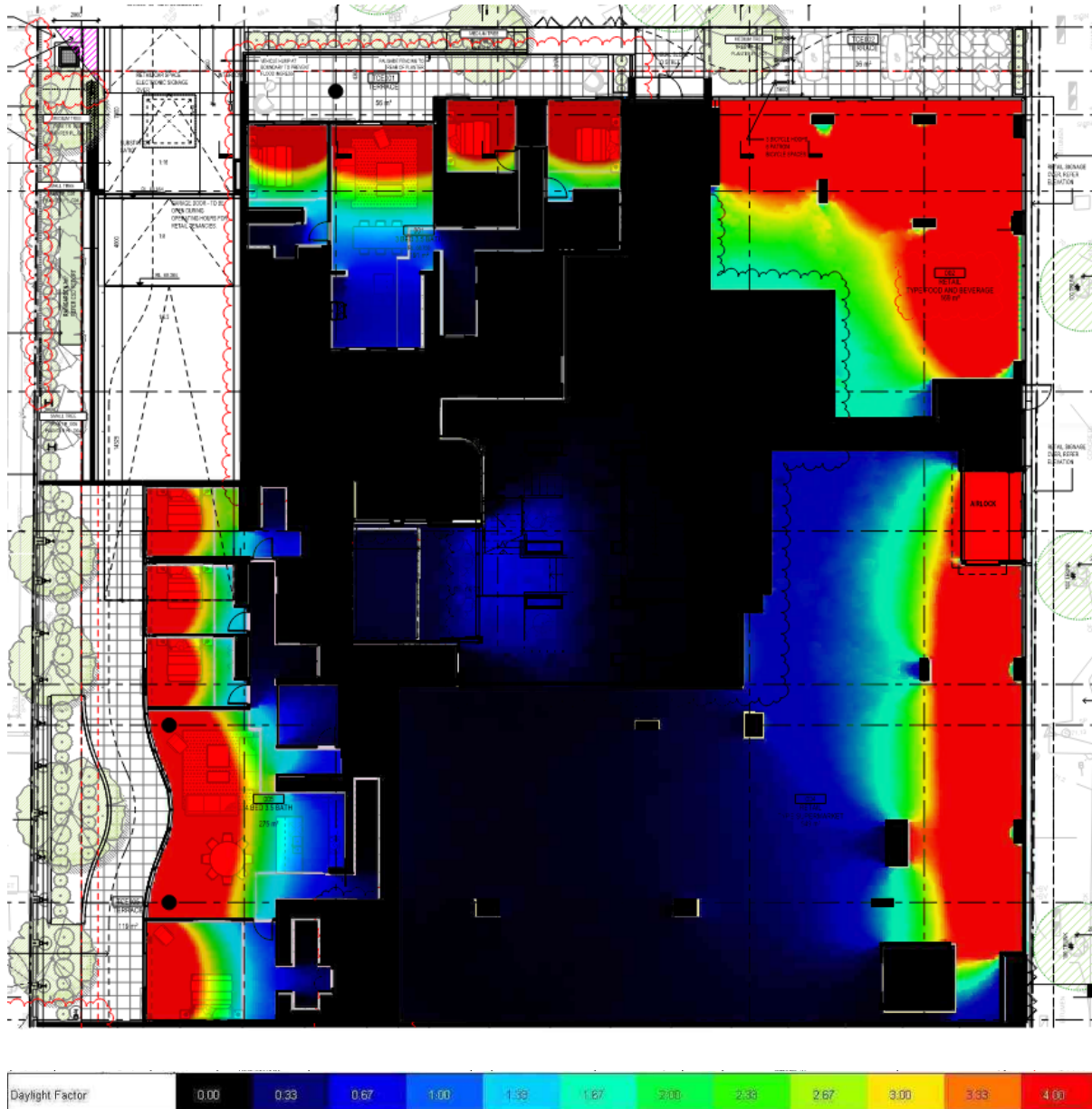


Figure 2 – Ground Floor Daylight Contour Plot

# VCAT Directed Plans

979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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Below is the summary table representing the compliant area, which achieves DF of more than 2.0% for non-residential spaces:

Block	Zone	Nominated Area (m <sup>2</sup> )	Nominated Area with Daylight Factor above 2% (m <sup>2</sup> )	Nominated Area with Daylight Factor above 2% (%)
Ground	Supermarket	520.5	103.3	20%
Ground	Retail - F&B	159.0	143.1	90%
Ground	Communal	47.8	0.0	0%
Ground - Mezzanine	Communal	45.1	0.0	0%
Total		772	246	32%

# VCAT Directed Plans

979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 4. Residential Portion Result Summary

### 4.1 Ground Floor Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across Ground floor.

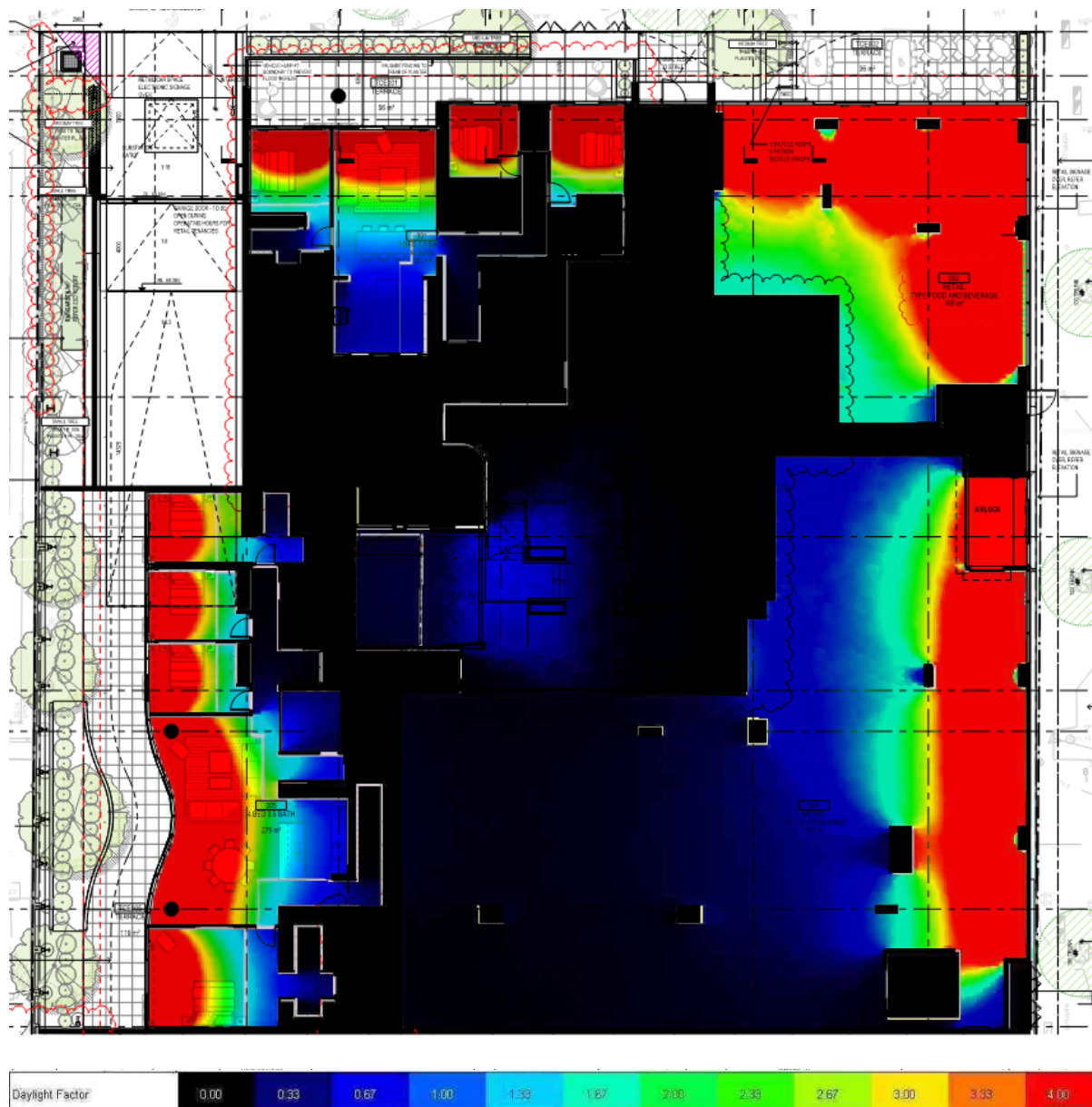


Figure 3 – Ground Floor Daylight Contour Plot

# VCAT Directed Plans

979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 4.2 Mezzanine Floor Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across Mezzanine Floor.

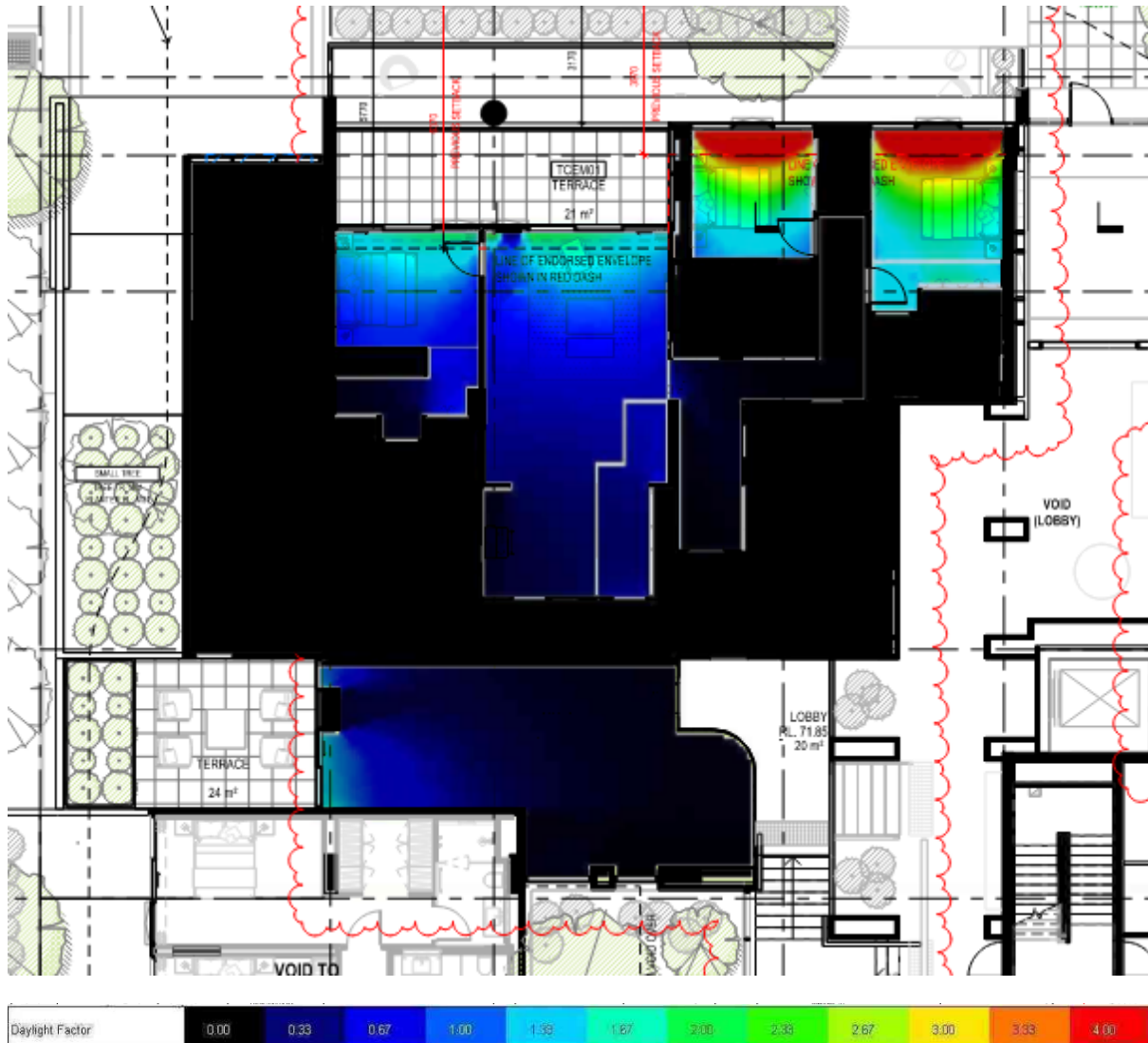


Figure 4 – Mezzanine Daylight Contour Plot



# VCAT Directed Plans

979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report

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## 4.3 Level 01 Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across Level 01.

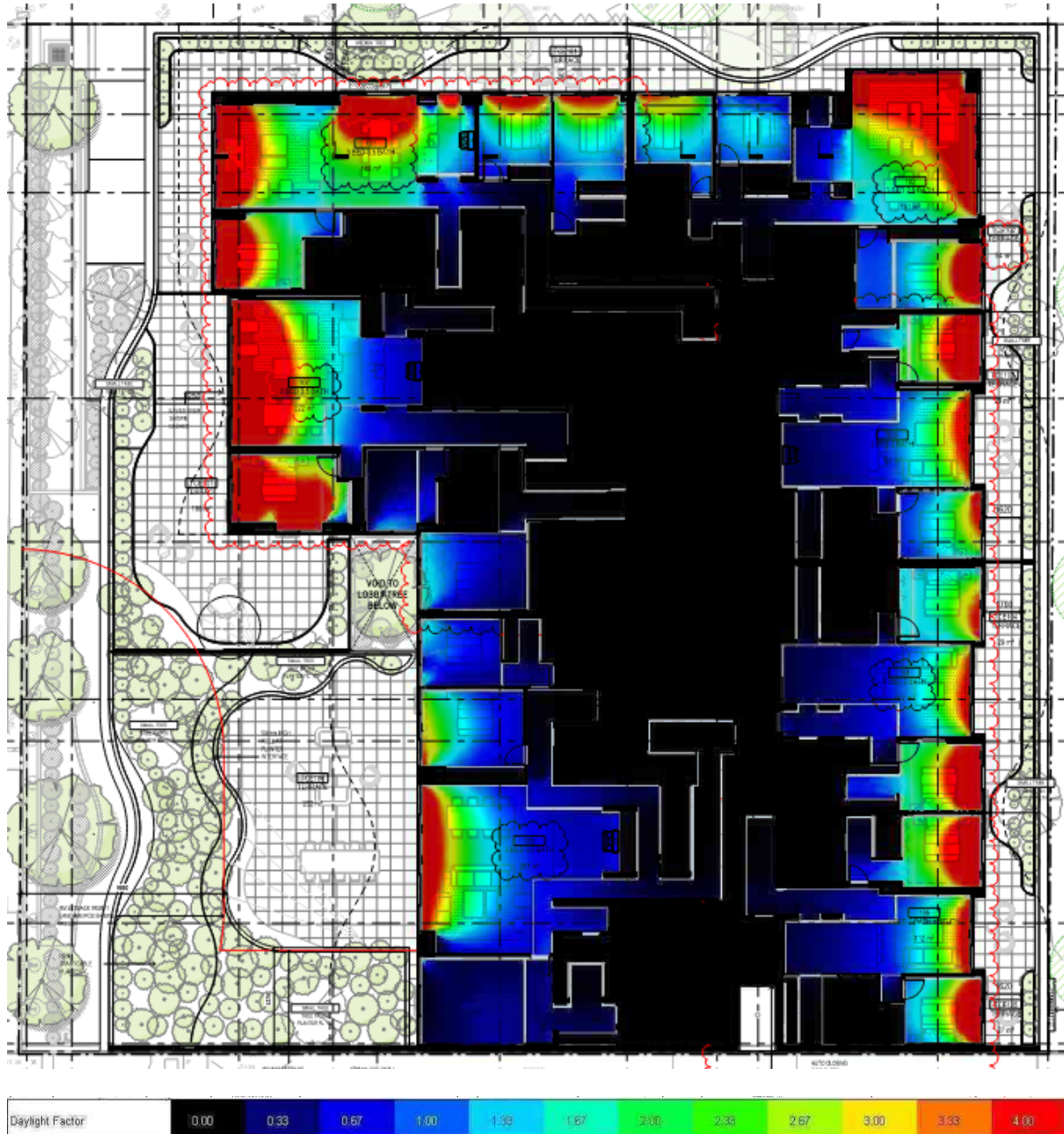


Figure 5 – Level 01 Daylight Contour Plot

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979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 4.4 Level 02 Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across Level 02.

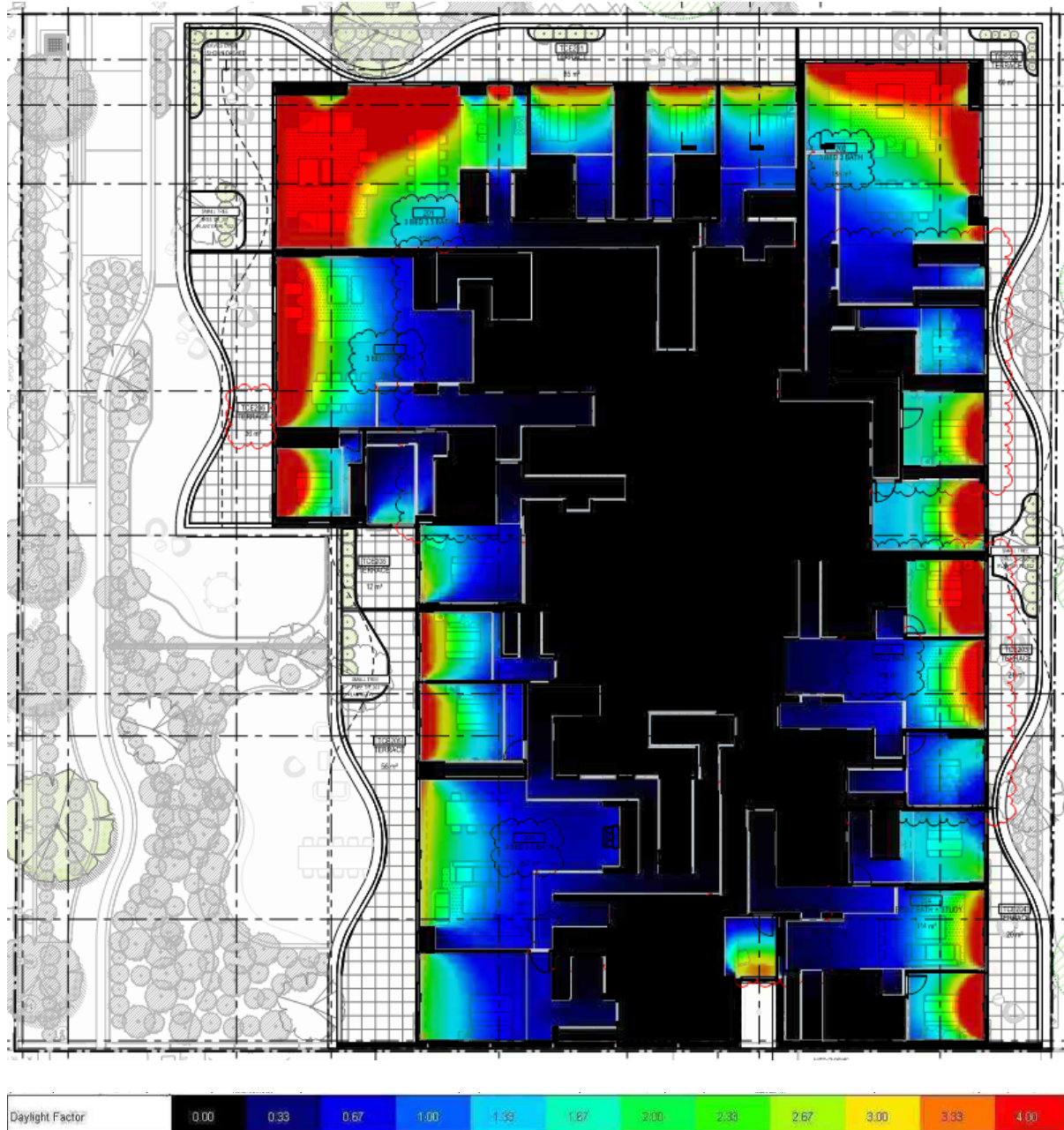


Figure 6 – Level 02 Daylight Contour Plot



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979-981 Burke Road, Camberwell

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## 4.5 Level 03 Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across Level 03.

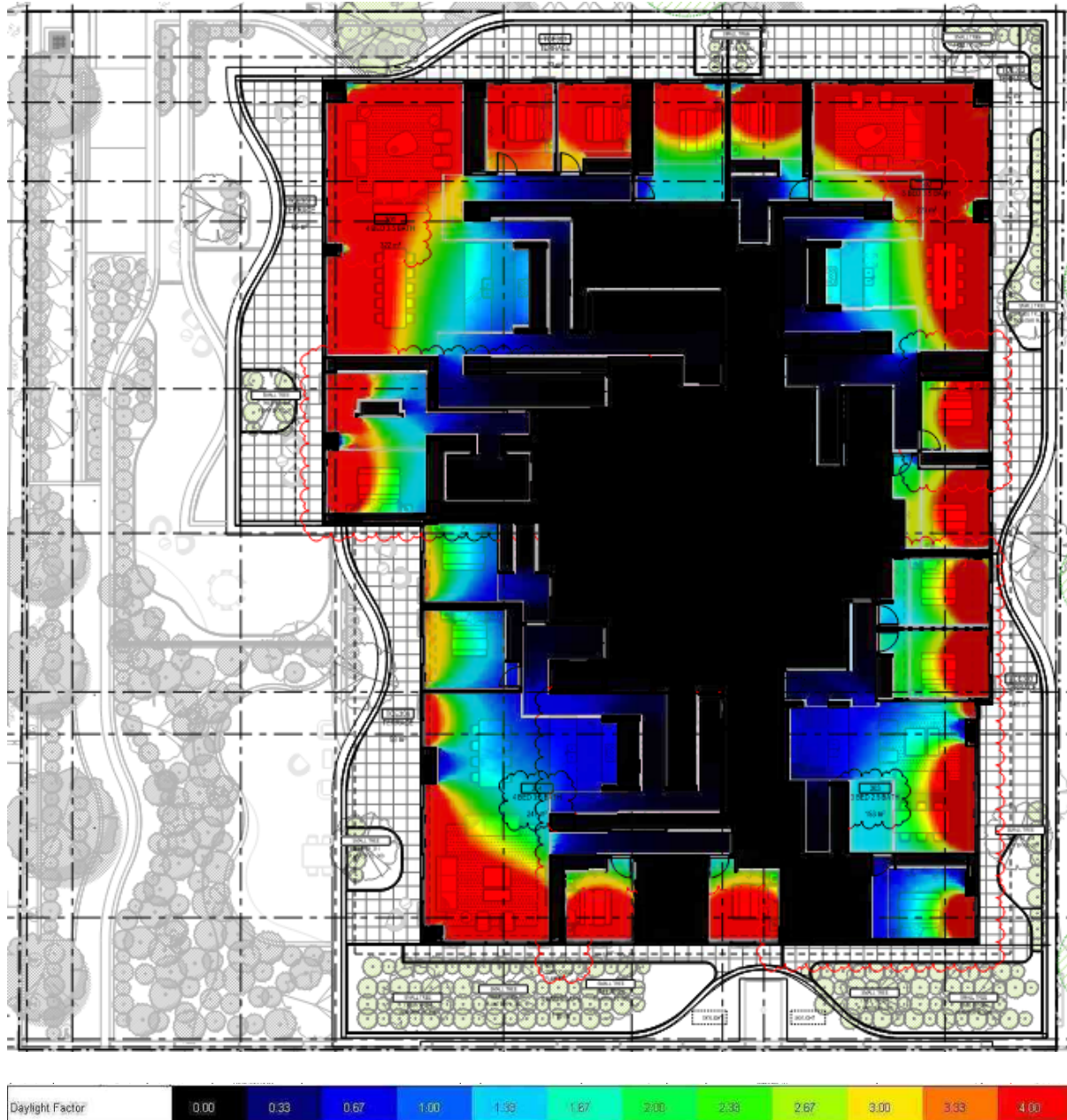


Figure 7 – Level 03 Daylight Contour Plot



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979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 4.6 Level 04 Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across Level 04.

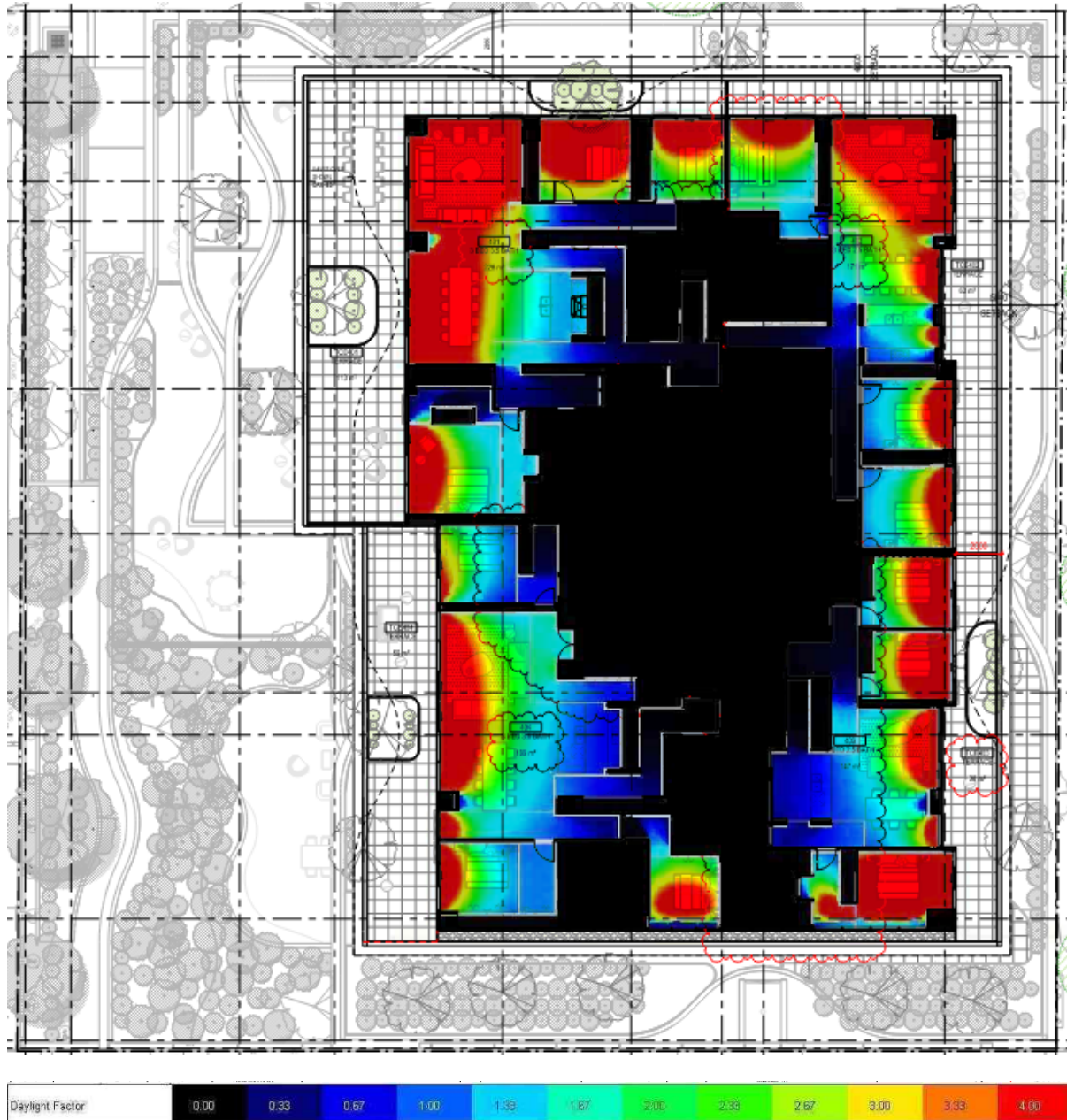


Figure 8 – Level 04 Daylight Contour Plot

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979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 4.7 Level 05 Daylight Contour Plot

Below is the daylight contour plot extracted from Design Builder daylight modelling result showing daylight availability across Level 05.

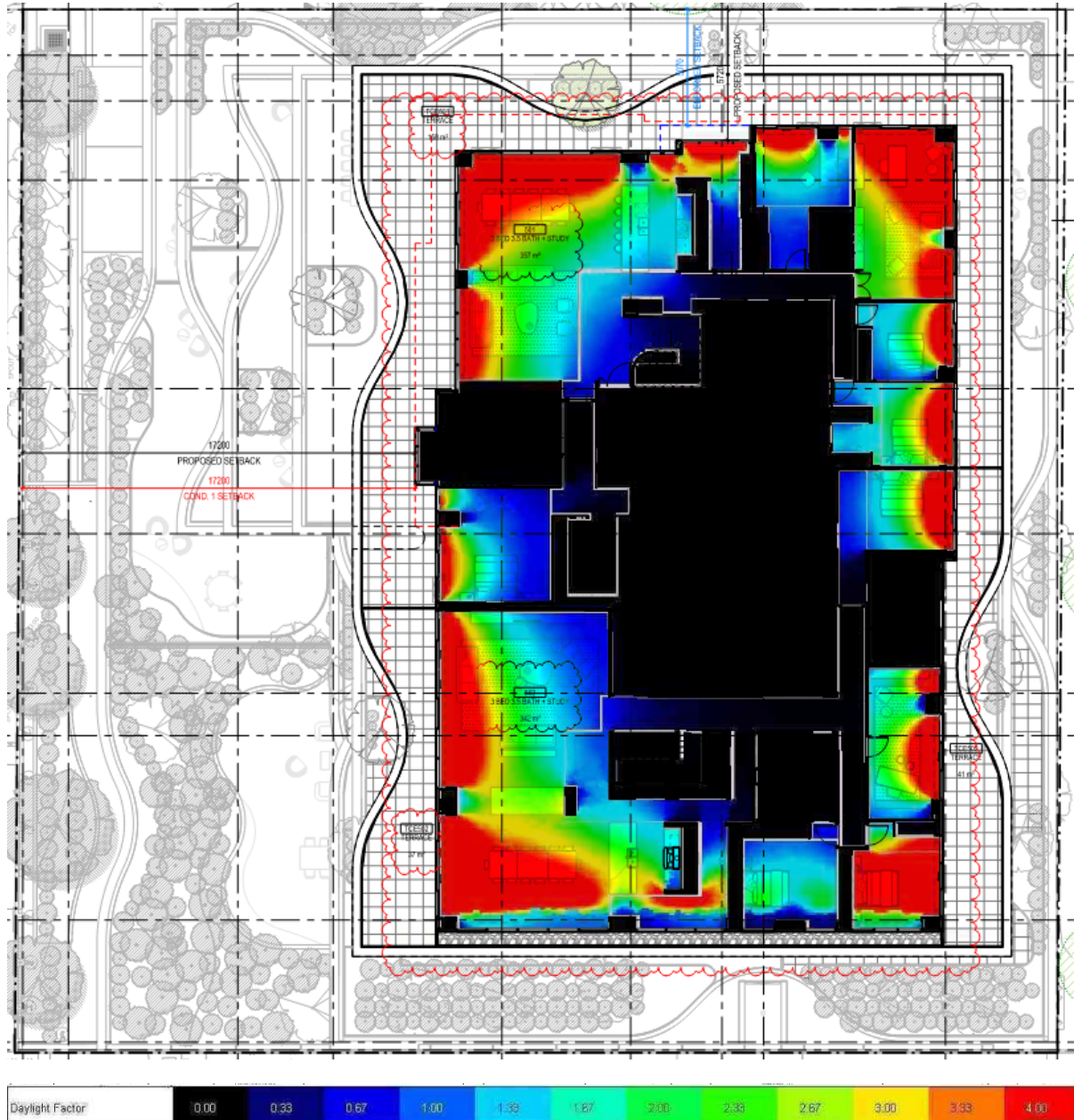


Figure 9 – Level 05 Daylight Contour Plot

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979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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Below is the summary table representing the compliant area, which achieves DF of more than 1.5 for residential spaces:

Block	Nominated Area extracted from the Daylight model (m <sup>2</sup> )	Nominated Area with Daylight Factor above 1.5% (m <sup>2</sup> )	Nominated Area with Daylight Factor above 1.5% (%)
Living rooms	1290.3	904.0	70%
Bedrooms	885.7	647.6	73%
Total	2176.0	1551.6	71%

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979-981 Burke Road, Camberwell

Green Star IEQ 12.1 Daylight Access Modelling Report



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## 5. Conclusion

Overall daylight availability output of the proposed mixed-use residential development is tabulated below:

Functional Space	Assessed Area (m <sup>2</sup> )	Compliant Area (m <sup>2</sup> )	% of Compliant	Green Star 12.1 Daylight Targeted Points
Non-Residential Space	772	246	61%	2
Residential Space	2,176	1,552		
<b>Total</b>	<b>2,948</b>	<b>1798</b>		

The modelling result has demonstrated 61% of the total nominated spaces comply with Credit 12.1 daylight requirement, and hence 2 points can be targeted.

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## Appendix C – Apartments NatHERS Report

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979-981 Burke Road,  
Camberwell

Project No: 22074  
Date: 01/03/2023

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## Document Control

Version	Date	Issue	Author		Reviewer	
00	21/01/2022	Issue for Review	Li Huan	LH	Slav Angelovski	SA
01	24/06/2022	Issue for Review	Li Huan	LH	Slav Angelovski	SA
02	23/08/2022	Issue for Review	Li Huan	LH	Slav Angelovski	SA
03	01/03/2023	Issue for Review	Li Huan	LH	Slav Angelovski	SA

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# VCAT Directed Plans



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## 1. Summary

Thermal performance assessment of the Class 2 apartments using accredited FirstRate5 Version 5.3.1a (3.21) software has been conducted on all sample residential apartments to NCC 2019 Section J0.2 and City of Boroondara Planning Conditions.

NCC 2019 Volume 1 Section J0.2 requires all Class 2 apartment units to achieve a minimum rating of 5.0 stars individually and an average (all apartments) rating of 6.0 stars.

As part of Boroondara City Council planning permit condition, 5-Star Green Star sustainable design is benchmarked under Green Star Design & As Built Version 1.3 and all residential apartments are to achieve a minimum NatHERS rating of 5.5 stars and an average NatHERS rating of above 7.0 stars.

From the assessment, all apartments have achieved a minimum NatHERS rating of above 5.5 stars, an average rating of above 7.0 stars and no dwellings exceed the maximum NatHERS annual cooling load of 21 MJ/m<sup>2</sup>.

Based on the NatHERS modelling results, all apartments will meet the Boroondara City Council planning permit condition.

The following residential thermal performance assessor details are provided for building permit purposes.

Assessor's Name: Li Huan  
Accreditation Number: DMN/12/1395  
AAO: FirstRate5 House Energy Rating Organization

Refer to Appendix 1 for NatHERS star rating results. The official star rating certificate can be provided by FirstRate5 House Energy Rating Organization on request and at the client's cost of \$100 (+GST) per certificate which includes \$30(+GST) per certificate application required by FirstRate5 House Energy Rating Organization and \$70(+GST) for processing, uploading per energy model and downloading per certificate. The certificate can be generated no later than three (3) months after the report is issued.

# VCAT Directed Plans



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## 2. Overview

**Project:** 979-981 Burke Road, Camberwell

**Applicable NCC:** 2019

**Climate Zone:** 6

**NCC Classification and Verification method:**

- Class 2 – Apartments with shared underground carpark spaces
- Class 2 building fabric and services – NCC 2019 deemed-to-satisfy provisions, Part J0.

**Reference Documents:** This report has been based upon review of a set of Architectural Drawings dated 21.02.2023 Issued for S87A Application.



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## 3. Modelling Inputs Assumptions

### Building Fabric Thermal Performance

Element	Type	Description	Minimum Added Insulation	Total System R-value
Wall	All	Refer architectural drawings		
	Internal	Walls adjoining a corridor	R1.5	≥ R1.8
	Internal	Neighbour Party Walls	R1.5	≥ R1.8
	Internal	Walls adjoining lift shaft/Stairwell	R2.5	≥ R2.8
	External	All other internal walls	-	-
Floor	Typical Floor	Suspended Concrete Slab to commercial space/exposed area. (No insulation is provided for unit 202, 203, 204 and 501 as per the referenced architectural drawings)	R2.0	≥ R2.3
		Suspended Concrete Slab to neighbor apartment	-	
	Coverings	Tiles – Wet areas, as per drawings Carpet – Bedrooms Timber – Kitchen	-	
Ceiling		Suspended Concrete Slab adjoining neighbor/conditioned area	-	-
		Suspended Concrete Slab to balconies/exposed	R2.0	≥ R2.3
		Top floor roof	Ceiling R4.0	≥ R4.3
Seals		All windows and externally facing doors are weather stripped.	Nil	
Exhaust Fans		Each kitchen area has 1 sealed exhaust fan. 1 sealed exhaust fan is provided for all bathrooms.	Nil	
LED Downlights		All recessed downlights to be IC-4 rated or equivalent	Nil	
Shading	Windows	Balconies protruding on the level above and adjacent building.	Nil	

Note: Total System R-Value including allowance for thermal bridging must be calculated to NCC 2019 Volume One Section J1.2 requirements.

### Windows Thermal Performance

Element	Type	Description
Windows (Typical)	Frame	AS (Improved) Aluminium Frames or equivalent
	External Glazing	Double Glazed
	Window Systems from Ground to Level 04	$U_w \leq 3.1$ , SHGC <sub>w</sub> = 0.27
	Level 05 Window Systems	$U_w \leq 2.7$ , SHGC <sub>w</sub> = 0.27

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## Appendix 1 – NatHERS Assessment Results

Location	Building Apartment Number	Number of Apartments	NatHERS Rating	Energy (MJ/m <sup>2</sup> )			Net Conditioned Floor Area
				Total	Heating	Cooling	(m <sup>2</sup> )
Ground Floor	001	1	7.9	59.3	55.9	3.4	170.2
Ground Floor	005	1	7.3	80.3	73.4	6.9	232.9
Mezzanine	M01	1	8.3	47.8	42.7	5.1	158.5
Level 1	101	1	7.9	61.2	54.1	7.1	168.9
Level 1	102	1	7.6	72.4	65.1	7.3	133.3
Level 1	103	1	8.3	48.9	43.8	5.1	84.5
Level 1	104	1	8.1	55.9	51.3	4.6	83.3
Level 1	105	1	7.8	63.6	59.9	3.7	91.6
Level 1	106	1	8.7	36.2	32.5	3.7	219.6
Level 1	107	1	8.3	47.7	40.9	6.8	199.6
Level 2	201	1	8.1	53.8	47.2	6.6	193.5
Level 2	202	1	7.6	73	65.2	7.8	164.3
Level 2	203	1	7.7	66.6	61	5.6	86.9
Level 2	204	1	7.1	87.5	80.3	7.2	93.4
Level 2	205	1	8.2	52.3	47	5.3	219.6
Level 2	206	1	8.2	52.5	47.8	4.7	197.2
Level 3	301	1	7.9	62.9	54.7	8.2	293.9
Level 3	302	1	7.7	69.9	60.4	9.5	193.7
Level 3	303	1	7.7	69.2	63	6.2	131.5
Level 3	304	1	7.4	79.1	73.3	5.8	222
Level 4	401	1	7.6	72.8	64	8.8	210
Level 4	402	1	6.9	92.6	86	6.6	150.6
Level 4	403	1	6.9	94.7	87.1	7.6	129.6
Level 4	404	1	7	90.8	84.9	5.9	178.6
Level 5	501	1	5.6	141.7	131.8	9.9	340.8
Level 5	502	1	5.6	138.4	128.9	9.5	321.6
<b>TOTALS</b>		<b>26</b>		<b>76.4</b>	<b>69.4</b>	<b>7.0</b>	
<b>WEIGHTED AVERAGE</b>					<b>7.45</b>		
<b>CALCULATED MINIMUM</b>					<b>5.6</b>		

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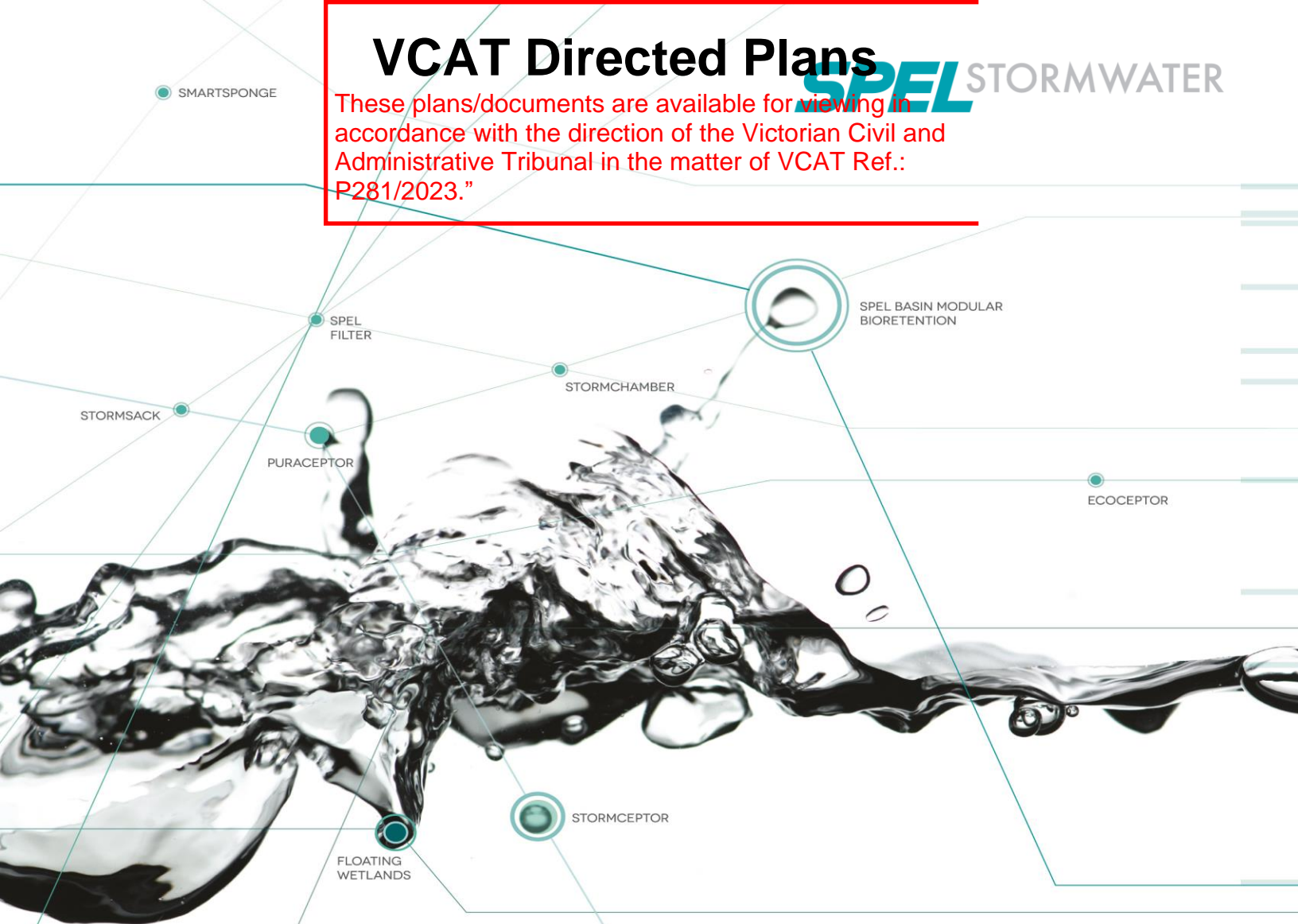
## Appendix D – Stormwater Management Plan

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**SPEL** STORMWATER



## Stormwater Management Plan for Victoria Hill 166 Victoria Road Camberwell, VIC

Date: March 14, 2023

Client: Hacer Group

Issue: 1

**SPEL Stormwater – Vic & Tas**  
ABN 32 379 724 600  
897 Wellington Rd, Rowville

Telephone: 1300 773 500  
[www.spel.com.au](http://www.spel.com.au)

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## Document Control Record

Approved By:	Kurt Jensen
Position:	General Manager – Vic & Tas
Signed:	
Date:	15 March 2023

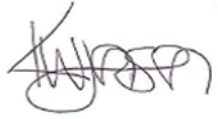




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## Revision Status

Revision No	Description Of Revision	Date:	Approved:
1	SUBMISSION	14 March 2023	

### SPEL Stormwater – Vic & Tas

ABN 32 379 724 600

897 Wellington Rd, Rowville VIC

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This study, report and analysis have been based on the information available to SPEL Total Stormwater at the time of preparation. SPEL Total Stormwater accepts responsibility for the report and its conclusions to the extent that the information was sufficient at the time of preparation. SPEL Total Stormwater does not take responsibility for errors and emissions due to incorrect information or information not available to SPEL Total Stormwater at the time of preparation of the study, report or analysis.



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## Confidentiality

### Section 1



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# VCAT Directed Plans

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## 1 Confidentiality

### 1.1 Conferee

This entire document has been presented to Hacer Group as **commercial-in-confidence** on the basis that it should not be disclosed in any part or whole to any third party without written consent from SPEL Total Stormwater.

This document contains:

- **Intellectual Property** – Material and design that are commercially sensitive intellectual property
- **Pricing Schedule** - Information from SPEL Total Stormwater and details about commercially sensitive pricing

### 1.2 Request for Information

Please direct all enquiries regarding this submission to:

**Kurt Jensen** | General Manager

SPEL Stormwater – Vic & Tas

897 Wellington Rd

Rowville, VIC, 3178

Telephone: 1300 773 500

Email: kurt.jensen@spel.com.au



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## Executive Summary

### Section 2

## 2 Executive Summary

SPEL Total Stormwater has been commissioned by **Hacer Group** to prepare a Conceptual Stormwater Management Plan (CSMP) for the proposed precinct development located at **166 Victoria Rd & 981 Bourke Rd, Camberwell VIC**.

The stormwater quality modelling was undertaken using the MUSIC version 6.2 software. The modelling results (see **Table 2.1**) indicate the 70%, 80%, 45% and 45% reduction targets for Gross Pollutants (GP), Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN) respectively can be achieved.

**Table 2.1: Treatment Train Effectiveness**

Pollutant	Inflows (kg/yr)	Outflows (kg/yr)	Reduction Achieved (%)	Reduction Target (%)
<b>Flow (ML/yr)</b>	1.31	0.802	<b>38.8</b>	0
<b>Total Suspended Solids</b>	248	34.3	<b>86.2</b>	80
<b>Total Phosphorus</b>	0.477	0.142	<b>70.2</b>	45
<b>Total Nitrogen</b>	3.08	0.839	<b>72.8</b>	45
<b>Gross Pollutants</b>	52	0.478	<b>99.1</b>	70

Stormwater management for the site is achieved using the following devices:

- One (1) x SPEL Stormsacks
- One (1) x SPELBasin MWS.3.6
- One (1) x 30kL Rainwater Tank (Others)

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## Overview

## Section 3

## 3 Overview

### 3.1 Company Background

SPEL Stormwater is a market leader in the environmental compliance sector since 1991. During that time, we have established many satisfied customers who return to SPEL Stormwater when they require new and more advanced technological solutions and services. SPEL Stormwater devotes a great deal of time, effort and financial investment to maintain our position as a market leader in a rapidly developing field. We employ the latest industry knowledge and advancements, providing our customers with the most progressive stormwater improvement technology.

SPEL Stormwater develops long term partnerships with our clients and providing on-going technical support which include a comprehensive scheduled service and maintenance program. We take pride in delivering quality workmanship and customer satisfaction that has created a market reputation, taking SPEL Stormwater to where it is today. In order maintain this vision and standard, we are heavily committed to Australian manufacturing and site water quality testing programs to control and maintain consistent quality.

SPEL Stormwater is committed to the health and safety of its people and protecting the environment in which they work. We understand the challenges associated with a project of this nature and the physical environment involved. Our safety, environmental and quality standards apply to all our people, products and services, providing certainty that the client's safety, environmental and quality requirements are adhered to.

### 3.2 Introduction

This report has been prepared by SPEL Stormwater to accompany and be considered part of a Development Application (DA) for a proposed precinct development located at **166 Victoria Road Camberwell, VIC**. The site is located within the catchment of the **City of Boroondara** Council.



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## 3.3 Site Locality

The subject site is bounded by Victoria Road to the North and Burke Road to the East. Situated in City of Boroondara Council the site has a total area of 2,090m<sup>2</sup> (see **Figure 3.1**).



**Figure 3.1 Site Location**



[illegible]

### Figure 3.2 Proposed Site Layout

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## Quality Management – Operational Controls

### Section 4

## 4 Quality Management – Operational Controls

### 4.1 Water Quality Objectives

Melbourne Water (2016) requires treatment of stormwater so that annual pollutant loads achieve targets set out in the Best Practice Environmental Management Guidelines (BPEMG). These are:

- 80% reduction in Total Suspended Solids (TSS) from typical urban loads.
- 45% reduction in Total Nitrogen (TN) from typical urban loads.
- 45% reduction in Total Phosphorus (TP) from typical urban loads; and
- 70% reduction in Gross Pollutants (GP) from typical urban loads.

### 4.2 Treatment Train

Based on the site characteristics and the range of available Stormwater Quality Improvement Devices (SQIDs), this study has developed an overall concept that will satisfy the requirements of downstream environmental protection. **Figure 4.1** shows a schematic representation of the proposed treatment train elements.

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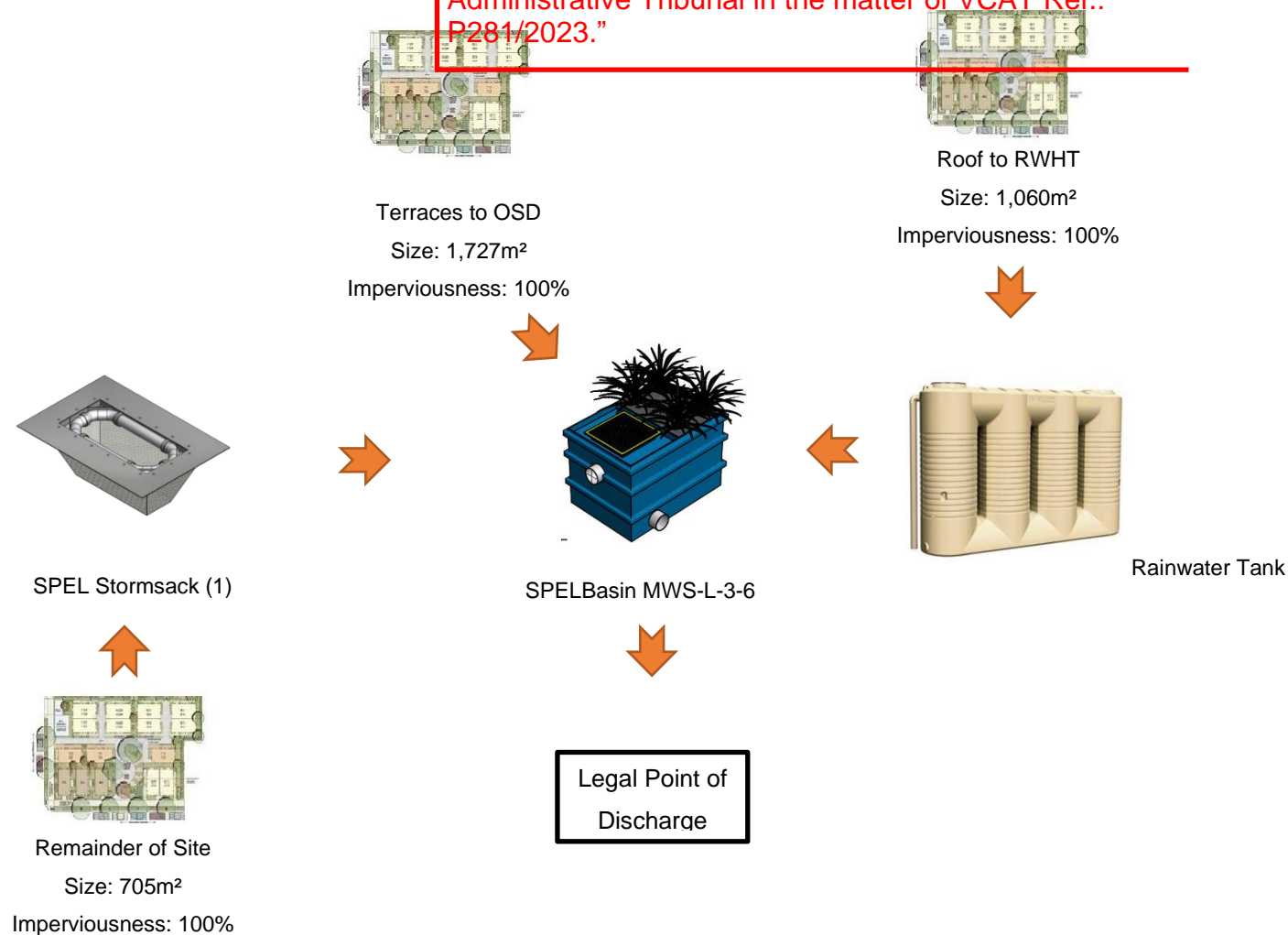


Figure 4.1 Treatment Train Schematic

## 4.2.1 SPEL StormSack – General Information

The SPEL StormSack is an effective at source GPT proven to reduce Gross Pollutants (GP), Total Suspended Solids (TSS), and Nutrients (TN & TP) from developed urban catchments. The SPEL StormSack is designed to rest on the flanges of conventional inlet pits which allows for easy of access during maintenance periods. The general configuration of the SPEL StormSack includes the basic design features outlined in **Appendix 1**.

**Table 4.1: SPEL StormSack Features**

SPEL StormSack Components	Description
Structural Load	The filter sack, frame and support components (such as PE fascia, metal frame, sack support clips, etc.) are engineered to support a dead load when the filter sack is filled to capacity with pollutants.
Filter Sack Mesh	SPEL uses a 200µm mesh fabric with anti-tear innovation.
Bypass	The integrated bypass is designed to unobstructed runoff greater than treatment flows (first flush). Each StormSack has a treatment flow rate up to 11L/s before bypass.
Frame Type	The SPEL StormSack comes in a Light weight Polyethylene frame for easy installation and removal (see <b>Figure 4.2</b> below).
Filter Sack Liner	A protective filter liner made from HDPE mesh has been integrated into the StormSack design to facilitate maintenance and during operation.
Oil Boom (optional)	Replaceable oil booms are easily fitted for sites with expected hydrocarbon runoff (i.e. Shopping centre carparks and Industrial estates).
Frame Sizes	SPEL StormSacks are designed to fit standard and custom designed inlet pits ranging from 450mm up to 1200mm inlet pits (including retrofits).



Figure 4.2: General configuration of the 200µm mesh SPEL StormSack

### 4.2.1.1 Australian Validation and Testing

Rigorous testing of the SPEL StormSack has been conducted locally under tier one (Laboratory) and tier two (field) conditions. QUT has published field test data on the SPEL StormSack which has since been peer-reviewed and published in the MDPI Water Journal August 2015 edition<sup>1</sup>, in accordance with the Water by Design guidelines. SPEL Total Stormwater has committed to on-going testing for the life of the SPEL StormSack and will continue providing published data on future events.



## 4.2.2 SPELBasin - General Information

The SPELBasin is an advanced stormwater treatment system that works with natural forces to provide superior pollutant removal. Delivered as a pre-fabricated, compact and self-contained treatment system. The SPELBasin utilizes horizontal flow bioretention technology and multistage pre-treatment.

Features	Description
Pre-treatment chamber	Captures incoming runoff and contains the first three stages of treatment
Grate type catch basin inlet	A standard grate type traffic rated catch basin opening directs stormwater into the system
Catch basin insert filter	Provides the first stage of treatment by capturing trash & litter, gross solids, and sediment
Settling chamber	Provides the second stage of treatment by separating out larger suspended solids
Pre-filter cartridge	Provides the third stage of treatment by physically and chemically capturing fine TSS, metals, nutrients, and bacteria
Bioretention chamber	Provides the final stage of treatment through a combination of physical, chemical and biological processes
Discharge chamber	Contains flow control, high flow bypass and optional drain down filter
Multi-level flow control	Orifice plates and/or valves are used to control the flow through the treatment stages

- **Vortex separation** - The SPEL Ecoceptor™ has a hydraulic force on incoming flows which produce a vortex cleaning action preventing captured pollutants, including fine TSS, from resuspending and discharging.
- **Ease of maintenance** – The cylindrical shape of the SQID with its tapered base (there are no square corners) affords efficient, effective and thorough cleaning of accumulated pollutants; ***this process is always done without the need of jetting and hosing the accrued mass of pollutants in the base of the system, a process which is common to all concrete systems.***

SPEL engages ongoing site tests for water quality of the Ecoceptor devices continually across a wide spectrum of catchments on Australia's east coast. We have pleasure in submitting the following independently analysed NATA test results:

- **TSS** - Lab, site testing in conjunction with flow modelling reveals reductions of >80% of TSS.

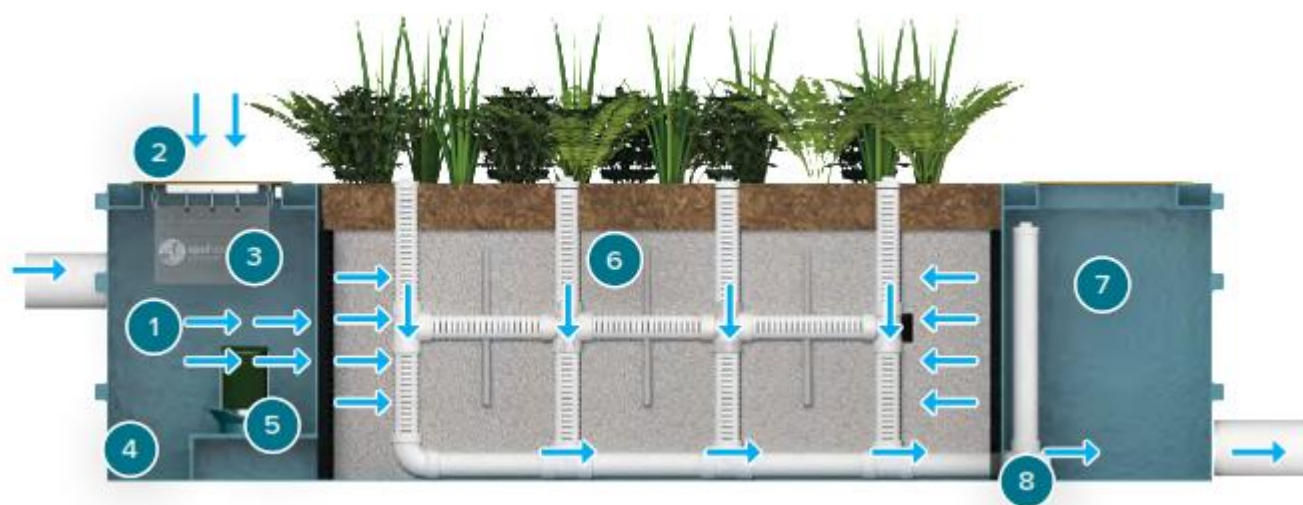


Figure 4.2: SPELBasin

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## 4.3 Maintenance Procedure

The SPEL treatment train specified above is an engineered stormwater treatment solution for the reduction in TSS, nutrients, gross pollutants and hydrocarbons. The Stormwater Quality Improvement Devices (SQIDs) identified in the stormwater treatment solution will required on-going maintenance for a prescribed period as specified by their respective council/authority. A draft of the proposed treatment train maintenance contract can be seen in **Appendix 2**.

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## Quality Analysis - MUSIC

### Section 5



## 5 Quality Analysis – MUSIC

Water quality modelling has been undertaken of the post-development (mitigated) scenario using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) software to demonstrate the load-based reduction targets are achieved. A stormwater treatment train has been developed and modelled to determine the effectiveness of the proposed system in achieving the relevant water quality objectives.

### 5.1 Rainfall and Evapotranspiration Parameters

**Table 5.1** summarized the meteorological and rainfall-runoff data used in the MUSIC model.

**Table 5.1 Meteorological and Rainfall Runoff Data**

Parameter	Value
Rainfall station	86314 Koo Wee Rup
Time step	6 minute
Modelling period	January 1971 – December 1980
Mean annual rainfall (mm)	769 mm
Evapotranspiration	1008 mm

### 5.2 Catchment Parameters

Based on the proposed land uses within the development, the subject site has been modelled as an urban source node. The rainfall-runoff parameters and pollutant generation parameters are based on parameters recommended by Melbourne Water (2016) (**Tables 5.2** and **5.3**).

**Table 5.2 Rainfall Runoff Parameters**

Parameter	All Nodes
Rainfall threshold (mm)	1.0
Soil storage capacity (mm)	120
Initial storage (% capacity)	25
Field capacity (mm)	50
Infiltration capacity coefficient a	200
Infiltration capacity exponent b	1
Initial depth (mm)	10
Daily recharge rate (%)	25
Daily base flow rate (%)	5
Daily deep seepage rate (%)	0

**Table 5.3: Pollutant Export Parameters for Urban Sites**

Catchment ID		Total Suspended Solids [log (mm/L)]		Total Phosphorous [log (mm/L)]		Total Nitrogen [log (mm/L)]	
		Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Remainder of Site	Storm Flow Concentration	2.431	0.333	-0.301	0.242	0.342	0.205
	Base Flow Concentration	0	0	0	0	0	0
Roof	Storm Flow Concentration	1.301	0.333	-0.886	0.242	0.301	0.205
	Base Flow Concentration	0	0	0	0	0	0
Terraces	Storm Flow Concentration	2.431	0.333	-0.301	0.242	0.342	0.205
	Base Flow Concentration	0	0	0	0	0	0

## 5.3 Treatment Node Parameters

The following sections describe the modelling parameters applied to MUSIC for each of the treatment nodes included as part of the water quality assessment.

### 5.3.1 SPEL Stormsack Parameters

A GPT treatment node in MUSIC has been used to simulate the treatment efficiency of the SPEL StormSack based on third-party field-testing results. The SPEL StormSack treatment node parameters are summarised in Table 5.4.

**Table 5.4 SPEL StormSack Treatment Node Parameters**

Catchment ID	SPEL Stormsack
Are the proposed pollutant reduction efficiencies independently verified using a method suited to local conditions?	Y
Does the data provided include performance results under dry weather flows (to account for potential pollutant leaching?)	Y
Is the assumed high-flow bypass rate consistent with manufacturer specifications?	Y
High Flow by-pass (m <sup>3</sup> /s)	0.011
Low Flow	0.000
TSS Input (mg/L) Output (mg/L)	1000 390
TN Input (mg/L) Output (mg/L)	50 27.5
TP Input (mg/L) Output (mg/L)	5 3.6
Gross Pollutants Input (mg/L) Output (mg/L)	15 0

## 5.3.2 SPELBasin Parameters

A generic node has been utilized in MUSIC, for the purpose of simulating treatment efficacy of SPELBasin and the transform function in the node has been modified based on SQIDEP (v1.3) Independent Evaluators Joint Report. These test results and papers are available upon request from SPEL Total Stormwater. The SPELBasin parameters utilised within MUSIC are summarised in **Table 5.5**.

**Table 5.5: SPEL Hydrosystem Parameters**

Catchment ID	SPEL Hydrosystem
Are the proposed pollutant reduction efficiencies independently verified using a method suited to local conditions?	Y
Does the data provided include performance results under dry weather flows (to account for potential pollutant leeching?)	Y
Is the assumed high-flow bypass rate consistent with manufacturer specifications?	Y
High Flow by-pass (m <sup>3</sup> /s) (for each separate system)	0.002
Low Flow	0.000
TSS Input (mg/L) Output (mg/L)	1000 140
TN Input (mg/L) Output (mg/L)	50 25
TP Input (mg/L) Output (mg/L)	10 3.5
Gross Pollutants Input (mg/L) Output (mg/L)	150 1.5

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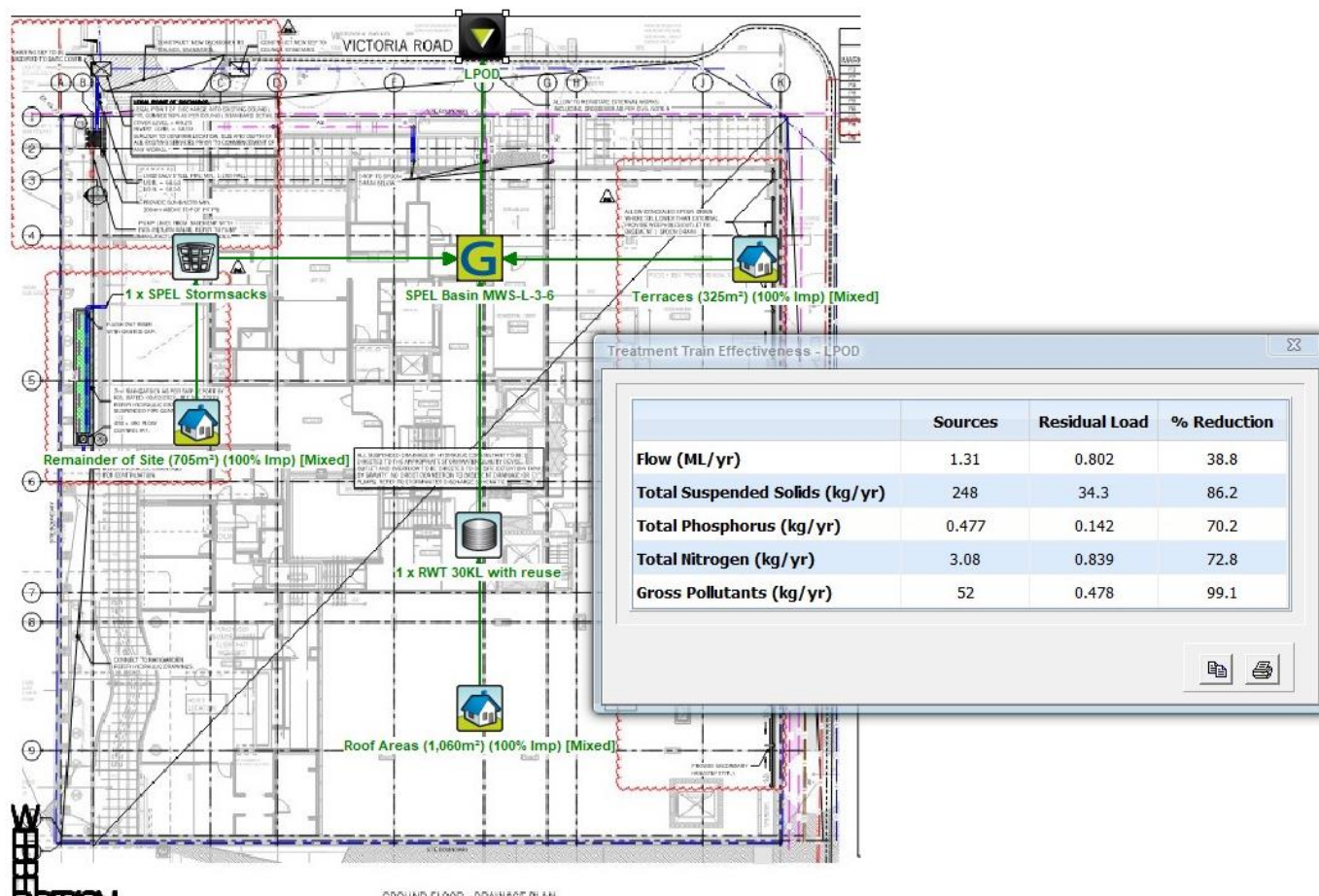
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## 5.4 MUSIC Results

Results of the MUSIC modelling for the treatment train effectiveness are summarised in **Table 5.6**. The results indicate the 80%, 45%, 45% and 70% reduction target for TSS, TP, TN and gross pollutants respectively are achieved. A screen capture of the MUSIC modelling results is included as **Figure 5.2**.

**Table 7.6: Treatment Train Effectiveness**

Pollutant	Inflows (kg/yr)	Outflows (kg/yr)	Reduction Achieved (%)	Reduction Target (%)
Flow (ML/yr)	1.31	0.802	38.8	0
Total Suspended Solids	248	34.3	86.2	80
Total Phosphorus	0.477	0.142	70.2	45
Total Nitrogen	3.08	0.839	72.8	45
Gross Pollutants	52	0.478	99.1	70



**Figure 5.2: Treatment Train Effectiveness & Layout**

## Summary and Recommendation

### Section 6

## 6 Summary and Recommendation

Based on the water quality assessment using the MUSIC software, it is found that the pollutant reduction targets can be achieved by adopting the SQIDs specified in **Table 6.1**.

**Table 6.1: Recommended Stormwater Quality Improvement Devices**

Stormwater Quality Improvement Device	Quantity
SPEL Stormsack	1
SPELBasin (MWS-L-3-6)	1

The recommended SQIDs are designed to capture stormwater at the downstream end of the drainage network and treat the runoff prior to discharging into the local waterway. The pollutant reduction targets achieved (as modelled in MUSIC) are summarised in **Table 6.2**.

**Table 6.2: MUSIC modelling results**

Pollutant	Inflows (kg/yr)	Outflows (kg/yr)	Reduction Achieved (%)	Reduction Target (%)
<b>Flow (ML/yr)</b>	1.31	0.802	<b>38.8</b>	0
<b>Total Suspended Solids</b>	248	34.3	<b>86.2</b>	80
<b>Total Phosphorus</b>	0.477	0.142	<b>70.2</b>	45
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## References

### Section 7

## 7 References

Melbourne Water (2016). *MUSIC Guidelines – Input Parameters and modelling approaches for MUSIC users in Melbourne Water’s service area 2016*



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**Appendix 1 – SPEL SQID Product Guides**

**Appendix 2 – SPELBasin SQIDEP Testing Report**

**Appendix 3 – Draft Treatment Train Maintenance Contract**

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## Appendix 1 – SPEL SQID Product Guides

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# SPELBasin

## TECHNICAL DESIGN GUIDELINES



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### 1.1 BIOFILTRATION

Biofiltration systems are one type of WSUD system that have been implemented in urban areas to manage stormwater by reducing peak flows and downstream pollution (Davis & Birch, 2009; Hunt et al., 2008; Le Coustumer et al., 2012). Biofiltration is also referred to as bioretention, biofilters and rain gardens in various literature. This report will use the terms interchangeably.

Biofiltration systems have been popular because of flexibility in their design which assists with simple integration (retrofitting) into existing urban areas (Bratieres et al., 2008), as well as new developments. Biofiltration systems are also considered to add to the benefits of traditional stormwater quality by including aesthetic and social benefits (Mullaney et al., 2015).

Biofiltration relies on physical, chemical and biological processes that occur in the various zones including the extended detention depth, filter media and drainage layers as indicated in Figure 1. Design modifications can include a submerged zone beneath the drainage layer to retain water for enhanced plant survival during dry weather and denitrification. Stormwater is treated as it filters through the vegetated media, utilising plant uptake, microbial processing, adsorption and physical filtration to reduce pollutant loads.

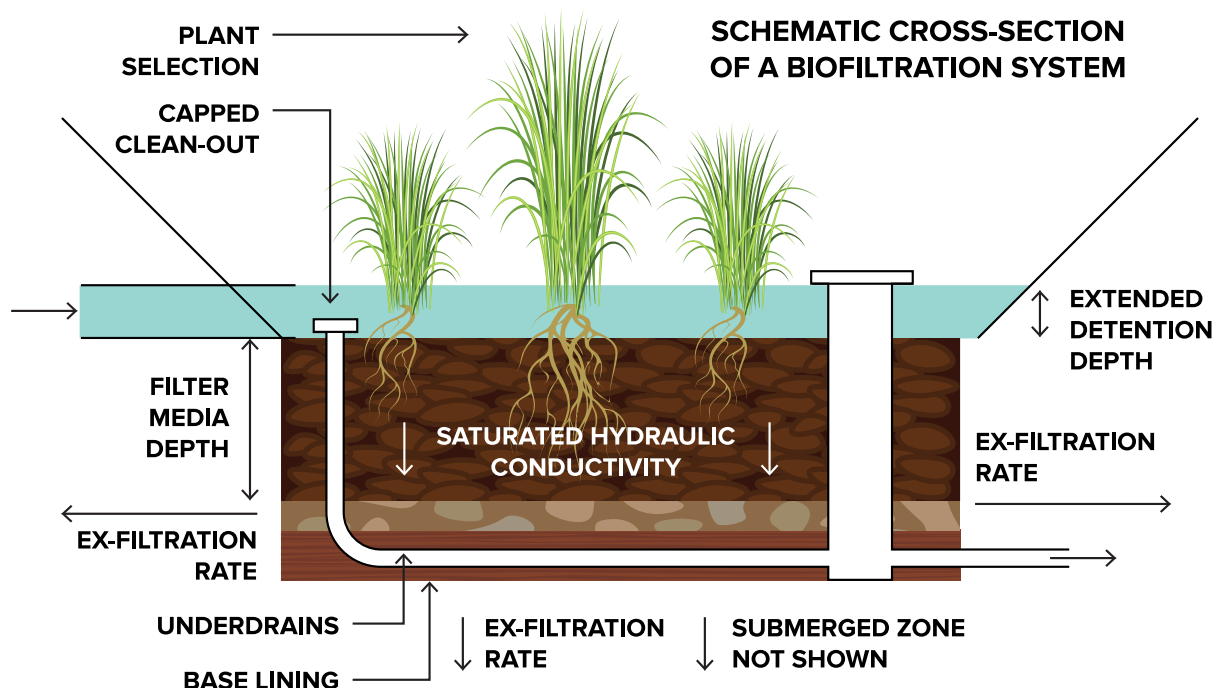


FIGURE 1.  
SCHEMATIC CROSS-SECTION OF A BIOFILTRATION SYSTEM

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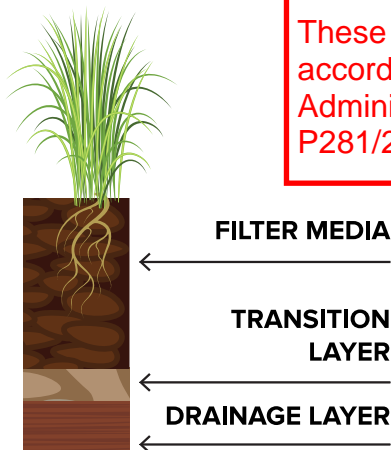


FIGURE 2.  
BIOFILTRATION MEDIA LAYERS SECTION

These three layers then have a detailed specification that describes the particle size distribution, nutrient content and desired permeability to achieve the stormwater treatment goals.

## 1.2 MODULAR BIOFILTRATION

The SPELBasin® modular biofiltration system has a number of similar design features to a traditional biofilter, however, differs in two key areas;

- the use of a proprietary media blend; and
- horizontal flow instead of top-down flow;

The treatment process provided by the SPELBasin® commences with runoff entering via a kerb inlet (2), grated inlet or pipe network, and passing through a coarse sediment screen in the pre-treatment chamber (3).

Flow then enters the biofiltration chamber via a pipe located at the base of the structure, and is distributed throughout the filter media through a HDPE geo-grid fitted to the perimeter walls (4). Stormwater filters through the proprietary media blend horizontally and into the centrally-located, slotted collection pipes (5) that discharge to the outlet chamber (6). Flow finally enters the underground stormwater drainage system through a discharge pipe (7) that is controlled by an offset outlet from the base to create a permanently submerged zone. These are shown in Figure 3.

## 1.3 DESIGN DRAWINGS/DIMENSIONS

A standard drawing of the SPELBasin® is shown in Figure 4. The SPEL basin has an overall length, width and height of 6120 x 1340 x 1300 mm respectively. The system allows for stormwater runoff to enter via a kerb inlet, a grated inlet or underground pipe. The kerbtype inlet and grated inlet are fitted with a 600 x 600 mm PEL StormSack which filters gross pollutants from stormwater inflow.

Pre-filter cartridges are situated within the pre-treatment chamber to further remove coarse sediment from stormwater that bypasses the StormSack. Flow is horizontally dispersed through a 7.3 m<sup>3</sup> biofiltration system with a proprietary biofiltration media blend which drains treated stormwater into the 1.56 m<sup>3</sup> discharge chamber. Treated water is discharged through outlet pits and to street drainage.

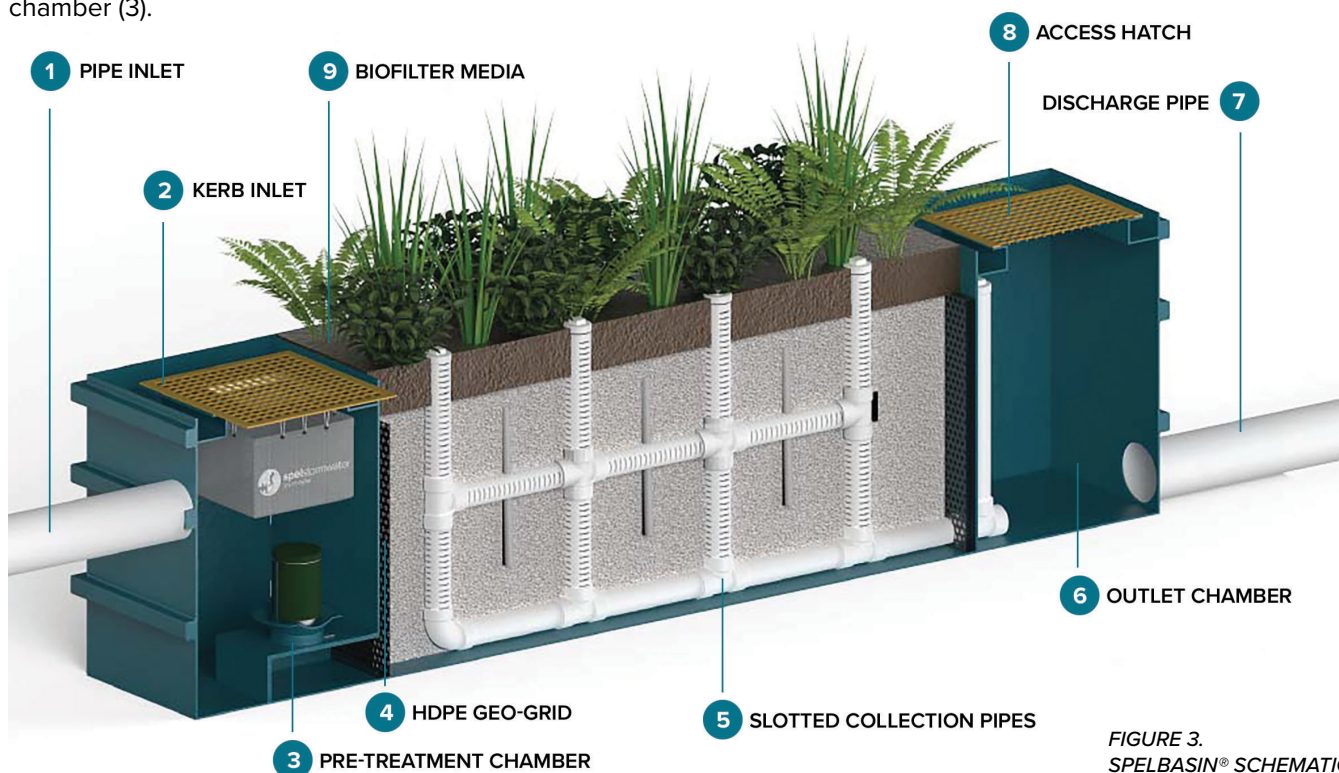


FIGURE 3.  
SPELBASIN® SCHEMATIC

# VCAT Directed Plans

## 2. Applicability Guide

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As a modular biofiltration system, there are some considerations that should be incorporated into the design process. These are indicated below in Table 1.

Design Consideration	Applicability	Information
At source stormwater treatment	✓	SPELBasin® systems are ideal for capturing runoff as it leaves a road, carpark and/or catchment surface.
Litter, sediment & nutrient capture	✓	Biofilters utilise physical, biochemical and biological processes to remove particulates and dissolved pollutants from stormwater.
Urban/civic landscaping	✓	The modular configuration allows landscaping to be incorporated into roadsides and traditionally hard cityscapes.
Constrained sites	✓	SPELBasin® systems can be as small as 0.6% of the contributing catchment, and lifted into difficult to access locations.
Moderate to steep gradient sites	✓	The fibreglass and precast concrete chambers promote unique alternatives to retaining walls and features in steep sites.
Sites with <600mm gradient	✓	Designs can accommodate internal invert level increases to achieve discharge on very flat sites, provided a free surface can be achieved.
Tidal influence	✗	SPELBasin® is not suitable for locations that are subject to tidal influence.
Tailwater	---	Tailwater can affect the treatment flow rate through the SPELBasin®, and should be avoided if possible. Check with SPEL Stormwater.
High velocity flowpaths	✗	As a filtration and biological treatment system, high velocity flowpaths may cause damage to the SPELBasin®. An external bypass is recommended.
Greywater treatment	✓	SPELBasin® systems have been observed to remove nutrients and suspended solids from stormwater. They could equally remove nutrients from greywater.

TABLE 1.  
APPLICABILITY GUIDE FOR SPELBASIN®

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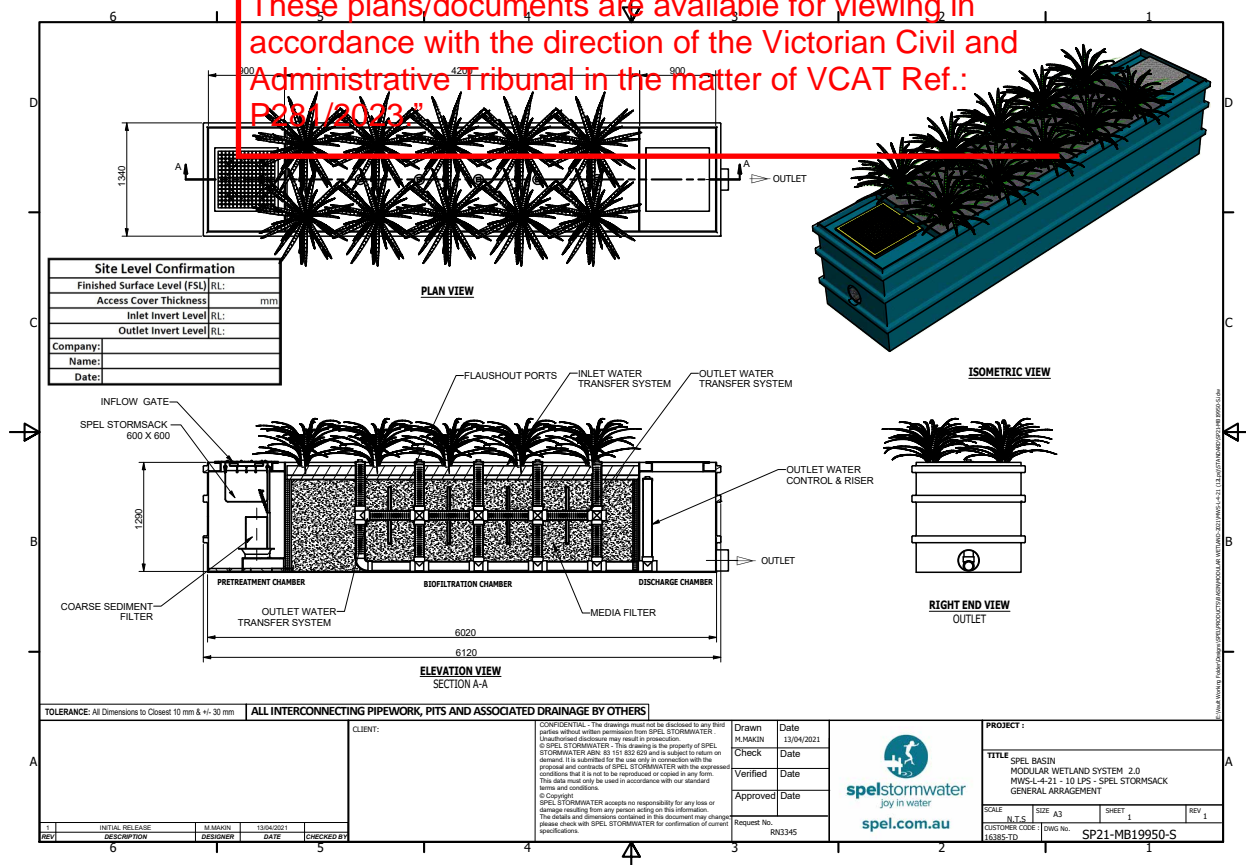


FIGURE 4.  
SPELBasin® STANDARD DRAWING

## 3. Functions

Similar to traditional biofiltration, the SPELBasin® improves water quality through several functional pathways.

### 3.1 HYDROLOGY

The SPELBasin® system facilitates buffering of stormwater flows due to capillary action provided by the filtration media, and during dry periods plants draw the reserved water from the anaerobic (submerged) zone. This reserve volume is then retained during the next storm event.

### 3.2 SEDIMENT

Several technologies and processes are incorporated into the SPELBasin® design to capture and retain sediment. For a grated inlet chamber, a Stormsack pit basket captures the coarse sediment as it enters. For a piped entry, a coarse filter cartridge settles sediment in the inlet chamber, minimising the chances of it entering the filter chamber. A proprietary blend of filter media maintains high hydraulic conductivity whilst filtering sediment from the treatment flow. As a final barrier, a geotextile surrounds the collection pipes to prevent sediment and filter media leaving the SPELBasin®.

### 3.3 NUTRIENT REMOVAL

Nutrients are observed in stormwater in particulate and dissolved forms. The relative percentages remain subject to further research, however, both forms are targeted by the SPELBasin® system.

#### 3.3.1 PARTICULATE NUTRIENT REMOVAL

Particulate nutrients are captured via the same pathways as sediment, since they are typically strongly adsorbed to sediment.

#### 3.3.2 DISSOLVED NUTRIENT REMOVAL

The SPELBasin® technology utilises a proprietary media blend that has been designed to target dissolved phosphorus and nitrogen. As well as the physico-chemical properties of the media, the biofilter plants remove nutrients from the stormwater and provide microbial communities to biologically remove dissolved nutrients. As with all living assets, an establishment period is typical. This may vary from 6 – 18 months depending on the plant growth cycle and climatic conditions. Once established, the SPELBasin® system should operate constantly and consistently for as long as the plants and media are viable.



# VCAT Directed Plans

## 4. Design

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Unlike traditional biofilter design, it is not necessary to utilise drainage, transition and filter media layers. The SPELBasin® system is delivered with the proprietary media pre-mixed ready for installation into the prefabricated chamber. Of importance, however, is that the geotextile protecting the outer geogrid and internal collection pipes is not damaged during the media installation.

### 4.1 OUTLET INVERT LEVEL (SATURATED ZONE)

The SPELBasin® system is designed to accommodate up to 300mm reservoir of water as a saturated/ anaerobic layer at the bottom. The levels from this outlet to the receiving drainage network should be checked to ensure the outlet is free-draining.

As a secondary guide, the Facility for Advancing Water Biofiltration (FAWB, 2009) recommend calculating the saturated zone with the following equation;

$$D = 8x t$$

Where: D = depth of saturated zone (mm)  
t = average of the longest annual dry period (days)

This level tends to determine the inlet level that runoff can enter the SPELBasin®.

### 4.2 INLET INVERT LEVEL & TYPE

The inlet level of the SPELBasin® system depends on the type of inlet structure;

- Kerb inlet;
- Grated inlet; and/or
- Pipe inlet.

Kerb and grated inlets have up to 150 mm of flexibility to match with surface levels. This also enables up to 150mm of extended detention within the SPELBasin® system.

Piped inlets have ~600 mm of flexibility to ensure the inlet pipe and outlet discharge to a free water surface. The exact dimensions will depend on the inlet pipe diameter, depth/cover and class.

### 4.3 BYPASS

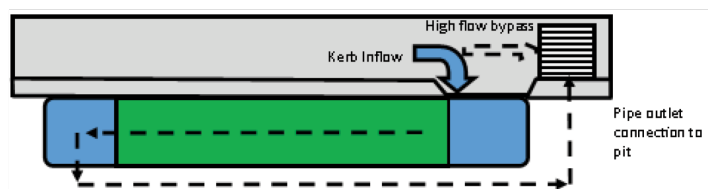
The SPELBasin® system is designed for flows that exceed the design treatment flow rate (TFR) to be bypassed externally. This is typically achieved by ensuring that when the inlet cannot carry any additional flow, flow is re-directed to a nearby/adjacent inlet pit. If the SPELBasin® requires an underground pipe inlet type, the bypass can be formed into the inlet chamber, or as a separate pit.

### 4.4 INLET AND OUTLET CONFIGURATIONS

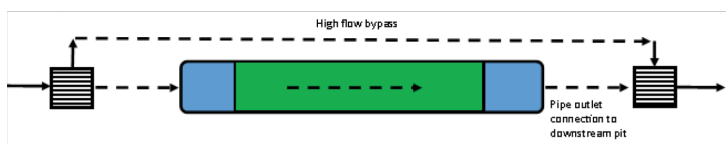
Multiple configurations are possible with the SPELBasin® depending on the site constraints. Some examples are indicated below.



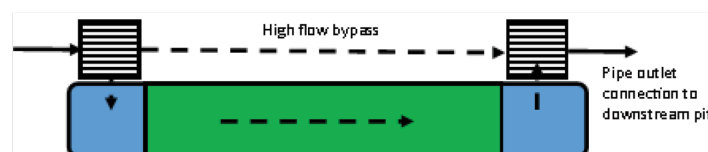
Kerb inlet Option



Kerb inlet Option



Pipe inlet Option



Pipe inlet Option

FIGURE 5.  
SPELBASIN® INLET AND OUTLET CONFIGURATIONS



# VCAT Directed Plans

## 4.5 SURFACE LEVEL SET DOWN

Pedestrian and vehicular safety is important when integrating the SPELBasin® into the roadscape and cityscape. Therefore, designers need to consider the interchange between the filter surface and surrounding landscape.

Application area	Surface level setdown
Roadscape	Maximum 200 mm
Footpaths/bikeways	Maximum 500 mm
Parkland, landscaping	Maximum 1000 mm where barriers or fencing are included

## 4.6 EDGE INTERFACE

The SPELBasin® system is supplied in precast concrete or prefabricated fibreglass structures. This results in a vertical edge to the technology. Also, there is a defined inlet to the system. Designers should allow for surface gradients to transport flow to the inlet location, and provide edge treatments (barriers, vegetation, batters) to discourage pedestrian and/or vehicular access to the filter media and outlet chambers.

Edge treatments could incorporate treated-timber sleepers, rock blocks, fencing, bollards or barrier planting.



FIGURE 6.  
SPELBASIN® WITH TIMBER SLEEPER EDGE TREATMENT

## 4.7 PLANT SELECTION

Plant selection for the SPELBasin® is very similar to that of a traditional biofilter. Wetland grasses and shrubs are most suitable with a core species list provided below.

Species name	Common name	Plant habit
Banksia robur	Swamp Banksia	Small tree/shrub
Callistemon viminalis hybrids	Little John, Wee Johnnie, Harkness, Kings Park Special Bottlebrush	Small-medium tree/shrub
Ficinia nodosa (also known as Isolepis nodosa)	Knobby club-sedge	Sedge/grass
Gahnia aspera	Red-fruited saw-sedge	Sedge
Imperata cylindrica	Blady grass	Grass
Juncus usitatus	Common Rush	Sedge/grass
Lomandra hystrix	River mat-rush	Grass
Lomandra longifolia	Spiny-headed mat-rush	Grass
Melaleuca thymifolia	Thyme honey myrtle	Shrub
Melaleuca linariifolia	"Snow in Summer"	Shrub
Melaleuca bracteata	Black tea-tree	Small tree

TABLE 2.  
RECOMMENDED PLANT SPECIES FOR SPELBASIN®

Due to the high permeability of the SPELBasin® filter media, it may be necessary to irrigate newly planted systems until they are established, or reliable, regular rainfall is received.

Planting density is recommended to be 6 plants/sqm, and a variety of species should be used, instead of a monoculture.

# VCAT Directed Plans

## 5. Maintenance

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The SPELBasin® system requires regular, simple maintenance to ensure its long-term effectiveness.

### 5.1 ACCESS

The inlet chamber and Stormsack are the areas of the SPELBasin® that will require the most attention for regular maintenance. These items are likely to capture the highest loads of sediment and litter (organic and anthropogenic) and therefore will need cleaning on a regular basis (eg. Quarterly). Whilst these are not large areas, a Stormsack full of sediment and organic matter can be heavy, and so access to the inlet chamber should be provided.

Suitable access could consist of a concrete or compacted crusher dust pathway, pavers, or permeable paving.

### 5.2 INLET STRUCTURES

The inlet to the SPELBasin® may be via a kerb inlet or surface grate. Regular inspections should check that these remain clear of debris and free-flowing. Underground pipe inlets to the SPELBasin® should also be checked to ensure debris is not settling in the upstream pipe, and if observed, should be removed during the inlet chamber maintenance.



FIGURE 7. SPELBASIN® KERB AND GRATED INLET

### 5.3 SEDIMENT & LITTER REMOVAL

Removal of sediment and litter from the inlet chamber and Stormsack may require a small vehicle and hoist, as well as vacuum eduction to ensure optimal operation of the SPELBasin®. Since the inlet is a relatively small volume, a commercial wet/dry vacuum may be sufficient, removing the need for large eduction trucks. The inlet coarse sediment filter is the SPEL coalescer media cartridge. Annual removal of the cartridge and low pressure rinse will maintain the treatment flow rate. The coarse sediment filter cartridge should be replaced on a 10 year interval.



FIGURE 8. SPELBASIN® INSPECTION OPENINGS

### 5.4 SLOTTED-DRAINAGE PIPES

Filtered stormwater is captured by slotted drainage pipes within the SPELBasin® filter media. These are installed within a geofabric sleeve, and protrude above the media surface. Each end of the drainage pipes is capped with an inspection fitting.

Maintenance activities should ensure that sediment is not collecting in the slotted pipes, and flow to the outlet is not obstructed.

If treatment flow is reduced and occlusion due to sedimentation in the pipes is suspected, they can be jetrodded and vacuum-cleaned at the outlet chamber. If this breakthrough of sediment is observed in the drainage pipes, it may be an indicator that replacement of the filter media is required.

### 5.5 FILTER MEDIA HYDRAULIC CONDUCTIVITY

The proprietary filter media blend in the SPELBasin® has a high hydraulic conductivity compared with traditional biofilters. This allows the SPELBasin® to treat higher flows per square metre, whilst maintaining high pollutant removal rates. To ensure treatment flow rates are maintained, annual maintenance inspections should check that the water level of the SPELBasin® returns to the "standby" level after 2 hours. If the water level remains high after more than 2 hours, replacement of the media may be required.

Filter media infiltration rates (hydraulic conductivity) may be tested using the FAWB methodology, or the AS1547:2000 Australian Standard Constant Head test. This should be conducted in at least two locations, and boreholes at two depths (150mm & 400mm).

Contact SPEL Stormwater for more details.

# VCAT Directed Plans

## 6. MUSIC Model Application

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The Model for Urban Stormwater Improvement Conceptualisation (MUSIC) is a software tool that simulates the behaviour of stormwater quality in urban catchments. This tool is widely used in the Stormwater Industry by professionals and this section provides a consistent and uniform approach for modelling SPELBasin® in all urban development projects. It is the aim here to provide a step by step guide for the assessment authorities to ensure the model is a correct representation of the ultimate installed products in the field.

SPELBasin® is represented in MUSIC using a **generic** node. Field research of the SPELBasin® found that the observed parameters were outside the algorithm bounds inside MUSIC and therefore to build a model that reflected the observed results required model inputs vastly different to those implemented onsite. Therefore, treatment efficiency of the SPELBasin® **generic** node is instructed by the observed field performance. The design treatment flow rate (TFR) of a standard SPELBasin® module is 10 L/s with removal rates of 99% GP, 86% TSS, 65% TP, 50% TN. The following inputs are recommended for the **Generic** node;

Pollutant	Input Concentration	Output Concentration	Removal %
Gross Pollutants	100	1	99
TSS	100	14	86%
TP	100	14	86%
TN	50	25	50%

The SPELBasin® modular biofiltration system provides treatment of stormwater in a package that can be quickly and simply installed. The SPELBasin® has been independently field tested in accordance with the Stormwater Australia SQIDEP protocol at Sippy Downs, Queensland. The SPELBasin® provides pollutant reductions of 86% TSS, 65% TP, 50% TN and should provide the same 99% gross pollutant reduction of traditional biofilters. A Generic MUSIC# node for modelling SPELBasin® is recommended and scaling the technology in increments of 10L/s per module should maintain the pollutant removal performance observed in the Australian Field monitoring.

Maintenance is required as per SPEL's Operation & Maintenance Manual to ensure optimal performance.

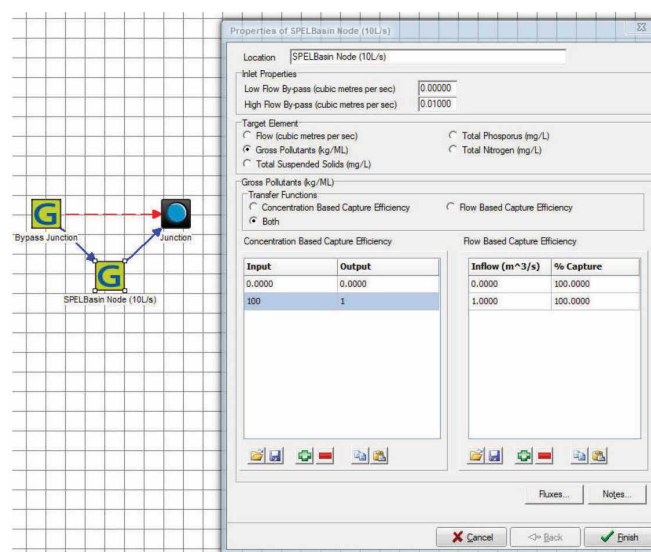


FIGURE 9.  
SPELBASIN® MUSIC NODE FOR GROSS POLLUTANTS REMOVAL

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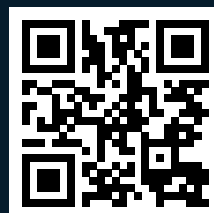
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# SPEL

## Basin TECHNICAL DESIGN GUIDELINES

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## Appendix 2 – SPELBasin SQIDEP Testing Report

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Sustainability  
Workshop

SPEL Basin

**SQIDEP (v1.3)**

**Independent Evaluators**

**Joint Report**

September 2020



**AFFLUX CONSULTING**  
STORMWATER MANAGEMENT SOLUTIONS

# VCAT Directed Plans

## SQIDEP Evaluation

SPEL Basin, Sippy Downs

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# VCAT Directed Plans

SQIDEP Evaluation

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## DOCUMENT VERIFICATION

*Project Name* ~~SQIDEP Independent Evaluation~~

*Client Contact*

Stormwater Australia

*Project Number*

J485

*Document Name*

Sqidep\_Evaluation\_R01

## Document History

<i>Issue To</i>	<i>Date</i>	<i>Version</i>	<i>Author</i>	<i>Reviewer</i>
Stormwater Australia	25/06/20	V01	CMB,AA,TP	CMB
Stormwater Australia	04/09/2020	V02	CMB, ML	CMB,ML

## Version History

<i>Version</i>	<i>Comment</i>
V01	Initial Version
V02	Joint Independent Evaluators Report

## Climate Change Statement

A wide range of sources, including but not limited to the IPCC, CSIRO and BoM, unanimously agree that the global climate is changing. Unless otherwise stated, the information provided in this report does not take into consideration the varying nature of climate change and its consequences on our current engineering practices. The results presented may be significantly underestimated; flood characteristics shown (e.g. flood depths, extents and hazards) are may be different once climate change is taken into account.

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# VCAT Directed Plans

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## 1. Introduction

This document ~~reports on the independent evaluation of an application by SPEL Stormwater~~ (hereafter SPEL) to have Stormwater Australia approve a SPEL Basin under the requirements included in Stormwater Quality Improvement Device Evaluation Protocol (SQIDEP) v1.3 (hereafter referred to as SQIDEP) published in 2019 by Stormwater Australia. SQIDEP v1.3 is available on Stormwater Australia's website at the time of reporting.

This is a joint report prepared by Independent Evaluators, Chris Beardshaw, a Director of Afflux Consulting and Mark Liebman, a Director of Sustainability Workshop. The Independent Evaluators were engaged by Stormwater Australia on a fee for service basis to carry out an independent evaluation of a SPEL Basin which can be described as a modular bioretention system.

## Evaluators Independence Declarations

It is declared that both evaluators, Chris Beardshaw and Mark Liebman, are completely independent and neither Independent Evaluator has any conflict of interest with respect to this engagement.

We jointly declare that:

*We are not, nor have we ever been employed or commissioned by the Applicant, SPEL Stormwater. We have not been involved in the design or development or monitoring of the SPEL Basin. We have undertaken this assessment without prejudice and in good faith.*

Signed: Chris Beardshaw

Signed: Mark Liebman

Signature: 

Signature: 

## Statutory Declaration by Independent Monitoring Scientist

*Dr Darren Drapper has signed a statutory declaration in accordance with SQIDEP.*

## Background

Stormwater Australia published the Stormwater Quality Improvement Device Evaluation Process (SQIDEP) in January 2019. The SQIDEP process seeks to "provide a uniform set of criteria to which stormwater treatment measures can be field-tested and reported. These criteria should guide and inform field monitoring programs seeking to demonstrate pollutant removals for stormwater treatment measures included in pollutant export modelling software. Future revisions of the protocol are anticipated to also include laboratory testing." (Stormwater Australia, 2019).

The SQIDEP process is shown below in Figure 2. Two pathways for evaluation exist under the protocol and this application involves local field testing. The Independent Evaluators



# VCAT Directed Plans

## SQIDEP Evaluation

*SPEL Basin, Sippy Downs*

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have not been involved with this project prior to this evaluation, for example at QAPP stage and have not been privy to the QAPP.

## Review Documents

The following documents form the basis of this independent evaluation:

- 1) Associate Professor Terry Lucke and Ms Oriana Sanicola, Evaluation of Treatment Performance of SPEL Basin at Sippy Downs, May 2018, Stormwater Research Group, University of Sunshine Coast.
- 2) Dr Darren Drapper and R. Biggins, SPEL Stormwater, Field Monitoring of a SPEL Basin at University of Sunshine Coast, 90 Sippy Downs Dr, Sippy Downs QLD 4556, Issue 1, 10 October 2019.
- 3) SPEL Basin Monitoring setup (digital video)
- 4) SPEL Basin Technical Design Guideline, revised August 2020.
- 5) Dr Darren Drapper and E. Hancock, SPEL Stormwater, Field Monitoring of a SPEL Basin at University of Sunshine Coast, 90 Sippy Downs Dr, Sippy Downs QLD 4556, SQIDEP Body of Evidence Application Supplementary Report, Issue 1, 31 July 2020.

## Sippy Downs SPEL Basin

A SPEL Basin was submitted for evaluation against the SQIDEP protocol in October, 2019. Testing for the system was conducted over the period from March 2017 to April 2018 by the University of Sunshine Coast (USC), with the testing criteria adapted to meet the SQIDEP Protocol (released subsequent to the testing period). USC is an independent organisation that undertook the testing on a fee for service basis.

The basin installation is on Sippy Downs Drive, Sippy Downs and can be seen in Figure 1. Greater description is contained in review documents 1 and 2.

A review of the site and catchment conditions is shown below. The field monitoring claims to have met all of the criteria of the SQIDEP protocol, and this claim is evaluated in this report.



# VCAT Directed Plans

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SPEL Basin, Sippy Downs

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Figure 1. SPEL Basin Field Study Location (Lucke & Sanicola, 2018)

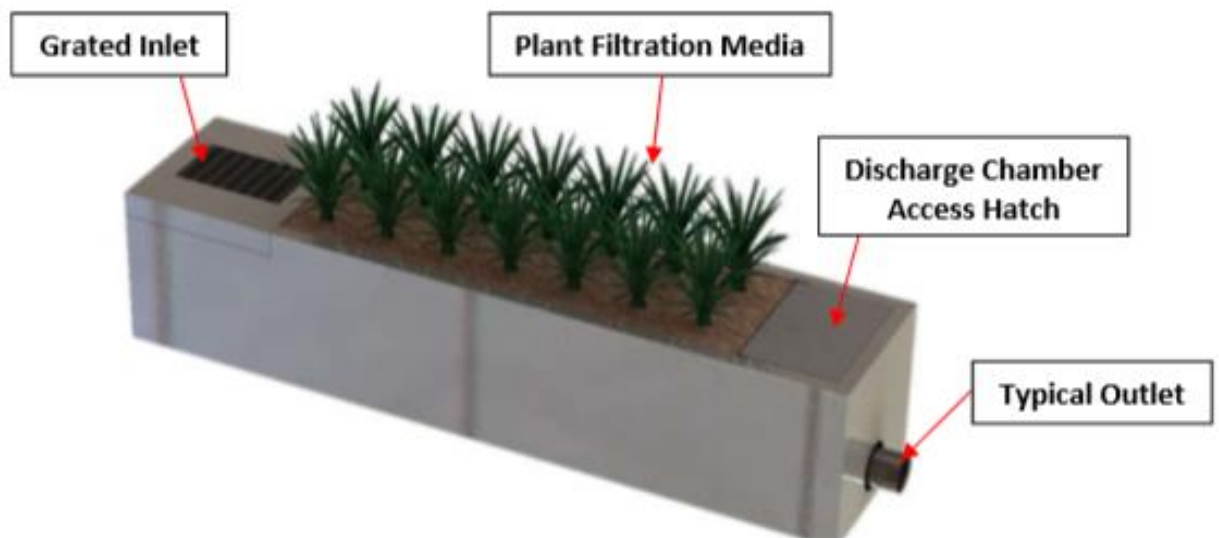


Figure 3. Typical SPEL Basin Schematic (Lucke & Sanicola, 2018)

Figure 1 SPEL Basin Diagram and Catchment Test Location (Drapper, 2019)



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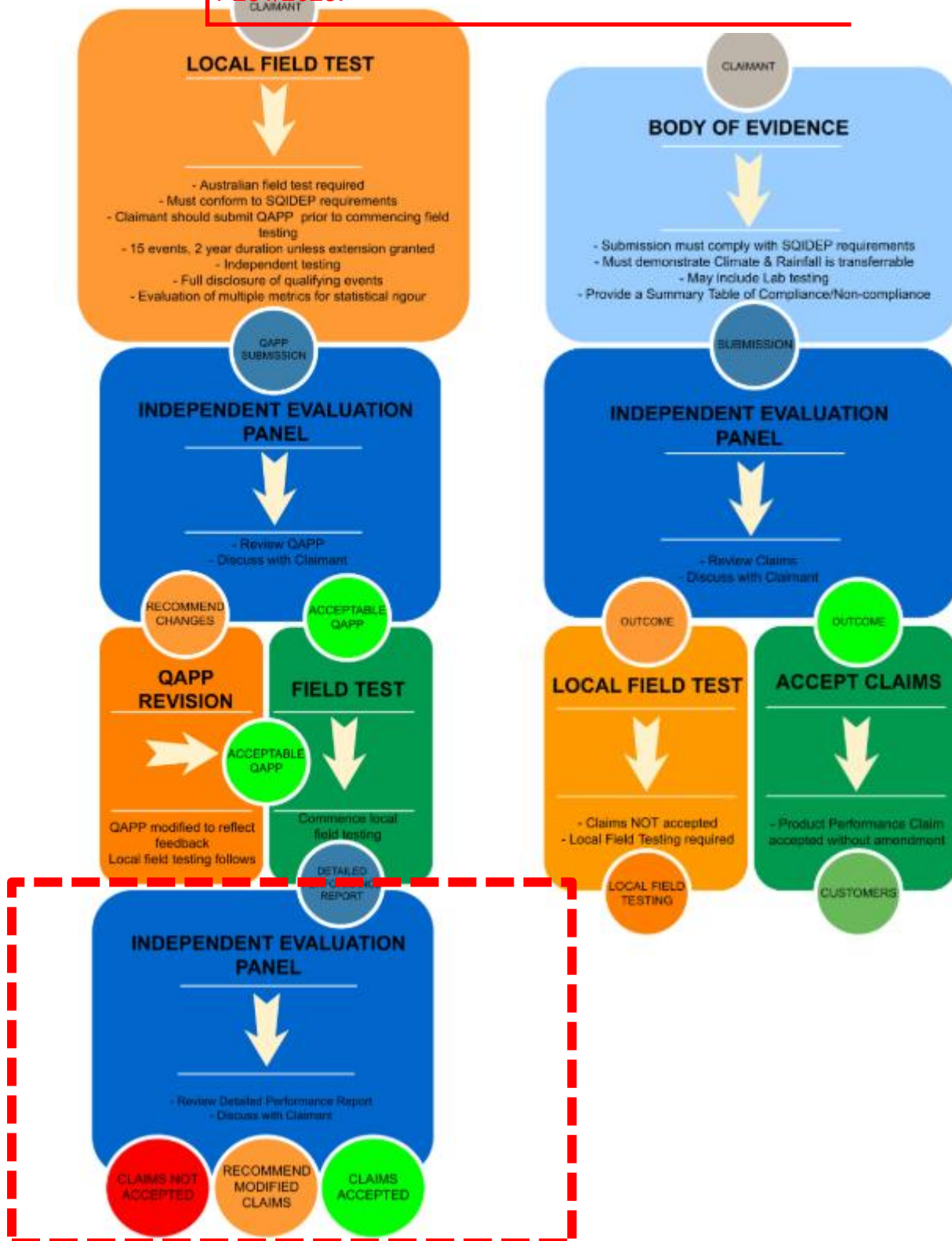


Figure 2 SQIDEP Pathways





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## Performance Claim

The SPEL Basin performance claim is as follows:

**Table 1. SPEL Basin Treatment Claims**

Parameter	Claim (%)
Total Suspended Solids (TSS)	86*
Total Phosphorus (TP)	65*
Total Nitrogen (TN)	50*
Total Petroleum Hydrocarbons (TPH)	0
Gross Pollutants	99

\*Mean of average CRE and efficiency ratio (ER)

This Body of Evidence (BOE) claim is based only on field test results from the Sippy Downs test site. It is not based on any overseas test data.

It is noted that gross pollutants were not tested however the system tested includes a SPEL Storm Sack draining into a stormwater pit. It is reasonable to assume that any gross pollutants (particle size > 3mm) would be captured in the Storm Sack component of the device. Even if the Storm Sack were to blind and go into bypass the gross pollutants would be captured (up to the high flow bypass rate) within the stormwater pit upstream of the basin.

It is important to note this claim includes the performance benefit of both a Storm Sack and the SPEL Basin filtration components so that any MUSIC model should not have a SPEL Stormsack placed upstream of the device as its already included in the overall performance.

Hydrocarbons were not tested and the claim was revised to exclude it.

## Site Background and Assumptions

The catchment is a small road catchment in Sippy Downs, Sunshine Coast. The catchment was checked for changes across the monitoring period (March 2017- April 2018). Aerial photography was taken across this period as can be seen below in Plates 1 to 4.

The broader catchment was maturing across the period, though no specific changes to the road catchments are seen. It is suspected that some of the developing catchment loads may have been transported into the monitored catchment in the early parts of the monitoring program. Otherwise the catchment seems to be in typical condition and suitable for monitoring.





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Plate 1 May 2016 with SPEL Basin highlighted in red



Plate 2 Dec 2017 with SPEL Basin highlighted in red



Plate 3 Nov 2018 with SPEL Basin highlighted in red



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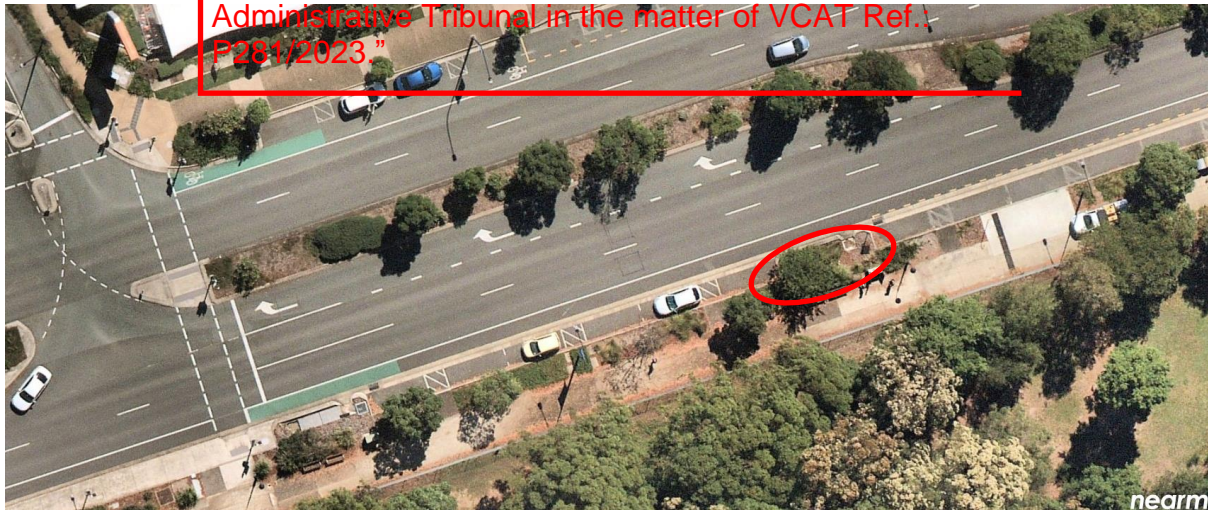


Plate 4 April 2020 with SPEL Basin highlighted in red

Independent checks of the catchment in Google street view were also made refer to Figure 3 below.



Figure 3 Streetview of monitoring station (Google Streetview , Image captured June 2017)



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## 2. SQIDEP Compliance

The key criteria for testing are listed in SQIDEP in *Table 3 – Minimum data and qualifying event requirements for assessment* (SA, 2019) and are repeated here for comparison. Table 1 below assesses the Application for compliance with the criteria included in SQIDEP v1.3.

Table 1 SQIDEP Compliance Table

Performance Criteria	Performance Requirement	Monitoring action or result	Compliance or non compliance
Min number of events	15 or enough events to achieve 90% confidence interval	18 complying events reported. USC reported that influent and effluent results were significantly different at a 90% confidence interval.	Compliance
Min rainfall depth	Sufficient to collect minimum sample volume for lab testing.	USC reported this was initially 2mm of rainfall, but this was revised to 1mm in 10minutes. Lab test results were provided for each complying event.	Compliance
Inter event period	Minimum 6 hours dry	No two events monitored on same day.	Compliance
Device Size	Full size	Used a full size single modular device with a high flow bypass claim of 10 l/s.	Compliance





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Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance
Runoff Characteristics	Target pollutant profile of influent and effluent	The road catchment is representative of a typical catchment. Catchment inflow was analysed for percentage of dissolved nitrogen in the influent. On average 57% of Total Nitrogen influent is comprised of dissolved nitrogen species. This should future-proof this application for any potential changes to this aspect of SQIDEPv1.3. It also confirms the catchment is representative of a broad range of catchments.	Compliance
Runoff volume or peak flow	At least 2 events should exceed the 75% of the TFR and 1 event greater than the TFR. The TFR for the device is claimed to be 10 l/s.	USC has reported peak flow rates for the range of events. 2 events exceed the TFR and a further 3 events exceed 75% of the TFR.	Compliance
Automated sampling	Composite samples on a flow or time weighted basis	Composite samples on a flow weighted basis every 500 L.	
Minimum number of aliquots	80% of field test collections should have at least 8 per event.	USC has reported the number of aliquots. Of the 19 events which triggered sampling, only one	Compliance



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Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance
		event collected less than 8 aliquots.	
Hydrograph coverage	At least 50% of qualifying storms should include the first 70% storm coverage	<p>USC reported the hydrographs however did not report the percentage of coverage. Visual assessment of the hydrographs which also included the sampling time demonstrates in excess of 70% coverage for all complying events. The 22<sup>nd</sup> November storm had approximately 60% coverage however was a non-compliant storm event (for other reasons).</p> <p>Drapper reported that 7 events did not achieve 80% hydrograph coverage. These were excluded to ensure hydrograph coverage was higher than 80%.</p> <p>Drapper's Supplementary Report reported hydrograph coverage significantly exceeded the minimum coverage requirements of SIDEPA v1.3.</p>	Compliance



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Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance
Hydrograph coverage	Multiple peaks should be accounted for (at least 1 occurrence).	Most hydrographs included in the BOE application show multiple peaks with sample collection occurring such that samples were collected near peaks and on rising and falling limbs.	Compliance.
Grab sampling	Not Applicable		Not applicable.
Sampling locations		<p>Sampling occurred upstream of the SPEL sack and up and downstream of the SPEL basin.</p> <p>The subject of this claim is the performance of the SPEL Basin measured by comparison of its upstream location (which is downstream of the SPEL Sack) to its downstream location which is downstream of the Basin outlet.</p> <p>The claim does not include the performance of the SPEL Sack. The claim is independent of the SPEL Sack but inclusive of the filter cartridge which filters flows prior to entry to the Basin.</p>	Compliance



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Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance																				
Chemical and physical analytes	As identified in the QAPP.	QAPP not sighted.	Not applicable to a BOE application.																				
Min and max concentrations within range	<p>Refer to Table 1 in SQIDEP repeated below:</p> <p><i>Table 1 — Typical Untreated Stormwater Contaminant Concentrations</i></p> <table><tr><th></th><th>Adopted minimum</th><th>Recommended Mean Influent Concentration &amp; (Standard Deviation)<sup>1</sup></th><th>Adopted maximum average for all qualifying storms: (Mean + 1SD)<sup>2</sup></th><th>Maximum for any individual event: Mean + 2SD</th></tr><tr><td>TSS</td><td>Limit of detection</td><td>151 (+220)</td><td>371</td><td>591</td></tr><tr><td>TP</td><td>Limit of detection</td><td>0.34 (+0.37)</td><td>0.71</td><td>1.1</td></tr><tr><td>TN</td><td>Limit of detection</td><td>1.82 (+1.27)</td><td>3.09</td><td>4.4</td></tr></table>		Adopted minimum	Recommended Mean Influent Concentration & (Standard Deviation) <sup>1</sup>	Adopted maximum average for all qualifying storms: (Mean + 1SD) <sup>2</sup>	Maximum for any individual event: Mean + 2SD	TSS	Limit of detection	151 (+220)	371	591	TP	Limit of detection	0.34 (+0.37)	0.71	1.1	TN	Limit of detection	1.82 (+1.27)	3.09	4.4	<p>All events where the maximum individual concentration exceeded Table 1 values was excluded from the data set and deemed a non complying event.</p> <p>The average of TSS, TP and TN influent values were well within the maximum averages in Table 1.</p>	Compliance.
	Adopted minimum	Recommended Mean Influent Concentration & (Standard Deviation) <sup>1</sup>	Adopted maximum average for all qualifying storms: (Mean + 1SD) <sup>2</sup>	Maximum for any individual event: Mean + 2SD																			
TSS	Limit of detection	151 (+220)	371	591																			
TP	Limit of detection	0.34 (+0.37)	0.71	1.1																			
TN	Limit of detection	1.82 (+1.27)	3.09	4.4																			
Analytical methods	NATA accredited sample handling and analytical methods	A suite of analytes was analysed by ALS Environmental. ALS have NATA accreditation for their analytical methods.	Compliance																				
Flow measurement location	Inlet, outlet and bypass, as applicable.	<p>Flow recorded at outlet only.</p> <p>The likely hydraulic retention of the device is considered small and therefore it is unlikely to</p>	Compliance																				



# VCAT Directed Plans

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Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance
		retain or detain flows to any material extent.  Accordingly, the claim does not include a claim for a volumetric reduction and so flow monitoring of the outlet only is acceptable	
<b>Precipitation Measurement</b>	A pluviometer is required	A pluviometer was used to monitor rainfall in 0.2mm increments.	Compliance
<b>Rainfall recording interval</b>	5 minutes or less.	Not reported but based on reported rainfall hyetographs it appears to report at a high frequency.	Unknown.
<b>Rainfall recording increments</b>	<0.25mm	0.2mm adopted.	Compliance
<b>Pluviometer calibration</b>	To be calibrated twice during the monitoring period.	Dr Drapper has signed a statutory declaration stating that the pluviometer was calibrated annually by Drapper Environmental Consultants.	Unknown.



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Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance
<b>Performance Indicators</b>	The target pollutants and testing rationale must be described in the QAPP and Detailed Performance Report.	<p>QAPP was not submitted as part of the application.</p> <p>Claiming TSS, TP and TN and Gross Pollutant reductions. TSS, TP and TN were measured. The initial claim included hydrocarbons by inference however these were not tested and it was agreed to remove these from the claim.</p> <p>Gross pollutants were not specifically measured however it is considered that gross pollutants are solids with a particle size greater than 3mm and which could not physically flow through the device. It is noted that a floatable gross pollutant may become buoyant and flow out of the system during extreme high flow bypass events. However the gross pollutant claim is considered justifiable on the basis of the nature of the device which includes a littler basket and filter</p>	Compliance.



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Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance
		cartridge of sorts – both of which would typically be credited with gross pollutant capture. The caveat here is that every installation of SPEL Basin must include a SPEL Sack at the entry pit.	
Performance Indicators	ER and CRE. If CRE average and median > 10% difference inspect dataset.	Both ER and average CRE was reported. The evaluators determined the median CRE and found median CRE aligned very closely with ER and the difference was less than 10%. The difference between ER and average CRE was found to be > 10%. It was agreed with the Applicant that an average of ER and average CRE would be adopted as a conservative approach that enables both metrics to be used and gives them equal weighting. We note that adoption of average CRE in lieu of median CRE reduced the	Compliance.



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## SQIDEP Evaluation

Performance Criteria	Performance Requirements	Monitoring action or result	Compliance or non compliance
		final agreed pollutant reductions by a few percentage points.	





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In summary, Table 1 shows there is a high degree of compliance with SQIDEP v1.3. It is considered unlikely that the rainfall gauge was calibrated a second time during the analysis however the Independent Evaluators have assessed the significance and risk of a non conformance as low. In addition, using historical rain radar records we have verified that field test pluviograph rainfall records generally match radar records.

A number of other checks on the data have been performed and are reported below.

## Comparison of Inflow Concentrations

Influent concentrations are impacted by a range of factors including antecedent conditions and catchment activity. Antecedent conditions allow accumulation of pollutants between events and it is possible to examine reported influent concentrations to identify indicative trends.

The inflow concentrations from this study were compared to previous studies of road catchments for cross-reference. In particular, the pollutant concentrations of TSS, TP and TN were extracted from Duncan (1999) which examined 42 (road) sites across Australia. A follow-up study, and one that is in close proximity to Sippy Downs was conducted by Drapper and Lucke (2015) for catchments within the South-East Queensland region. The pollutants concentrations from both studies are summarised below along side the inflow concentrations found at Sippy Downs (Table 1). Full graphs are shown in Appendix A.

The most noticeable point between the studies is the pollutant concentration range. Drapper and Lucke (2015) cited that the inflow concentrations observed in that study were significantly different to results of Duncan (1999). And similarly, the Sippy Downs concentration ranges vary differently to those of the comparison studies, however they are still considered realistic. This highlights the difficulty of quantifying pollutant runoff parameters, and consequently, modelling inflows. It is noted that Sippy Downs appears to be on the low end of the spectrum which would yield a conservative result. Any MUSIC generic node developed from this Application would be applicable to both clean and dirty sites.

We also note mean TSS influent concentrations, at 147mg/L are about 50% of default MUSIC road EMC values but not untypical for a new well sealed road, mean TN concentrations at 1.72 mg/L are not far off typical MUSIC default values at 2.2 mg/L while the TP loads were considered to be about 33% of default MUSIC values for a sealed road, i.e. low.

Table 1: Typical pollutant concentrations for road catchments

	Duncan (1999) study	Drapper and Lucke (2015) study	Current study – Sippy Downs
TSS (mg/L)	60 – 700 (n=42)	1.45 – 5800 (n=325)	16 – 1130 (n=19)
TP (mg/L)	0.1 – 0.8 (n=25)	0.08 – 26 (n=325)	0.03 – 1 (n=19)
TN (mg/L)	1 – 9 (n=17)	0.38 - 8.5 (n=325)	0.2-8.9 (n=19)

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## Dissolved Inorganic Nitrogen

This claim is for TSS, TP and TN. It does not include subspeciation of nitrogen. However the Independent Evaluators have assessed the influent concentrations to determine if there were unusually high organic nitrogen loads which might skew the claim and not be consistent with a site that is reasonably representative.

We found that dissolved nitrogen is the dominant (> 50% by mass) form of nitrogen on this site. The testing and analysis finds that the device performance is statistically significant in relation to TN removal and this indicates the device is removing both particulate and some forms of dissolved nitrogen.

## Pollutant removal and statistical analysis

The statistical analysis and methodology for determining significance was reviewed. It was found that the steps taken follow standard procedures for evaluating stormwater data. Typically stormwater concentration data is not normally distributed, as denoted from a Shapiro-Wilk normality test. Log10 transformation does result in normality of the data. Paired Student T-test can be used on the transformed dataset to test significance between data sets.

Afflux Consulting undertook its own Paired Student T-test and found the same result as those reported by the Stormwater Research Group (see Appendix B).

## Reported Concentrations Analysis

While the performance of the device is based on changes between influent and effluent concentrations as reported and elsewhere the influent concentrations are examined (see above) for representativeness of the recommended installation type, it is considered worthwhile to examine the influent concentrations with respect to antecedent conditions to gain an understanding of how the catchment is behaving.

Pollutant concentrations in runoff are influenced by a range of conditions that include the type, intensity and timing of catchment activity, and can be influenced by specific events that add to loadings, and detailed analysis is beyond a simple correlation with antecedent dry weather (ADW) conditions.

In general, it is expected that

- prolonged ADW will lead to increased pollutant concentrations; and
- some pollutants (e.g. Total Suspended Solids) will exhibit a more definitive correlation with ADW.

Influent concentrations are listed in Table 2 for three ranges of ADW. Given the nature of the catchment (e.g. road) it is not expected that TP or TN pollutant will be significant and it is not possible to draw any definitive conclusions from these results, however they show (on average) higher results for TSS for longer ADW periods and gives some level of comfort that the catchment is behaving in terms of currently accepted build and wash off conceptual models.

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Table 2 Comparison of Administrative and Technical Information

	Date	Antecedent Dry Period (Hrs)	TSS (mg/L)	TP (mg/L)	TN (mg/L)
SHORT ADWP (<24Hrs)	13/06/2017	13	107.00	0.16	2.30
	7/07/2017	11	256.00	0.55	8.90
	8/07/2017	11	196.00	0.24	2.30
	23/09/2017	11	142.00	0.24	3.00
	3/10/2017	11	72.00	0.08	0.70
	21/11/2017	13	61.00	0.04	0.40
	22/11/2017	11	22.00	0.04	0.10
	29/11/2017	11	34.00	0.04	0.10
	AVERAGE		111.25	0.17	2.23
MEDIUM ADWP (>24Hrs, <100Hrs)	29/03/2017	14	42.00	0.04	0.40
	12/11/2017	37	176.00	0.15	0.70
	4/03/2018	51	30.00	0.04	0.50
	AVERAGE		82.67	0.08	0.53
LONG ADWP (>100Hrs)	14/03/2017	267	25.00	0.03	0.20
	20/03/2017	146	1130.00	1.00	7.30
	18/05/2017	242	134.00	0.11	1.40
	5/07/2017	336	122.00	0.08	0.90
	1/11/2017	123	137.00	0.13	1.40
	25/12/2017	254	16.00	0.05	0.70
	31/12/2017	121	41.00	0.05	0.70
	18/04/2018	264	46.00	0.03	0.50
	AVERAGE		206.38	0.19	1.64

The catchment condition has also been considered for any correlations to reported data. As can be seen in the background information some adjacent catchment development was occurring in the early parts of the testing period (**Error! Reference source not found.**). Reviewing the data it can be seen that in general the TSS loadings are higher in the first 6 months of the testing period, with the catchment settling down after this period. There could be some correlation with the vegetation growth within the system, however an establishment chronology is not given and could not be assessed. Certainly, the vegetation is well established by June 2017 (Figure 3).

We note that the Evaluators have not been given any recent photographs of the installation and the health and robustness of the vegetation in the device approximately 3 years after commission is unknown.



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Table 3 – All Observed Removal Efficiency Results

Date	Rain depth (mm)	TSS (mg/L) (LOD = 5)			TP (mg/L) (LOD = 0.01)			TN (mg/L) (LOD = 0.1)		
		IN	OUT	CRE	IN	OUT	CRE	IN	OUT	CRE
14/03/2017	47.8	25	5*	90%	0.03	0.02	33%	0.2	0.1*	50%
20/03/2017	6.2	1130	9	99%	1.00	0.03	97%	7.3	0.3	96%
29/03/2017	6.4	42	12	71%	0.04	0.04	0%	0.4	0.4	0%
18/05/2017	15.0	134	10	93%	0.11	0.01	91%	1.4	0.4	71%
13/06/2017	34.0	107	10	91%	0.16	0.01*	94%	2.3	0.2	91%
5/07/2017	9.8	122	5*	98%	0.08	0.02	75%	0.9	0.4	56%
7/07/2017	5.0	256	20	92%	0.55	0.03	95%	8.9	0.6	93%
8/07/2017	5.4	196	10	95%	0.24	0.03	88%	2.3	0.4	83%
23/09/2017	6.6	142	12	92%	0.24	0.05	79%	3.0	1.3	57%
3/10/2017	43.4	72	9	88%	0.08	0.02	75%	0.7	0.4	43%
1/11/2017	4.4	137	14	90%	0.13	0.12	8%	1.4	0.8	43%
12/11/2017	5.6	176	17	90%	0.15	0.05	67%	0.7	0.4	43%
21/11/2017	23.8	61	5	92%	0.04	0.01	75%	0.4	0.2	50%
22/11/2017	45.0	22	5*	77%	0.04	0.03	25%	0.1	0.1	0%
29/11/2017	27.8	34	15	56%	0.04	0.01	75%	0.2	0.1	50%
25/12/2017	19.2	16	6	63%	0.05	0.02	60%	0.7	0.7	0%
31/12/2017	11.2	41	12	71%	0.05	0.04	20%	0.7	0.7	0%
4/03/2018	13.0	30	5*	83%	0.04	0.03	25%	0.5	0.3	40%
18/04/2018	28.4	46	6	87%	0.03	0.02	33%	0.5	0.4	20%
Mean	18.8	147	9.8		0.16	0.03		1.72	0.43	
Average CRE		84%			59%			47%		
Efficiency Ratio		93%			81%			75%		

\*Values below Limit of Detection (LOD) are given as LOD to be conservative

A number of anomalies, which have subsequently been addressed in a supplementary report prepared by Drapper Environmental Consultants, were also seen in the qualifying events (Table 5 in USC, 2019) and are shown below.

- TSS below LOD – shown in orange highlights – makes minimal difference to overall averages
- Less than 8 aliquots – shown in green. This applies to less than 20% of the total number of samples and therefore meets the criteria
- 50% of storms to have at least 70% of hydrograph coverage – the supplied graphs seem to indicate this, but further clarification was sought and confirmed as noted below.

It is noted the supplementary report addressed these points as follows:

- 1) A sensitivity analysis was undertaken to determine the impact of reporting at the LOD and 50% of the LOD. It was found by Drapper that reporting at the LOD or 50% of the LOD as is prescribed by SQIDEP makes about 1-2% difference. We note that USC was not consistent in their reporting of LOD events but this was corrected by Dr Drapper in the Supplementary Report.



# VCAT Directed Plans

## SQIDEP Evaluation

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- 2) It is noted that some other minor reporting errors by USC were corrected in the Drapper Supplementary Report.
- 3) The Drapper Supplementary Report also identified the percentage of hydrograph coverage. Only one of the storms (22/11) recorded less than 70% of the hydrograph coverage and this was later excluded due to excessively high pollutant concentrations (outlier) anyway.

**Table 5 – Removal Efficiency Results Excluding Statistical Outliers (after Grubbs [6])**

Date	Rain depth (mm)	TSS (mg/L) (LOD = 5)			TP (mg/L) (LOD = 0.01)			TN (mg/L) (LOD = 0.1)		
		IN	OUT	CRE	IN	OUT	CRE	IN	OUT	CRE
14/03/2017	47.8	25	2.5	90%	0.03	0.02	33%	0.2	0.1*	75%
29/03/2017	6.4	42	12	71%	0.04	0.04	0%	0.4	0.4	0%
18/05/2017	15.0	134	10	93%	0.11	0.01	91%	1.4	0.4	71%
13/06/2017	34.0	107	10	91%	0.16	0.01*	97%	2.3	0.2	91%
5/07/2017	9.8	122	2.5	98%	0.08	0.02	75%	0.9	0.4	56%
8/07/2017	5.4	196	10	95%	0.24	0.03	88%	2.3	0.4	83%
23/09/2017	6.6	142	12	92%	0.24	0.05	79%	3.0	1.3	57%
3/10/2017	43.4	72	9	88%	0.08	0.02	75%	0.7	0.4	43%
1/11/2017	4.4	137	14	90%	0.13	0.12	8%	1.4	0.8	43%
12/11/2017	5.6	176	17	90%	0.15	0.05	67%	0.7	0.4	43%
21/11/2017	23.8	61	5	92%	0.04	0.01	75%	0.4	0.2	50%
22/11/2017	45.0	22	5	77%	0.04	0.03	25%	0.1	0.1	0%
29/11/2017	27.8	34	15	56%	0.04	0.01	75%	0.2	0.1	50%
25/12/2017	19.2	16	6	63%	0.05	0.02	60%	0.7	0.7	0%
31/12/2017	11.2	41	12	71%	0.05	0.04	20%	0.7	0.7	0%
4/03/2018	13.0	30	5*	83%	0.04	0.03	25%	0.5	0.3	40%
18/04/2018	28.4	46	6	87%	0.03	0.02	33%	0.5	0.4	20%
Mean	20.4	83	9.3		0.09	0.03		0.96	0.42	
Average CRE		83%			54%			42%		
Efficiency Ratio		89%			65%			56%		

\*Values below Limit of Detection (LOD) are given as LOD to be conservative

The final SQIDEP Compliant Storm results is extracted from Drapper's Supplementary report and shown below:





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Table 8. Amended SPEL Basin SQIDEP-compliant Results

Event Date	Rainfall Depth (mm)	TSS			TP			TN		
		Inlet	Outlet	CRE %	Inlet	Outlet	CRE %	Inlet	Outlet	CRE %
14/03/2017	47.80	25.00	5.00	80%	0.03	0.02	33%	0.20	0.10	50%
20/03/2017		Excl.	Excl.		Excl.	Excl.		Excl.	Excl.	
29/03/2017	6.40	42.00	12.00	71%	0.04	0.04	0%	0.40	0.40	0%
18/05/2017	15.00	134.00	10.00	93%	0.11	0.01	91%	1.40	0.40	71%
13/06/2017	34.00	107.00	10.00	91%	0.16	0.01	94%	2.30	0.20	91%
5/07/2017	9.80	122.00	5.00	96%	0.08	0.02	75%	0.90	0.40	56%
7/07/2017	5.00	256.00	20.00	92%	0.55	0.03	95%	Excl.	Excl.	
8/07/2017	5.40	196.00	10.00	95%	0.24	0.03	88%	2.30	0.40	83%
23/09/2017	6.60	142.00	12.00	92%	0.24	0.05	79%	3.00	1.30	57%
3/10/2017	43.40	72.00	9.00	88%	0.08	0.02	75%	0.70	0.40	43%
1/11/2017	4.40	137.00	14.00	90%	0.13	0.12	8%	1.40	0.80	43%
12/11/2017	5.60	176.00	17.00	90%	0.15	0.05	67%	0.70	0.40	43%
21/11/2017	23.80	61.00	5.00	92%	0.04	0.01	75%	0.40	0.20	50%
22/11/2017	45.00	22.00	5.00	77%	0.04	0.03	25%	Excl.	Excl.	
29/11/2017	27.80	34.00	15.00	56%	0.04	0.01	75%	0.20	0.10	50%
25/12/2017	19.20	16.00	6.00	63%	0.05	0.02	60%	0.70	0.70	0%
31/12/2017	11.20	41.00	12.00	71%	0.05	0.04	20%	0.70	0.70	0%
4/03/2018	13.00	30.00	5.00	83%	0.04	0.03	25%	0.50	0.30	40%
18/04/2018	7.55	46.00	6.00	87%	0.03	0.02	33%	0.50	0.40	20%
Average		92.17	9.89	84%	0.12	0.03	56%	0.91	0.40	44%
ER			89%			73%			56%	

The final claim is as follows:

Table 1. SPEL Basin Treatment Claims

Parameter	Claim (%)
Total Suspended Solids (TSS)	86*
Total Phosphorus (TP)	65*
Total Nitrogen (TN)	50*
Total Petroleum Hydrocarbons (TPH)	0
Gross Pollutants	99

\*Mean of average CRE and efficiency ratio (ER)

## Rainfall Review

The monitoring site was equipped with both a tipping bucket rainfall gauge and (outlet) flow meter to assist with identification of qualifying storm events (depth/ duration), determination of antecedent dry weather periods and to assist with determination of required sampling frequency (i.e. number of aliquots).

This information is presented in the report in tabular and graphical format and described against protocol requirements. The closest BOM gauge depths are shown in Appendix C.



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Checks were carried out to examine the historical rainfall record (historic radar) and a number of selected events as a 'sensitivity check' to verify the on-site measurements were in line with what should be expected.

## Events

Radar records were used to examine historic rainfall. This is able to provide an indication of rainfall occurrence and intensity. Figure 4 shows radar results for the 7th July and the corresponding flow rates provided in 'SQIDEP BOE Application - Supporting Information'.

In general terms:

- Higher rainfall intensities should manifest as higher peak flows through the device;
- Flow peaks through the device should match altered intensity as a storm front passes; and
- The duration of an event (from start to finish) should match the radar record.

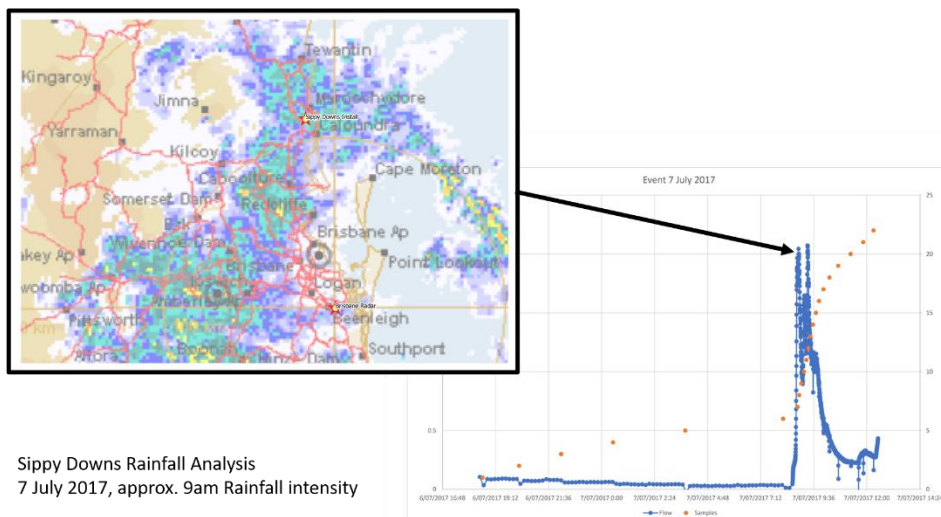


Figure 4 Radar Rainfall Checks

For the majority of events provided for analysis the observations indicate a reasonable match in storm and flow peaks between the site recordings and meteorological results, with two exceptions for the 8<sup>th</sup> July 2017 and 23 September 2017.

Both these days report relatively low flow through the device (i.e. less than 0.5l/s) and reported rainfall depth for these events were 5.4 mm and 6.6 mm respectively. Scrutiny of the flow rainfall depth for other days indicates a higher order of flow response. As such, it is possible that the characterization of the storm event is incorrect and has been plotted incorrectly. Given the overwhelming correlation of the other events to the data, the rainfall and event data is generally accepted.

Note that it is possible that the sample collected on the 8<sup>th</sup> July was as a result of continuing flow generated by the event on the 7<sup>th</sup> July, however the radar record does not appear to indicate that there was sufficient rainfall on the 23<sup>rd</sup> September to generate the tabled data.





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## Cherry Picking of Storm Events

SQIDEP v1.3 does not explicitly require that sequential storm events be monitored and reported. None the less, the Independent Evaluators have checked for evidence of cherry picking.

We have reviewed all storms that were excluded from the data set. Dr Drapper included in his Detailed Report a summary of the rainfall and storms that occurred during the monitoring period. This table is extracted and shown below:

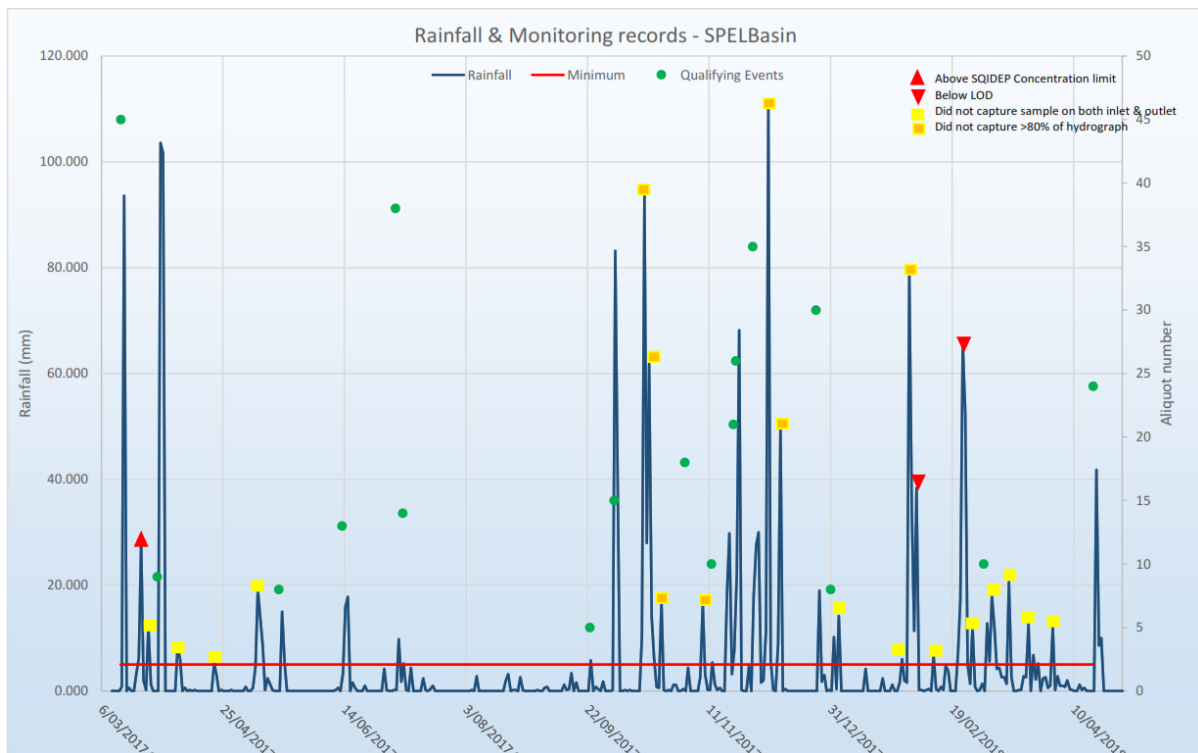


Figure 5 Reported rainfall and monitoring records.

The chart shows that there were 6 recorded storm events, intense events with an average depth of about 50mm which failed to capture more than 80% of the hydrograph and were therefore discarded. There are also a number of events where either the inlet or outlet sample was not obtained presumably due to mechanical or some kind of equipment failure or simply because no outflow occurred. These are credible events and are considered typical of any monitoring dataset noting that flow and quality monitoring equipment is notoriously unreliable.

Analysis of the spread of reported events also indicates some events where performance was high and equally some events where performance was not great. A “cherry picked” dataset would, by definition, only include events with good performance. The duration of the monitoring period, which is considered relatively short at 13 months, is indicative of a study which did not wait for high performing events to occur.

At the request of the Evaluators, Dr Drapper also provided data logs for storm events which were excluded and these demonstrated that there was a failure of equipment to record for example the first 100mm of rainfall. It is noted this is not a fully independent data analysis however it adds to the body of evidence to demonstrate cherry picking was not undertaken.



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On a first principles basis and assuming good faith by all parties, this study has the hallmarks of a robust scientifically sound assessment, i.e. it was undertaken with as much independence as is feasible, i.e. independent measurement, independent reporting and oversight and independent evaluation (peer review) and is considered representative of typical field conditions and therefore repeatable under typical conditions.



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### 3. Evaluation of Enduring Performance

~~The Independent Reviewers have endeavoured to consider the long term enduring performance of the SPEL Basin.~~

The device includes an ion exchange element. The cation exchange capacity of the media has been confirmed to have a long life-time at typical hydraulic loading rates and this indicates the device would not need to have its media replaced to maintain chemical water quality outcomes within the life expectancy of the media.

However the media may be subject to blocking and reduced hydraulic conductivity from occlusion by sediment. The SPEL Basin system includes a litter basket and filter cartridge. Both of these can be easily maintained, without replacement, and will add significantly to the life expectancy and functionality of the device as they prefilter sediment.

A sensitivity analysis of the device was undertaken by modelling its performance in MUSIC with a 40% reduced high flow bypass rate. Assuming the hydraulic conductivity and consequently the high flow bypass was reduced by 40% (indicative of partially clogged filter media) the performance of the device would reduce by 2-3%, i.e. marginally.

It was agreed with SPEL to include a requirement in their Technical Design Guideline that if the media was observed to not fully drain down to its lowest level within 2 hours that the media be investigated and if required replaced. This would ensure that hydraulic conductivity was maintained at reasonable levels and the TFR would be maintained in turn ensuring that the claimed treatment train effectiveness would be achieved in the longer term.

It is noted that it is not possible nor required of the Evaluators to determine the life of the device or the media and we are confident that under similar conditions to the test site that the device will have a reasonable life expectancy. It is recommended that SPEL continues to monitor at least the hydraulic performance of the SPEL Basin to confirm its long term performance and range of media life-expectancy under both light and heavy pollutant loading rates.

# VCAT Directed Plans

SQIDEP Evaluation

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## 4. Discussion

Our independent evaluation finds that:

- 1) As shown in Table 1, The testing regime and results comply with SQIDEP protocol requirements.
- 2) In addition, the catchment parameters, expected runoff concentrations, and rainfall mapping to event recording are within standard, or expected guidelines though it is noted this site is considered "clean" or lightly loaded relative to default EMC values adopted in MUSIC. Of itself, this implies that, based on diminishing returns, the performance claims are more difficult to achieve and therefore conservative however the device itself may demonstrate clogging more prematurely on more heavily loaded sites. In this sense the field test may not have stress tested the device as much as it will experience in the real world. None the less the claim is considered valid and generally representative.
- 3) The field study appears to be a scientifically sound study and would be repeatable under similar conditions which it is noted are deemed representative.
- 4) There will be some sites where media life is reduced due to higher sediment loads and we note this SQIDEP claim and this independent evaluation do not involve a claim against expected media life. This however is addressed in part by the need for the asset owner to observe draining times and if draining times fall below 2 hours to then investigate if the media is blocked and needs replacing.
- 5) The cation exchange capacity of the media is reportedly very high and indicates the CEC is very unlikely to limit media life.
- 6) We were unable to assess the longer term vegetative health of the system though during the investigation rigorous and healthy plant growth was evident.
- 7) We did not find evidence of cherry picking of storm events.
- 8) We found that the dominant forms nitrogen in this study were dissolved nitrogen indicating that filtration, absorption and adsorption are occurring.

### Final Agreed Pollution Reduction Performance

The final agreed pollutant reduction performance can be seen in

**Table 1. SPEL Basin Treatment Claims**

Parameter	Claim (%)
Total Suspended Solids (TSS)	86*
Total Phosphorus (TP)	65*
Total Nitrogen (TN)	50*
Total Petroleum Hydrocarbons (TPH)	0
Gross Pollutants	99

\*Mean of average CRE and efficiency ratio (ER)

Figure 6 and includes total suspended solids, total phosphorus, total nitrogen, and gross pollutant claims.



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Based on the testing regime and submitted results, SS, TP, TN and gross pollutants can be evaluated in this process. It is however acknowledged that by association and by reference to other scientific studies hydrocarbons will be removed though no credit given.

**Table 1. SPEL Basin Treatment Claims**

Parameter	Claim (%)
Total Suspended Solids (TSS)	86*
Total Phosphorus (TP)	65*
Total Nitrogen (TN)	50*
Total Petroleum Hydrocarbons (TPH)	0
Gross Pollutants	99

\*Mean of average CRE and efficiency ratio (ER)

Figure 6 Final Agreed Pollutant Reduction Performance

### Scalability and Hydraulic Loading Rate

The question of scalability of these results has been considered as part of this review. The design treatment rate of 10L/s was tested in the field and at least 4 events out of the qualifying 18 events approach or exceed this value. Of these larger events there is a spread of CRE values, with some well below the claimed reductions and some above. Viewing these results more critically it would seem that the antecedent conditions, and shape of the hydrograph are just as important precursors to the CRE as the actual flow rate. Clearly more field data may better define these correlations, however given the 90% confidence rate already, the care taken to remove outliers and non-qualifying events and defined SQIDEP protocol it is accepted that natural variations will occur and that a treatment rate of 10L/s is an acceptable limit.

How this 10L/s plays out in installations is a further consideration. SPEL have stated that their preference is to procure the application in 10L/s modules. If this is adhered to then this should have a level of acceptable saleability. Given that these modules are only procured by one manufacturer applying this limit this should minimise the misuse of this limit – the same cannot be said for many other nutrient removal applications in the market. However, this should strongly be written into any technical guideline associated with the modules, so that any prospective purchaser or asset owner is aware of this limitation.

We note that this study tested a SPEL Basin accepting runoff from an 850m<sup>2</sup> catchment. Using a City of Gold Coast template this produces an annual hydraulic load rate of about 215m/year. We would therefore consider that a hydraulic loading rate up to 250m/year would be an acceptable load rate for the device. Should the load rate for example increase to say 500m/year then the same results found in field study would not be repeatable.

### Limitations of Acceptance

The limitations of the acceptance of these testing results include:

1. The results are for a road based catchment. The results lie within acceptable inflow limits for this type of catchment and based on the analysis are found to be acceptable. This does not necessarily relate to other catchment types, though it is



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noted that hard stand catchments will behave similarly. Cleaner, roof catchments may not achieve the same pollutant reduction targets.

2. The results are for a hydraulic loading rate up to 250m/year. Should the hydraulic load rate exceed this, the results and life expectancy of the media would be expected to decline in line with excessive loading on the device.
3. The results are reliant on the maintenance of the device being consistent with the manufacturers guidelines and those that are contained in the report. Most importantly the cleaning of the Storm Sack and filter cartridge at regular intervals.
4. The life expectancy of the device and the media is unknown. In discussions with the manufacturer the testing is consistent to at least the 6 year mark. It is suggested that an estimated lifespan of both media and the whole device be written into any technical guidelines as the filter material will deteriorate over time.
5. The acceptance of these results is reliant on the installation being similar to that shown in this analysis. Alternative installations may result in different outcomes.

### Recommendation for Associated Technical Guidelines

The results of this analysis can be seen to be reliant on a number of factors, a number of which could be tied strongly to a set of technical installation and maintenance guidelines. As such it is strongly recommended that the SQIDEP results be tied to a product guideline to ensure future consistency.



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## 5. Conclusions

Based on the results presented and the analysis shown in this report, the authors are satisfied that the BOE Application complies with the SQIDEP protocol and the performance reduction claims shown at Figure 6 have been agreed.

It is recommended that these results and acceptance be packaged with the MUSIC nodes and a technical guideline.





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## 6. References

~~Duncan, H.P. (1999), *Urban Stormwater Quality: A Statistical Overview*, Report 99/3, Cooperative Research Centre for Catchment Hydrology, February 1999.~~

Drapper, Darren & Lucke, Terry. (2015). *Characterisation of Stormwater Pollutants from Various Catchment types in South-east Queensland*.

Drapper D., (2019), *SQIDEP Body of Evidence Application Supporting Information*, Drapper Environmental Consultants, Springfield Lakes, QLD

Lucke T., Sanicola O., (2018), University of Sunshine Coast, *Evaluation of Treatment Performance of SPEL Basin at Sippy Downs*, University of Sunshine Coast



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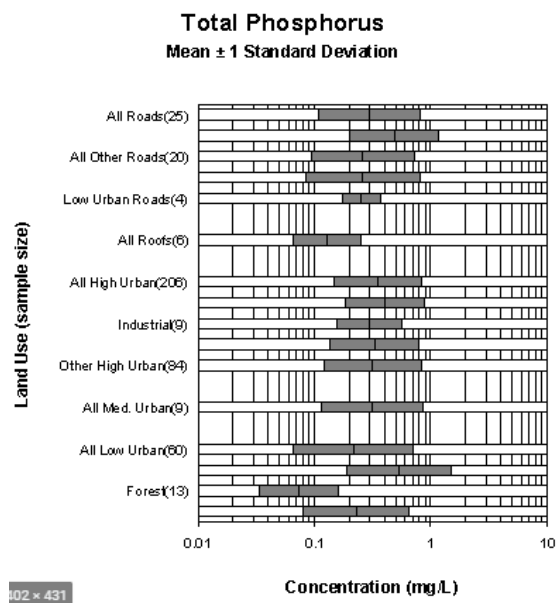
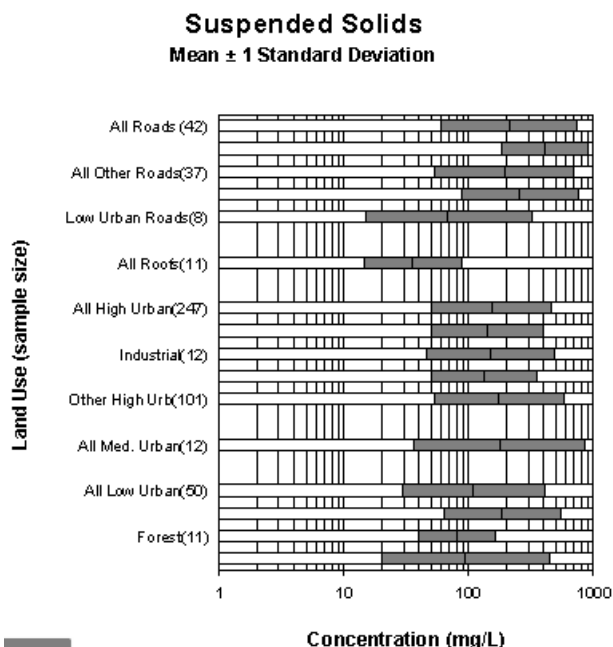
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## 7. Appendix A – Typical Concentrations

Typical concentration graphs from Duncan et. al (1999) for road catchments:

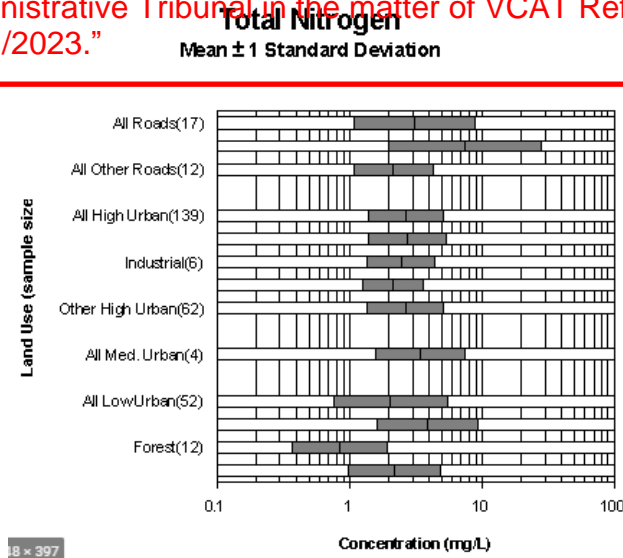


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Typical pollutant concentrations from Drapper et. al (2005):

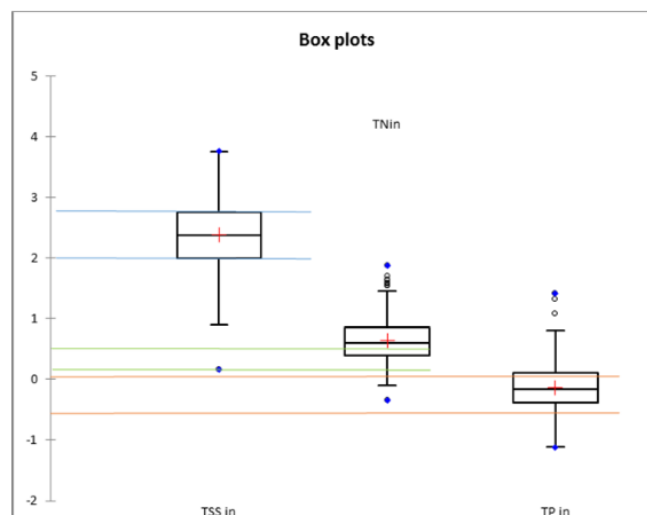


Figure 3. Boxplot comparison of BCC and additional SEQ data (log mg/L) for Roads Land Use

Table 7. Student's t tests on commercial land use

	TSS	TN	TP
t (Observed value)	73.9512	3.0504	0.877
DF	423	423	423
p-value (Two-tailed)	< 0.0001	0.024	0.381
alpha	0.05	0.05	0.05



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## 8. Appendix B – Statistical check

### Shapiro-Wilk Normality Test

Normality test of raw TSS data:

Shapiro-Wilk Test		
	<i>in</i>	<i>out</i>
W-stat	0.89021	0.949454
p-value	0.046703	0.447941
alpha	0.05	0.05
normal	no	yes

Normality test of raw TP data:

	<i>in</i>	<i>out</i>
W-stat	0.801047	0.710221
p-value	0.002097	0.000151
alpha	0.05	0.05
normal	no	no

Normality test of raw TN data:

	<i>in</i>	<i>out</i>
W-stat	0.830236	0.8366
p-value	0.005436	0.006744
alpha	0.05	0.05
normal	no	no



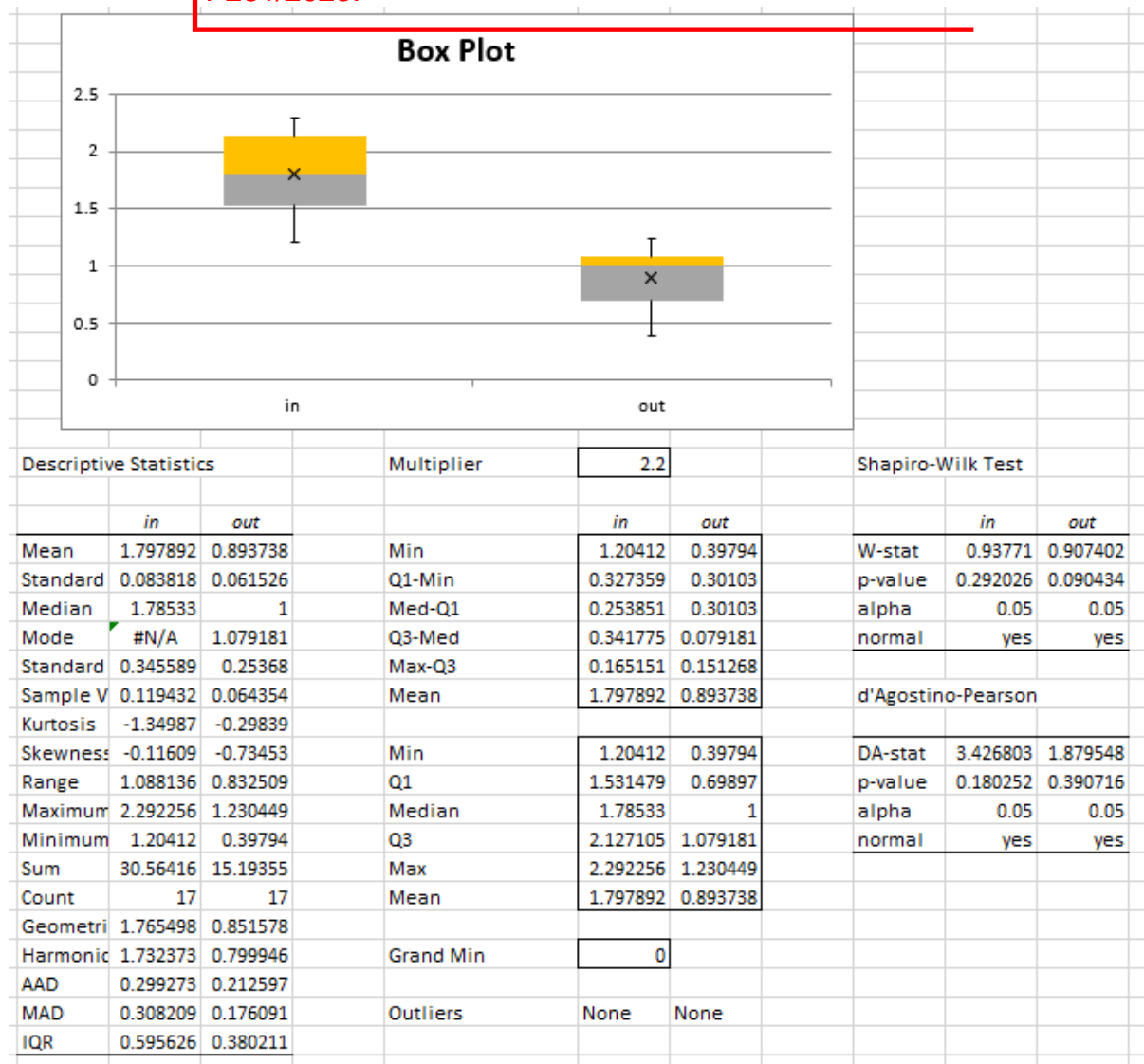
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TSS transformed results



T Test: Two Paired Samples								
SUMMARY			Alpha		0.05		Hyp Mean	
							0	
Groups	Count	Mean	Std Dev	Std Err	t	df	Cohen d	Effect r
1.39794	16	1.822889	0.340681					
0.39794	16	0.924725	0.226345					
Differenc	16	0.898163	0.345739	0.086435	10.39123876	15	2.59781	0.937031
T TEST								
	p-value	t-crit	lower	upper	sig			
One Tail	1.5E-08	1.75305			yes			
Two Tail	3.01E-08	2.13145	0.713932	1.082395	yes			



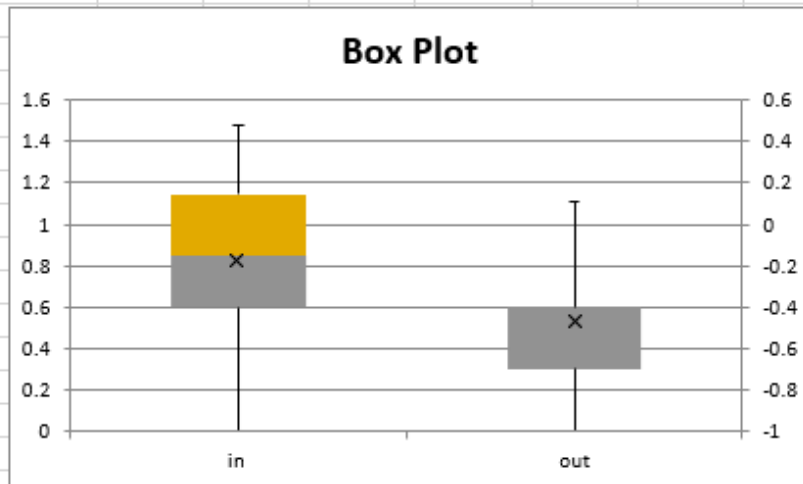
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## TN transformed - Results



Descriptive Statistics			Multiplier	2.2		Shapiro-Wilk Test		
	in	out		in	out		in	out
Mean	-0.17461	-0.47054	Min	0	0	W-stat	0.965171	0.910285
Standard	0.097522	0.07825	Q1-Min	0.60206	0.30103	p-value	0.729681	0.101154
Median	-0.1549	-0.39794	Med-Q1	0.243038	0.30103	alpha	0.05	0.05
Mode	-0.1549	-0.39794	Q3-Med	0.30103	0	normal	yes	yes
Standard	0.402093	0.322631	Max-Q3	0.330993	0.511883			
Sample V	0.161679	0.104091	Mean	0.825388	0.529461	d'Agostino-Pearson		
Kurtosis	-0.21441	-0.31649						
Skewness	-0.24342	-0.32029	Min	-1	-1	DA-stat	0.218801	0.390662
Range	1.477121	1.113943	Q1	-0.39794	-0.69897	p-value	0.896371	0.822562
Maximum	0.477121	0.113943	Median	-0.1549	-0.39794	alpha	0.05	0.05
Minimum	-1	-1	Q3	0.146128	-0.39794	normal	yes	yes
Sum	-2.96841	-7.99917	Max	0.477121	0.113943			
Count	17	17	Mean	-0.17461	-0.47054			
Geometri	#NUM!	#NUM!						
Harmonic	#NUM!	#NUM!	Grand Min	-1				
AAD	0.302776	0.246774						
MAD	0.243038	0.243038	Outliers	None	None			
IQR	0.544068	0.30103						



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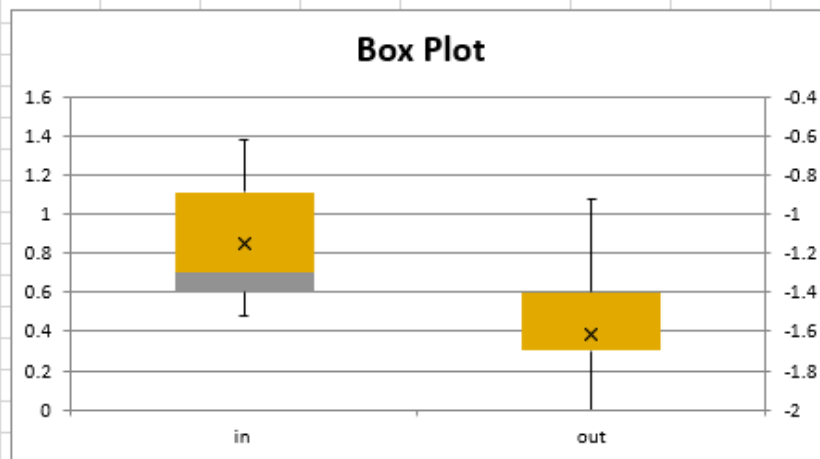
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T Test: Two Paired Samples								
SUMMARY		Alpha		0.05		Hyp Mean		0
Groups	Count	Mean	Std Dev	Std Err	t	df	Cohen d	Effect r
-0.69897	16	-0.14184	0.391129					
-1	16	-0.43745	0.30195					
Difference	16	0.295608	0.291321	0.0728303	4.05886	15	1.014715	0.723479
T TEST								
	p-value	t-crit	lower	upper	sig			
One Tail	0.000514	1.75305			yes			
Two Tail	0.00103	2.13145	0.14037	0.450842	yes			

## TP transformed - Results



Descriptive Statistics			Multiplier	2.2	Shapiro-Wilk Test		
	in	out				in	out
Mean	-1.14914	-1.61072	Min	0.477121	0	W-stat	0.886455 0.921314
Standard	0.075171	0.072421	Q1-Min	0.124939	0.30103	p-value	0.040514 0.155427
Median	-1.30103	-1.69897	Med-Q1	0.09691	0	alpha	0.05 0.05
Mode	-1.39794	-1.69897	Q3-Med	0.414973	0.30103	normal	no yes
Standard	0.309937	0.298598	Max-Q3	0.266268	0.477121	d'Agostino-Pearson	
Sample V	0.096061	0.089161	Mean	0.850861	0.38928		
Kurtosis	-1.19802	0.253664					
Skewness	0.504691	0.451427	Min	-1.52288	-2	DA-stat	3.16666 0.963127
Range	0.90309	1.079181	Q1	-1.39794	-1.69897	p-value	0.20529 0.617817
Maximum	-0.61979	-0.92082	Median	-1.30103	-1.69897	alpha	0.05 0.05
Minimum	-1.52288	-2	Q3	-0.88606	-1.39794	normal	yes yes
Sum	-19.5354	-27.3822	Max	-0.61979	-0.92082		
Count	17	17	Mean	-1.14914	-1.61072		
Geometri	#NUM!	#NUM!					
Harmonic	#NUM!	#NUM!	Grand Min	-2			
AAD	0.270031	0.235102					
MAD	0.20412	0.30103	Outliers	None	None		
IQR	0.511883	0.30103					





# VCAT Directed Plans

## SQIDEP Evaluation

SPEL Basin, Sippy Downs

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T Test: Two Paired Samples								
SUMMARY			Alpha	0.05		Hyp Mean	0	
Groups	Count	Mean	Std Dev	Std Err	t	df	Cohen d	Effect r
-1.52288	16	-1.12578	0.304255					
-1.69897	16	-1.6052	0.307495					
Difference	16	0.479424	0.369255	0.092313738	5.193421	15	1.298355	0.801633
T TEST								
	p-value	t-crit	lower	upper	sig			
One Tail	5.46E-05	1.75305			yes			
Two Tail	0.000109	2.13145	0.282662	0.676186199	yes			



# VCAT Directed Plans

SQIDEP Evaluation

SPEL Basin, Sippy Downs

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## Appendix C – Rainfall at Palmwood across testing period

2017 ▾	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Graph												
1st	0	0	0		0	0	0	0	0	0	0	48.0
2nd	0	0	19.8		0	0	0	0	0	0	0	↓
3rd	8.2	0	0		0	0	0	0	0	72.6	0	10.2
4th	30.6	0	↓		0	0	0	0	0	24.0	0	5.0
5th	8.2	0	↓		0	0	0	0	2.4	0	0	73.6
6th	↓	0	15.0	7.0	0	0	10.8	0	0	0	0	0
7th	3.4	0	0	6.4	0	0	0	14.0	0	0	3.8	0
8th	0	0	0		0	0	5.0	0	0	0	22.0	0
9th	0	16.4	0		8.4	0	0	0	0	0	3.2	13.0
10th	0	0	0		14.8	0	0	0	0	0	↓	35.0
11th	0	0	0		11.6	0	4.2	0	0	0	↓	0
12th	0	0	0		0	0	0	0	0	0	↓	9.2
13th	0	0	0		0	↓	0	0	0	0	↓	0
14th	0	7.6	7.2		0	19.6	0	0	0	5.4	↓	0
15th	55.0	0	64.6		0	10.4	0	0	0	43.4	↓	0
16th	0	0	0		0	0	0	0	0	45.2	↓	0
17th	0	0	↓		0	3.0	0	0	0	92.8	↓	0
18th	0	0	↓		0	0	0	0	0	39.6	22.0	0
19th	0	0	51.2		16.8	0	0	0	0	15.4	33.6	0
20th	0	26.4	13.2		5.2	0	0	0	0	0	5.0	0
21st	0	0	20.4		0	0	0	0	0	5.0	21.6	0
22nd	25.0	0	20.2	5.4	0	0	0	0	0	23.4	16.8	0
23rd	0	0	7.4		0	0	0	0	2.2	0	45.8	0
24th	0	0	0		0	0	0	0	0	0	0	0
25th	0	0	10.6		0	0	0	5.4	0	0	0	0
26th	0	0	0		0	0	0	0	0	0	0	17.0
27th	0	11.2	0		0	0	0	0	0	0	11.4	↓
28th	0	0	0		0	0	0	0	0	0	0	7.4
29th	0		5.4		0	0	0	0	0	0	15.0	0
30th	0		153.0		0	3.8	0	0	0	0	47.8	0
31st	0		52.2		0		0	0		0		0
Highest Daily	55.0	26.4	153.0	7.0	16.8	10.4	10.8	14.0	2.4	92.8	47.8	73.6
Monthly Total	130.4	61.6	440.2	18.8	56.8	36.8	20.0	19.4	4.6	366.8	248.0	218.4

Annual total for 2017 = 1621.8 mm [View all monthly data](#) [Plot year of daily data](#)



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## Appendix 3 – Draft Treatment Train Maintenance Contract

# VCAT Directed Plans

IMPACT Traffic Engineering Pty Ltd  
ABN: 78 611 24 107

Level 17, 31 Queen Street, Melbourne, Victoria 3000  
impacttrustin.com.au

27 February 2023  
Reference: IMP2111029LET03F02.docx

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37° 49' 6" S 144° 57' 42" E

Scarlette Huang  
Project Manager  
Time & Place  
Level 6, 189 Flinders Lane  
Melbourne VIC 3000

Dear Scarlette,

**SUBJECT: TRAFFIC ENGINEERING ASSESSMENT**  
**PROJECT: SECONDARY CONSENT APPLICATION**  
**SITE ADDRESS: 979-981 BURKE ROAD, CAMBERWELL**

## Preamble

A permit (PP19/0843) was issued approving the subject site (979-981 Burke Road) to be constructed as a six (6) storey mixed-use building, subject to conditions.

An amendment application is now being lodged for the site, modifying various elements of the proposal (whilst the use remains generally consistent with what was previously endorsed).

The following letter has been prepared to assess the appropriateness of the proposed parking provisions for the amendment (based on plans 'S87A Application' dated 21/02/2023).

## Summary of Changes

The following sets out the latest development yield compared to the originally endorsed proposal:

Element	Endorsed	Proposed Amendment	Change
Residential Dwellings			
- 2 bed dwelling	5 dwellings	5 dwellings	No change
- 3+ bed dwelling	19 dwellings	21 dwellings	+2 dwellings
Supermarket	550 sq.m	549 sq.m	-1 sq.m
Retail (food & bev)	140 sq.m	169 sq.m	+29 sq.m
Office	254 sq.m	0 sq.m	-254 sq.m
Parking Provision	92 spaces*	81 spaces	-11 spaces

\*The parking provision provided was in accordance with the statutory rate for the proposal.

As set out above, the proposal generally contemplates a similar (albeit redistributed) yield when compared to the endorsed scheme.

# VCAT Directed Plans

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## Proposed Car Park Provision / Allocation

As above, the proposed amendment considers an overall reduction in the number of on-site parking spaces provided.

The proposed parking provision (81 in total) compared to the statutory requirement has been outlined as follows:

Element	Rate	Requirement	Provision
Residential Dwellings			
- 2 bed dwelling	1 / dwelling	5 spaces	
- 3+ bed dwelling	2 / dwelling	42 spaces	52 spaces
- Visitors	1 / 5 dwellings	5 spaces	5 spaces
Supermarket	5 / 100sq.m	27 spaces	
Retail (food & bev)	3.5 / 100sq.m	5 spaces	24 spaces

Based on the foregoing, the proposal considers on-site parking in accordance with the statutory rate for the residential component and seeks a dispensation for the supermarket / retail components of the land.

Where seeking a dispensation, Council requires the proposal prepare a Car Parking Demand Assessment, which assess the parking demand likely to be generated by the proposal.

Additionally, before granting a permit to reduce the number of spaces, there are several items the authority must consider, including (but not limited to):

- The Car Parking Demand Assessment;
- Relevant local policy or incorporated plans;
- The availability of alternative car parking in the locality of the land, including:
  - Efficiencies gained from the consolidation of shared car parking;
  - Public car parks intended to serve the land;
  - On-street parking in non-residential zones; and
  - Streets in residential zones specifically managed for non-residential parking.
- Access to or provision of alternative transport modes;

Considering the foregoing, we have undertaken the following car park demand assessment which responds to the above and confirms the appropriateness of the proposed on-site parking provisions.

# VCAT Directed Plans

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## Car Park Demand Assessment

### Food & Drink Tenancy

In the context of the mixed-use development, the food and drink tenancy will draw a majority of its customers from walk-up traffic, either from the residents within the development or neighbouring residents and / or businesses.

Thus, parking need only be considered for staff.

In this regard, staff demand for these uses is typically generated at a rate of approximately 1 space per 100 sq.m, or between 1-2 spaces in total.

### Supermarket Tenancy

With respect to the demands generated by the supermarket tenancy, we note the following:

- Reference to a recent VCAT decision from 'Anplus Developments Pty Ltd v Maribyrnong CC (no2) [2022] VCAT 1311' (17 November 2022);
- The VCAT case deliberated whether the proposed amendment was consistent with what was previously approved. Specifically, the amendment contemplated whether the proposed 'supermarket' was consistent with the approved 'retail' use;
- Ultimately, the member found that in the context of the proposed 'supermarket' was consistent with a 'retail' shop. They noted that:
  - The proposed 1,000 sq.m did not reflect a 'full line' supermarket;
  - The floor area was not large enough to compete with other existing 'supermarkets' and instead it falls into the category of a 'convenience type' or 'mini major supermarket'
  - In this regard, the member declared that the proposed 'shop' use was more reflective of the proposed tenancy, than a 'supermarket' land use.

Based on the foregoing, the parking demands for the proposed supermarket on-site could reasonably be estimated to generate parking demands in line with the 'retail' rate. Application of this rate to the 549 square metre tenancy gives an estimated yield of 19 spaces.

Further, we expect that staff parking demands will be generated at a rate of approximately 1 space per 100 sq.m, or between 5-6 spaces in total, with remaining demands attributed visitor spaces (13-14 spaces).

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37° 49' 6" S 144° 57' 42" E

## Responsible Authority Considerations

### Car Park Demand Assessment

Based on the preceding assessment, we note that the following demands could reasonably be expected to be generated by the site:

- Food & Drink
  - Staff 2 spaces;
  - Visitors 0 spaces.
- Supermarket
  - Staff 6 spaces;
  - Visitors 13 spaces.

Based on the above, the commercial component of the proposal is expected to generate a demand for 21 spaces.

The plans consider a total of 24 spaces for the commercial component of the site, which exceeds the anticipated demand based on the foregoing.

### Relevant Local Policy or Incorporated Plans

We note that the proposed operational model (where a shift away from the private motor vehicle is encouraged) aligns with the aspirations in State Policy, specifically, Plan Melbourne which sets out to create a city of 20-minute neighbourhoods.

The 20-minute neighbourhood concept is all about 'living locally' giving people the ability to meet most of their every day needs within a 20-minute walk, cycle or local public transport trip of their home. A 20-minute neighbourhood must:

- Be safe, accessible and well connected for pedestrians and cyclists to optimise active transport;
- Offer high-quality public realm and open space;
- Provide services and destinations that support local living;
- Facilitate access to quality public transport that connects people to jobs and higher-order services;
- Deliver housing / population at densities that make local services and transport viable;
- Facilitate thriving local economies.

The hallmarks of a 20 minute neighbourhood are illustrated at the figure below.



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To achieve the aspiration of a 20 minute neighbourhood, a stated outcome of Plan Melbourne is an outcome that 'Melbourne has an integrated transport system that connects people to jobs and services and goods to mark' (Outcome 3).

To achieve this outcome and for Melbourne to continue to be a globally connected and competitive city with strong and health communities and higher social and economic participation, the share of trips by public transport, as well as active transport modes such as walking and cycling, must increase. (our emphasis).

That means land use and transport needs to support and encourage convenient trip options so that more people can meet most of their needs locally and be less reliant on private vehicles.

## The Availability of Alternative Car Parking

The subject site is located within the Camberwell Junction Activity Centre.

In an activity centre customers are drawn to the centre as a whole, with businesses drawing their customers from people within the activity centre as part of a broader trip (i.e. multi-purpose trips).

In this regard, we note that on-street parking throughout the activity the centre is intended to serve the businesses of this centre. Specifically, we note that the short-term parking located along both Victoria Street and Burke Road will provide a viable alternative to help offset any demands that may not be met on-site.

## The Availability of Alternative Transport Modes

The subject site is conveniently located and designed to facilitate access by alternative means of transport, specifically:

- Tram route 72 (Melbourne University to Camberwell) operates along Burke Road, providing a convenient connection to the site
  - Services operate along this stretch of road every 10 minutes during the peak periods and every 15-20 minutes outside of peak periods.
- The development is planned to include on-site parking for bicycles, including
  - Secure bike spaces within the basement for staff / residents; and
  - At-grade horizontal hoops at ground level for use by visitors.



# VCAT Directed Plans

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37° 49' 6" S 144° 57' 42" E

## Adequacy of Proposed Provision

We are satisfied that the proposed on-site parking provision is appropriate in the context of the site, noting that:

- The provision of parking on-site will exceed the minimum anticipated demand for the retail portion of the site;
- The site is located within an activity centre area, which includes short-term on-street parking opportunities that are intended to serve the land;
- Provision of on-site bicycle parking in excess of the statutory requirement will help to encourage cycling as a mode of travel to/from the site; and
- The State is seeking to create a 'living local' strategy, which aims to leverage and expand on local activity centre areas, making them a one-stop destination for residents who live nearby - encouraging the use of active transport modes in place of private motor car.

The proposal is therefore deemed to satisfy the intent of Clause 52.06, specifically:

- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality;
- To support sustainable transport alternatives to the motor car; and
- To ensure car parking does not adversely affect the amenity of the locality.

## Proposed Bicycle Park Provision - Query Remove

The proposed bicycle parking provision compared to the statutory requirement has been outlined as follows:

Element	Rate	Requirement	Provision
Residential Dwellings			
- Dwellings	1 / 5 dwellings	5 spaces	
- Visitors	1 / 10 dwellings	3 spaces	
Supermarket (Shop)			26 spaces - residents
- Staff	1/600 sq.m*	1 space	
- Visitors	1/500 sq.m*	1 space	4 spaces - staff
Retail (shop)			6 spaces - visitors
- Staff	1/600 sq.m*	0 spaces	
- Visitors	1/500 sq.m*	0 spaces	

\* These rates apply to tenancies exceeding 1,000 square metres.

The planned bicycle parking provision exceeds the minimum number required and will help to encourage cycling as a mode of transport to / from the subject site.

Further, the over provision of bicycle facilities will help to offset the parking reductions sought.

# VCAT Directed Plans

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37° 49' 6" S 144° 57' 42" E

We trust that the above assessment is clear and consistent with your expectations. Should you require any additional information or clarification, please do not hesitate to contact the undersigned.

KIND REGARDS,



Will Drew

**Associate**

M: 0427 337 399

E: [will@impactaustralia.com.au](mailto:will@impactaustralia.com.au)

# VCAT Directed Plans

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37°49'25"S  
145°03'28"E

## Mixed Use Development: 979 & 981 Burke Road, Camberwell



### Waste Management Plan

27 February 2023  
Prepared for Time & Place

IMP2111029WMP03F01.docx

Impact

# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

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## Company Information

## Document Information

Impact Traffic Engineering Pty Ltd

Client

Time & Place

Level 17, 31 Queen Street, Melbourne, Victoria, 3000

Report Title

Mixed Use Development: 979  
& 981 Burke Road, Camberwell

ABN: 78 611 424 107

Report Reference

IMP2111029WMP03F01.docx

Email [create@impactaustralia.com.au](mailto:create@impactaustralia.com.au)

Date of Issue

27 February 2023

Website [www.impactaustralia.com.au](http://www.impactaustralia.com.au)

Approved By

John-Paul Maina

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## Document Control

Version	Date	Author
FINAL	27 February 2023	Will Drew

# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

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# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

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APPENDIX B	Swept Path Analysis



# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

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## 1 Introduction

### 1.1 Engagement

**IMPACT**® have been engaged by Time & Place to prepare a Waste Management Plan (WMP) for the proposed mixed-use development at 979 & 981 Burke Road, Camberwell.

### 1.2 Scope of Engagement

A permit (PP19/0843) was issued approving the site to be developed as a six (6) storey mixed-use building, subject to conditions. Condition 19 of the permit required an updated Waste Management Plan be prepared, generally in accordance with the previous WMP prepared by **IMPACT**® (albeit amended to reflect the endorsed planning set).

An amendment application is now being lodged for the proposal, modifying various elements of the proposal, whilst the use remains generally consistent with what was previously endorsed. This report has been prepared in response to the previous Condition 19, updated to reflect the plans considered as part of the amendment application.

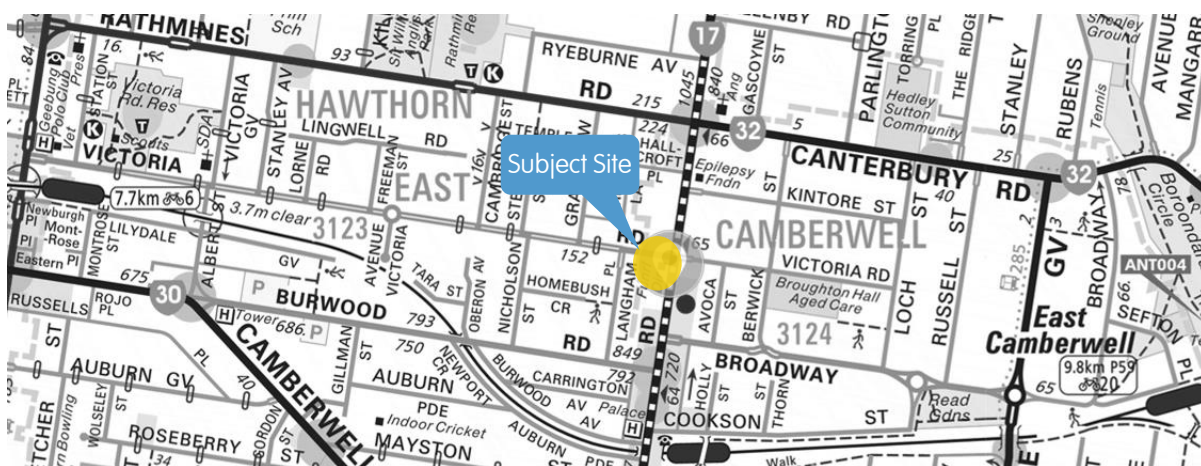
In preparing this assessment we have referenced the following:

- Development plans prepared by Cera Stribley Architects
- City of Boroondara Waste Minimisation and Recycling Strategy
- Sustainability Victoria's 'Waste Management and Recycling in Multi-Unit Developments Better Practice Guide'
- Sustainability Victoria's 'Multi-Unit and Commercial development Waste and Recycling Generation Rates Calculator.'

## 2 Existing Conditions

### 2.1 Location

The subject site, 979 & 981 Burke Road Camberwell, is located on the south west corner of the Burke Road / Victoria Road intersection as illustrated in Figure 1.



**Figure 1** Location of Subject Site

The site has a frontage of approximately 45 metres to both Burke Road and Victoria Road.

The site is currently serviced by three crossovers to Victoria Road and one to Burke Road.

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## 3 Development Proposition

### 3.1 Use and Yield

A mixed-use development comprising retail, supermarket and residential components is proposed on-site. Table 1 provides a breakdown of the proposed development schedule:

**Table 1 Project Yield**

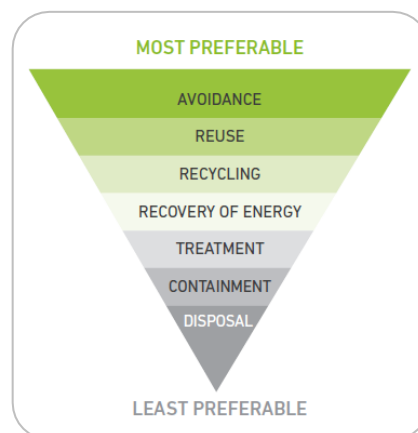
Use	Yield
2-bed dwelling	5
3 or more bed dwelling	21
<u>Dwellings Subtotal</u>	<u>26 x apartments</u>
Retail (food & drink)	169 square metres
Supermarket*	549 square metres

## 4 Objectives

The primary objective of this WMP is to:

- Identify all potential waste streams likely to be generated on site; and
- Provide a description of how waste is likely to be stored, handled, processed and disposed of, or reused and recycled.

This WMP seeks to establish principles by which the design, provision and maintenance of services and infrastructure that enable garbage, recycling, organics and bulky waste services to be operated at the development site in the best possible way in order to improve resource recovery and align with the principles of waste hierarchy.



# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

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## 5 Waste Generation

To estimate the likely waste generation for garbage and recycling, reference is made to the rates provided in Appendix 1 & Appendix 2 of the Guide to Best Practice for Waste Management in Multi-Unit Developments.

The rates adopted for each component of the development are shown in Table 2.

**Table 2 Projected Waste and Recycling Generation Rates**

Component	Waste Generation	Recycling Generation
2 Bedroom Dwelling	100 L / week *	100 L / week
3+ Bedroom Dwelling	120 L / week *	120 L / week
Supermarket**	660 L / 100m <sup>2</sup> / day	240 L / 100m <sup>2</sup> / day
Retail (Food & Beverage)	300 L / 100m <sup>2</sup> / day	200 L / 100m <sup>2</sup> / day

\* Approximately 35% of Residential waste is attributable to food organics waste.

\*\*Given the size of the 'supermarket' tenancy, the waste generated may ultimately be less than a standard 'supermarket'. Notwithstanding, this rate has been conservatively applied in the first instance.

To this end, the proposed development is expected to generate waste and recycling as set out in Table 3 and Table 4.

**Table 3 Projected Waste Generation - Residential**

Component	No.	Generation Rate	Waste Generation / Week
2 Bedroom Dwelling	5	100 L / week Waste, comprised of: - 65 L / week Landfill - 35 L / week Food Organics - 100 L / week Recycling	500 L Garbage, comprised of: - 325 L Landfill - 175 L Food Organics - 500 L Recycling
3+ Bedroom Dwelling	21	120 L / week Waste, comprised of: - 78 L / week Landfill - 42 L / week Food Organics - 120 L / week Recycling	2,520 L Garbage, comprised of: - 1,638 L Waste - 882 L Food Organics - 2,520 L Recycling
<b>Residential Subtotal</b>			<b>3,020 L Garbage</b> , comprised of: - 1,963 L Waste - 1,057 L Food Organics <b>3,020 L Recycling</b>

**Table 4 Projected Waste Generation - Commercial**

Component	Area	Generation Rate	Waste Generation / Day
Supermarket	549m <sup>2</sup>	660 L / 100m <sup>2</sup> / day 240 L / 100m <sup>2</sup> / day	3,623 L Waste 1,318 L Recycling
Retail (food & beverage)	169m <sup>2</sup>	300 L / 100m <sup>2</sup> / day 200 L / 100m <sup>2</sup> / day	507 L Waste 338 L Recycling
<b>Commercial Subtotal</b>			<b>4,130 L Waste</b> <b>1,656 L Recycling</b>

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."

## 6 Equipment and Systems

### 6.1 Bins

As per the Boroondara Waste Minimisation and Recycling Strategy, private waste collection will be utilised to service the subject site.

To reduce the impact and total number of waste and recycling bins required, it is recommended that a mixture of primarily 660 litre and 1,100 litre bins are used for both the residential and commercial components of the subject site.

**Note:** It is recommended that food organics bins be provided in the form of smaller 240 L MGBs, to minimise the overall weight of the bin.

The approximate dimensions for these bins are provided in Table 5.

**Table 5 Bin Dimensions**

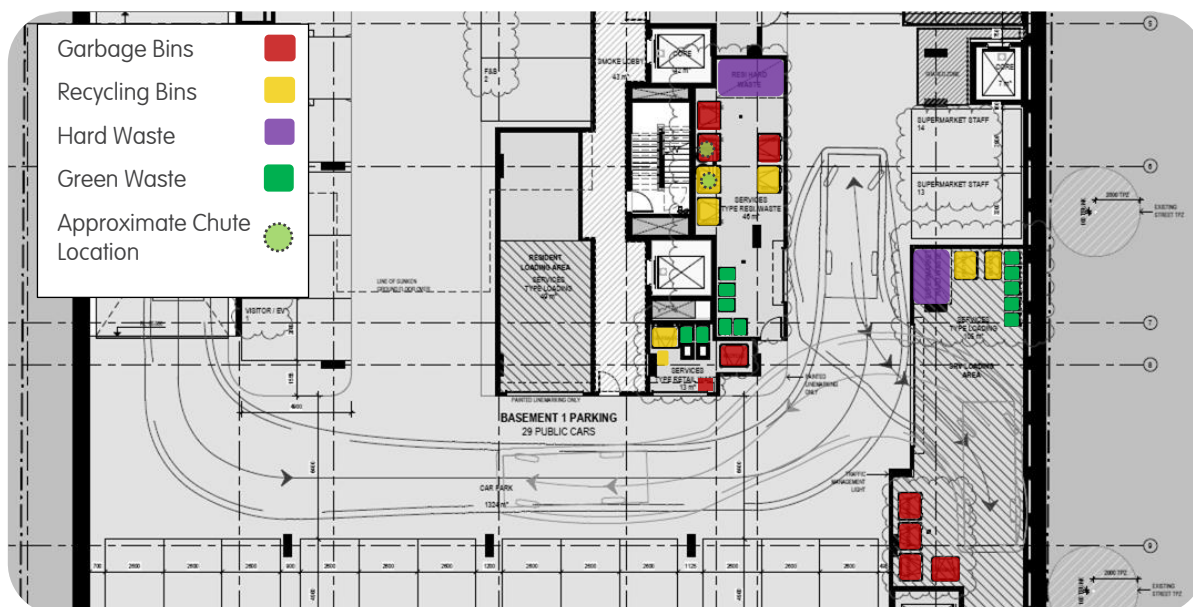
Bin	Height	Depth	Width
240 L	1,060 mm	730 mm	585 mm
660 L	1,200 mm	780 mm	1,260 mm
1,100 L	1,330 mm	1,070 mm	1,240 mm

A private bin collection arrangement is recommended; thus, the bin colours can be adopted from options provided in AS4123.7 and labelled accordingly to identify the waste generator and site address.

As private collection is proposed, Council's minimum waste service charge will apply.

### 6.2 Bin Storage and Location

Three separate bin storage areas are proposed in the first basement level for each element of the proposal. The location and distribution of bins within each one of these stores has been illustrated in Figure 2. A scaled copy of the basement level (and waste rooms) plan can be found attached as Appendix A



**Figure 2 Bin Storage Areas - Indicative Layout**

# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023.

A total of 6 x 1,100 L bins are proposed within the residential storage area (3 x waste and 3 x recycling), plus a further five (5) x 240 L bins provided for food organics.

The retail bin store includes 2 x 1,100 L bins (one for garbage and one for recycling) plus an additional 4 x 240 L bins (two for the diversion of food wastes, one for garbage and one for recycling).

Finally, 5 x 1,100 L and 1 x 660 L bins will be provided for use by the supermarket tenancy, with a further 5 x 240 L bins dedicated to the diversion of food wastes.

## 6.3 Collection Frequency

The bin details and collection frequency for each waste stream are summarised in Table 6.

**Table 6 Waste Collection Frequency**

Component	Waste Generation	Bin Capacity (Site Total)	Collection Frequency
<b>Resident</b>	3,020 L Waste per week:		
	- 1,963 L Landfill per week	Landfill - 3,300 L*	Once a Week
	- 1,057 L Food Waste per week	Food Waste - 1,200 L	Once a Week
	2,780 L Recycling per week	Recycling - 3,300 L	Once a Week
<b>Supermarket</b>	3,623 L Waste daily	Waste - 4,400 L	Daily
	1,318 L Recycling daily	Recycling - 1,760 L	Daily
	Food Waste - Varies	Food Waste - 1,200 L	As needed
<b>Retail (F&amp;B)</b>	507 L Waste daily	Landfill - 1,340 L	Three times a Week
	338 L Recycling daily	Recycling - 1,340 L	Twice a Week
	Food Waste - Varies	Food Waste - 480 L	Twice a Week (or as needed)

\*Waste bins conservatively provided to include capacity for both weekly landfill and weekly food waste, should residents choose to use chutes rather than manually transfer organic waste.

## 6.4 Collection Arrangements

### 6.4.1 Waste Disposal

#### 6.4.1.1 Resident Waste

Residents of the subject site are to sort their waste and dispose of garbage and recyclables via the proposed bin chute system. It is proposed to utilise a typical bin chute system with a total of two chutes, one allocated to waste and one to recycling.

Bins will be rotated underneath the chutes by a representative of the Owners Corporation / Building Manager to ensure no overflow.

Where disposing of food organics, residents will be required to manually transfer bins to the waste storage rooms.

Each dwelling shall be provided with a kitchen caddy and compostable caddy liners to assist with the segregation of food waste generated by the residents before being placed in the assigned waste bin. An illustration of a kitchen caddy / compostable liner is shown in the figure below.

# VCAT Directed Plans

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**Note:** Given residents disposing of food organics (and hard waste) will be required to transfer their waste into the bin room directly - where the chute's terminate, we recommend that the chute termination point be securely screened / protected to prevent the likelihood of wastes spilling out when manual transfers are occurring.

## 6.4.1.2 Commercial Waste

It is then expected that staff (or cleaners) of the two commercial tenancies will sort their waste and garbage and then transfer it from their tenancy to their respective waste storage areas throughout the day.

**Note:** A representative of the Owners Corporation / Building Manager shall be responsible for managing the waste system and for developing and implementing adequate safe operating procedures.

## 6.4.2 On-Site Collection

A private waste contractor will be engaged to collect and dispose of all waste streams generated by the development.

Waste collections will be undertaken from the on-site loading zones, with contractors required to transfer bins from the bin storage areas (located in the rooms adjacent to the loading bay).

Waste bins shall be collected by a rear-lift small rigid vehicle with the following dimensions:

- Nominal Length 6.4m long;
- Nominal Height 2.1m high;
- Nominal Gross Vehicle Mass 6.4 tonnes;

A swept path analysis, provided as Appendix B confirms that the development plans make adequate provision for vehicles to move in and out of the loading bays.

As demonstrates in the attached swept paths, vehicles will reverse back into each respective loading bay before collecting waste (keeping the aisle clear). To help manage this movement, the following physical measures will ultimately be adopted:

- Spaces located immediately adjacent to the loading area (where vehicles move) will be allocated to staff of the retail tenancy
  - This will help to minimise the chance that access to these spaces will be required whilst waste collections are occurring;
- An audio / visual flashing light will be adopted at the entrance to the loading area to alert circulating vehicles as to when the dock is in use; and
- A convex mirror can be provided to supplement sight lines around this corner (in conjunction with the flashing light system).



# VCAT Directed Plans

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In addition to the above, additional management measures could also be implemented to assist in the loading movement for waste collection, including:

- The scheduling of waste collections to occur at times which do not coincide with peak traffic; and
- An additional contractor (or staff member) can act as a 'spotter' for vehicles as they enter and exit the loading dock.

## 6.5 Responsibility

The Owners Corporation / Building Manager will be responsible for appointing a representative for implementing the Waste Management Plan. This representative will ensure that bins are rotated beneath the bin chute as required and that sufficient access is provided for the collection vehicle operators during collection times.

Typically, and where appropriate, the waste collection contractors will be provided with keypad / swipe card to provide access to the various waste rooms.

## 6.6 Amenity Management

### 6.6.1 Washing, Ventilation and Vermin-Prevention Measures

It is recommended that a drained wash down area is provided on-site proximate to the waste storage areas / loading bay.

Each bin is to be washed regularly by the building management representative. Bin washing areas / bin wash bays must discharge into a grease trap. It is noted that there is ample space within the bin storage areas or loading bay to provide for a bin wash bay and grease trap.

Alternatively, a third-party bin washing service can be engaged to perform this service (particularly for the smaller retail bin storage area). Bin washing suppliers must retain all wastewater within their washing apparatus and not impact on the drainage provision of the site.

### 6.6.2 Noise Reduction Measures

Waste collection is to be via private waste services, who will undertake collections in accordance with Council's local laws and / or in the Victorian EPA Noise Control Guideline, which sets out the following requirements:

- Collection occurring once a week should be restricted to the hours: 6am to 6pm Monday to Saturday.
- Collections occurring more than once a week should be restricted to the hours: 7am to 6pm Monday to Saturday.
- Compaction should only be carried out while on the move.
- Bottles should not be broken up at the point of collection.
- Routes which service entirely residential areas should be altered regularly to reduce early morning disturbance.
- Noisy verbal communication between operators should be avoided where possible

All bins are to be kept within the bin rooms except at collection times.

All bins will have rubber wheels for quiet rolling during transfers.



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## 6.6.3 Stormwater Pollution Prevention

To prevent stormwater pollution, residents, staff and the building manager will be required to:

- Ensure all waste is disposed into bins / chutes (as relevant);
- Ensure rubbish and recycling items are secured so they can't blow away;
- Keep bins closed to prevent animals from searching through waste; and
- Make sure any bin spillage is cleaned up using dry absorbent materials (such as sand, sawdust or paper towel, as required).

## 6.6.4 Other Waste Streams

### 6.6.4.1 Hard Waste and E-waste

It is expected that hard / e-waste services will also be provided by a private contractor under the management of the Building Manager / Owners Corporation.

Both hard waste and e-waste will be collected as required by a private contractor.

Space has been set aside on-site for the storage of hard waste as indicatively shown in Figure 2 and in the scaled site plan attached as Appendix A.

### 6.6.4.2 Food Organics

The waste generation estimations provided in Section 5 make allowance for the total waste generated by both the dwellings and commercial tenancies (including any food wastes) and bin storage be provided in accordance with these estimations.

The above notwithstanding, additional 240 L bins have been shown in each of the respective waste storage areas - bins which could be dedicated to the disposal of food wastes generated by the site. A dual chute system (landfill and recycling) is proposed, and thus residents wanting to divert food organics would need to dispose into these bins manually.

An additional food waste collection service can then be organised on an as needs basis by the Building Manager.

## 6.6.5 Communication Strategy

Waste drop-off areas (including chute hatches) and bins will be clearly marked and signed with appropriate signage (examples indicatively shown below, or equivalent).



Tenants will be instructed by building management / the owners corporation to adhere to these requirements.

# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023.

## 6.7 Contact Information

### 6.7.1 Council

Boroondara City Council	Local Council	ph 03 9278 4444
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### 6.7.2 Suppliers / Contractors

Citywide Service Solutions Pty Ltd	Private Waste Collector	ph 03 9261 5002
iDump	Private Waste Collector	ph 1300 443 867
Kartaway	Private Waste Collector	ph 1300 362 362
Waste Wise Environmental	Private Waste Collector	ph 03 9359 1555
Sulo MGB Australia	Bin supplier	ph 1300 364 388

### 6.7.3 Other Useful Contacts

Safety Australia	OH & S consultant	ph 1300 585 128
FJP Safety Advisors Pty Ltd	OH & S consultant	ph 03 9255 3660
Boroondara Recycling and Waste Centre		ph: 9278 4444
Stonnington Waste Transfer Station		ph: 8290 1333
Sustainability Victoria		ph 1300 363 744 Online <a href="http://www.sustainability.vic.gov.au">www.sustainability.vic.gov.au</a>
Cleanaway		Online: <a href="http://www.cleanaway.com.au">www.cleanaway.com.au</a>

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## 7 Limitations

This Waste Management Plan is intended to inform and accompany a town planning application.

The waste generation data presented in this report are estimates only based on the existing operations. Actual waste generation characteristics could vary month to month depending on demand and productivity. Accordingly, it is our expectation that the Building Manager / Site Operator will adjust the recommended strategy to respond to actual operational conditions post development. These adjustments could include, but are not limited to increasing the number of bins and or increasing the collection frequency - Subject to Council Approval.

To this end, Subject to Council request, changes in legal requirements, changes in the development's needs and / or waste patterns (waste composition, volume or distribution), or to address unforeseen operation issues, the operator shall be responsible for coordinating the necessary Waste Management Plan revisions, including (if required):

- A waste audit and new waste strategy;
- Revision of the waste systems (bin sizes / quantity / streams / collection frequency);
- Re-education of tenants;
- Revision of the services provided by the waste collector(s); and
- Any necessary statutory approval(s).

# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

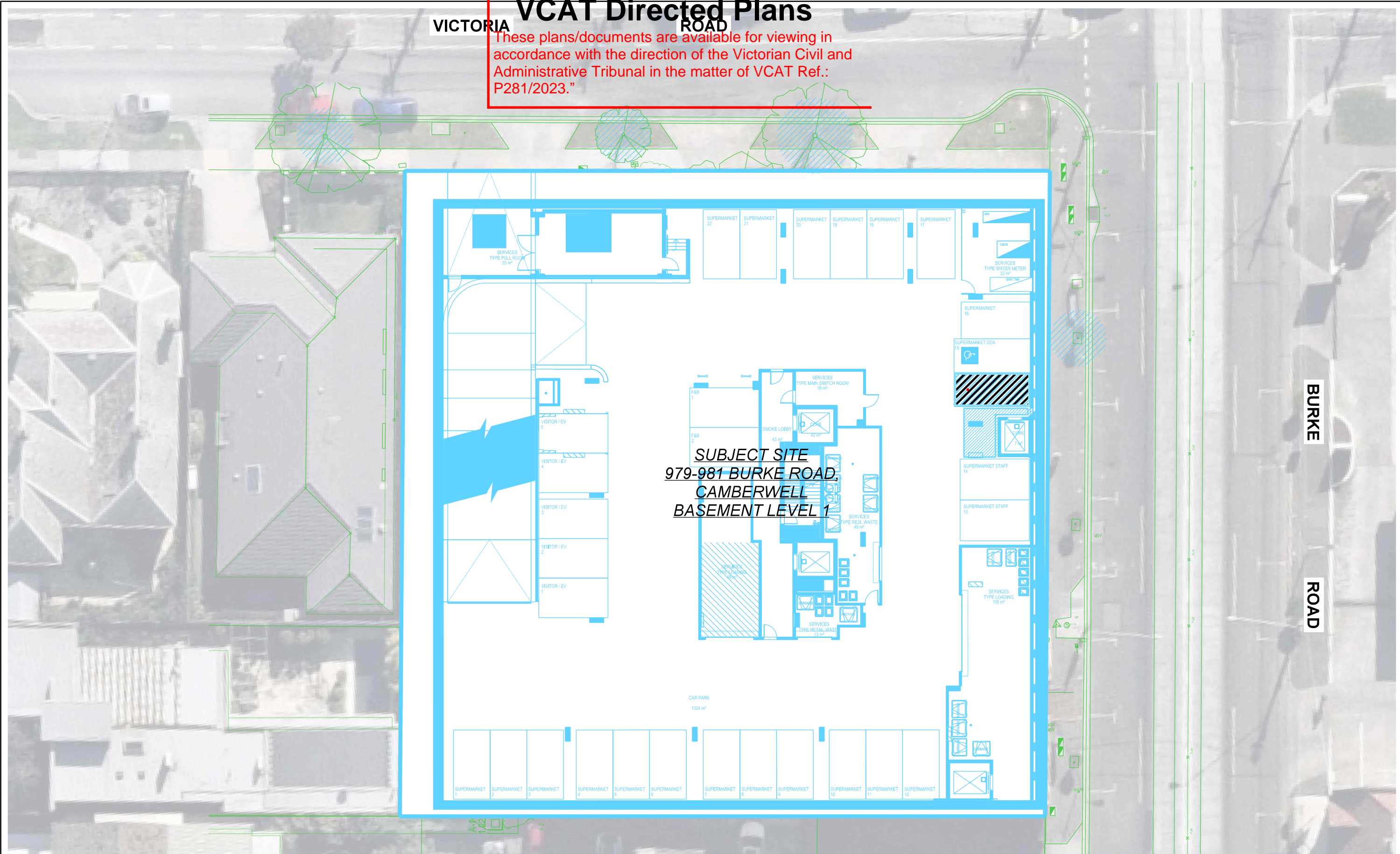
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## APPENDIX A

### Scaled Site Plan

# VCAT Directed Plans

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**SUBJECT SITE**  
**979-981 BURKE ROAD,**  
**CAMBERWELL**  
**BASEMENT LEVEL 1**

- GENERAL NOTES:
1. ALL DIMENSIONS ARE TO FACE OF KERB AND CHANNEL UNLESS NOTED OTHERWISE
  2. LOCAL ROADS - VICTORIA ROAD (SPEED ZONE 40 KM/H)  
DECLARED ROADS - BURKE ROAD (SPEED ZONE 60 KM/H)
  3. BASE INFORMATION FROM NEARMAP AERIAL PHOTOGRAPHY DATED 01.09.2021 AND CERA STRIBLEY ARCHITECTS TP\_1003.dwg DATED 20.02.2023

TIME & PLACE

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MELWAY ONLINE REF: MAP 43 J15

SCALE  
1:250 @ A3

Client  
**TIME & PLACE**

Project  
**MIXED USE DEVELOPMENT**  
**979-981 BURKE ROAD, CAMBERWELL**  
**CITY OF BOROONDARA**

Title  
**WASTE MANAGEMENT PLAN**  
**SITE LAYOUT PLAN - BASEMENT 1**

Status  
**PRELIMINARY**

Revision Description  
**ISSUED FOR INFORMATION**

Date  
**2023-02-22**  
Drawn / Approved  
**WK / WD**

Drawing Number  
**IMP2111029 - DG-08-01**

Revision  
**A**

# VCAT Directed Plans

Mixed Use Development: 979 & 981 Burke Road, Camberwell

Waste Management Plan

27 February 2023

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## APPENDIX B

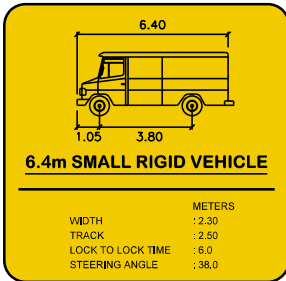
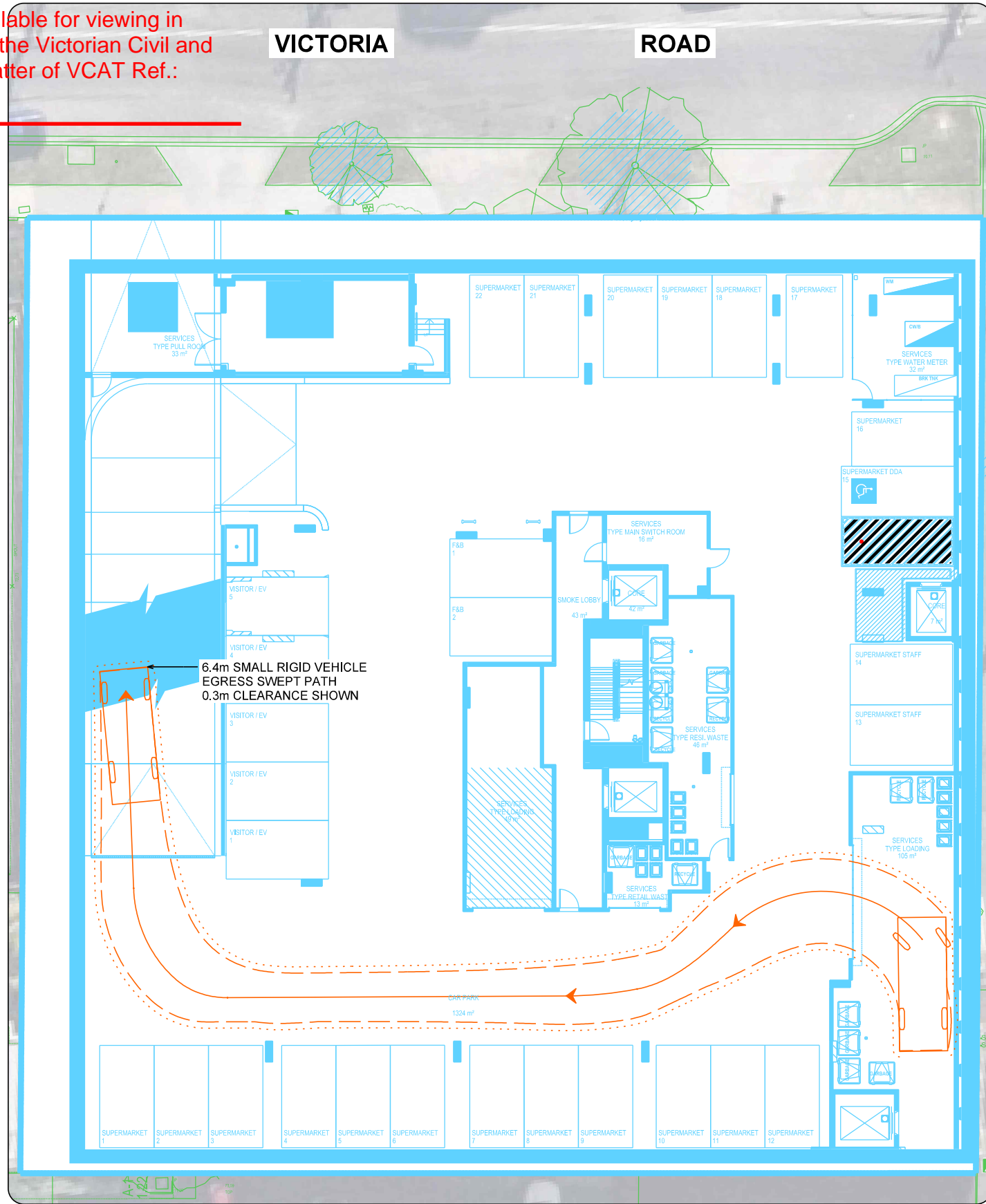
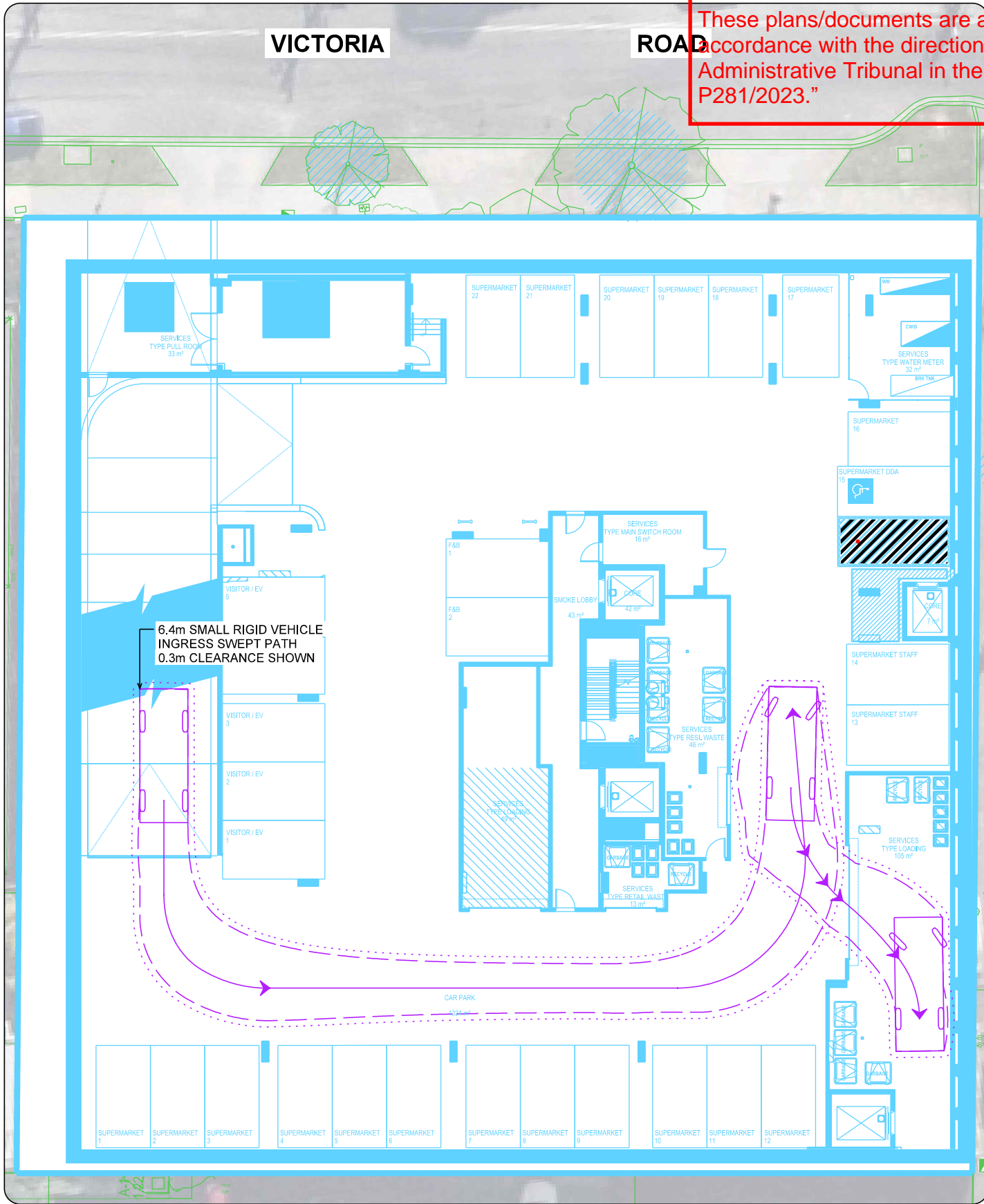
# Swept Path Analysis

Design Vehicle: 6.4 Metre Small Rigid Vehicle



# VCAT Directed Plans

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SCALE  
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## Client TIME & PLACE

Project  
**MIXED USE DEVELOPMENT**  
979-981 BURKE ROAD, CAMBERWELL  
CITY OF BOROONDARA

Title  
**WASTE MANAGEMENT PLAN**  
SWEEP PATH ANALYSIS - 6.4m SMALL RIGID VEHICLE  
LOADING MOVEMENTS

## Status PRELIMINARY

Revision Description  
**ISSUED FOR INFORMATION**

Date  
2023-02-22  
Drawn / Approved  
WK / WD

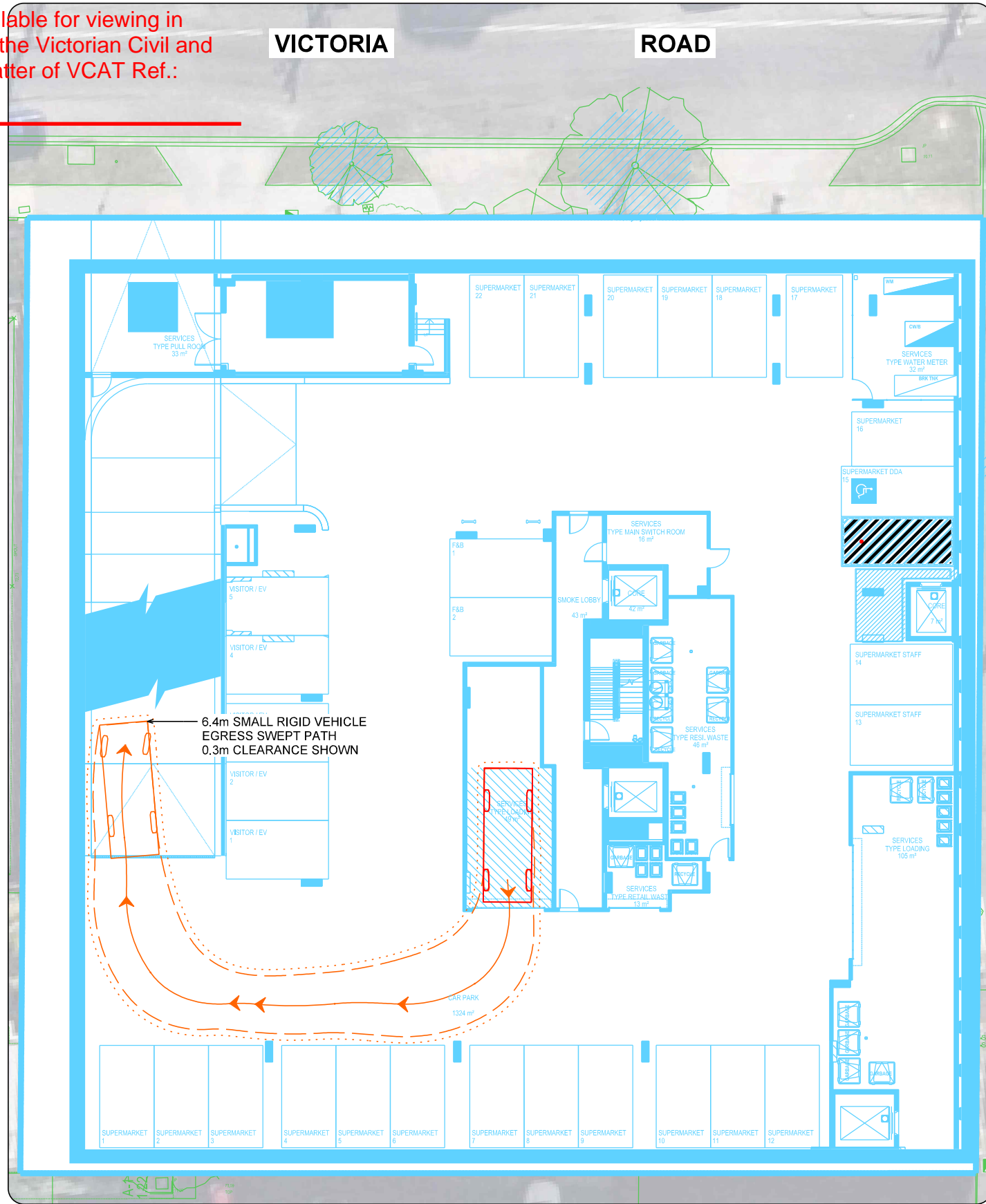
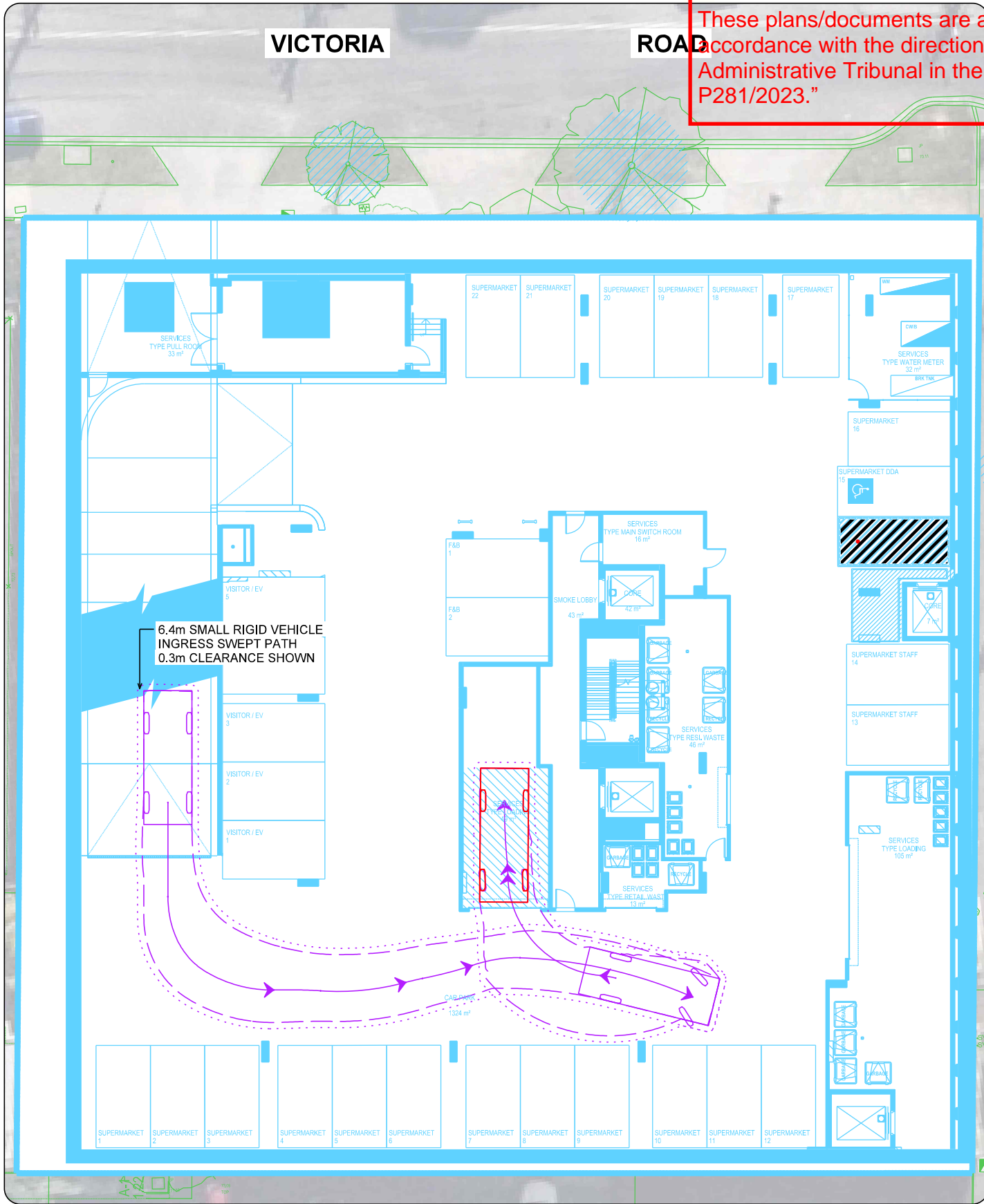
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**IMP2111029 - DG-08-02**

Revision  
**A**

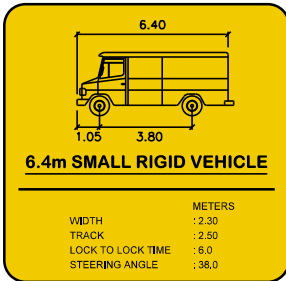


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SCALE  
1:250 @ A3

Client

## TIME & PLACE

Project  
**MIXED USE DEVELOPMENT**  
979-981 BURKE ROAD, CAMBERWELL  
CITY OF BOROONDARA

Title

**WASTE MANAGEMENT PLAN**  
SWEEP PATH ANALYSIS - 6.4m SMALL RIGID VEHICLE  
LOADING MOVEMENTS

Status

## PRELIMINARY

Revision Description  
**ISSUED FOR INFORMATION**

Date

2023-02-22

Drawn / Approved  
WK / WD

Drawing Number

**IMP2111029 - DG-08-03**

Revision

**A**

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Simplexity



# VCAT Directed Plans

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The Registrar  
Planning and Environment List – Major Cases  
Victorian Civil and Administrative Tribunal  
55 King Street  
MELBOURNE VIC 3000

Lodged via the online portal

1 March 2023

**Re: Major Cases List – Application to Amend Planning Permit No. PP19/0843  
Section 87A of the Planning and Environment Act 1987  
979-981 Burke Road, Camberwell**

Dear Sir/Madam,

We act on behalf of CW Victoria Hill Development Pty Ltd, the landowner and prospective developer of the land at 979-981 Burke Road, Camberwell ('the subject site').

Our client seeks to amend Planning Permit No. PP19/0843 ('the permit'), which was issued on 19 July 2021 at the direction of the Victorian Civil and Administrative Tribunal (VCAT).

This application to amend the permit is therefore made pursuant to Section 87(A) of the *Planning and Environment Act 1987*.

Accordingly, to assist the Tribunal with processing our client's application, we are pleased to enclose the following:

- A credit card payment for \$4,265.90, being the requisite application fee for matters of this nature.
- A copy of the VicPlan Planning Property Report.
- A copy of the Planning Permit proposed to be amended (PP19/0843).
- A tracked changes version detailing the amendments to the permit to be amended.
- A recent copy of the Certificate of Title for the land affected by the application.
- A detailed Statement of Changes prepared by Cera Stribley Architects.
- Architectural Design Report, including an analysis of the proposed amendments, prepared by Cera Stribley Architects.
- Revised Architectural Plans, Development Summary and Finishes Schedule prepared by Cera Stribley Architects.
- Traffic Engineering Assessment prepared by Impact Traffic Engineering Pty Ltd.
- Revised Waste Management Plan prepared by Impact Traffic Engineering Pty Ltd.

LTR – S87A Submission

# VCAT Directed Plans

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- Revised Landscape Plan prepared by Eckersley Garden Architecture.

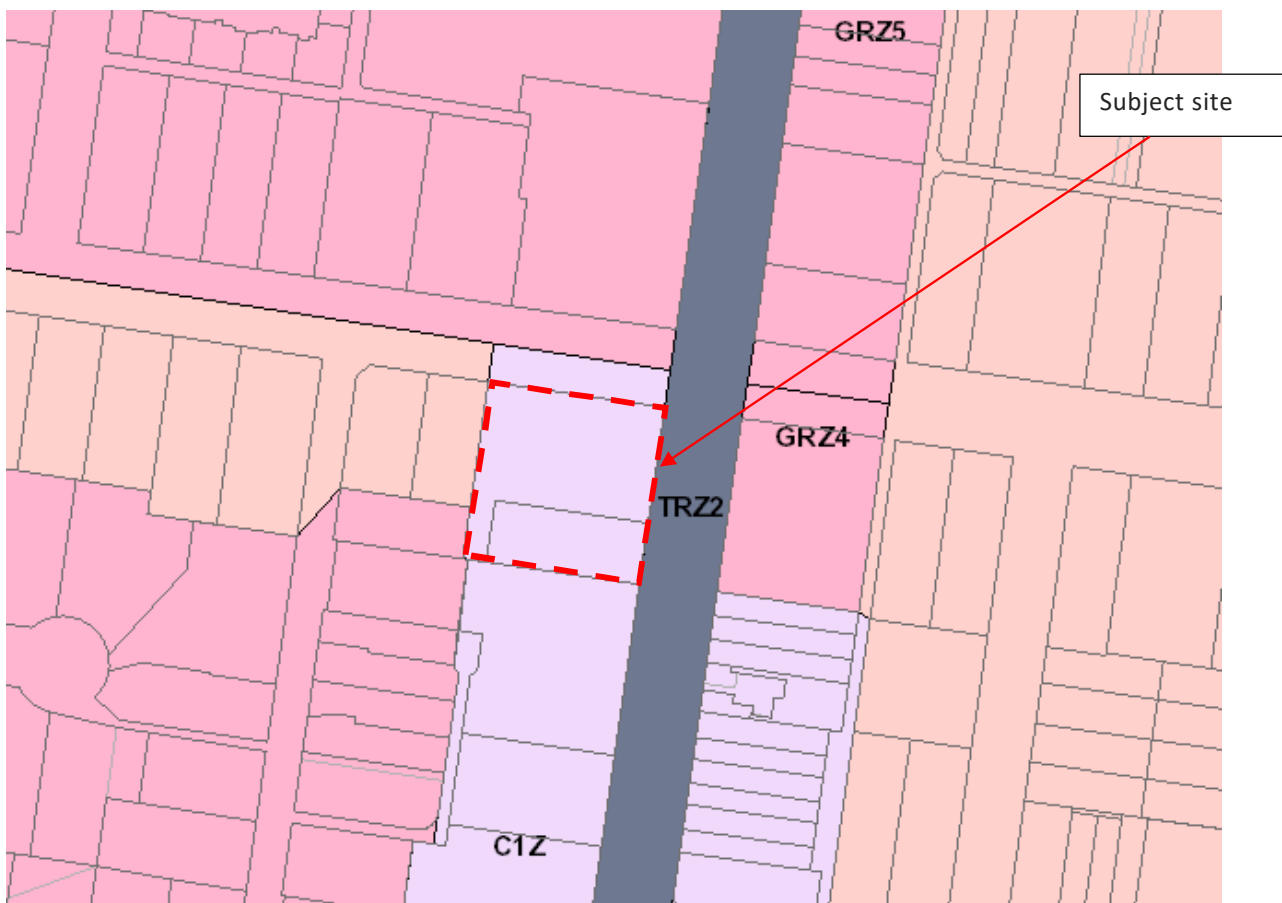
A revised Sustainable Management Plan prepared by Integrated Group Services will be uploaded to the SharePoint file containing the material listed above by 15 March 2023.

In essence, this application seeks to amend the existing permit and development shown on the endorsed plans to rationalise the proposed land uses, provide for a revised car parking provision and allocation to the residential and retail uses, alter the side fence treatment along the western boundary, provide for rooftop pools and outdoor terraces for two dwellings and delete the external shading to the eastern and western façades, amongst a range of other minor design and development changes.

It is submitted that the amended development provides a thoughtful and functional design response that is consistent with the sound planning outcome established by the existing approved development.

## BACKGROUND

By the way of background, the subject site is located to the south-west of the intersection of Burke Road and Victoria Road in Camberwell. It has an overall area of approximately 2,090 square metres and comprises two separate land holdings within the Camberwell Junction Activity Centre (CIAC).



**Figure 1 – Location of the subject site**

The permit was issued at the direction of the Tribunal on 19 July 2021.





# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023.”

The permit allows:

- ~~Construction of a six-storey (including mezzanine level) mixed use development, constructed over three basement levels;~~
- *Reduction in car parking; and*
- *Alteration of access to a Road Zone Category 1.*

*In accordance with the endorsed plans.*

Plans and reports in accordance with Condition 1 of the permit were endorsed on 3 May 2022 and subsequently amended via secondary consent on 8 December 2022.

The approved buildings and works have commenced on-site and hence, the condition of the subject site has changed. It was previously occupied by two buildings; a single storey rendered brick building and a double storey brick building. Figure 2 illustrates the current state of the subject site.



Figure 2 – Aerial photograph of the subject site



# VCAT Directed Plans

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## PROPOSED AMENDMENTS

It is proposed to amend the existing planning permit, including some permit conditions, and accompanying endorsed plans and reports, as described in the documentation supporting this application.

The project architects, Cera Stribley Architects, have prepared an Architectural Design Report, Statement of Changes and revised architectural plans, which provide a detailed explanation of the changes to the approved development and comparison with the approved development. The project traffic engineers, Impact Traffic Engineering Pty Ltd, have also prepared a Traffic Engineering Assessment, which provides a detailed explanation of the principal change to be affected by the proposed amendments; a reduction in the car parking provision associated with the "Food and Drinks Premises" and "Supermarket" uses and associated reallocation of car parking within the basement levels.

In addition to the matters addressed in Cera Stribley's Design Report and Statement of Changes, we are pleased to provide the following summary of the key amendments contemplated by this application:

- Reduction in the car parking provision associated with the "Food and Drinks Premises" and "Supermarket" uses, as described in Table 1 below:

Use	Statutory Requirement	Application	Leasable Floor Area	Required Car Parking Provision	Car Parking Provision	Total Reduction
Food and Drinks Premises	3.5 car parking spaces to each 100 square metres of leasable floor area	Current Endorsed Plans	140 square metres	4 spaces	8 spaces (5 customer and 3 staff)	N/A – surplus of 4 spaces
		Proposed Amendments	169 square metres	5 spaces	2 spaces (staff only)	-3 spaces
Supermarket	5 car parking spaces to each 100 square metres of leasable floor area	Current Endorsed Plans	550 square metres	27 spaces	25 spaces (22 customer and 3 staff)	-2 spaces
		Proposed Amendments	549 square metres	27 spaces	22 spaces (20 customer and 2 staff)	-5 spaces

**Table 1: Details of Proposed Car Parking Reduction**

- Deletion of the "Office" uses on the Ground and Mezzanine Floor levels and provision of two additional three-bedroom apartments in their place.
  - Consequential alterations to the overall car parking provision, allocation and basement layouts, including the waste storage arrangements and deletion of the end-of-trip facilities.
  - Consequential reduction in the extent of the communal space at the Ground and Mezzanine Floor Levels.
  - Consequential reduction in the setback of the Mezzanine Floor Level from Victoria Road by 800mm to align with the ground level setback below.
  - Consequential removal of the planter box along the Victoria Road frontage at the Mezzanine Floor Level.
- Minor reduction in the extent of the "Supermarket" tenancy from 550 square metres to 549 square metres.



# VCAT Directed Plans

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- Increase in the extent of the "Food and Drinks Premises" from 140 square metres to 169 square metres.
- Minor increase in the floor-to-floor height of Level 5 from 3.4 metres to 3.5 metres. Consequential increase in the height of the building to the roof parapet from 21.42 metres to 21.52 metres.
- Provision of rooftop private open space (pools and outdoor terraces with pergolas) for use by residents of apartments 501 and 502.
- Deletion of external shading to the east and west elevations.
- Provision of a 1.8-metre-high palisade fence along the section of the western boundary fence abutting the vehicle accessway.
- Minor adjustments to the alignment of the western façade at Level 5.
- Provision of a new concrete wall on the southern boundary at the Ground Floor Level in a natural grey colour. Minor increase in the height of the wall on boundary by 0.48 metres.
- Alteration to the materiality of the southern wall on boundary from a combination of dark grey oxide coloured concrete and cream coloured brickwork to a combination of natural grey coloured concrete and textured cream coloured concrete.
- Realignment of the "scalloped" edges of the southern boundary wall.
- Minor increase in the size of the planter box along the southern boundary at Level 3 to extend the edge of the planter box to the southern boundary. Consequential increase in the maximum parapet height of the southern wall on boundary by 1.2 metres.
- Minor reconfiguration of the internal apartment layouts, building core and service arrangements throughout the development.

## SUMMARY OF CHANGES TO THE PLANNING PERMIT

In the context of the proposed amendments to the approved development, changes are required to the wording of the permit conditions.

A summary of the changes to the permit is provided below:

- Conditions 1, 6, 18 and 19 amended to reference the amended plans and reports submitted with this amendment application.
- Deletion of Condition 1's sub condition requirements. The condition 1 requirements are captured in the endorsed plans and the plans accompanying this application, except for two of the requirements which are proposed to be deleted:
  - 1axi replace the approved fence with a metal palisade fence along the section of the western boundary fence abutting the vehicle accessway, rather than a masonry fence; and
  - 1xiv removal of external shading from the eastern and western windows of all apartments.

We note that a change is not required to the wording of the permit preamble. The current reference to a car parking reduction in the preamble appears to have been included in error, as the ultimate decision plans for the original application (VCAT Amended Plans dated 15 May 2020) did not include a car parking reduction under Clause 52.06-3 of the Boroondara Planning Scheme ('the Scheme').





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We anticipate that the error occurred as the original application plans (dated November 2019) proposed a car parking reduction for the retail uses (supermarket and food and drinks premises). However, the proposal was subsequently amended as part of the Application for Review to meet the statutory car parking requirements.

Furthermore, a car parking reduction was not sought as part of the recent secondary consent request as the total number of car parking spaces provided for the retail uses (supermarket and food and drinks premises) exceeded the minimum statutory requirements (a total of 31 retail car parking spaces were required and a total of 33 car parking spaces were provided, as described in Table 1).

Hence, planning permission is now required for the proposed dispensation of 8 car parking spaces for the retail uses, pursuant to Clause 52.06-3 of the Scheme.

Enclosed with this application is a copy of the amended permit. The proposed amendments have been undertaken in 'Track Changes' to assist all parties in identifying those aspects of the permit which are proposed to be amended.

## GROUNDINGS AND FACTS RELIED UPON BY THE APPLICANT FOR REVIEW

The following grounds and facts are relied upon in support of the proposed amendments to the planning permit:

- The amended development will continue to facilitate the site's efficient and intensive redevelopment for a mix of uses which will consolidate and enhance the role and function of the Camberwell Junction Activity Centre. The amended development continues to provide a symbiotic combination of valuable employment generating retail floor area and increases in residential densities on a site with ready access to public transport, school, commercial areas, and other community facilities. These elements are consistent with the urban consolidation and activity centre planning policy objectives at Clause 11 of the Boroondara Planning Scheme and the purpose of the Commercial 1 zoning of the land.
- The development remains a genuine mixed-use proposition, as envisaged by the planning scheme's policies. Whilst the office tenancies are proposed to be removed, the activity centre still includes a substantial retail offering. The resulting provision of two additional apartments at the north-western corner of the site at the ground and mezzanine floor levels will provide a sound transition from the more robust retail offering at the site's north-eastern corner to the more sensitive residential context of Victoria Road to the north and west of the subject site.
- The amended proposal continues to deliver an acceptable outcome on-site with respect to car parking, traffic, waste collection, loading and off-site amenity impact considerations, as confirmed in the Traffic Engineering Assessment and Waste Management Plan prepared by Impact Traffic Engineering Pty Ltd. On-site car parking provided for residents and employees reflects an empirical assessment of anticipated demand and is minimised in line with the transport and traffic management objectives for the Camberwell Junction Activity Centre, to reduce traffic congestion and promote use of alternative modes of transport.
- The amended car parking allocation is supported when assessed against the relevant decision guidelines of Clause 52.06-7. Please refer to the Traffic Engineering Assessment enclosed for details of the acceptability of the proposed car parking reduction and allocation from a traffic engineering perspective.
- The development continues to provide bicycle parking in accordance with Clause 52.34, despite the alterations to the commercial and retail land use mix at Ground Floor Level and increase in the overall number of apartments.



# VCAT Directed Plans

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- The new apartments at the ground and mezzanine floor levels will achieve a high level of internal amenity, as will the reconfigured apartment layouts, in accordance with the expectations established by Clause 16 and Clause 58 of the Boroondara Planning Scheme. This is demonstrated by the following observations:
  - The amended proposal comprises five, two-bedroom dwellings, eighteen three-bedroom dwellings and one, four-bedroom dwelling with various configurations and accessible layouts, providing an appropriate level of dwelling diversity, in accordance with Clause 58.02-3.
  - All dwellings are afforded with a northern, eastern, or western aspect where possible to maximise their thermal efficiency, in accordance with Clause 58.03-1.
  - All dwellings are provided with an outward facing balcony and all bedrooms have an external window, providing adequate daylight to apartments and reasonable outlook from dwellings, in accordance with Clause 58.04-1.
  - All habitable room windows will continue to be setback from the building's edges to allow for generous balconies to all frontages which prevents opportunities for internal overlooking. A combination of varying setbacks, planter boxes and balustrading prevent overlooking opportunities from balconies to lower-level balconies. As such, none of the revised apartments will have overlooking opportunities into lower-level dwellings, in accordance with Clause 58.04-2.
  - Noise sources continue to be sited away from noise sensitive rooms, with services largely confined to the basement levels and rooftop, in accordance with Clause 58.04-3.
  - The revised apartment layouts continue to be designed for those with limited mobility, in excess of Clause 58.05-1's standard.
  - All dwellings have private open space in the form of a balcony with direct access from the living room and of a size that far exceeds the recommendations of Clause 58.05-3.
  - All dwellings are provided with internal and total storage volumes that exceed the recommendations of Clause 58.05-4.
  - All dwellings meet the minimum dimensions for bedrooms and living rooms described in Tables D7 and D8 of Clause 58.07-1.
  - All habitable areas include an external window, and no habitable rooms rely on borrowed light, in accordance with Clause 58.07-3.
  - 57% of the amended dwellings are naturally cross ventilated, exceeding the recommendation of Clause 58.07-4.
  - All single aspect habitable rooms are provided with room depths in accordance with Clause 58.07-2, with the exception of the two new apartments fronting Victoria Road at the ground and mezzanine floor levels. These apartments require minor variations to the numerical requirements of the standard, in the order of 1.315 metres for Apartment 001 and 0.495 metres for Apartment M01. These variations are considered appropriate in the context of the new apartments as they will not detract from the useability, functionality or amenity of the dwellings, both of which are afforded with generous open plan living, dining and kitchen areas, with living rooms located closest to the balconies and windows to ensure that optimal daylight outcomes are achieved, in accordance with the objective of Clause 58.07-2.
- In its order dated 23 March 2021 (*Angle Victoria Pty Ltd v Boroondara CC* (2021) VCAT 245), the Tribunal accepted the provision of apartments at the Ground and Mezzanine Floor Levels at the north-western corner of the subject site fronting Victoria Road, subject to resolving the (then) circuitous path of travel to the apartment entrances and level changes. It stated that "*during the second part of the hearing the applicant submitted drawings showing the deletion of these two apartments replaced with*



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office space. We find the circuitous path of travel to the apartment entrances as well as the level changes are not acceptable or desirable and we will require revised plans that either show a level path of entry to apartments or office space". These issues have been resolved in the revised architectural plans accompanying this application through the provision of direct and level lift access to the apartments. Thus, their inclusion in the revised architectural plans is considered appropriate.

- The provision of a 1.8-metre-high palisade fence along the section of the western boundary fence abutting the vehicle accessway in lieu of a masonry fence has arisen from discussions between the owner of the subject land and the adjoining landowner, who would prefer a palisade fence. It is noted that the masonry fence treatment originated at a point in time when the design included an open driveway to Victoria Road, which has subsequently been enclosed with a solid wall along the western edge of the driveway, removing the need for a solid fence treatment on the boundary for acoustic protection. Thus, the revised fence treatment and consequential deletion of Condition 1axi is considered appropriate.
- The deletion of the external shading from the eastern and western facades is considered appropriate as the energy performance of the amended development will continue to achieve a compliant outcome having regard to the relevant provisions of the Boroondara Planning Scheme. The amended development continues to achieve a 5-Star Green Star equivalent sustainable design under Green Star Design & As Built v1.3 and the apartments will not exceed the maximum NatHERS annual cooling load of 21 MJ/m<sup>2</sup>, in accordance with the energy efficiency objectives of Clause 58.03-1, as detailed in the revised Sustainable Management Plan prepared by Integrated Group Services. Each level of the development is also designed with carefully sited "swoops" that extend over a portion of the balconies on the levels below, providing shading to the windows of the apartments below and enhancing their thermal comfort. As cited in the *Autron Property Pty Ltd v Stonnington CC* (2017) VCAT 1352 decision, "the planning scheme does not require an ideal outcome as pre-requisite to a permit... the Tribunal is entitled to grant a permit where it is satisfied that the permit will result in a reasonably acceptable outcome having regard to the matters relevant to its decision under the planning scheme". Having regard to the considerations noted above, it is considered that the proposal achieves an acceptable outcome with regards to environmentally sustainable design and the removal of the external shading is justified and acceptable in this instance.
- In relation to the minor increase in the overall building height afforded by the increase in the floor-to-floor height of Level 5 and the introduction of the proposed roof-top private open spaces, it is considered:
  - The additional roof-top private open space is appropriate as it will optimise the use of the rooftop to enhance the internal amenity of apartments 501 and 501.
  - The additional 100mm building height and the roof-top private open spaces will not result in any adverse off-site amenity impacts on neighbouring properties, particularly those of a lower scale to the west and north, due to the generous setbacks provided from the western boundary and the significant physical separation of the site from neighbouring properties to the north by Victoria Road. Rather, the roof-top private open spaces have been limited in extent and carefully sited to be recessive, avoid additional overshadowing of the residential properties to the west and the eastern footpath of Burke Road before 2pm, to preserve the amenity of both neighbouring properties and the public realm. The primary impact of any additional overshadowing cast over the secluded private open spaces of the adjoining properties to the west as a result of the additional 100mm in height is negligible, and limited to between 9am and 10am only. Accordingly additional off-site amenity impacts are limited and within acceptable limits having regard to the physical and strategic context of the subject land.



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- The height differential between the approved and proposed development (100mm) will be completely imperceptible from the broader public realm. The exceptional architectural quality of the building also ensures the additional height cannot be said to have any adverse visual impacts.
- There are no planning controls within the Boroondara Planning Scheme that limit the building height on the site.
- Such a nominal increase in height does not conflict with any of the considerations which lead the Tribunal to grant a permit in the first instance.
- The architectural and urban design integrity of the approved development is sought to be retained.
- There is no applicable Planning Scheme control or policy impediment to the proposed amendments.

Having regard to the above, it is submitted that the amended development proposal is appropriate and continues to provide for a sound planning outcome on the subject site.

## CONCLUSION

We confirm that a copy of this application has been forwarded to the City of Boroondara, to assist officers with responding to the Tribunal's practice note requirements.

We trust that the above and enclosed information is of assistance to the Tribunal and other parties in understanding the proposed amendments to the development approved by Planning Permit No. PP19/0843.

We now look forward to the receipt of advice from the Tribunal regarding the future conduct of these proceedings.

Yours sincerely



### Genevieve Kour

Senior Planner  
gkour@upco.com.au  
encl.

cc: CW Victoria Hill Development Pty Ltd  
Level 6, 189 Flinders Lane  
MELBOURNE VIC 3000



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VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL

PLANNING AND ENVIRONMENT LIST

VCAT REFERENCE NO. P281/2023

PERMIT NO.PP19/0843

**APPLICANT** CW Victoria Hill Development Pty Ltd

**RESPONSIBLE AUTHORITY** Boroondara City Council

**REFERRAL AUTHORITY** The Head, Transport for Victoria\*

**SUBJECT LAND** 979-981 Burke Road  
CAMBERWELL VIC 3124

**DATE OF ORDER** 16 March 2023

## ORDER

### Hearings

- 1 This application is listed for a compulsory conference and a hearing as detailed below.

The in-person fixture(s) will be conducted at 55 King Street Melbourne. Details will be published in the law list late on the afternoon of the day prior to the hearing.

If there is any change to these details, the Tribunal will notify you.

<b>Compulsory Conference:</b>	
Date and time	18 May 2023 10.00 am – 1.00 pm
Conduct	Online Platform

<b>Hearing:</b>	
Date and time	7, 8 & 9 August 2023 10.00 am – 4.30 pm
Conduct	In Person

The details of the online platform will be provided to the parties before the relevant fixture.

### What the applicant must do

- 2 By **22 March 2023** the applicant must give the following documents to the responsible authority:
  - a copy of the application and all attachments; and



# VCAT Directed Plans

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- any other material given to the Tribunal; and
- a copy of this order

- 3 By **4 April 2023** the applicant must give notice of the application in accordance with the directions set out in Appendix A and the information received from the responsible authority in response to Order 5.
- 4 By **26 April 2023** the applicant must give to the Tribunal:
  - a completed statement of notice; and
  - a list of names and addresses of all persons and authorities who were notified; and
  - a sample of the letter sent with the documents; and
  - all other information required by the statement of notice.

If a statement of notice is not given to the Tribunal by **26 April 2023**, this application may be struck out. No reminder will be sent.

## What the responsible authority must do

- 5 By **29 March 2023**, the responsible authority must give the following to the applicant and the Tribunal:
  - the names and addresses of all relevant referral authorities;
  - the names and addresses of all persons it considers may have a material interest in the outcome of this application to amend a permit who should be given notice of the application; and
  - details of any other form of notice which should be given (such as the display of a sign on the land and/or publication of notice in the newspaper).
- 6 By **4 April 2023** the responsible authority must make available for inspection at its main office and display on its website a complete copy of the application and all attachments.
- 7 By **3 April 2023** the responsible authority must give the information required by the Tribunal's Practice Notice **PNPE2 – Information from Decision Makers (PNPE2)** to the Tribunal, unless this material has already been given in another related proceeding. The responsible authority must give a copy of the completed table of PNPE2 to the applicant. The attachments do not need to be given to the applicant.

## Statement of grounds

- 8 If you want to become a party and take part in this proceeding, you must complete a Statement of Grounds online at [www.vcat.vic.gov.au/respondplanning](http://www.vcat.vic.gov.au/respondplanning) and give a copy to the responsible authority and the applicant by **24 April 2023**.





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(Note: you must also pay a fee. Information regarding fees is available at [www.vcat.vic.gov.au/fees](http://www.vcat.vic.gov.au/fees). A fee does not apply to referral authorities.)

## What all parties must do

- 9 No later than **5 business days** before the hearing, the parties must provide an electronic copy of their submissions and associated material (such as supporting documentation, case law and photographs) to the Tribunal and all parties. The copy for the Tribunal must be sent to [admin@vcat.vic.gov.au](mailto:admin@vcat.vic.gov.au)
- 10 All expert evidence must be filed and served in accordance with the Tribunal's Practice Note PNVCAT2 Expert Evidence.

## Compulsory conference

- 11 All parties must attend the compulsory conference either in person or by a representative who has permission to settle the proceeding on their behalf.  
(Note: See more information in Appendix B of this order).
- 12 No later than **10 business days** before the compulsory conference the applicant must give all parties a copy of any amended plans it wants to discuss or rely upon at the compulsory conference.
- 13 No later than **5 business days** before the compulsory conference the responsible authority must give the Tribunal and all parties a copy of draft permit conditions that may be discussed at the compulsory conference. A copy of the conditions must be brought to the compulsory conference in electronic Word format.
- 14 Any document to be relied on for the compulsory conference that is provided to the Tribunal must be clearly marked "**For Compulsory Conference**".

## Requests for procedural orders

- 15 Any request for procedural orders from the Tribunal must be made in writing and a copy must be given to all parties.

## Tribunal Book

- 16 No later than **5 business days** before the hearing, the applicant must provide an electronic copy of a Tribunal Book to the Tribunal and all parties. The copy for the Tribunal must be sent to [admin@vcat.vic.gov.au](mailto:admin@vcat.vic.gov.au)  
Information on the content and format requirements of the Tribunal Book is available at [www.vcat.vic.gov.au](http://www.vcat.vic.gov.au)

Rachel Naylor  
Senior Member





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## HELP AND SUPPORT

Information for all parties is available at the Tribunal's website  
[www.vcat.vic.gov.au](http://www.vcat.vic.gov.au)

For information about what happens after you make your application, visit  
[www.vcat.vic.gov.au/afterapplyplanning](http://www.vcat.vic.gov.au/afterapplyplanning)

For information about responding to an application visit  
[www.vcat.vic.gov.au/respondplanning](http://www.vcat.vic.gov.au/respondplanning)

If you are not able to access the website, contact the Tribunal on 1300 01 8228  
Monday to Friday 9.00am to 4.30pm to request a paper copy.

To find out about the Tribunal's support services such as interpreters, disability  
support and security, visit [www.vcat.vic.gov.au/support](http://www.vcat.vic.gov.au/support)

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## APPENDIX A

### HOW MUST THE APPLICANT GIVE NOTICE OF THIS APPLICATION?

This order requires the applicant to give notice of the application. Notice must be given to the following persons:

- the owner and occupier of the subject land,
- any persons who may have a material interest in the outcome of the application who are named in the application,
- any additional persons identified by the responsible authority in response to Order 5,
- all relevant referral authorities.

The notice must comprise the following

- a copy of the application (the attachments do not need to be given),
- a copy of this order,
- a description of the proposed changes to the permit, including details of the changes from the previous plans,
- a letter that must:
  - explain that an application to amend a permit has been made to the Tribunal,
  - advise that a complete copy of the application, including amended plans, can be inspected at the main office of the responsible authority and on the responsible authority's website
  - advise that a copy of the amended plans and/or other attachments can be obtained by request from the applicant
  - specify the date in Order 8 as the date by which any Statement of Grounds form must be given to the Tribunal, to the responsible authority and to the applicant,
  - advise that they must provide a completed Statement of Grounds form in order to take part in the proceeding,
  - specify the date and time scheduled for the hearing
  - if applicable, include a statement identifying those matters within the application for which there is no right of review under section 82 of the *Planning and Environment Act 1987*.
- If the responsible authority has advised that a sign must be displayed on the land, this must be done by the date specified in Order 3. You must use the sign provided by the Tribunal and it must be completed to include all the required information. You must maintain the sign in good order and condition for not less than 14 days from the day it is put up on the land.
- If the responsible authority has advised that notice of the application must be published in a newspaper, this must be done within 7 days of the date specified in Order 3.

The sign displayed on the land and the notice published in the newspaper must:

- Explain that if a person wants take part in this proceeding, they must complete a Statement of Grounds form (available at [www.vcat.vic.gov.au/respondplanning](http://www.vcat.vic.gov.au/respondplanning)) and specify that the completed Statement of Grounds form must be given to the Tribunal, to the responsible authority and to the applicant by the date specified in Order 8.
- Specify the date and time of the hearing as specified in Order 1.
- If applicable, set out those matters within the permit application for which there is no right of review under section 82 of the *Planning and Environment Act 1987*.

### Dispute about notice

If the applicant disagrees with the responsible authority about the extent of notice to be given, or the responsible authority fails to give the information by the date specified in Order 5, the applicant may request an urgent practice day hearing to resolve the dispute.



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## APPENDIX B

### COMPULSORY CONFERENCE INFORMATION SHEET

#### What is a compulsory conference?

A compulsory conference is a private meeting between the parties to the proceeding.

With the assistance of a Tribunal member the parties can explore options to reach an agreement on all or some of the matters in dispute. The parties should come with an open mind and flexibility in considering options that could resolve the case.

Unless all parties agree, evidence of anything said or done in the course of a compulsory conference (including any document provided to the Tribunal for the purpose of the compulsory conference) is not admissible in any hearing before the Tribunal in the proceeding.

More information about compulsory conferences is available on the Tribunal's website at [www.vcat.vic.gov.au](http://www.vcat.vic.gov.au) and in **VCAT Practice Note PNVCAT4 – Alternative Dispute Resolution (ADR)**.

#### Requirement to attend compulsory conference

If you are a party, you **must** attend the compulsory conference in person or by a representative who has written permission to settle the proceeding on your behalf. If you do not attend, the matter may be resolved in your absence and you may be struck out as a party. If all the parties present at the compulsory conference agree, the Tribunal may make a final order or make other orders that may affect you in an adverse way.

The Tribunal may make any of the following orders under the *Victorian Civil and Administrative Tribunal Act 1998*:

- If you are the applicant, your application may be dismissed or struck out.
- If you are not the applicant, you may be struck out as a party. This means that you can take no further part in the proceeding, including the hearing.
- The matter may also be settled, approving the proposal with or without changes.
- You may be ordered to pay the costs of the other parties in certain circumstances.

#### Who may attend a compulsory conference?

Only parties to the proceeding may attend a compulsory conference.

A person is a 'party' to the proceeding if the person:

- lodged an objection to the planning application
- has given a completed Statement of Grounds form to the Tribunal by the due date and paid the fee
- has indicated in their Statement of Grounds form that they intend to participate in the hearing

The following persons are NOT a party to a proceeding:

- a person who did not lodge an objection to the permit application
- a person who did not give their Statement of Grounds form by the due date and/or did not pay the fee



# VCAT Directed Plans

- a person who has indicated on their Statement of Grounds that they do not intend to participate in the hearing with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023.

If you are not a party to the proceeding but wish to be heard, you can attend at the start of the compulsory conference and ask the Tribunal to join you as a party to the proceeding. You will need to explain why you should be joined as a party to the proceeding. Other parties will also be given the opportunity to tell the Tribunal whether they agree or disagree about you being joined as a party. The Tribunal will then make a decision to join you as a party or not.

If you are not joined as party, you cannot take any further part in the compulsory conference and the Tribunal may make a final order or make other orders that may affect you in an adverse way.

A party who is struck out because they do not attend a compulsory conference cannot participate in any further compulsory conference or hearing.

## **What happens if agreement is reached at the compulsory conference?**

If the parties present at a compulsory conference reach agreement, the Tribunal may make a final order to give effect to the agreement without a hearing being required. This can include allowing the proposal with or without changes.

## **What happens if agreement is not reached at the compulsory conference?**

If parties present at the compulsory conference do not reach an agreement, a hearing date/s will be confirmed. An order will be issued by the Tribunal.

## **What happens if a partial agreement is reached at the compulsory conference?**

If the parties reach agreement about some issues but not others, the hearing will proceed. If the parties present agree, the Tribunal may make an order that limits the issues to be considered at the hearing or specifies issues that will not be able to be considered. The Tribunal may also make further orders that restrict the ability of parties to raise any matters that were resolved at the compulsory conference.

## **What should you bring to the compulsory conference?**

Parties should be come to the compulsory conference with a summary of their issues and solutions. This could include possible changes that could be made to the proposal in order to address your concerns or the concerns of other parties. The attached 'Summary of Issues and Solutions for a Compulsory Conference' may be used. The applicant for the permit should bring an extra copy of any relevant plans including elevations.



# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."

VCAT | victorian civil & administrative tribunal

## PLANNING AND ENVIRONMENT LIST SUMMARY OF ISSUES AND SOLUTIONS FOR A COMPULSORY CONFERENCE

<b>VCAT reference number</b>	P281/2023
<b>Applicant</b>	CW Victoria Hill Development Pty Ltd
<b>Responsible authority</b>	Boroondara City Council
<b>Your name</b>	

It is suggested that each party identify key issues and potential solutions before the compulsory conference. This will help to clarify the key issues that the parties consider most important to them and possible solutions.

***Most important issues in dispute from your perspective (including any legal matters)*** Use additional pages if required

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***What potential solutions would you consider?*** Use additional pages if required

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**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_



# VCAT Directed Plans

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## PLANNING AND ENVIRONMENT LIST

### STATEMENT OF NOTICE

To be completed by or for the Applicant

Subject Land	979-981 Burke Road CAMBERWELL VIC 3124	VCAT Ref: P281/2023
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I, .....(Print full name)  
of .....(Print name of firm, if relevant)  
.....(Print address)  
.....

**STATE** to the Victorian Civil and Administrative Tribunal (VCAT) that:

- On ..... (**date of service**) I served on the responsible authority a hard copy and a copy in electronic PDF form of the application and all attachments and other material filed with the Tribunal and a copy of the initiating order.
- (**Only complete if applicable**) I caused Notice of the Application to VCAT to be given by publishing the notice in the following newspapers.

Name of Newspaper	Date of Publication

I attach clippings of the notices published.

- (**Only complete if applicable**) On ..... (**date of erection**) I caused Notice of the Application to VCAT to be given by erecting a sign on the subject land.

Such notice was maintained in good condition on the land for not less than 14 days until it was removed on ..... (**date of removal**)

I erected the following number of signs in the following locations:

Number of signs erected (total)	
Location of signs erected: Specify each street frontage or other location	

I attach the following document (**tick as applicable**)

- ☐ Original sign erected on the land  
☐ True copy of the completed sign erected on the land



# VCAT Directed Plans

4. On ..... (date of service) served the following documents on each of the persons specified below by post/ by email/ in person\* (delete whichever does not apply)
- Documents served:**
- a copy of the application (excluding attachments) and any other relevant documents required to be served by VCAT's initiating order;
  - a copy of the VCAT initiating order;
- Persons served: (tick as appropriate)**

- ☐ any referral authorities
- ☐ those persons set out in the attached list I obtained from the relevant municipal council or other responsible authority
- ☐ any person directed by the Tribunal
- ☐ any other person or authority

I attach copies of the following documents.

**Documents attached: (tick as appropriate)**

- ☐ list of names and addresses of all persons or authorities served
- ☐ copy of sample cover letter sent with documents served

## ALTERNATIVELY

5. There are no objectors or referral authorities to serve because:
- ☐ The responsible authority did not require notice to be given to anyone
- ☐ The application is exempt from third party notice and review rights

I understand that knowingly giving false or misleading information to VCAT may result in imprisonment or fine (section 136 of the *Victorian Civil and Administrative Tribunal Act 1998*).

Signature ..... Date.....





# VCAT Directed Plans

## PLANNING PERMIT

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."



Permit Number: PP19/0843

Planning Scheme: Boroondara Planning Scheme

Responsible Authority: City of Boroondara

ADDRESS OF THE LAND: 979-981 Burke Road, Camberwell

### THE PERMIT ALLOWS:

- Construction of a six-storey (including mezzanine level) mixed use development, constructed over three basement levels;
- Reduction in car parking; and
- Alteration of access to a Road Zone Category 1.

In accordance with the endorsed plans.

***This permit was issued by Order of the Victorian Civil and Administrative Tribunal dated pursuant to Section 85(1)(b) of the Planning and Environment Act 1987 – Application For Review No.P126/2020.***

### THE FOLLOWING CONDITIONS APPLY TO THIS PERMIT:

#### Amended plans required

1. Before the development starts, amended plans to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority. The plans must be drawn to scale with dimensions and an electronic copy provided (unlocked PDF). When the plans are endorsed they will then form part of the permit. The plans must be substantially in accordance with the 'VCAT plans', prepared by Cera Stribley Architects, dated 15 May 2020, but modified to show:

#### General

- a. All changes as depicted in the plans by Cera Stribley Architects Revision I, dated 30 April 2021, except:
  - i. The 'void over' annotation in the south west corner of apartment 106 deleted;
  - ii. Balustrading or a screening device adjacent to the southern most bedroom of apartment 107 to ensure the window of that bedroom would comply with Standard B22 of clause 55.04-6 in relation to any possible overlooking to the south;
  - iii. Balustrading or a screening device adjacent to the full length of the southern edge of the terrace for apartment 207 extending to a height of 1.7 metres and to be no more than 25% transparent;
  - iv. The planter area of the terrace to apartment 107 be annotated as non-trafficable and include a physical barrier such as a planter wall or similar of a

Date Issued: 19 July 2021

A handwritten signature in black ink, appearing to read "Stephanie Ng".

Signature for the Responsible Authority: \_\_\_\_\_

Stephanie Ng  
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PLANNING**

height of at least 500mm at the interface between the planter area and terrace to restrict pedestrian movement over the planter area;

- v. Deletion of the notation box referring to the extent of built form on previous versions of the plans before VCAT;
- vi. Screening of all habitable room windows, balconies and terraces to comply with Standard B22 of Clause 55.04-6 (Overlooking) of the Boroondara Planning Scheme including provision of enlarged detail (including sections where appropriate) of all privacy screens/balustrades, demonstrating that they are fixed and not more than 25% transparent;
- vii. Enlarged detail of the external finish of all services cupboards, demonstrating that a high quality finish is achieved that is integrated with the balance of the development;
- viii. The Finishes Schedule amended to provide further details, including the type (brand/specifications), finish, profile, colour and size-format of all metal, cladding and brick finishes;
- ix. The provision of a sample board of the schedule of external materials and finishes;
- x. The ceiling/soffit above the vehicle accessway finished with an acoustically absorptive cladding, having a Noise Reduction Coefficient of 0.8 or higher;
- xi. Masonry boundary fence treatment for the section of western boundary fence abutting the vehicle accessway
- xii. Any changes arising from the Environmentally Sustainable Design report required by Condition 18 of this permit;
- xiii. Either an annotation and/or a section indicating that pier and beam construction will be implemented for any works adjacent to the Tree Protection Zones of the street trees along the Victoria Road frontage;
- xiv. Details of and the inclusion of automated shading to the eastern and western windows of all apartments;

## Landscaping

- xv. Trees TR\_G01 and TR\_G08 planted at natural ground level, with any changes necessary to avoid obstruction of root access to the ground outside the site and into the deep planting zones above the basement;
- xvi. Any changes arising from the Landscape Plan required by Condition 6 of this permit;

## Car parking and accessways:

- xvii. All site services within the proposed crossover to be accurately shown on the ground and basement plans;
- xviii. A notation that all obstructions within the pedestrian sightlines (landscaping, ramp walls, planter boxes etc.) must be kept to a maximum of 900mm or made to be 50% permeable;
- xix. A notation that dwellings will be allocated resident car spaces in accordance with the requirements of Clause 52.06.

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### Layout and uses not to be altered

- 2 The layout of the site and the size, levels, design and location of buildings and works and the description of the use(s) on the endorsed plans must not be modified without the prior written consent of the Responsible Authority.

This does not apply if a planning permit is not required for any such modifications.

### Ongoing involvement of architect

- 3 Cera Stribley Pty Ltd must be retained to provide architectural oversight of the delivery of the detailed design, as shown in the endorsed plans and endorsed schedule of materials and finishes, unless with the prior written approval of and to the satisfaction of the Responsible Authority.

### Condition required by the Head, Transport for Victoria

- 4 Prior to the occupation of the development hereby permitted, all disused or redundant vehicle crossings must be removed, and the area reinstated to the satisfaction of the Responsible Authority and at no cost to the Head, Transport for Victoria or the responsible authority.
- 5 Prior to the occupation of the development hereby permitted, the access crossover and associated works must be provided and available for use.

### Landscape plan

- 6 Concurrent with the endorsement of plans under condition 1, a revised landscape plan to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority. The plan must be drawn to scale with dimensions and an electronic copy provided (unlocked PDF). When endorsed, the plan will form part of the permit. The landscape plan must be generally in accordance with the Landscape Plan prepared by Eckersley Garden Architecture dated 15 May 2020 except that the plan must show:
- (a) Any changes as depicted on the plans by Eckersley Garden Architecture dated 30 April 2021; and
  - (b) Any changes required by Condition 1 of this permit;
  - (c) Details of the surface finish of all pathways, paved areas and access ways;
  - (d) A planting schedule of all proposed trees, shrubs and ground covers including botanical names, common names, pot sizes, sizes at maturity and the quantities of each plant;

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- (e) Details of the planter boxes, including dimensions, soil depth, materials, drainage, and the use of anchoring systems for trees planted in narrow planters;
- (f) Trees TR\_G01 and TR\_G08 planted at natural ground level, with root access to the ground outside the site and into the deep planting zones above the basement;
- (g) Detail of growing media, specified by an appropriately qualified soil scientist, including appropriate media for the areas within the deep planting zones above the basement and underneath the vehicle access ramp. This must detail that the soil mixture proposed will be suitable for the ongoing viability of the plants proposed;
- (h) Details of the irrigation system for all planter boxes, designed by an appropriately qualified irrigation professional in collaboration with the soil scientist specifying growing media, incorporating the use of moisture sensors, and using rainwater harvested and stored on site with mains back-up;
- (i) Substitution of the Pin Oak nominated along the western boundary with an evergreen tree capable of growing to a similar height and spread, of a species suitable for planting in close proximity to underground footings and infrastructure
- (j) Provision of additional trees along the western boundary to provide screening to adjoining properties to the west where made possible by 2 metre wide deep planting zone; and
- (k) Landscaping required by any other condition of this permit.

## Completion of landscaping works

- 7 Landscaping as shown on the endorsed landscape plan/s must be carried out and completed to the satisfaction of the Responsible Authority prior to the occupation of the development.
- 8 Any soil/media intended to be utilised for any landscaping area must be certified by the soil scientist employed under condition 6(g) before it is installed. A report by the soil scientist to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority prior to installation of any soil or landscaping works.

## Landscape Management Plan

- 9 Before the occupation of the development, a Landscape Management Plan must be submitted to and approved by the Responsible Authority. The Landscape Management Plan must:
  - (a) Detail the management and maintenance of the irrigation system, including the service of the irrigation system on at least an annual basis, and the replacement of components of the system as required;

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- (b) Detail the long-term management and maintenance of all landscaping works shown on the endorsed landscape plan/s, including details of proposed maintenance arrangements in respect of planting within private dwellings, and the replacement of any dead, diseased or damaged plants;
- (c) Provide for the certification of growing media at the time of its delivery to the site, by the soil scientist involved in the preparation of the Landscape Plan under condition 1(g).

Once approved, the Landscape Management Plan must be implemented to the satisfaction of the Responsible Authority.

## Street Tree Zone Fencing

- 10 Prior to the commencement of the development hereby permitted, a Tree Protection Zone (TPZ) must be established and maintained during and until completion of all buildings and works including landscaping, around the following trees in accordance with the distances and measures specified below, to the satisfaction of the Responsible Authority:
- (a) Tree protection zone distances:
    - i Tree 1 – 2.7 metre radius from the centre of the tree base.
    - ii Tree 2 – 2.0 metre radius from the centre of the tree base.
    - iii Tree 3 – 2.0 metre radius from the centre of the tree base.
    - iv Tree 4 – 2.0 metre radius from the centre of the tree base.
    - v Tree 5 – 2.0 metre radius from the centre of the tree base.
    - vi Tree 6 – 2.0 metre radius from the centre of the tree base.
    - vii Tree 7 – 2.0 metre radius from the centre of the tree base.
  - (b) Tree protection zone measures are to be established in accordance to Australian Standard 4970-2009 and including the following:
    - i Erection of solid chain mesh or similar type fencing at a minimum height of 1.8 metres held in place with concrete feet.
    - ii Signage placed around the outer edge of perimeter fencing identifying the area as a TPZ. The signage should be visible from within the development, with the lettering complying with AS 1319.
    - iii Mulch across the surface of the TPZ to a depth of 100mm and undertake supplementary watering in summer months as required.
    - iv No excavation, constructions works or activities, grade changes, surface treatments or storage of materials of any kind are permitted within the TPZ

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unless otherwise approved within this permit or further approved in writing by the Responsible Authority.

- v All supports, and bracing should be outside the TPZ and any excavation for supports or bracing should avoid damaging roots where possible.
- vi No trenching is allowed within the TPZ for the installation of utility services unless tree sensitive installation methods such as boring have been approved by the Responsible Authority.
- vii TPZ fencing must not block off a footpath or roadway. The TPZ fencing location can be modified to ensure the tree(s) is protected, however must not obstruct, roads, footpaths or access ways.

## Specific Street Tree Protection Methods

- 11 During the construction of any buildings or works, the following tree protection requirements must be carried out to the satisfaction of the responsible Authority:
- (a) All buildings and works associated with the subject site (as shown on the endorsed plans) must not alter the existing ground level or topography of the land within the TPZs of Trees 1 - 7.
  - (b) For Trees 1 - 7, no roots are to be cut or damaged during any part of the construction process.
  - (c) The builder / site manager must ensure that the TPZ Fencing Conditions for trees 1 - 7 are being adhered to throughout the entire building process, including site demolition, levelling and landscape works.

## Drainage

- 12 The site must be drained to the satisfaction of the Responsible Authority.

## Driveways and car parking areas

- 13 Prior to the occupation of the development hereby permitted, area/s set aside for car parking, access lanes and driveways shown on the endorsed plans must be:
- (a) Constructed;
  - (b) Formed to such levels and properly drained so that they can be used in accordance with the endorsed plans;
  - (c) Surfaced with an all-weather seal coat or as otherwise required by other Conditions within this Permit; and
  - (d) Drained;
- to the satisfaction of the Responsible Authority.

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- 14 Prior to the occupation of the development hereby permitted, a Car Parking and Loading Management Plan must be submitted to and approved by the responsible authority. The plan must provide for:

- (a) Allocation of car spaces in respect of each use;
- (b) Car park access control measures;
- (c) Management of the loading area to address potential vehicle and pedestrian conflicts.

Once approved, the Car Parking and Loading Management Plan must be implemented to the satisfaction of the Responsible Authority.

### Vehicle crossovers

- 15 Any new vehicle crossover or modification to an existing vehicle crossover must be constructed to the satisfaction of the Responsible Authority.

### Removal of redundant vehicle crossovers

- 16 All disused or redundant vehicle crossovers must be removed and the area reinstated with footpath, nature-strip, kerb and channel to the satisfaction of the Responsible Authority.

### Concealment of pipes

- 17 All pipes (except down-pipes), fixtures, fittings and vents servicing any building on the site must be concealed in service ducts or otherwise hidden from external view, to the satisfaction of the Responsible Authority.

### Environmentally Sustainable Design Report

- 18 Concurrent with the submission of any plans pursuant to Condition 1, an Environmentally Sustainable Design (ESD) Report that is to the satisfaction of the Responsible Authority must be prepared by a suitably qualified expert and submitted to the Responsible Authority for approval. The report must be generally in accordance with the Sustainable Management Plan prepared by Sustainable Development Consultants dated June 2020 and incorporate and assess any amendments included as a result of all amendments required by condition 1. Once approved, such a plan must be implemented prior to the occupation of the dwellings to the satisfaction of the Responsible Authority.

### Waste Management Plan

- 19 Concurrent with the submission of any plans pursuant to Condition 1, a Waste Management Plan to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority. The plan must be generally in accordance

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with the Waste Management Plan prepared by Impact Traffic dated 26 September 2019. Once approved, the plan must be implemented to the satisfaction of the Responsible Authority.

## Loading and unloading

- 20 All loading and unloading associated with the commercial uses on the land must take place only on-site.
- 21 No deliveries of goods associated with the commercial uses on the site may take place on the site before 7am or after 10pm on Monday to Saturday or before 9am and after 10pm on a Sunday and any public holiday.

## Noise and amenity

- 22 Noise emitted from the commercial premises must comply with the State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N1, to the satisfaction of the Responsible Authority.

## Construction Management Plan

- 23 Prior to the commencement of the development hereby permitted, a Construction Management Plan must be submitted to and endorsed by the Responsible Authority. No works are permitted to occur until the Plan has been endorsed by the Responsible Authority. Once endorsed, the construction management plan will form part of the permit and must be implemented to the satisfaction of the Responsible Authority. The plan must be prepared in accordance with Council's Construction Management Plan Template and provide details of the following:
  - (a) Hours for construction activity in accordance with any other condition of this permit;
  - (b) Measures to ensure construction workers, including contractors, are aware of and observe the requirements of the approved Tree Management Plan required by this Permit;
  - (c) Measures to control noise, dust, water and sediment laden runoff;
  - (d) Measures relating to removal of hazardous or dangerous material from the site, where applicable;
  - (e) A plan showing the location of parking areas for construction and sub-contractors' vehicles on and surrounding the site, to ensure that vehicles associated with construction activity cause minimum disruption to surrounding premises. Any basement car park on the land must be made available for use by sub-constructors/tradespersons upon completion of such areas, without delay;
  - (f) A Traffic Management Plan showing truck routes to and from the site;

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- (g) Swept path analysis demonstrating the ability for trucks to enter and exit the site in a safe manner for the largest anticipated truck associated with the construction;
- (h) A plan showing the location and design of a vehicle wash-down bay for construction vehicles on the site;
- (i) Measures to ensure that sub-contractors/tradespersons operating on the site are aware of the contents of the construction management plan;
- (j) Contact details of key construction site staff;
- (k) A site plan showing the location of any site sheds, on-site amenities, building waste storage and the like, noting that Council does not support site sheds on Council road reserves; and
- (l) Any other relevant matters, including VicRoads' requirements.

## Hours for Construction Work

- 24 All construction activity associated with the approved development is to be limited to the following hours, unless with the prior written consent of the Responsible Authority:

Monday to Thursday:	7:00am to 6:30pm;
Friday:	7:00am to 5:00pm;
Saturday:	9:00am to 5:00pm;
Sunday & Public Holidays:	No construction.

## Permit Expiry

- 25 This Permit will expire if:

- (a) The development does not start within two (2) years of the issue date of this Permit; or
- (b) The development is not completed within four (4) years of the issue date of this Permit.

The Responsible Authority may extend the times referred to if a request is made in writing before the permit expires or:

- i Within six (6) months afterwards if the use or the development has not commenced; or
- ii Within twelve (12) months afterwards if the development has not been completed.

## Notes

- *Headings are for ease of reference only and do not affect the interpretation of permit conditions.*

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- This is not a Building Permit. A Building Permit may be required prior to the commencement of any works associated with the proposed development.

### **Parking permits note**

- Pursuant to Council's Residential Parking Permit Policy (2011), the owners and occupiers of dwellings approved in this development will not be eligible to obtain resident or visitor parking permits. The Residential Parking Permit Policy is available to download at [http://www.boroondara.vic.gov.au/your\\_council/local-laws-policies/traffic](http://www.boroondara.vic.gov.au/your_council/local-laws-policies/traffic) . Alternatively please contact Council on 9278 4444.
- Prior to the commencement of any works on the site, the owner/developer must submit drainage plans for assessment and approval by the Responsible Authority (Asset Management).
- Stormwater drains are to be connected to a legal point of discharge approved by Council. Drainage Connections within a road reserve, right-of-way, parkland, within an easement or to a Health Act drain must be to Council's standards. A Council Supervision Permit is required for this work. All fees and charges associated with the connection are to be borne by the applicant.
- The Tree Protection Local Law requires that a Local Law Tree Permit be sought from Council for the removal and/or lopping of a 'Significant Tree' and/or excavation within the critical root zone of a Significant Tree. A list of Significant Trees is available at <http://www.boroondara.vic.gov.au/our-city/trees/significant-trees>. A Local Law Tree Permit is also required to remove, damage kill or destroy any identified 'Canopy Tree' which may include any excavation within the tree protection zone of a 'canopy tree'. The Tree Protection Local Law identifies a 'Canopy tree' as any tree with a single trunk circumference of 110cm or a combined circumference of a multi stemmed tree of 110cm or greater measured at 1.5m above ground level. A Planning Permit does not constitute a Local Law Tree Permit or permission to remove, damage kill or destroy a significant or canopy tree. The Tree Protection Local Law is available to download at <http://www.boroondara.vic.gov.au/our-city/trees/tree-works-permits> alternatively please contact Council's Arborist – Statutory Planning (telephone 9278 4888) should a Local Law Tree Permit be required.
- An Asset Protection Permit is required prior to the commencement of site works in accordance with Council's Protection of Council Assets and Control of Building Sites Local Law 2011.
- Prior consent from Council and any and all public authorities is required to be obtained for alteration or reinstatement of assets or services affected as a result of the development.

**Date Issued: 19 July 2021**

**Signature for the Responsible Authority:** \_\_\_\_\_



Stephanie Ng  
**ACTING CO-ORDINATOR – STATUTORY  
 PLANNING**

Planning Permit No.: PP19/0845

Address of the Land: 979-981 Burke Road, Camberwell

# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."



- *The full cost of reinstatement of any Council assets damaged as a result of demolition, building or construction works, must be met by the permit applicant or any other person responsible for such damage, to the satisfaction of the Responsible Authority.*
- *Discharge to the legal point of discharge will be allowed subject to the flow being limited to a rate equivalent to pre-development levels or less. Any additional discharge and / or runoff above the pre-development level is to be detained on site, via an approved storm water detention system. This matter should be discussed with Council's Asset Management Department.*
- *Residents of the development approved by this permit will not be issued resident parking permits (including visitor parking permits).*
- *Should the land cease to be used for student accommodation a new planning permit may be required for an alternative use. It should be noted that any dispensation for on-site car parking given to the student accommodation development may not be transferable to any proposed alternative use of the land. Any subsequent use will be assessed in accordance with the car parking provisions of the Boroondara Planning Scheme.*

Date Issued: 19 July 2021

Signature for the Responsible Authority: \_\_\_\_\_

A handwritten signature in black ink, appearing to read "Stephanie Ng".

Stephanie Ng  
ACTING CO-ORDINATOR – STATUTORY  
PLANNING

# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023 "

## VCAT ISSUED PERMIT

### IMPORTANT INFORMATION ABOUT THIS PERMIT (see over)

#### WHAT HAS BEEN DECIDED?

The responsible authority has issued a permit at the direction of the Victorian Civil and Administrative Tribunal.  
(Note: This is not a permit granted under Division 5 or 6 of Part 4 of the **Planning and Environment Act 1987**.)

#### CAN THE RESPONSIBLE AUTHORITY AMEND THIS PERMIT?

The responsible authority may amend this permit under Division 1A of Part 4 of the **Planning and Environment Act 1987**.

#### WHEN DOES A PERMIT BEGIN?

A permit operates:

- from the date specified in the permit; or
- if no date is specified, from—
  - (i) the date of the decision of the Victorian Civil and Administrative Tribunal, if the permit was issued at the direction of the Tribunal; or
  - (ii) the date on which it was issued, in any other case.

#### WHEN DOES A PERMIT EXPIRE?

1. A permit for the development of land expires if—
  - the development or any stage of it does not start within the time specified in the permit; or
  - the development requires the certification of a plan of subdivision or consolidation under the Subdivision Act 1988 and the plan is not certified within two years of the issue of the permit, unless the permit contains a different provision; or
  - the development or any stage is not completed within the time specified in the permit, or, if no time is specified, within two years after the issue of the permit or in the case of a subdivision or consolidation within 5 years of the certification of the plan of subdivision or consolidation under the **Subdivision Act 1988**.
2. A permit for the use of land expires if—
  - the use does not start within the time specified in the permit, or if no time is specified, within two years after the issue of the permit; or
  - the use is discontinued for a period of two years.
3. A permit for the development and use of land expires if—
  - the development or any stage of it does not start within the time specified in the permit; or
  - the development or any stage of it is not completed within the time specified in the permit, or, if no time is specified, within two years after the issue of the permit; or
  - the use does not start within the time specified in the permit, or, if no time is specified, within two years after the completion of the development; or
  - the use is discontinued for a period of two years.
4. If a permit for the use of land or the development and use of land or relating to any of the circumstances mentioned in section 6A(2) of the **Planning and Environment Act 1987**, or to any combination of use, development or any of those circumstances requires the certification of a plan under the **Subdivision Act 1988**, unless the permit contains a different provision—
  - the use or development of any stage is to be taken to have started when the plan is certified; and
  - the permit expires if the plan is not certified within two years of the issue of the permit.
5. The expiry of a permit does not affect the validity of anything done under that permit before the expiry.

#### WHAT ABOUT REVIEWS?

- The person who applied for the permit may apply for a review of any condition in the permit unless it was granted at the direction of the Victorian Civil and Administrative Tribunal, in which case no right of review exists.
- An application for review must be lodged within 60 days after the permit was issued, unless a notice of decision to grant a permit has been issued previously, in which case the application for review must be lodged within 60 days after the giving of that notice.
- An application for review is lodged with the Victorian Civil and Administrative Tribunal.
- An application for review must be made on the relevant form which can be obtained from the Victorian Civil and Administrative Tribunal, and be accompanied by the applicable fee.
- An application for review must state the grounds upon which it is based.
- A copy of an application for review must also be served on the responsible authority.
- Details about applications for review and the fees payable can be obtained from the Victorian Civil and Administrative Tribunal.

The contact details of the Victorian Civil and Administrative Tribunal are:

55 King Street, MELBOURNE VIC 3000. Telephone: (03) 9628 9777, Fax: (03) 9628 9789.

<http://www.vcat.vic.gov.au/>

# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."

## PLANNING PERMIT



Permit Number: PP19/0843  
Planning Scheme: Boroondara Planning Scheme  
Responsible Authority: City of Boroondara

ADDRESS OF THE LAND: 979-981 Burke Road, Camberwell

### THE PERMIT ALLOWS:

- Construction of a six-storey (including mezzanine level) mixed use development, constructed over three basement levels;
- Reduction in car parking; and
- Alteration of access to a Road Zone Category 1.

In accordance with the endorsed plans.

*This permit was issued by Order of the Victorian Civil and Administrative Tribunal dated pursuant to Section 85(1)(b) of the Planning and Environment Act 1987 – Application For Review No.P126/2020.*

### THE FOLLOWING CONDITIONS APPLY TO THIS PERMIT:

#### Amended plans required

1. Before the development starts, amended plans to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority. The plans must be drawn to scale with dimensions and an electronic copy provided (unlocked PDF). When the plans are endorsed they will then form part of the permit. The plans must be substantially in accordance with the 'VCAT plans', plans prepared by Cera Stribley Architects, dated ~~15 May 2020~~ 27 February 2023, but modified to show:

- 1- a. Any conditions to be imposed by the Tribunal.

#### General

- a. All changes as depicted in the plans by Cera Stribley Architects Revision I, dated 30 April 2021, except:
- The 'void over' annotation in the south west corner of apartment 106 deleted;
  - Balustrading or a screening device adjacent to the southern most bedroom of apartment 107 to ensure the window of that bedroom would comply with Standard B22 of clause 55.04-6 in relation to any possible overlooking to the south;
  - Balustrading or a screening device adjacent to the full length of the southern edge of the terrace for apartment 207 extending to a height of 1.7 metres and to be no more than 25% transparent;
  - The planter area of the terrace to apartment 107 be annotated as non-trafficable and include a physical barrier such as a planter wall or similar of a

Date Issued: 19 July 2021

Signature for the Responsible Authority:

Stephanie Ng  
ACTING CO-ORDINATOR – STATUTORY  
PLANNING



# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."

Planning Permit No.: PP19/0843

Address of the Land: 979-981 Burke Road, Camberwell



- height of at least 500mm at the interface between the planter area and terrace to restrict pedestrian movement over the planter area;
- v. Deletion of the notation box referring to the extent of built form on previous versions of the plans before VCAT;
- vi. Screening of all habitable room windows, balconies and terraces to comply with Standard B22 of Clause 55.04-6 (Overlooking) of the Boroondara Planning Scheme including provision of enlarged detail (including sections where appropriate) of all privacy screens/balustrades, demonstrating that they are fixed and not more than 25% transparent;
- vii. Enlarged detail of the external finish of all services cupboards, demonstrating that a high quality finish is achieved that is integrated with the balance of the development;
- viii. The Finishes Schedule amended to provide further details, including the type (brand/specifications), finish, profile, colour and size-format of all metal, cladding and brick finishes;
- ix. The provision of a sample board of the schedule of external materials and finishes;
- x. The ceiling/soffit above the vehicle accessway finished with an acoustically absorptive cladding, having a Noise Reduction Coefficient of 0.8 or higher;
- xi. Masonry boundary fence treatment for the section of western boundary fence abutting the vehicle accessway;
- xii. Any changes arising from the Environmentally Sustainable Design report required by Condition 18 of this permit;
- xiii. Either an annotation and/or a section indicating that pier and beam construction will be implemented for any works adjacent to the Tree Protection Zones of the street trees along the Victoria Road frontage;
- xiv. Details of and the inclusion of automated shading to the eastern and western windows of all apartments;

## Landscaping

- xv. Trees TR\_G01 and TR\_G08 planted at natural ground level, with any changes necessary to avoid obstruction of root access to the ground outside the site and into the deep planting zones above the basement;
- xvi. Any changes arising from the Landscape Plan required by Condition 6 of this permit;

## Car parking and accessways:

- xvii. All site services within the proposed crossover to be accurately shown on the ground and basement plans;
- xviii. A notation that all obstructions within the pedestrian sightlines (landscaping, ramp walls, planter boxes etc.) must be kept to a maximum of 900mm or made to be 50% permeable;
- xix. A notation that dwellings will be allocated resident car spaces in accordance with the requirements of Clause 52.06;

**Commented [HS1]:** Plans referenced in preamble show all the requirements of Conditions (a), except for xi and xiv, the requirements of which are not met in the plans and are proposed to be removed from the (already endorsed) plans

Date Issued: 19 July 2021

Signature for the Responsible Authority: \_\_\_\_\_

Stephanie Ng  
ACTING CO-ORDINATOR – STATUTORY  
PLANNING



# VCAT Directed Plans

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."

Planning Permit No.: PP19/0843

Address of the Land: 979-981 Burke Road, Camberwell



## Layout and uses not to be altered

- 2 The layout of the site and the size, levels, design and location of buildings and works and the description of the use(s) on the endorsed plans must not be modified without the prior written consent of the Responsible Authority.

This does not apply if a planning permit is not required for any such modifications.

## Ongoing involvement of architect

- 3 Cera Stribley Pty Ltd must be retained to provide architectural oversight of the delivery of the detailed design, as shown in the endorsed plans and endorsed schedule of materials and finishes, unless with the prior written approval of and to the satisfaction of the Responsible Authority.

## Condition required by the Head, Transport for Victoria

- 4 Prior to the occupation of the development hereby permitted, all disused or redundant vehicle crossings must be removed, and the area reinstated to the satisfaction of the Responsible Authority and at no cost to the Head, Transport for Victoria or the responsible authority.
- 5 Prior to the occupation of the development hereby permitted, the access crossover and associated works must be provided and available for use.

## Landscape plan

- 6 Concurrent with the endorsement of plans under condition 1, a revised landscape plan to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority. The plan must be drawn to scale with dimensions and an electronic copy provided (unlocked PDF). When endorsed, the plan will form part of the permit. The landscape plan must be generally in accordance with the Landscape Plan prepared by Eckersley Garden Architecture dated [15 May 2020](#) - [24 February 2023](#) except that the plan must show:

~~(a) Any changes as depicted on the plans by Eckersley Garden Architecture dated 30 April 2021; and~~

~~(b)(a)~~ Any changes required by Condition 1 of this permit;

~~(c) Details of the surface finish of all pathways, paved areas and access ways;~~

~~(d) A planting schedule of all proposed trees, shrubs and ground covers including botanical names, common names, pot sizes, sizes at maturity and the quantities of each plant;~~

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- ~~(e) Details of the planter boxes, including dimensions, soil depth, materials, drainage, and the use of anchoring systems for trees planted in narrow planters;~~
- ~~(f) Trees TR\_G01 and TR\_G08 planted at natural ground level, with root access to the ground outside the site and into the deep planting zones above the basement;~~
- ~~(g) Detail of growing media, specified by an appropriately qualified soil scientist, including appropriate media for the areas within the deep planting zones above the basement and underneath the vehicle access ramp. This must detail that the soil mixture proposed will be suitable for the ongoing viability of the plants proposed;~~
- ~~(h) Details of the irrigation system for all planter boxes, designed by an appropriately qualified irrigation professional in collaboration with the soil scientist specifying growing media, incorporating the use of moisture sensors, and using rainwater harvested and stored on site with mains back-up;~~
- ~~(i) Substitution of the Pin Oak nominated along the western boundary with an evergreen tree capable of growing to a similar height and spread, of a species suitable for planting in close proximity to underground footings and infrastructure~~
- ~~(j) Provision of additional trees along the western boundary to provide screening to adjoining properties to the west where made possible by 2 metre wide deep planting zone; and~~
- ~~(k) Landscaping required by any other condition of this permit.~~

## Completion of landscaping works

- 7 Landscaping as shown on the endorsed landscape plan/s must be carried out and completed to the satisfaction of the Responsible Authority prior to the occupation of the development.
- 8 Any soil/media intended to be utilised for any landscaping area must be certified by the soil scientist employed under condition 6(g) before it is installed. A report by the soil scientist to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority prior to installation of any soil or landscaping works.

## Landscape Management Plan

- 9 Before the occupation of the development, a Landscape Management Plan must be submitted to and approved by the Responsible Authority. The Landscape Management Plan must:
  - (a) Detail the management and maintenance of the irrigation system, including the service of the irrigation system on at least an annual basis, and the replacement of components of the system as required;

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- (b) Detail the long-term management and maintenance of all landscaping works shown on the endorsed landscape plan/s, including details of proposed maintenance arrangements in respect of planting within private dwellings, and the replacement of any dead, diseased or damaged plants;
- (c) Provide for the certification of growing media at the time of its delivery to the site, by the soil scientist involved in the preparation of the Landscape Plan under condition 1(g).

Once approved, the Landscape Management Plan must be implemented to the satisfaction of the Responsible Authority.

## Street Tree Zone Fencing

- 10 Prior to the commencement of the development hereby permitted, a Tree Protection Zone (TPZ) must be established and maintained during and until completion of all buildings and works including landscaping, around the following trees in accordance with the distances and measures specified below, to the satisfaction of the Responsible Authority:
- (a) Tree protection zone distances:
    - i Tree 1 – 2.7 metre radius from the centre of the tree base.
    - ii Tree 2 – 2.0 metre radius from the centre of the tree base.
    - iii Tree 3 – 2.0 metre radius from the centre of the tree base.
    - iv Tree 4 – 2.0 metre radius from the centre of the tree base.
    - v Tree 5 – 2.0 metre radius from the centre of the tree base.
    - vi Tree 6 – 2.0 metre radius from the centre of the tree base.
    - vii Tree 7 – 2.0 metre radius from the centre of the tree base.
  - (b) Tree protection zone measures are to be established in accordance to Australian Standard 4970-2009 and including the following:
    - i Erection of solid chain mesh or similar type fencing at a minimum height of 1.8 metres held in place with concrete feet.
    - ii Signage placed around the outer edge of perimeter fencing identifying the area as a TPZ. The signage should be visible from within the development, with the lettering complying with AS 1319.
    - iii Mulch across the surface of the TPZ to a depth of 100mm and undertake supplementary watering in summer months as required.
    - iv No excavation, constructions works or activities, grade changes, surface treatments or storage of materials of any kind are permitted within the TPZ

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unless otherwise approved within this permit or further approved in writing by the Responsible Authority.

- v All supports, and bracing should be outside the TPZ and any excavation for supports or bracing should avoid damaging roots where possible.
- vi No trenching is allowed within the TPZ for the installation of utility services unless tree sensitive installation methods such as boring have been approved by the Responsible Authority.
- vii TPZ fencing must not block off a footpath or roadway. The TPZ fencing location can be modified to ensure the tree(s) is protected, however must not obstruct, roads, footpaths or access ways.

## Specific Street Tree Protection Methods

- 11 During the construction of any buildings or works, the following tree protection requirements must be carried out to the satisfaction of the responsible Authority:
- (a) All buildings and works associated with the subject site (as shown on the endorsed plans) must not alter the existing ground level or topography of the land within the TPZs of Trees 1 - 7. \
  - (b) For Trees 1 - 7, no roots are to be cut or damaged during any part of the construction process.
  - (c) The builder / site manager must ensure that the TPZ Fencing Conditions for trees 1 - 7 are being adhered to throughout the entire building process, including site demolition, levelling and landscape works.

## Drainage

- 12 The site must be drained to the satisfaction of the Responsible Authority.

## Driveways and car parking areas

- 13 Prior to the occupation of the development hereby permitted, area/s set aside for car parking, access lanes and driveways shown on the endorsed plans must be:
- (a) Constructed;
  - (b) Formed to such levels and properly drained so that they can be used in accordance with the endorsed plans;
  - (c) Surfaced with an all-weather seal coat or as otherwise required by other Conditions within this Permit; and
  - (d) Drained;
- to the satisfaction of the Responsible Authority.

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Address of the Land: 979-981 Burke Road, Camberwell



14 Prior to the occupation of the development hereby permitted, a Car Parking and Loading Management Plan must be submitted to and approved by the responsible authority. The plan must provide for:

- (a) Allocation of car spaces in respect of each use;
- (b) Car park access control measures;
- (c) Management of the loading area to address potential vehicle and pedestrian conflicts.

Once approved, the Car Parking and Loading Management Plan must be implemented to the satisfaction of the Responsible Authority.

## Vehicle crossovers

15 Any new vehicle crossover or modification to an existing vehicle crossover must be constructed to the satisfaction of the Responsible Authority.

## Removal of redundant vehicle crossovers

16 All disused or redundant vehicle crossovers must be removed and the area reinstated with footpath, nature-strip, kerb and channel to the satisfaction of the Responsible Authority.

## Concealment of pipes

17 All pipes (except down-pipes), fixtures, fittings and vents servicing any building on the site must be concealed in service ducts or otherwise hidden from external view, to the satisfaction of the Responsible Authority.

## Environmentally Sustainable Design Report

18 Concurrent with the submission of any plans pursuant to Condition 1, an Environmentally Sustainable Design (ESD) Report that is to the satisfaction of the Responsible Authority must be prepared by a suitably qualified expert and submitted to the Responsible Authority for approval. The report must be generally in accordance with the Sustainable Management Plan prepared by [Sustainable Development Consultants dated June 2020](#) [Integrated Group Services dated March 2023](#) and incorporate and assess any amendments included as a result of all amendments required by condition 1. Once approved, such a plan must be implemented prior to the occupation of the dwellings to the satisfaction of the Responsible Authority.

## Waste Management Plan

19 Concurrent with the submission of any plans pursuant to Condition 1, a Waste Management Plan to the satisfaction of the responsible authority must be submitted to and approved by the Responsible Authority. The plan must be generally in accordance

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with the Waste Management Plan prepared by Impact Traffic dated [26 September 2019](#), [27 February 2023](#). Once approved, the plan must be implemented to the satisfaction of the Responsible Authority.

## Loading and unloading

- 20 All loading and unloading associated with the commercial uses on the land must take place only on-site.
- 21 No deliveries of goods associated with the commercial uses on the site may take place on the site before 7am or after 10pm on Monday to Saturday or before 9am and after 10pm on a Sunday and any public holiday.

## Noise and amenity

- 22 Noise emitted from the commercial premises must comply with the State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N1, to the satisfaction of the Responsible Authority.

## Construction Management Plan

- 23 Prior to the commencement of the development hereby permitted, a Construction Management Plan must be submitted to and endorsed by the Responsible Authority. No works are permitted to occur until the Plan has been endorsed by the Responsible Authority. Once endorsed, the construction management plan will form part of the permit and must be implemented to the satisfaction of the Responsible Authority. The plan must be prepared in accordance with Council's Construction Management Plan Template and provide details of the following:
  - (a) Hours for construction activity in accordance with any other condition of this permit;
  - (b) Measures to ensure construction workers, including contractors, are aware of and observe the requirements of the approved Tree Management Plan required by this Permit;
  - (c) Measures to control noise, dust, water and sediment laden runoff;
  - (d) Measures relating to removal of hazardous or dangerous material from the site, where applicable;
  - (e) A plan showing the location of parking areas for construction and sub-contractors' vehicles on and surrounding the site, to ensure that vehicles associated with construction activity cause minimum disruption to surrounding premises. Any basement car park on the land must be made available for use by sub-contractors/tradespersons upon completion of such areas, without delay;
  - (f) A Traffic Management Plan showing truck routes to and from the site;

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- (g) Swept path analysis demonstrating the ability for trucks to enter and exit the site in a safe manner for the largest anticipated truck associated with the construction;
- (h) A plan showing the location and design of a vehicle wash-down bay for construction vehicles on the site;
- (i) Measures to ensure that sub-contractors/tradespersons operating on the site are aware of the contents of the construction management plan;
- (j) Contact details of key construction site staff;
- (k) A site plan showing the location of any site sheds, on-site amenities, building waste storage and the like, noting that Council does not support site sheds on Council road reserves; and
- (l) Any other relevant matters, including VicRoads' requirements.

## Hours for Construction Work

- 24 All construction activity associated with the approved development is to be limited to the following hours, unless with the prior written consent of the Responsible Authority:

Monday to Thursday:	7:00am to 6:30pm;
Friday:	7:00am to 5:00pm;
Saturday:	9:00am to 5:00pm;
Sunday & Public Holidays:	No construction.

## Permit Expiry

- 25 This Permit will expire if:

- (a) The development does not start within two (2) years of the issue date of this Permit; or
- (b) The development is not completed within four (4) years of the issue date of this Permit.

The Responsible Authority may extend the times referred to if a request is made in writing before the permit expires or:

- i Within six (6) months afterwards if the use or the development has not commenced; or
- ii Within twelve (12) months afterwards if the development has not been completed.

## Notes

- *Headings are for ease of reference only and do not affect the interpretation of permit conditions.*

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Address of the Land: 979-981 Burke Road, Camberwell



- This is not a Building Permit. A Building Permit may be required prior to the commencement of any works associated with the proposed development.

## **Parking permits note**

- Pursuant to Council's Residential Parking Permit Policy (2011), the owners and occupiers of dwellings approved in this development will not be eligible to obtain resident or visitor parking permits. The Residential Parking Permit Policy is available to download at [http://www.boroondara.vic.gov.au/your\\_council/local-laws-policies/traffic](http://www.boroondara.vic.gov.au/your_council/local-laws-policies/traffic). Alternatively please contact Council on 9278 4444.
- Prior to the commencement of any works on the site, the owner/developer must submit drainage plans for assessment and approval by the Responsible Authority (Asset Management).
- Stormwater drains are to be connected to a legal point of discharge approved by Council. Drainage Connections within a road reserve, right-of-way, parkland, within an easement or to a Health Act drain must be to Council's standards. A Council Supervision Permit is required for this work. All fees and charges associated with the connection are to be borne by the applicant.
- The Tree Protection Local Law requires that a Local Law Tree Permit be sought from Council for the removal and/or lopping of a 'Significant Tree' and/or excavation within the critical root zone of a Significant Tree. A list of Significant Trees is available at <http://www.boroondara.vic.gov.au/our-city/trees/significant-trees>. A Local Law Tree Permit is also required to remove, damage kill or destroy any identified 'Canopy Tree' which may include any excavation within the tree protection zone of a 'canopy tree'. The Tree Protection Local Law identifies a 'Canopy tree' as any tree with a single trunk circumference of 110cm or a combined circumference of a multi stemmed tree of 110cm or greater measured at 1.5m above ground level. A Planning Permit does not constitute a Local Law Tree Permit or permission to remove, damage kill or destroy a significant or canopy tree. The Tree Protection Local Law is available to download at <http://www.boroondara.vic.gov.au/our-city/trees/tree-works-permits> alternatively please contact Council's Arborist – Statutory Planning (telephone 9278 4888) should a Local Law Tree Permit be required.
- An Asset Protection Permit is required prior to the commencement of site works in accordance with Council's Protection of Council Assets and Control of Building Sites Local Law 2011.
- Prior consent from Council and any and all public authorities is required to be obtained for alteration or reinstatement of assets or services affected as a result of the development.

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- *The full cost of reinstatement of any Council assets damaged as a result of demolition, building or construction works, must be met by the permit applicant or any other person responsible for such damage, to the satisfaction of the Responsible Authority.*
- *Discharge to the legal point of discharge will be allowed subject to the flow being limited to a rate equivalent to pre-development levels or less. Any additional discharge and / or runoff above the pre-development level is to be detained on site, via an approved storm water detention system. This matter should be discussed with Council's Asset Management Department.*
- *Residents of the development approved by this permit will not be issued resident parking permits (including visitor parking permits).*
- *Should the land cease to be used for student accommodation a new planning permit may be required for an alternative use. It should be noted that any dispensation for on-site car parking given to the student accommodation development may not be transferable to any proposed alternative use of the land. Any subsequent use will be assessed in accordance with the car parking provisions of the Boroondara Planning Scheme.*

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## VCAT ISSUED PERMIT

### IMPORTANT INFORMATION ABOUT THIS PERMIT (see over)

#### WHAT HAS BEEN DECIDED?

The responsible authority has issued a permit at the direction of the Victorian Civil and Administrative Tribunal.  
(Note: This is not a permit granted under Division 5 or 6 of Part 4 of the **Planning and Environment Act 1987**.)

#### CAN THE RESPONSIBLE AUTHORITY AMEND THIS PERMIT?

The responsible authority may amend this permit under Division 1A of Part 4 of the **Planning and Environment Act 1987**.

#### WHEN DOES A PERMIT BEGIN?

A permit operates:

- from the date specified in the permit; or
- if no date is specified, from —
  - the date of the decision of the Victorian Civil and Administrative Tribunal, if the permit was issued at the direction of the Tribunal; or
  - the date on which it was issued, in any other case.

#### WHEN DOES A PERMIT EXPIRE?

- A permit for the development of land expires if—
  - the development or any stage of it does not start within the time specified in the permit; or
  - the development requires the certification of a plan of subdivision or consolidation under the Subdivision Act 1988 and the plan is not certified within two years of the issue of the permit, unless the permit contains a different provision; or
  - the development or any stage is not completed within the time specified in the permit, or, if no time is specified, within two years after the issue of the permit or in the case of a subdivision or consolidation within 5 years of the certification of the plan of subdivision or consolidation under the **Subdivision Act 1988**.
- A permit for the use of land expires if—
  - the use does not start within the time specified in the permit, or if no time is specified, within two years after the issue of the permit; or
  - the use is discontinued for a period of two years.
- A permit for the development and use of land expires if—
  - the development or any stage of it does not start within the time specified in the permit; or
  - the development or any stage of it is not completed within the time specified in the permit, or, if no time is specified, within two years after the issue of the permit; or
  - the use does not start within the time specified in the permit, or, if no time is specified, within two years after the completion of the development; or
  - the use is discontinued for a period of two years.
- If a permit for the use of land or the development and use of land or relating to any of the circumstances mentioned in section 6A(2) of the **Planning and Environment Act 1987**, or to any combination of use, development or any of those circumstances requires the certification of a plan under the **Subdivision Act 1988**, unless the permit contains a different provision—
  - the use or development of any stage is to be taken to have started when the plan is certified; and
  - the permit expires if the plan is not certified within two years of the issue of the permit.
- The expiry of a permit does not affect the validity of anything done under that permit before the expiry.

#### WHAT ABOUT REVIEWS?

- The person who applied for the permit may apply for a review of any condition in the permit unless it was granted at the direction of the Victorian Civil and Administrative Tribunal, in which case no right of review exists.
- An application for review must be lodged within 60 days after the permit was issued, unless a notice of decision to grant a permit has been issued previously, in which case the application for review must be lodged within 60 days after the giving of that notice.
- An application for review is lodged with the Victorian Civil and Administrative Tribunal.
- An application for review must be made on the relevant form which can be obtained from the Victorian Civil and Administrative Tribunal, and be accompanied by the applicable fee.
- An application for review must state the grounds upon which it is based.
- A copy of an application for review must also be served on the responsible authority.
- Details about applications for review and the fees payable can be obtained from the Victorian Civil and Administrative Tribunal.

The contact details of the Victorian Civil and Administrative Tribunal are:  
55 King Street, MELBOURNE VIC 3000. Telephone: (03) 9628 9777, Fax: (03) 9628 9789.  
<http://www.vcat.vic.gov.au/>

City of Boroondara – Statutory Planning Department  
8 Inglesby Road, Camberwell 3124  
Postal Address: Private Bag 1, CAMBERWELL VIC 3124  
Telephone: (03) 9278 4888

# VCAT Directed Plans

## PLANNING PROPERTY REPORT

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Environment,  
Land, Water  
and Planning

From [www.planning.vic.gov.au](http://www.planning.vic.gov.au) at 2:16 PM on 21 February 2023 (VZ)

### PROPERTY DETAILS

Address: **979 BURKE ROAD CAMBERWELL 3124**  
Lot and Plan Number: **Lot 1 TP837218**  
Standard Parcel Identifier (SPI): **1\TP837218**  
Local Government Area (Council): **BOROONDARA**  
Council Property Number: **373555**  
Planning Scheme: **Boroondara**  
Directory Reference: **Melway 45 J11**

[www.boroondara.vic.gov.au](http://www.boroondara.vic.gov.au)

[Planning Scheme - Boroondara](#)

### UTILITIES

Rural Water Corporation: **Southern Rural Water**  
Melbourne Water Retailer: **Yarra Valley Water**  
Melbourne Water: **Inside drainage boundary**  
Power Distributor: **CITIPower**

### STATE ELECTORATES

Legislative Council: **SOUTHERN METROPOLITAN**  
Legislative Assembly: **HAWTHORN**

### OTHER

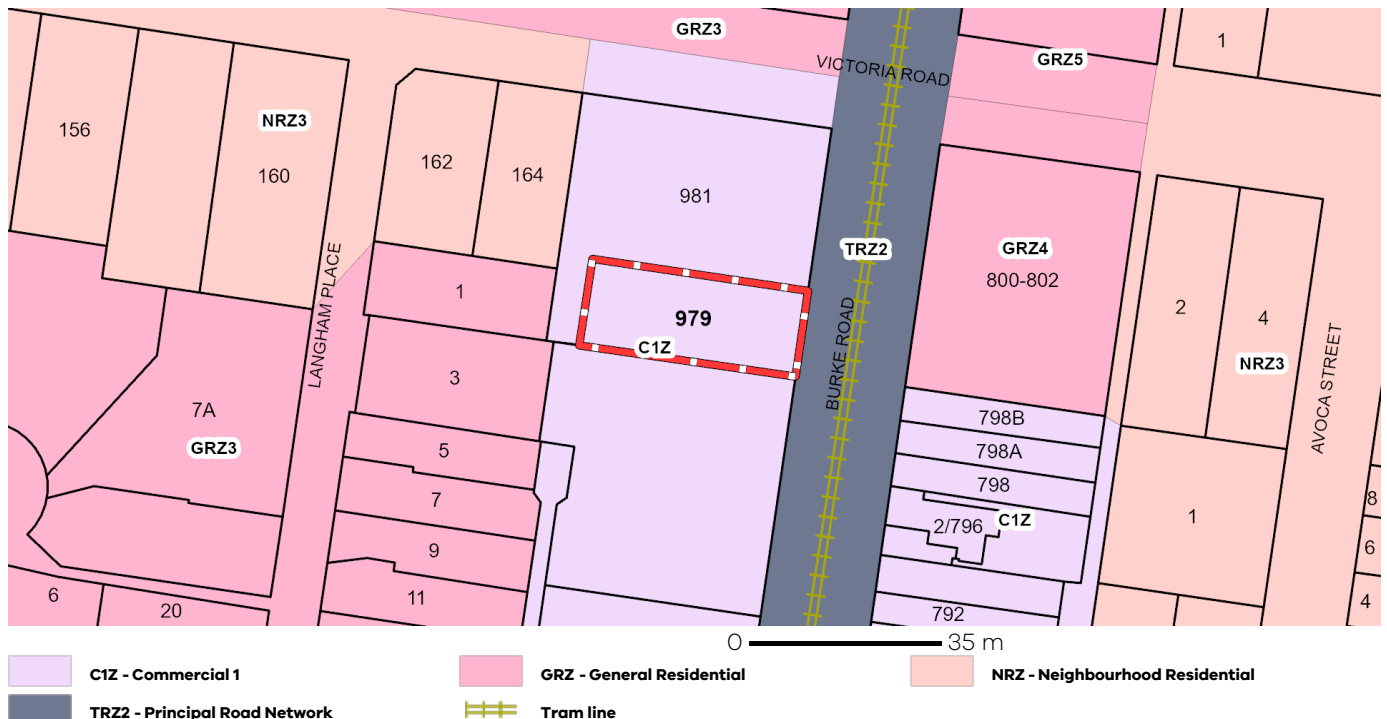
Registered Aboriginal Party: **Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation**

[View location in VicPlan](#)

### Planning Zones

[COMMERCIAL 1 ZONE \(C1Z\)](#)

[SCHEDULE TO THE COMMERCIAL 1 ZONE \(C1Z\)](#)



Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

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Read the full disclaimer at <https://www.delwp.vic.gov.au/disclaimer>

Notwithstanding this disclaimer, a vendor may rely on the information in this report for the purpose of a statement that land is in a bushfire prone area as required by section 32C (b) of the Sale of Land 1962 (Vic).

# VCAT Directed Plans

## PLANNING PROPERTY REPORT

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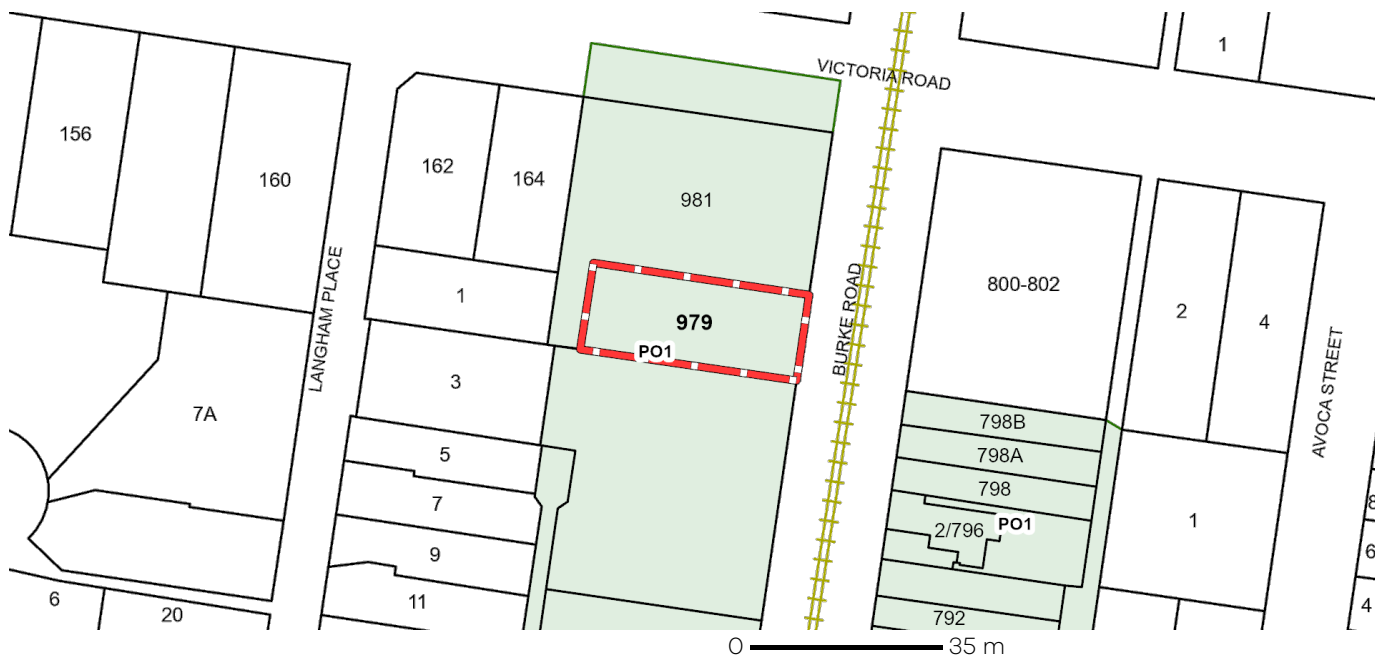
VICTORIA  
State  
Government

Environment,  
Land, Water  
and Planning

### Planning Overlays

[PARKING OVERLAY \(PO\)](#)

[PARKING OVERLAY - PRECINCT 1 SCHEDULE \(PO1\)](#)



**PO - Parking Overlay**

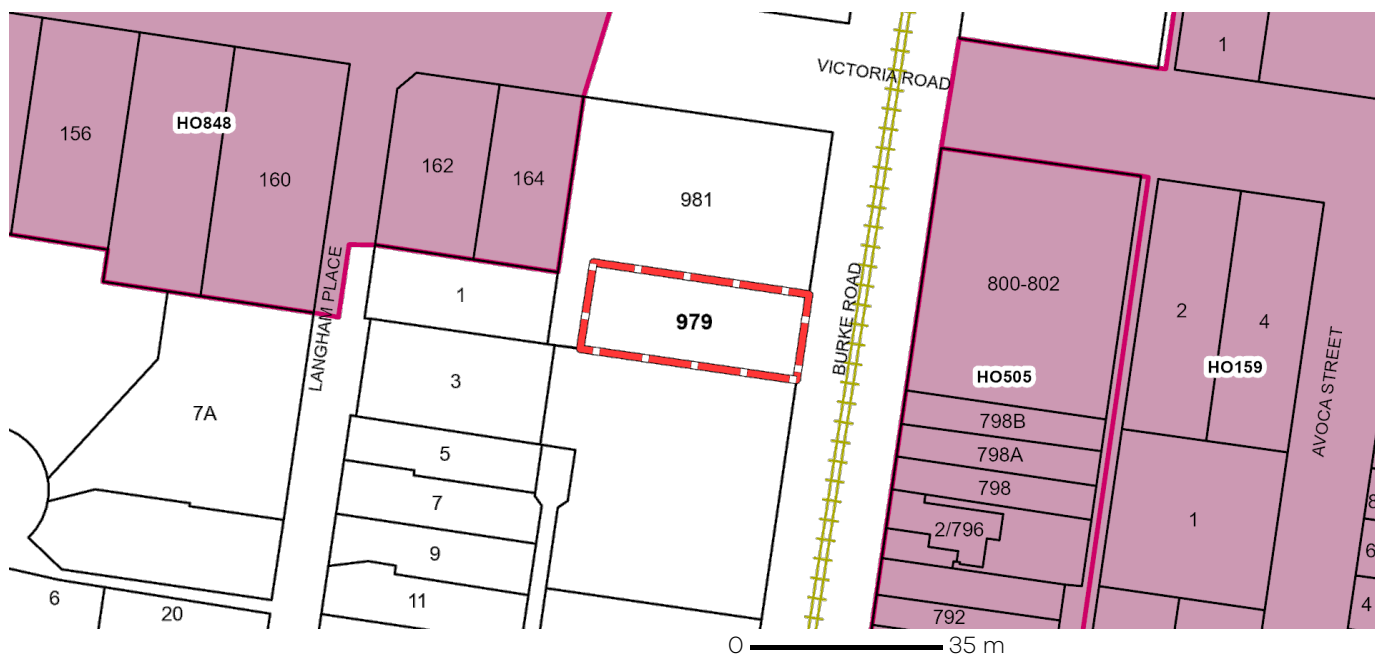
**Tram line**

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

### OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

[HERITAGE OVERLAY \(HO\)](#)



**HO - Heritage Overlay**

**Tram line**

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

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PLANNING PROPERTY REPORT: 979 BURKE ROAD CAMBERWELL 3124

Page 2 of 4

## Further Planning Information

Planning scheme data last updated on 15 February 2023.

A **planning scheme** sets out policies and requirements for the use, development and protection of land. This report provides information about the zone and overlay provisions that apply to the selected land. Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting <https://www.planning.vic.gov.au>

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# VCAT Directed Plans

## PLANNING PROPERTY REPORT



Environment,  
Land, Water  
and Planning

These plans/documents are available for viewing in accordance with the direction of the Victorian Civil and Administrative Tribunal in the matter of VCAT Ref.: P281/2023."

### Designated Bushfire Prone Areas

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### Native Vegetation

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From [www.planning.vic.gov.au](http://www.planning.vic.gov.au) at 2:16 PM on 21 February 2023 (UTC+11:00)

### PROPERTY DETAILS

Address: **981 BURKE ROAD CAMBERWELL 3124**  
Lot and Plan Number: **Lot 1 TP231062**  
Standard Parcel Identifier (SPI): **1\TP231062**  
Local Government Area (Council): **BOROONDARA**  
Council Property Number: **373560**  
Planning Scheme: **Boroondara**  
Directory Reference: **Melway 45 J11**

[www.boroondara.vic.gov.au](http://www.boroondara.vic.gov.au)

[Planning Scheme - Boroondara](#)

### UTILITIES

Rural Water Corporation: **Southern Rural Water**  
Melbourne Water Retailer: **Yarra Valley Water**  
Melbourne Water: **Inside drainage boundary**  
Power Distributor: **CITIPOWER**

### STATE ELECTORATES

Legislative Council: **SOUTHERN METROPOLITAN**  
Legislative Assembly: **HAWTHORN**

### OTHER

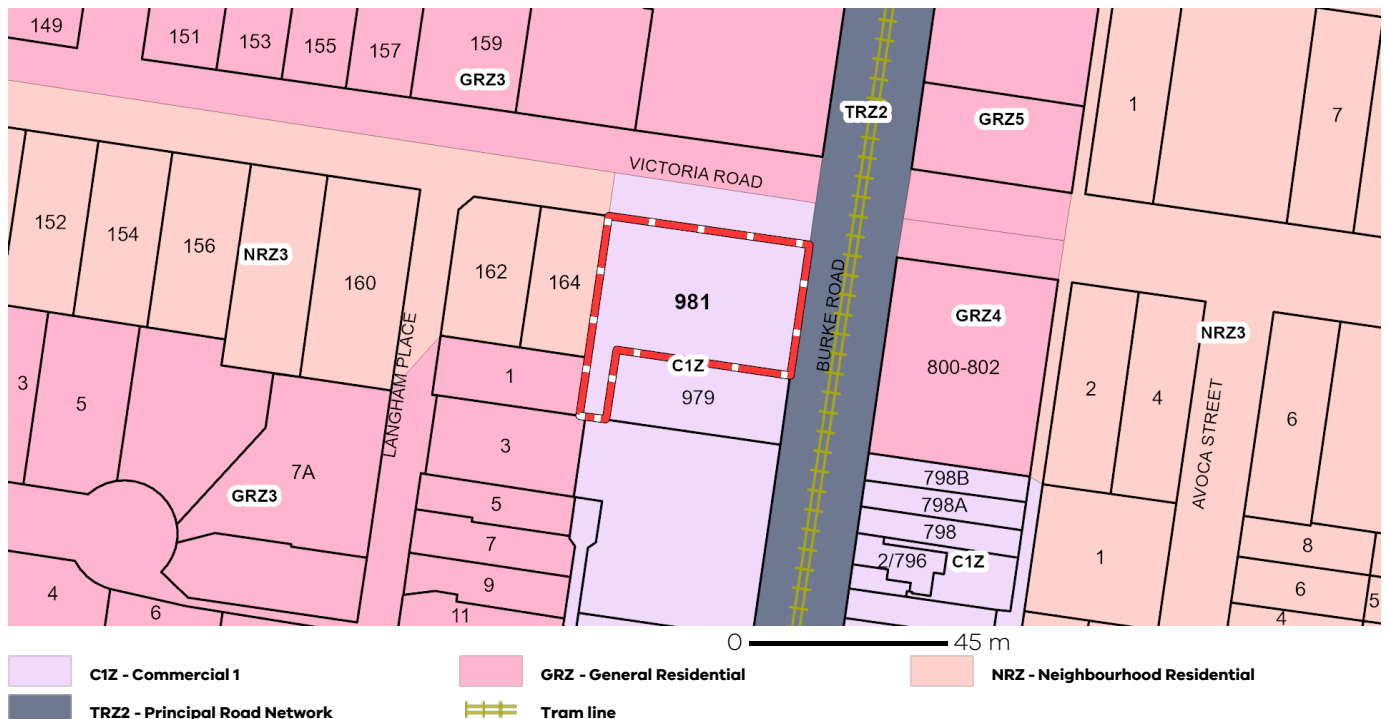
Registered Aboriginal Party: **Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation**

[View location in VicPlan](#)

### Planning Zones

[COMMERCIAL 1 ZONE \(C1Z\)](#)

[SCHEDULE TO THE COMMERCIAL 1 ZONE \(C1Z\)](#)



Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

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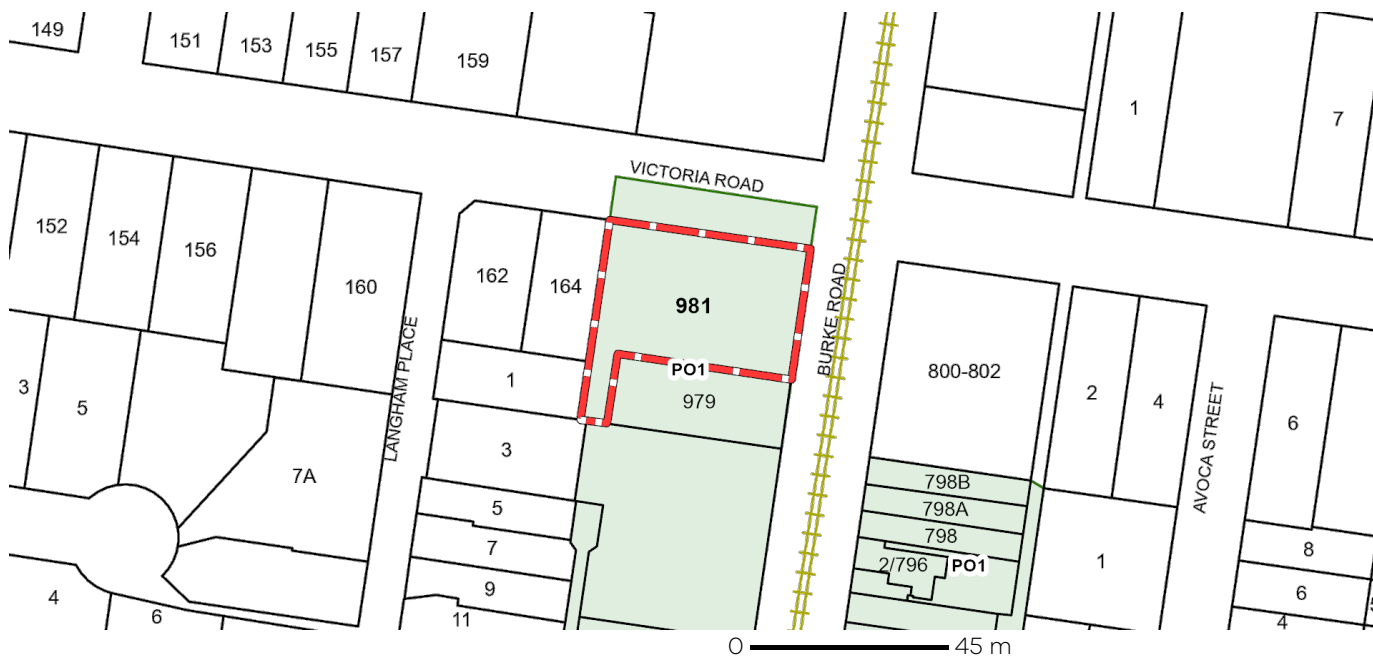


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### Planning Overlays

#### PARKING OVERLAY (PO)

#### PARKING OVERLAY - PRECINCT 1 SCHEDULE (PO1)



**PO - Parking Overlay**

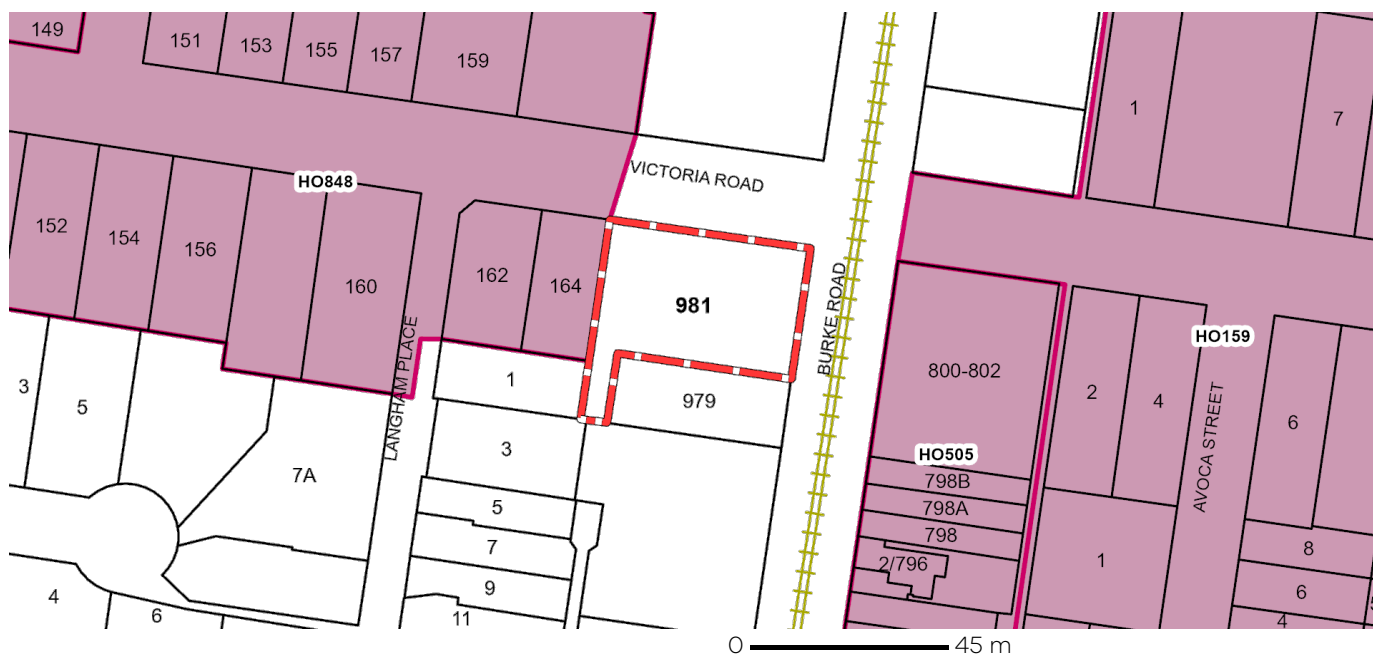
**Tram line**

Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

#### OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

#### HERITAGE OVERLAY (HO)



**HO - Heritage Overlay**

**Tram line**

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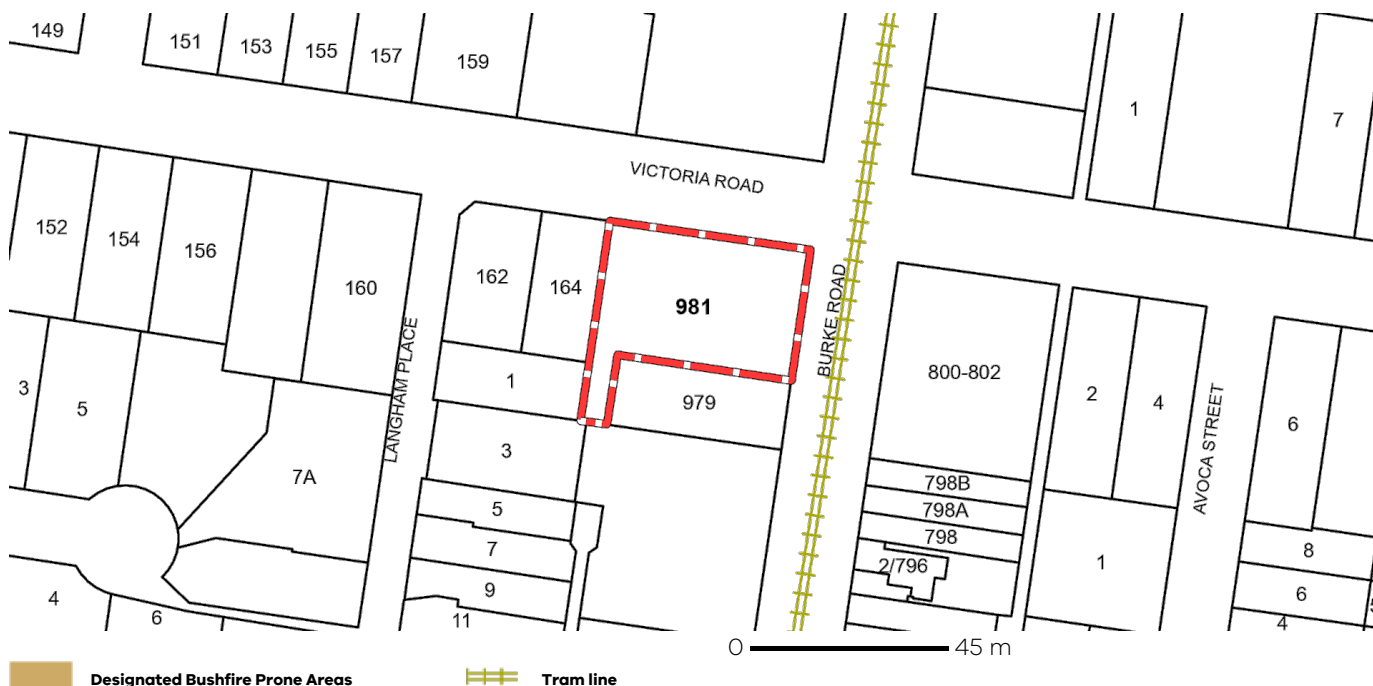
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