

Application for Planning Permit

If you need help to complete this form, read [How to complete the Application for Planning Permit form](#).

Planning Enquiries
Phone: 03 9205 2200
Web: <http://www.hume.vic.gov.au>

Clear Form

The Land i ① Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.:	St. No.: 161	St. Name: HOTHLYN DRIVE
Suburb/Locality: CRAIGIEBURN		Postcode: 3064

Formal Land Description * Complete either A or B.

i This information can be found on the certificate of title.

A Lodged Plan Title Plan Plan of Subdivision

OR

B

If this application relates to more than one address, please click this button and enter relevant details. Add Address

The Proposal i You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.

② For what use, development or other matter do you require a permit? *

If you need help about the proposal, read:
[How to Complete the Application for Planning Permit Form](#)

THE CONSTRUCTION OF 3 DOUBLE STOREY DWELLINGS.

i Provide additional information on the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

③ Estimated cost of development for which the permit is required *

i You may be required to verify this estimate. Insert '0' if no development is proposed.

If the application is for land within metropolitan Melbourne (as defined in section 3 of the *Planning and Environment Act 1987*) and the estimated cost of the development exceeds \$1 million (adjusted annually by CPI) the Metropolitan Planning Levy must be paid to the State Revenue Office and a current levy certificate must be submitted with the application. Visit www.sro.vic.gov.au for information.

Existing Conditions i

④ Describe how the land is used and developed now *

eg. vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

THERE IS CURRENTLY A SINGLE STOREY DWELLING ON THE LARGE PARCEL OF LAND.

i Provide a plan of the existing conditions. Photos are also helpful.

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Title Information

5 Encumbrances on title *

If you need help about the title, read:

[How to complete the Application for Planning Permit form](#)

Does the proposal breach in any way an encumbrance on title such as a restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- Yes. (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- No
- Not applicable (no such encumbrance applies).

Provide a full, current copy of the title for each individual parcel of land forming the subject site. (The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'Instruments', eg. restrictive covenants.)

Applicant and Owner Details

6 Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Please provide at least one contact phone number *

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

Name:

Title:	First Name:	Surname:
--------	-------------	----------

Organisation (if applicable): IKONOMIDIS DESIGN STUDIO

Postal Address: If it is a P.O. Box, enter the details here:

Unit No.:	St. No.: 277	St. Name: PLENTY ROAD
-----------	--------------	-----------------------

Suburb/Locality: PRESTON	State: VIC	Postcode: 3072
--------------------------	------------	----------------

Contact person's details *

Same as applicant (if so, go to 'contact information')

Name:

Title: Mrs	First Name: STEFANIE	Surname: BECCARIS
------------	----------------------	-------------------

Organisation (if applicable):

Postal Address: If it is a P.O. Box, enter the details here:

Unit No.:	St. No.: 277	St. Name: PLENTY ROAD
-----------	--------------	-----------------------

Suburb/Locality: PRESTON	State: VIC	Postcode: 3072
--------------------------	------------	----------------


Contact Information

Business Phone: 91141911	Email: stefanie@ikonds.com.au
--------------------------	-------------------------------

Mobile Phone:	Fax:
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Declaration

7 This form must be signed by the applicant *

 Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

I declare that I am the applicant; and that all the information in this application is true and correct; and the owner (if not myself) has been notified of the permit application.

Signature: 	Date: 26/10/2021 day / month / year
--	--

Need help with the Application?

If you need help to complete this form, read [How to complete the Application for Planning Permit form](#). General information about the planning process is available at www.delve.vic.gov.au/planning

Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist. Insufficient or unclear information may delay your application.

8 **Has there been a pre-application meeting with a Council planning officer?**


No Yes


Checklist

9 **Have you:**

Filled in the form completely?

Paid or included the application fee?

 Most applications require a fee to be paid. Contact Council to determine the appropriate fee.

 Provided all necessary supporting information and documents?

A full, current copy of title information for each individual parcel of land forming the subject site

A plan of existing conditions.

Plans showing the layout and details of the proposal

Any information required by the planning scheme, requested by council or outlined in a council planning permit checklist.

If required, a description of the likely effect of the proposal (eg traffic, noise, environmental impacts).

If applicable, a current Metropolitan Planning Levy certificate (a levy certificate expires 90 days after the day on which it is issued by the State Revenue Office and then cannot be used). Failure to comply means the application is void.

Completed the relevant Council planning permit checklist?

Signed the declaration (section 7)?

Lodgement

Lodge the completed and signed form, the fee payment and all documents with:

Hume City Council
PO Box 119 Dallas VIC 3047
Pascoe Vale Road Broadmeadows VIC 3047

Contact information:


Telephone: 61 03 9205 2200

Email: email@hume.vic.gov.au

DX: 94718

Translation: 03 9205 2200 for connection to Hume Link's multilingual telephone information service

Deliver application in person, by fax, or by post:



Make sure you deliver any required supporting information and necessary payment when you deliver this form to the above mentioned address. This is usually your local council but can sometimes be the Minister for Planning or another body.

Save Form:



You can save this application form to your computer to complete or review later or email it to others to complete relevant sections.

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

VOLUME 09924 FOLIO 050

Security no : 124093262767F
Produced 22/10/2021 01:34 PM

LAND DESCRIPTION

Lot 1000 on Plan of Subdivision 214568Q.
PARENT TITLE Volume 09891 Folio 907

REGISTERED PROPRIETOR

[REDACTED]

ENCUMBRANCES, CAVEATS AND NOTICES

[REDACTED]

COVENANT (as to whole or part of the land) in instrument P709964K

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 or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP214568Q 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: 161 HOTHLYN DRIVE CRAIGIEBURN VIC 3064

ADMINISTRATIVE NOTICES

NIL

[REDACTED]

DOCUMENT END



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Document Type	instrument
Document Identification	P709964K
Number of Pages (excluding this cover sheet)	2
Document Assembled	30/03/2022 15:25

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Lodged at the Titles Office by

ESANDA DIVISION
85 SPRING ST. MELBOURNE, 3000.
Code 0247M.

Titles Office Use Only

190390 1006 45 38 P709964K

P709964K

VICTORIA

TRANSFER OF LAND

Subject to the encumbrances affecting the land including any created by dealings lodged for registration prior to the lodging of this instrument the transferor for the consideration expressed at the request and by the direction of the directing party (if any) transfers to the transferee the estate and the interest specified in the land described together with any easement hereby created and subject to any easement hereby reserved or restrictive covenant herein contained or covenant created pursuant to statute and included herein. (Notes 1-4)

Land (Note 5)

CERTIFICATE OF TITLE VOLUME 9924 FOLIO 050

Consideration (Note 6)
\$38,800.00

Transferor (Note 7)
BRANDY WOODS PTY.LTD.

STAMP DUTY VICTORIA
U#03C#1 S#1 T#0457DB 00017661 16/03/90
R#169956 D#44 \$731.00

Transferee (Note 8)
HANTSIL PTY.LTD. of 267 Hawthorn Road, Caulfield

Estate and Interest (Note 9)
All its estate and interest in the fee simple

Directing Party (Note 10)

Creation (or Reservation) of Easement and/or Covenant (Notes 11-12)

4-1
731
✓
35000
⊂

Comptroller of Stamps Use Only

See over
J.

T2 Office Use Only
OFFICE OF TITLES
VICTORIA

A memorandum of the within instrument has been entered in the Register Book.



Approval No. T2/1 LJE 3/4/90

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RESTRICTIVE COVENANT

The property will be sold subject to the Purchaser agreeing to include in the Transfer to him a Restrictive Covenant affecting the land and which covenant is to be in a form of the Covenant set out below:

"The said Transferee for himself and his successors in title and other the registered proprietor or proprietors for the time being of the said land HEREBY COVENANTS and as separate covenants with the said Transferor and its successors in title and other the registered proprietor or proprietors of the Lots in Plan of Subdivision No. LP214568Q other than the said land hereby transferred that he will not build or cause to be built on any part of the land transferred any dwelling having an external surface constructed with less than eighty per cent (80%) brick or brick veneer excluding glazing and such dwelling shall not have a living area of less than 115m² or have a roof constructed or clad with reflective material or to build or cause to be built or to place or cause to be placed on any part of the land transferred any caravan or mobile home or temporary or removable building or any building moved from another site other than a builder's shed and that for a period of twenty-four (24) months from the date of this Transfer unless a dwelling house has been constructed on the land transferred he will not erect cause or permit to be erected on the land transferred or any part thereof any sign stating that the land is or may in the future be for sale and it is intended that this Covenant shall run at law and in equity with the land hereby transferred and shall appear as an encumbrance on any Certificate of Title to issue herefore."

Date 5TH MARCH 1990 .

(Note 13)

Execution and Attestation

(Note 14)

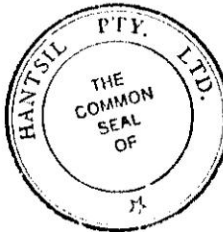
THE COMMON SEAL of BRANDY)
WOODS PTY.LTD. was hereunto)
affixed in accordance with its)
Articles of Association in the)
presence of:)

..... [Signature] Director.
..... [Signature] Secretary.



THE COMMON SEAL of HANTSIL)
PTY.LTD. was hereunto affixed in)
accordance with its Articles of)
Association in the presence of:)

..... [Signature] Director.
..... [Signature] Secretary.





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Document Type	plan
Document Identification	LP214568Q
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Document Assembled	30/03/2022 15:25

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PLAN OF SUBDIVISION OF PART OF CROWN SECTION 16 PARISH OF YUROKE COUNTY OF BOURKE	APPROPRIATIONS BLUE: DRAINAGE AND SEWERAGE BROWN: WAY, DRAINAGE AND SEWERAGE	COLOUR CONVERSION BLUE - E-1, E-3 BROWN - E-2 YELLOW - A-1	APPROPRIATION YELLOW: IMPLIED WAY, DRAINAGE AND SEWERAGE VIDE LP. 130524 PART OF NOTHLYN DRIVE COLOURED BROWN IS FURTHER ENCLINERED FOR WAY DRAINAGE + SEWERAGE VIDE L.P. 130524.	
	PLAN OF SUBDIVISION OF PART OF CROWN SECTION 16 PARISH OF YUROKE COUNTY OF BOURKE			

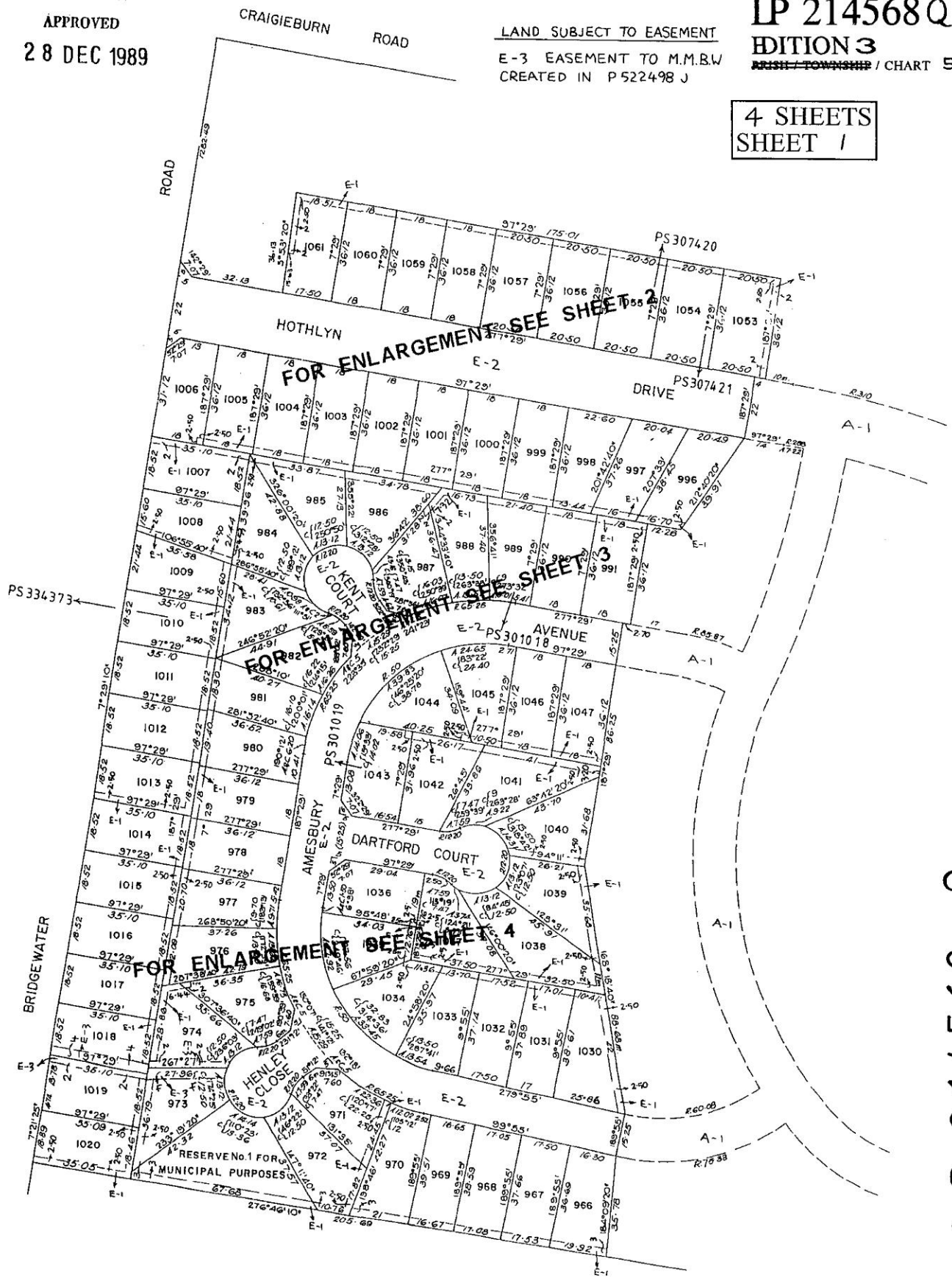
cr V 9891 F 907
APPROVED
28 DEC 1989

LAND SUBJECT TO EASEMENT
E-3 EASEMENT TO M.M.B.W
CREATED IN P522498 J

LP 214568 Q
EDITION 3
PARISH / TOWNSHIP / CHART 5

4 SHEETS
SHEET 1

WARNING: THE IMAGE OF THIS DOCUMENT OF THE REGISTER HAS BEEN DIGITALLY AMENDED. NO FURTHER AMENDMENTS ARE TO BE MADE TO THE ORIGINAL DOCUMENT OF THE REGISTER.

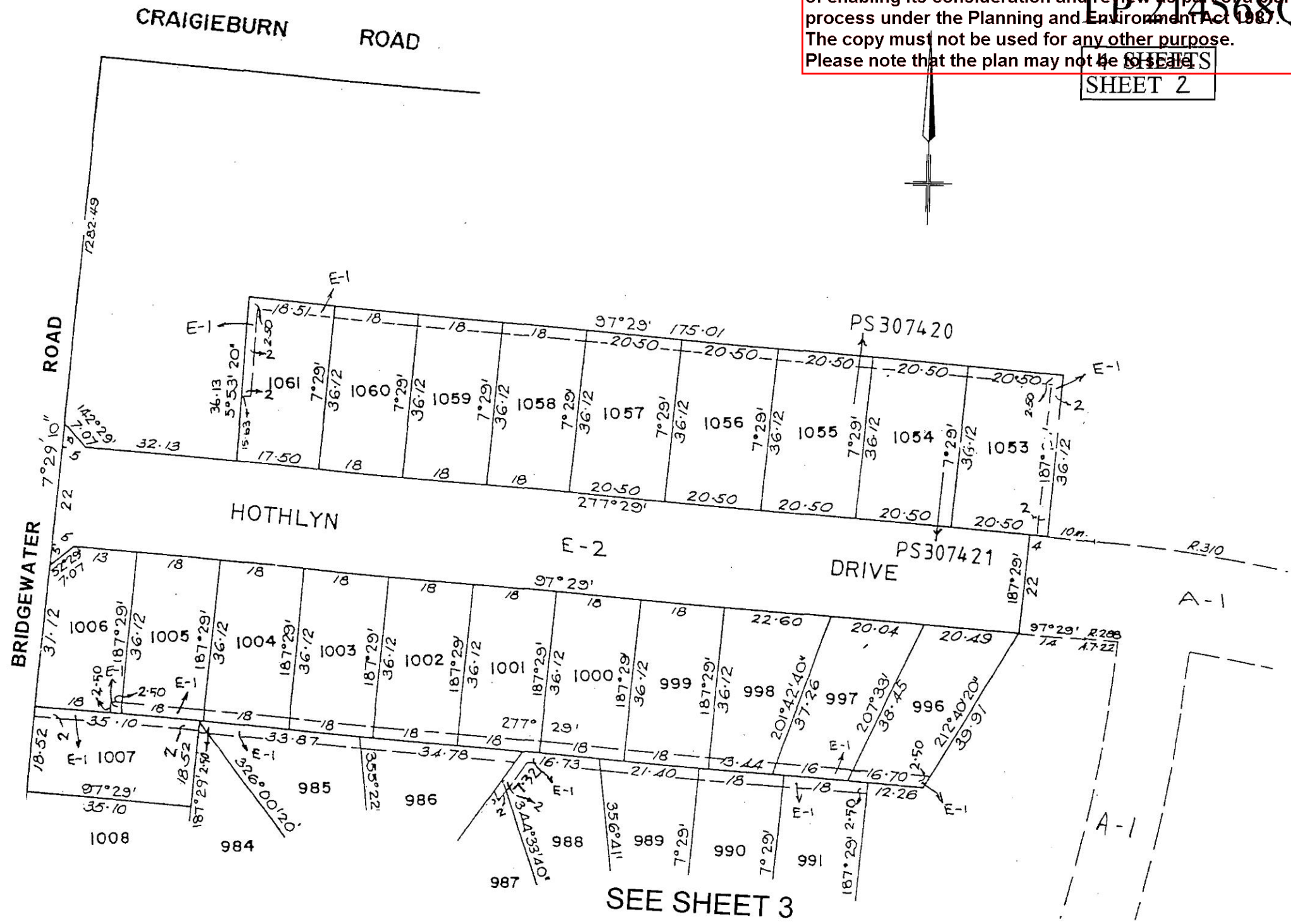


LP 214568 Q

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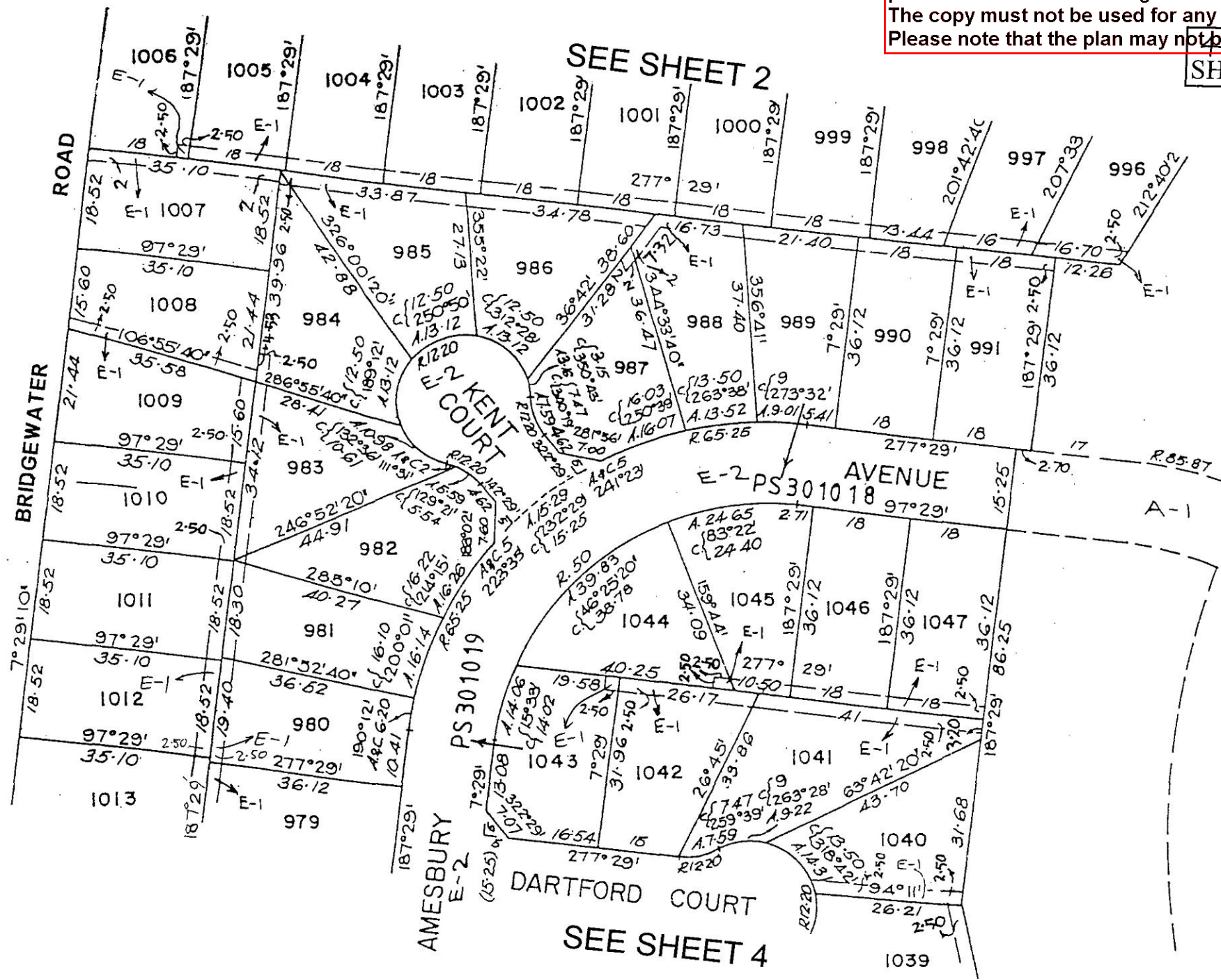
LP 214568Q

SHEETS
SHEET 2



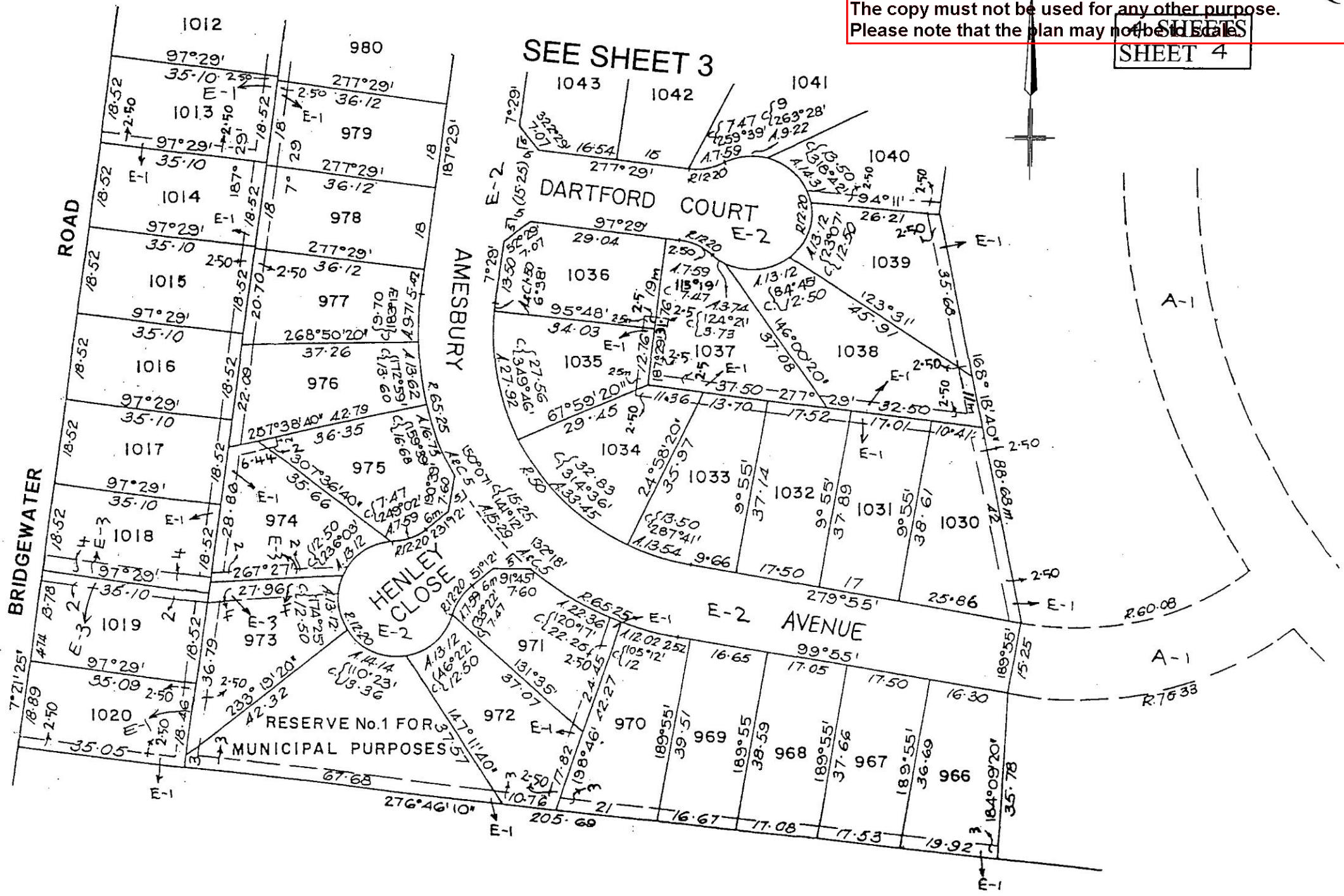
SEE SHEET 3

4 SHEETS
SHEET 3



LP 2145680



SHEETS
SHEET 4



PLAN NUMBER
LP 214568Q

MODIFICATION TABLE

RECORD OF ALL ADDITIONS OR CHANGES TO THE PLAN

LAND	MODIFICATION	DEALING REFERENCE	DATE AND TIME ENTERED		NEW EDITION NUMBER	SIGNATURE OF ASSISTANT REGISTRAR OF TITLES
			DATE	TIME		
LOTS 973, 974, 1018 & 1019	CREATION OF EASEMENT	P522498			2	
1010	SUBDIVISION	PS334373			3	

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**Proposed construction of three
double storey dwellings**

161 Hothlyn Drive, Craigieburn

1. Introduction

This planning report has been prepared on behalf of the registered proprietors of the subject site to accompany a planning permit application to the Hume City Council for development of the land at 161 Hothlyn Drive, Craigieburn.

This application seeks approval for the construction of three double storey dwellings on the subject site.

This submission incorporates a review of the Hume Planning Scheme, along with a detailed review of the subject site and surrounds. The submission also includes:

- A detailed description of the proposed development;
- A description of the existing conditions of the site, the area in which it is located and photographs;
- Architectural drawings including elevations and floor plans;
- An assessment of the proposal against the State and Local policy requirements of the Hume Planning Scheme.



Figure 1: Subject site locality plan (Melways, 2021)

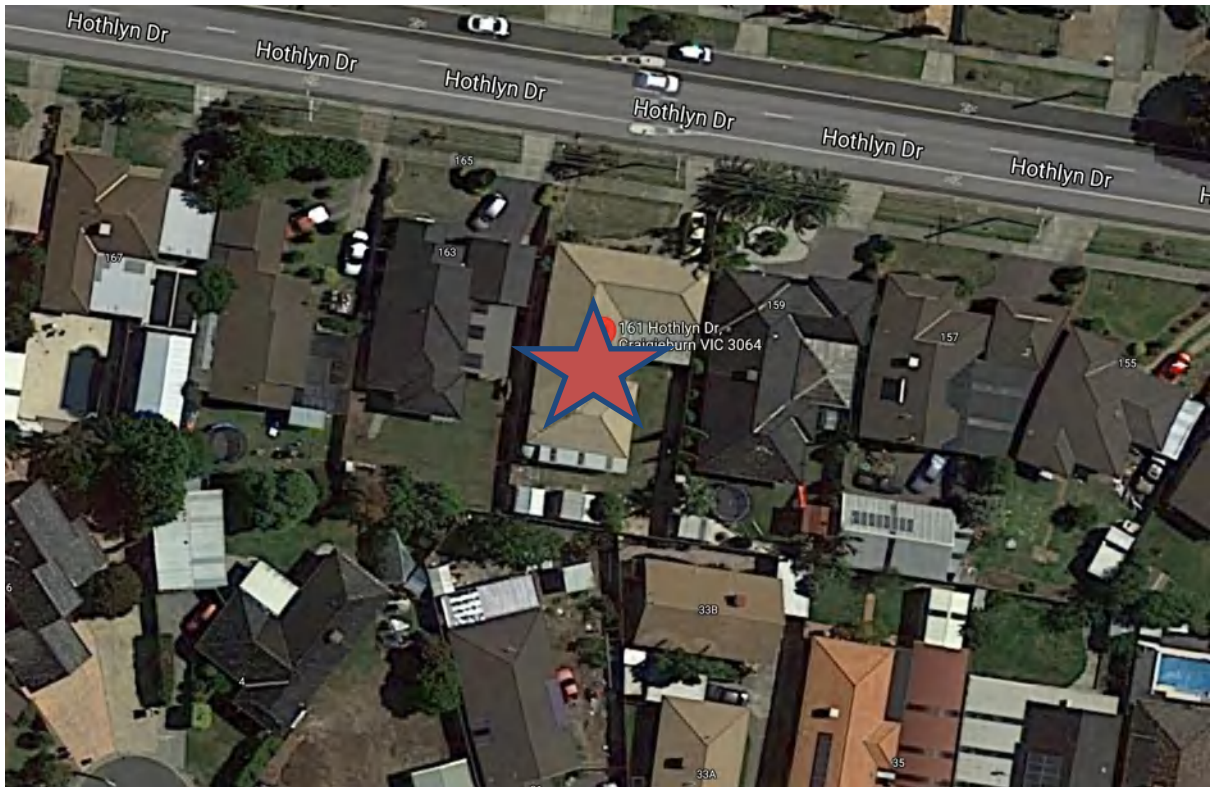


Figure 2: Aerial photograph view onto the subject site (Google Earth,2021)



Figure 3: Views onto the subject site from the streetscape



Figure 4: Views onto the adjoining dwelling to the west



Figure 5: Views from the subject site looking east



Figure 6: Views from the subject site looking north onto the opposite side of the roadway

2. The subject site and surrounding context

The subject site is located on the southern side of Hothlyn Drive in Craigieburn approximately 100 metres east from Bridgewater Road.

The subject site currently comprises of an existing single storey brick dwelling with a tiled roof. The existing dwelling is setback approximately 6 metres from the northern boundary along Hothlyn Drive. There are two existing sheds located adjacent to the rear boundary together with a water tank which is located directly behind the existing dwelling.

The subject site is relatively flat as shown in the plans tendered with this application and the total site area comprises of 650 square metres. There is an existing 2 metre wide easement shown in the title plan along the rear boundary. The existing vehicle crossing is located in the north east corner of the site.

There is no existing fencing along the front boundary and there is existing vegetation scattered throughout the subject site none of which are significant.

A covenant also applies under land title which states *“that he will not build or cause to be built on any part of the land transferred any dwelling having an external surface constructed with less than eighty per cent (80%) brick or brick veneer excluding glazing and such dwelling shall not have a living area of less than 115sqm or have a roof constructed or clad with reflective material or to build or cause to be built or to place or cause to be placed on any part of the land transferred any caravan or mobile home or temporary or removable building or any building moved from another site other than a builders shed...”*. Based on our review it is considered that the proposal is not in contravention of the encumbrances noted above.

The subject site is located within walking distance of the local shops located east along Hothlyn Drive. The subject site also has the benefit of being located in close proximity recreational park land facilities, the Craigieburn secondary school and a childcare centre all within distance of the site adjacent to the existing shops.

The subject site is also located within walking distance of bus services that operate along Hothlyn Drive and along Bridgewater Drive. The Craigieburn Train Station is located approximately 1.5 kilometres northeast from the site.

Western interface

Abutting the subject site to the west is an existing single storey brick dwelling which is constructed 6.1 metres from the front boundary. The existing garage is setback between 1.7 metres from the common boundary and the remainder of the dwelling is setback a minimum of 7.1 metres. There are three existing windows orientated towards the subject site including a verandah area directly adjacent to the site. It appears the dwellings private open space is located to the east and south of the existing dwelling.

The properties are also separated by an existing metal fence which has been constructed 2 metres in height.

Eastern interface

Abutting the site to the east is no. 159 Hothlyn Drive which is constructed in single storey brick form. The existing dwelling is setback 6 metres from the front boundary and is setback between 1.7 metres to 2.3 metres from the common property boundary. There are four existing habitable room windows orientated towards the

subject site including existing canopy vegetation which has been planted along the western boundary.

The properties are also separated by an existing metal fence which has been constructed 1.9 metres in height.

Southern Interface

To the south of the subject site is the private open space of no. 31 and 33B Amesbury Street. No. 33B Amesbury Street has been constructed a minimum of 3 metres from the northern boundary which includes one habitable room windows orientated towards the site. The dwellings are also separated by a metal fence up to 1.9 metres in height.

Hothlyn Drive

Hothlyn Drive is a local roadway and is characterised by predominantly single storey building form with side boundary development constructed of brick and rendered finishes. Some of the dwellings have been renovated and others appear to have not been altered from the original construction date.

The existing roadway also has bike lane provision on each side of the road including unrestricted car parking.

The wider area generally comprises of single and some two storey building form. There are some examples of medium density dwellings upto two storeys in height including attached dwellings which are generally constructed of brick and rendered finishes with predominantly pitched roofs. The backyard scape comprises of building form which includes dwellings and outbuildings.

Setbacks throughout this precinct generally vary and the front setbacks comprise predominantly of low size vegetation with clear outlooks onto the dwellings that are present along the streetscape setting. The dwellings including their garages are a dominant feature in this streetscape.

3. The Proposal

The development proposal is shown in the architectural drawings prepared by Ikonomidis Design Studio.

This application proposes to construct three double storey dwellings on the subject site. Dwelling 1 will be orientated towards the streetscape and Dwelling 2 and 3 will be constructed to the rear of the site.

Each dwelling will comprise an open plan living/kitchen/dining area, powder room, and a laundry on the ground floor. The first floor of Dwelling 1 will comprise of three bedrooms and a bathroom. The first floor of Dwelling 2 and 3 will comprise of two bedrooms and a bathroom.

The secluded private open space for Dwelling 1 will be located along the western side of the dwelling and will comprise of a minimum of 25.41sqm. The secluded private open space for Dwelling 2 will be located along the southern side of the dwelling and will comprise of 38.4sqm and the secluded private open space for Dwelling 3 will also be located along the south side of the dwelling and will comprise of 59.88sqm.



Figure 7: Perspective views onto Dwelling 1 from the streetscape

The existing vehicle crossing will be retained and will provide vehicle access for Dwelling 1. A new vehicle crossing is proposed to provide vehicle access for Dwelling 2 and 3 which will be located in the northwest corner of the site.

The proposed dwellings will be constructed of contemporary material finishes and colours and includes brick and rendered finishes together with tiled pitched roofs. Feature cladding is also proposed to provide further visual articulation. The materials and finishes proposed have drawn direct reference from the surrounding area.

There is ample opportunity for canopy vegetation within the front setback and private open space of each dwelling as demonstrated by the plans tendered as part of this application. Landscaping is also proposed along the side boundaries and along both sides of the driveway area. A 1.8 metre high timber paling fence is also proposed around the secluded private open space of Dwelling 1.

The letterboxes for each dwelling will be located along the front boundary area along Hothlyn Drive.



Figure 8: Perspective views onto Dwelling 2 and 3 from the proposed driveway

4. Relevant Planning Scheme Provisions

The Victorian Planning Schemes seek to achieve the objectives of planning in Victoria as set out in Section 4(1) of the Planning & Environment Act 1987. These objectives are:

- *To provide for the fair, orderly, economic and sustainable use and development of land.*
- *To provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity.*
- *To secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria.*
- *To conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value.*
- *To protect public utilities and other assets and enable the orderly provision and coordination of public utilities and other facilities for the benefit of the community.*
- *To facilitate development in accordance with the objectives set out in the points above.*
- *To balance the present and future interests of all Victorians.*

The purpose of planning schemes in Victoria seeks:

- *To provide a clear and consistent framework within which decisions about the use and development of land can be made.*
- *To express state, regional, local and community expectations for areas and land uses.*
- *To provide for the implementation of State, regional and local policies affecting land use and development*

Planning Policy Framework (PPF)

The Planning Policy Framework (SPPF) contains the general principles for land use and development in planning in Victoria. The State Planning Policy Framework seeks to ensure that the objectives of planning in Victoria are achieved through appropriate land use and development planning policies and practices which integrate relevant environmental, social and economic factors in the interests of net community benefit and sustainable development.

The SPPF sets out specific policies expressing relevant economic, social and environmental factors.

The sections of the PPF, which are relevant include:

- Clause 11 – Settlement

Under Clause 11.02-1S *Supply of Urban Land* seeks to ensure the sufficient supply of land for residential, commercial, retail, recreational, institutional and other community uses. The strategies seek to ensure there opportunities for intensification of existing urban areas and consideration of neighbourhood character and landscape considerations.

Under Clause 11.03-1S *Activity Centres* seeks to encourage the concentration of major retail, residential, commercial, administrative, entertainment and cultural development into activity centres that are highly accessible to the community.

- Clause 15 – Built Environment and Heritage

Under Clause 15.01-1S *Urban Design* seeks to create urban environments that are safe, healthy, functional and enjoyable and that contribute to a sense of place and cultural identity.

Under Clause 15.01-1R *Urban design – Metropolitan Melbourne* seeks to create a distinctive and liveable city with quality design and amenity.

Under Clause 15.01-2S *Building design* to achieve building design outcomes that contribute positively to the local context and enhance the public realm.

Under Clause 15.01-4S *Healthy neighbourhoods – metropolitan Melbourne* seeks to create a city of 20-minute neighbourhoods, that give people the ability to meet most of their everyday needs within a 20-minute walk, cycle or local public transport trip from their home.

Under Clause 15.01-5S *Neighbourhood Character* seeks to recognise, support and protect neighbourhood character, cultural identity, and sense of place.

Under Clause 15.02-1S *Energy and Resource Efficiency* seeks to encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions.

- Clause 16 – Housing

Under Clause 16.01-1S *Integrated Housing* seeks to promote a housing market that meets community needs. It also seeks to increase the supply of housing in existing urban areas by facilitating increased housing yield in appropriate locations.

Under Clause 16.01-1R *Integrated housing – Metropolitan Melbourne* seeks to provide the scale of growth in different areas and allows for a range of growth categories. The subject site is located in a high change growth area.

Under Clause 16.01-2S *Location of residential development* seeks to locate housing in designated locations that offer good access to jobs, services and transport.

Under Clause 16.01-2R *Housing opportunity areas – Metropolitan Melbourne* seeks to identify area that offer opportunities for more medium and high-density housing near employment and transport in Metropolitan Melbourne. It also seeks manage the supply of new housing to meet population growth and create a sustainable city by developing housing and mixed-use development opportunities in metropolitan activity centres.

Under Clause 16.01-3S *Housing diversity* to provide for a range of housing types to meet diverse needs.

Local Planning Policy Framework (LPP)

The Local Planning Policy comprises the Municipal Strategic Statement (MSS) and local planning policies. The Municipal Strategic Statement (MSS) is a concise statement of the key strategic planning, land use and development objectives for the municipality and the strategies and actions for achieving the objectives.

The Local Planning Policies are tools used to implement the objectives and strategies of the Municipal Strategic Statement.

The Council's vision and mission under Clause 21.01-3 notes that:

Vision: Hume City Council will be recognised as a leader in achieving social, environmental and economic outcomes with a common goal of connecting our proud community and celebrating the diversity of Hume.

Mission: To enhance the social, economic and environmental prosperity of our community through vision, leadership, excellence and inclusion.

The Local Planning Policies are tools used to implement the objectives and strategies of the Municipal Strategic Statement. Under the provisions of Clause 21.02 in relation to growth the objectives seek to facilitate large scale change that meets the needs of Hume's growing population and provides choice and equitable access to a range of housing, employment, transport, services and facilities and also to ensure that the planning for growth in Hume minimises the impact on the environment and heritage.

Clause 21.03-2 *Housing* seeks to increase the diversity of housing in Hume and to encourage well designed infill residential development that provides smaller housing product. The policy also seeks to encourage smaller one- and two-bedroom dwellings and ensure medium density development is provided.

Under Clause 21.04-1 *Urban Design* the policy seeks to enable well designed medium and higher density residential development that protects the amenity of existing residents and sensitively responds to identified preferred neighbourhood character.

Under Clause 21.04-3 *Landscape Character* the policy seeks to ensure development protects significant and unique landscape values which contribute to Hume's character and identity.

Under Clause 21.08 *Water Quality and Conservation* seeks to protect water quality and ensure that water resources are managed in a sustainable way. Development should be designed to minimise wastewater and stormwater discharge and maximise reuse.

Planning Scheme Amendments

Based on our enquiries there are no current planning scheme amendments that affect this application.

Zoning

The subject site is in a General Residential Zone (Schedule 1) under the Hume Planning Scheme. The surrounding land is also zoned General Residential.

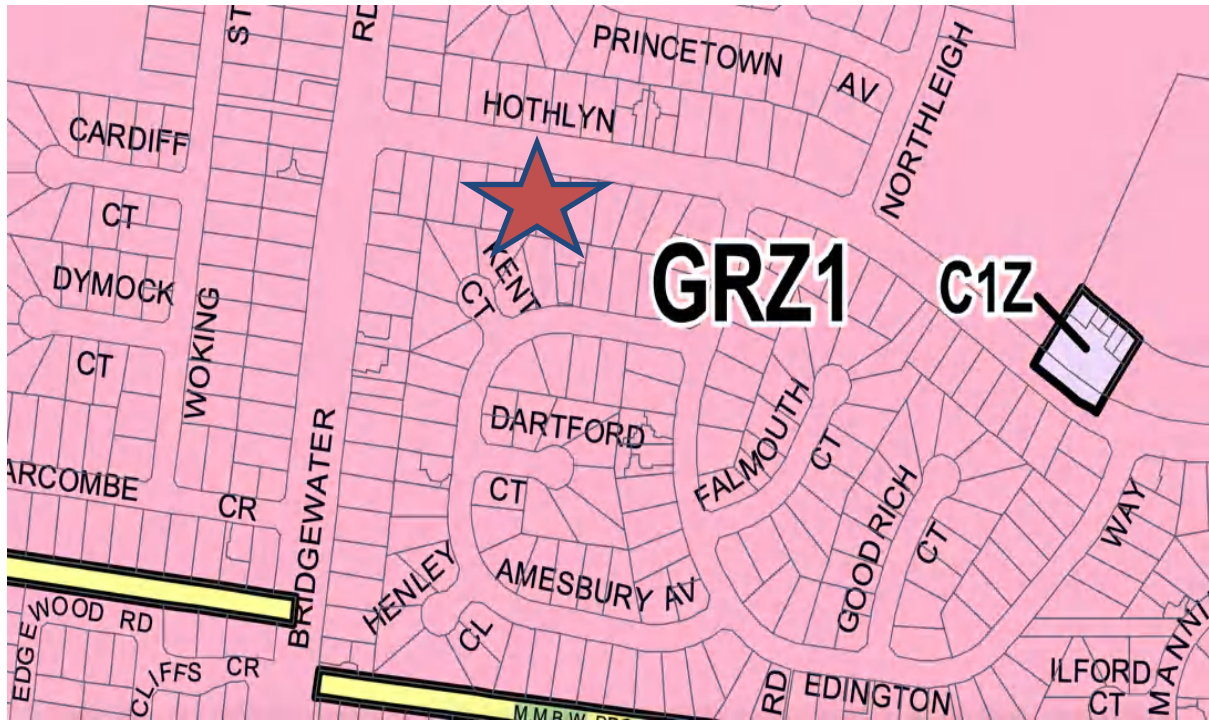


Figure 7: Zoning map (Hume Planning Scheme mapping, 2021)

The purpose of the General Residential Zone reads as follows:

- *To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- *To encourage development that respects the neighbourhood character of the area.*
- *To encourage a diversity of housing types and housing growth particularly in locations offering good access to services and transport.*
- *To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.*

The schedule to the zone does not specify any particular design requirements.

Under Clause 32.08-4 the lot must provide the minimum garden area at ground level as specified within the table. The minimum percentage of the site set aside for

garden space must be 35%. We note that the garden space required under these provisions has been provided.

Under Clause 32.08-6 of the General Residential 1 Zone a planning permit is required for two or more dwellings on a lot. The development must meet the requirements of Clause 55 of the Hume Planning Scheme.

Before deciding on an application, in addition to the decision guidelines in Clause 65, the Hume Council must consider, as appropriate:

- *The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- *The interface with adjoining zones, especially the relationship with residential areas*
- *The effect that existing uses may have on the proposed use.*
- *The drainage of the land.*
- *The availability of and connection to services.*
- *The effect of traffic to be generated on roads.*
- *The interim use of those parts of the land not required for the proposed use*
- *Provision for vehicles providing for supplies, waste removal and emergency services and public transport.*
- *The effect the subdivision will have on the potential of the area to accommodate the uses which will maintain or enhance its competitive strengths*
- *The movement of pedestrians and cyclists, and vehicles providing for supplies, waste removal, emergency services and public transport.*
- *The provision of car parking.*
- *The streetscape, including the conservation of buildings, the design of verandahs, access from the street front, protecting active frontages to pedestrian areas, the treatment of the fronts and backs of buildings and their appurtenances, illumination of buildings or their immediate spaces and the landscaping of land adjoining a road.*
- *The storage of rubbish and materials for recycling*
- *Defining the responsibility for the maintenance of buildings, landscaping and paved areas.*
- *Consideration of the overlooking and overshadowing as a result of building or works affecting adjoining land in a General Residential Zone, Neighbourhood Residential Zone, Residential Growth Zone or Township Zone.*
- *The availability of and connection to services.*
- *The design of buildings to provide for solar access.*

- *The objectives, standards and decision guidelines of Clause 54 and Clause 55. This does not apply to a development of five or more storeys, excluding a basement.*

Overlays

Under the Hume Planning Scheme, no planning scheme overlays apply to the subject site.

Particular Provisions

The following particular provisions apply to this proposal.

- Clause 52.06 Car Parking

The objectives read as follows:

- *To ensure that car parking is provided in accordance with the State Planning Policy Framework and Local Planning Policy Framework.*
- *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.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

Under Clause 52.06-5 the number of car parking spaces required for a dwelling of two bedroom is one and three or more bedrooms is two. Each proposed dwelling is to be provided with off street parking provision in accordance with the requirements under Clause 52.06-5.

- Clause 53.18 Stormwater Management in urban Development

The policy seeks to ensure that stormwater in urban development, including retention and reuse, is managed to mitigate the impacts of stormwater on the

environment, property and public safety, and to provide cooling, local habitat and amenity benefits.

General Provisions

- Clause 65 - Decision Guidelines

The decision guidelines note that because a permit can be granted does not imply that a permit should or will be granted. The responsible authority must decide whether the proposal will produce acceptable outcomes in terms of the decision guidelines of this clause.

Before the responsible authority decides on an application or approval of a plan, they must consider as appropriate:

- *The matters set out in Section 60 of the Act.*
- *The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- *The purpose of the zone, overlay or other provision.*
- *Any matter required to be considered in the zone, overlay or other provision.*
- *The orderly planning of the area.*
- *The effect on the amenity of the area.*
- *The proximity of the land to any public land.*
- *Factors likely to cause or contribute to land degradation, salinity or reduce water quality.*
- *Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.*
- *The extent and character of native vegetation and the likelihood of its destruction.*
- *Whether native vegetation is to be or can be protected, planted or allowed to regenerate.*
- *The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.*
- *This clause does not apply to a VicSmart application.*

5. ResCode

Clause 55 (ResCode) is applicable to the proposal. Attachment 1 contains an assessment of the proposal against the relevant standards of ResCode.

The assessment reveals a high level of compliance with the objectives and standards of ResCode. Specifically, the assessment indicates that:

- The proposed dwellings are consistent and respectful to the existing and emerging neighbourhood character of the area in respect to the design, scale and layout of the development;
- The private open space provision is considered appropriate for each proposed dwelling and will receive adequate levels of sunlight and daylight;
- The proposed front, side and rear setbacks comply with the relevant standards and objectives;
- Adequate on-site car parking has been provided for each dwelling;
- The proposed crossovers will not create any unreasonable amenity impacts on the streetscape and will retain on street vehicle parking;
- The proposed dwellings will not create any unreasonable overshadowing impacts on the adjoining properties or their habitable room windows;
- The proposal will protect the amenity of adjoining residential properties; and
- The subject site has the capacity to accommodate the proposed development without creating any unreasonable impacts on the neighbouring properties.

6. Hume City Council Housing Diversity Strategy June 2020

The Housing Diversity Strategy is an important plan for the Council to in summary ensure there is a home for everyone in Hume over the next 20 years. The strategic document has been adopted by the Council in June 2020.

In summary under the Strategy the subject site is located within an area nominated for a 'Gradual' level of housing change due to its location. The document confirms that the character of this area will change over time.

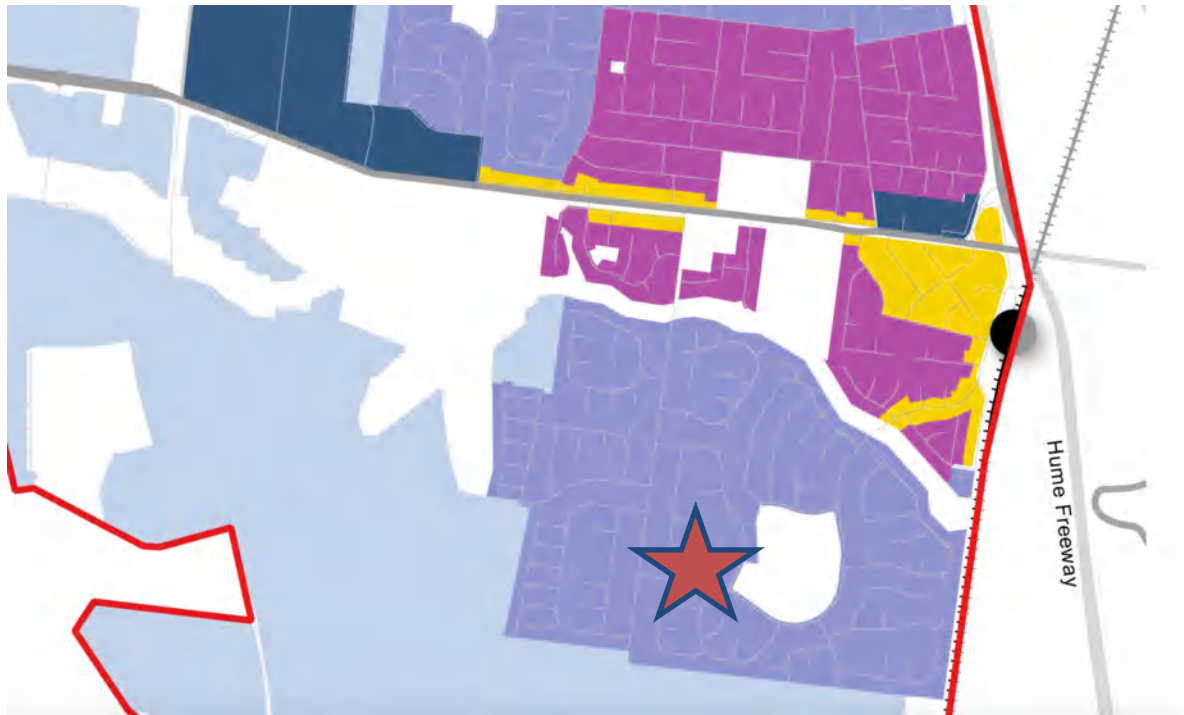


Figure 8: Housing Diversity Strategy map (Craigieburn Area)

These areas nominated for gradual change will continue to be the preferred location for large family homes, units and townhouses will provide housing diversity. The strategic document notes that these areas provide for housing change including a mix of one and two storey units and townhouses as well as some three storey apartments.

We believe the proposed development is entirely consistent with the objectives and directions of the strategy which encourages the form of development being proposed as part of this application.

7. Planning assessment of the Proposal

The proposed development will provide further housing options and is site responsive without compromising on the amenity of the adjoining dwellings. The design of the proposed dwellings with adequate side and rear setbacks ensures that the amenity of the adjoining properties is protected, while providing dwellings which positively contribute to the existing and preferred neighbourhood character.

The proposal positively addresses the State Planning Policy Framework as it will provide for a well-designed medium density development in an area that can readily support it, in close proximity to all community facilities, services and public transport options. Clause 15 of State Planning Policy encourages development to

respond to the surrounding area. It seeks to encourage development that contributes to the local urban character while minimising unreasonable impacts to the adjoining properties.

The proposed dwellings are located within walking distance of local shops. The subject site is also located within walking distance of bus services that operate along the streetscape and is within close proximity of the Craigieburn Train Station. The site also benefits from convenient access to a range of local education facilities and parkland immediately east of the site. The site is an ideal candidate for the type of development proposed as part of this application. Medium density development of this kind has already occurred in this neighbourhood including development.

In terms of the proposed built form the dwellings will be well articulated at ground and first floor reducing visual bulk when viewed from the streetscape and the adjoining residential properties. The proposed colours and good quality materials will reduce the negative impacts of mass when viewed from the adjoining properties. The proposed dwellings will be well articulated and modulated ensuring there are no unreasonable amenity impacts to the residential properties along the side and rear interfaces. There will be no visual bulk issues from the proposal on the adjoining residential properties.

The proposed dwellings will be setback a minimum of 4 metres from the rear boundary at ground level and a minimum of 5 metres on the first floor with further recessed elements. The proposed first floor building form will be well recessed from the side boundaries and the setback proposed on the first floor between Dwelling 1 and 2 will create a physical break between the form on the first floor mid-block. We believe the proposed setbacks, overall building heights, material finishes and colours, window proportions and screen planting along the boundaries will ensure there is no visual bulk issues to these properties and their private open spaces.

The proposed development will not cause any detrimental overshadowing onto the adjoining private open space areas or habitable room windows as demonstrated by the development plans tendered as part of this application. The secluded private open space of Dwelling 2 and 3 will also receive adequate levels of solar access.

The proposed front setback of Dwelling 1 at ground and first floor has been staggered and articulated so that it does not create unreasonable amenity impacts when viewed from the streetscape. Furthermore, the space set aside within the

front setback will allow for canopy tree planting and vegetation to provide a green outlook onto the subject site from the streetscape.

Solar access has been maximised wherever possible to most habitable windows. The proposal will promote energy and resource efficiency, and this is confirmed through the Environmentally Sustainable Design principles employed. The proposal will not compromise access to sunlight, daylight and weather protection of adjoining sites as demonstrated under the development plans provided as part of this application.

The materials and colours proposed will be contemporary and respective of the existing neighbourhood character elements. This is encouraged under the neighbourhood character precinct guidelines. The proposed development will respond to the streetscape character in a contemporary manner however acknowledges the existing architecture in the area. The proposal will in turn enhance the look of the subject site from the adjoining properties and uses a variety of finishes to complement the material finishes in the area. The façade treatment will provide an interesting outlook on the site and will be visually articulated when viewed from the streetscape.

The proposed vehicle accessways will not create any unreasonable effects on the operation and public safety of this public roadway. A vehicle parking space can be accommodated on the street between the existing and proposed vehicle crossing. In addition, each dwellings parking provision meets the requirements of Clause 52.06-5 in relation to car parking.

The proposed development is not in contravention of the covenant that applies to the land. The development plans demonstrate that 80.85% of the external surfaces will be constructed in brick veneer.

The proposed setbacks of the built form are well recessed from the canopy trees located on the adjoining properties. The plans demonstrate that there will be no unreasonable impacts on the tree protection zones of these existing trees immediately adjacent to the site along the side boundaries.

General Residential Zone (Schedule 1) Response

The proposal responds positively to the objectives and decision guidelines of the General Residential Zone. The low scale proposal over two storey's in height

provides a development which responds to the existing characteristic elements of the neighbourhood including the setbacks, upper level recessive elements, roof form and landscaping provision. The proposal responds to the existing characteristic features found within this neighbourhood.

The site is located in an area where medium density development is encouraged subject to a design response that responds to the existing neighbourhood character features. The proposal will not be intrusive visually to the street and will not create a foreign element within the backyard scape.

The proposed height of the dwellings reflects the preferred building height and the proposed setbacks achieve the desired spatial proportion of the street. The proposed car parking areas will have no visual impact on the streetscape and the proposal also includes landscaping that has been integrated within the design of the proposed dwellings.

Stormwater Management in Urban Development Response

A Sustainable Design Assessment has been completed by Keystone Alliance Sustainability Solutions.

The report demonstrates that the proposal maximises the retention and reuse of stormwater, reduces the impact of stormwater on the drainage system and filters sediment and waste from stormwater prior to discharge from the site. The proposal also contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.

The SDA report confirms the following:

- Water efficient fixtures and fittings (5.0 Star).
- Rainwater tanks and Enviss pit are the measures used to treat the stormwater.
- All sanitary flushing, laundries and garden irrigation to operate using rainwater tanks.
- The proposal achieves a BESS SCORE 65%

8. Conclusion

Having considered the above assessment, we conclude that the development proposal for three double storey dwelling is an appropriate development response for the subject site. The State and Local Planning Policies encourage well designed medium density residential development in areas that are in close proximity to public transport and community services.

The design response is considered appropriate based on the following attributes:

- The proposal has been designed to take advantage of the existing physical and social infrastructure including the sites strategic location in close proximity to all the necessary services and facilities;
- The proposed development responds to the directions noted in Council's adopted housing strategy;
- The proposal will sit comfortably in the existing built form context;
- Adequate areas have been set aside for landscaping along the front and rear setbacks;
- The proposed additional vehicle crossing will not create any unreasonable impacts to on street parking and on the amenity of the streetscape;
- The proposed design, including the proposed setbacks, height and massing will not have any unreasonable impact upon the adjoining residential properties to the north, east and west;
- The proposed setbacks comply with the objectives and standards of Clause 55 and will not create any unreasonable amenity impacts on the adjoining properties and their private open space areas;
- The proposal provides a high level of amenity for future residents in terms of outlook, open space provision and sunlight access;
- The proposal demonstrates a high level of compliance with Clause 55 ResCode.
- The proposed development is not in contravention of the existing covenant; and
- There will be no unreasonable impacts on the existing vegetation on the adjoining lots.

We believe this site is capable of accommodating the proposed contemporary and well-designed development as outlined in this application.

The development will sit comfortably on the subject site and in the context of the neighbourhood and we believe a conditional planning permit should be granted

If you have any questions in the meantime, please let me know.

2181 PLANNING

August 2021

Attachment 1

Clause 55 – Rescode Assessment 161 Hothlyn Drive, Craigieburn

<p>Clause 55.02-1 Neighbourhood character objectives</p> <p>To ensure that the design respects the existing neighbourhood character or contributes to a preferred neighbourhood character.</p> <p>To ensure that the design responds to the features of the site and the surrounding area.</p>	<p>Standard B1</p> <p>The design response must be appropriate to the neighbourhood and the site.</p> <p>The proposed development must respect the existing or preferred neighbourhood character and respond to the features of the site.</p>	<p>The design of the proposed dwellings is appropriate in this neighbourhood and can be comfortably accommodated on the subject land. The design of the dwellings incorporates the use of brick and light weight upper level finishes and appropriate building scale and form which will positively contribute to the existing and emerging character of the area. The proposed built form includes adequate setbacks and articulation which are common elements within this area. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.02-2 Residential policy objectives</p> <p>To ensure that residential development is provided in accordance with any policy for housing in the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.</p> <p>To support medium densities in areas where development can take advantage of public transport and community infrastructure and services.</p>	<p>Standard B2</p> <p>An application must be accompanied by a written statement to the satisfaction of the responsible authority that describes how the development is consistent with any relevant policy for housing in the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.</p>	<p>This has been outlined in detail within our town planning submission.</p> <p>The proposed development is consistent with the relevant State and Local Planning Policy Framework including the Municipal Strategic Statement.</p> <p>The medium density development takes advantage of the existing public transport services and community infrastructure and services.</p> <p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.02-3 Dwelling diversity objective</p> <p>To encourage a range of dwelling sizes and types in developments of ten or more dwellings.</p>	<p>Standard B3</p> <p>Developments of ten or more dwellings should provide a range of dwelling sizes and types, including:</p> <ul style="list-style-type: none"> ▪ Dwellings with a different number of bedrooms. 	<p>Not Applicable</p>

	<ul style="list-style-type: none"> At least one dwelling that contains a kitchen, bath or shower, and a toilet and wash basin at ground floor level. 	
<p>Clause 55.02-4 Infrastructure objectives</p> <p>To ensure development is provided with appropriate utility services and infrastructure.</p> <p>To ensure development does not unreasonably overload the capacity of utility services and infrastructure.</p>	<p>Standard B4</p> <p>Development should be connected to reticulated services, including reticulated sewerage, drainage, electricity and gas, if available.</p> <p>Development should not unreasonably exceed the capacity of utility services and infrastructure, including reticulated services and roads.</p> <p>In areas where utility services or infrastructure have little or no spare capacity, developments should provide for the upgrading of or mitigation of the impact on services or infrastructure.</p>	<p>All relevant infrastructure is available to the subject site. The proposed development for an additional two dwellings will not unreasonably overload the capacity of the existing utility service provision.</p> <p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.02-5 Integration with the street objectives</p> <p>To integrate the layout of development with the street.</p>	<p>Standard B5</p> <p>Developments should provide adequate vehicle and pedestrian links that maintain or enhance local accessibility.</p> <p>Development should be oriented to front existing and proposed streets.</p> <p>High fencing in front of dwellings should be avoided if practicable.</p> <p>Development next to existing public open space should be laid out to complement the open space.</p>	<p>The proposed entry for Dwelling 1 will be from the streetscape. The entry to Dwelling 2 and 3 will be from the proposed driveway. The pedestrian and vehicle access will be safe and will enhance accessibility to each dwelling. The proposed design enhances accessibility.</p> <p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.03-1 Street setback objective</p> <p>To ensure that the setbacks of buildings from a street respect the existing or preferred neighbourhood</p>	<p>Standard B6</p> <p>Walls of buildings should be set back from streets the distance specified in Table B1.</p> <p>Porches, pergolas and verandahs that are less</p>	<p>The proposed front setback of Dwelling 1 will be from 6.1 metres. A canopy tree can also be planted within the front setback which will ensure a filtered green outlook onto the dwelling from the streetscape.</p>

<p>character and make efficient use of the site.</p>	<p>than 3.6 metres high and eaves may encroach not more than 2.5 metres into the setbacks of this standard.</p>	<p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.03-2 Building height objectives To ensure that the height of buildings respects the existing or preferred neighbourhood character.</p>	<p>Standard B7 The maximum building height should not exceed the maximum height specified in the zone, schedule to the zone or an overlay that applies to the land. If no maximum height is specified in the zone, schedule to the zone or an overlay, the maximum building height should not exceed 9 metres, unless the slope of the natural ground level at any cross section wider than 8 metres of the site of the building is 2.5 degrees or more, in which case the maximum building height should not exceed 10 metres. Changes of building height between existing buildings and new buildings should be graduated.</p>	<p>The maximum building height proposed will be approximately 7.3 metres. The proposed building height respects the existing and preferred neighbourhood character of the precinct. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.03-3 Site coverage objective To encourage development that respects the landscape character of the neighbourhood. To encourage the retention of significant trees on the site.</p>	<p>Standard B8 The site area covered by buildings should not exceed 60 per cent.</p>	<p>The proposed site coverage will be 42.55%. This site coverage respects the existing neighbourhood character and responds appropriately to the features of the site. There is adequate space provided to accommodate landscaping. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.03-4 Permeability objectives To reduce the impact of increased stormwater run-off on the drainage system. To facilitate on-site stormwater infiltration.</p>	<p>Standard B9 At least 20 per cent of the site should not be covered by impervious surfaces.</p>	<p>Approximately 35.46% of the development area will be permeable. This will reduce the impact of stormwater run-off on the drainage system and will facilitate on-site stormwater infiltration. The objective and standard has therefore been satisfied.</p>

<p>Clause 55.03-5 Energy efficiency objectives</p> <p>To achieve and protect energy efficient dwellings and residential buildings.</p> <p>To ensure the orientation and layout of development reduce fossil fuel energy use and make appropriate use of daylight and solar energy.</p>	<p>Standard B10</p> <p>Buildings should be:</p> <ul style="list-style-type: none"> ▪ Oriented to make appropriate use of solar energy. ▪ Sited and designed to ensure that the energy efficiency of existing dwellings on adjoining lots is not unreasonably reduced. <p>Living areas and private open space should be located on the north side of the development, if practicable.</p> <p>Developments should be designed so that solar access to north-facing windows is maximised.</p>	<p>The main living areas and areas of secluded private open spaces have been located to reduce fossil fuel energy use and make appropriate use of daylight and solar energy.</p> <p>The development has been sited and recessed along the site to ensure that the energy efficiency of the existing dwellings on the adjoining lots is not unreasonably reduced.</p> <p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.03-6 Open space objective</p> <p>To integrate the layout of development with any public and communal open space provided in or adjacent to the development.</p>	<p>Standard B11</p> <p>If any public or communal open space is provided on site, it should:</p> <ul style="list-style-type: none"> ▪ Be substantially fronted by dwellings, where appropriate. ▪ Provide outlook for as many dwellings as practicable. ▪ Be designed to protect any natural features on the site. ▪ Be accessible and useable. 	<p>Not Applicable</p>
<p>Clause 55.03-7 Safety objective</p> <p>To ensure the layout of development provides for the safety and security of residents and property.</p>	<p>Standard B12</p> <p>Entrances to dwellings and residential buildings should not be obscured or isolated from the street and internal accessways.</p> <p>Planting which creates unsafe spaces along streets and accessways should be avoided.</p> <p>Developments should be designed to provide good lighting, visibility and surveillance of car</p>	<p>Each of the proposed dwelling entrances will be visible with the porticos providing a clear sense of address from Hothlyn Drive and the proposed internal driveway. Lighting will also be provided to each dwelling entry way.</p> <p>The objective and standard has therefore been satisfied.</p>

	<p>parks and internal accessways.</p> <p>Private spaces within developments should be protected from inappropriate use as public thoroughfares.</p>	
<p>Clause 55.03-8 Landscaping objectives</p> <p>To encourage development that respects the landscape character of the neighbourhood.</p> <p>To encourage development that maintains and enhances habitat for plants and animals in locations of habitat importance.</p> <p>To provide appropriate landscaping.</p> <p>To encourage the retention of mature vegetation on the site.</p>	<p>Standard B13</p> <p>The landscape layout and design should:</p> <ul style="list-style-type: none"> ▪ Protect any predominant landscape features of the neighbourhood. ▪ Take into account the soil type and drainage patterns of the site. ▪ Allow for intended vegetation growth and structural protection of buildings. ▪ In locations of habitat importance, maintain existing habitat and provide for new habitat for plants and animals. ▪ Provide a safe, attractive and functional environment for residents. <p>Development should provide for the retention or planting of trees, where these are part of the character of the neighbourhood.</p> <p>Development should provide for the replacement of any significant trees that have been removed in the 12 months prior to the application being made.</p> <p>The landscape design should specify landscape themes, vegetation (location and species), paving and lighting.</p>	<p>There will be no unreasonable impacts to the existing vegetation on the adjoining allotments. The TPZ and SRZ areas have been considered as part of the design of the proposed dwellings.</p> <p>Canopy trees vegetation can be planted throughout the development including within the front setbacks and the private open space areas of each dwelling. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.03-9</p>	<p>Standard B14</p> <p>Accessways should:</p>	<p>The existing crossover will be retained and will provide vehicle access for Dwelling 1. A new</p>

<p>Access objectives</p> <p>To ensure vehicle access to and from a development is safe, manageable and convenient.</p> <p>To ensure the number and design of vehicle crossovers respects the neighbourhood character.</p>	<ul style="list-style-type: none"> ▪ Be designed to allow convenient, safe and efficient vehicle movements and connections within the development and to the street network. ▪ Be designed to ensure vehicles can exit a development in a forwards direction if the access way serves five or more car spaces, three or more dwellings, or connects to a road in a Road Zone. ▪ Be at least 3 metres wide. ▪ Have an internal radius of at least 4 metres at changes of direction. ▪ Provide a passing area at the entrance that is at least 5 metres wide and 7 metres long if the access way serves ten or more spaces and connects to a road in a Road Zone. <p>The width of accessways or car spaces should not exceed:</p> <ul style="list-style-type: none"> ▪ 33 per cent of the street frontage, or ▪ if the width of the street frontage is less than 20 metres, 40 per cent of the street frontage. <p>No more than one single-width crossover should be provided for each dwelling fronting a street.</p> <p>The location of crossovers should maximise the retention of on-street car parking spaces.</p> <p>The number of access points to a road in a</p>	<p>vehicle crossing will be constructed for Dwelling 2 and 3. The width of the accessways will not occupy more than 33% of the street frontages.</p> <p>The vehicle accessways will allow convenient, safe and efficient vehicle movements and connections to the roadway for vehicles entering and leaving the proposed vehicle crossings. The accessways will provide access for service and emergency vehicles.</p> <p>The objective and standard has therefore been satisfied.</p>
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	<p>Road Zone should be minimised.</p> <p>Developments must provide for access for service, emergency and delivery vehicles.</p>	
<p>Clause 55.03-10 Parking location objectives</p> <p>To provide convenient parking for resident and visitor vehicles.</p> <p>To avoid parking and traffic difficulties in the development and the neighbourhood.</p> <p>To protect residents from vehicular noise within developments.</p>	<p>Standard B15</p> <p>Car parking facilities should:</p> <ul style="list-style-type: none"> ▪ Be reasonably close and convenient to dwellings and residential buildings. ▪ Be secure. ▪ Be designed to allow safe and efficient movements within the development. ▪ Be well ventilated if enclosed. <p>Large parking areas should be broken up with trees, buildings or different surface treatments.</p> <p>Shared accessways or car parks of other dwellings and residential buildings should be located at least 1.5 metres from the windows of habitable rooms. This setback may be reduced to 1 metre where there is a fence at least 1.5 metres high or where window sills are at least 1.4 metres above the accessway.</p>	<p>The proposed dwellings will be provided with the required car parking provision onsite. Each car parking space proposed will be secure and easily accessible for the future occupants of each dwelling.</p> <p>The proposed parking and access areas will be practical and attractive.</p> <p>The proposed car parking spaces meet the numerical standards as nominated under this standard.</p> <p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.04-1 Side and rear setbacks objective</p> <p>To ensure that the height and setback of a building from a boundary respects the existing or preferred neighbourhood character and limits the impact on the amenity of existing dwellings.</p>	<p>Standard B17</p> <p>A new building not on or within 200mm of a boundary should be set back from side or rear boundaries:</p> <ul style="list-style-type: none"> ▪ At least the distance specified in a schedule to the zone, or ▪ If no distance is specified in a schedule to the zone, 1 metre, plus 0.3 	<p>The proposed setbacks of the upper level of each dwelling along the eastern and western boundaries complies with the standard and objectives. The setbacks will allow for appropriate articulation without impacting on the amenity of adjoining properties and their private open space areas.</p> <p>The proposed dwellings are also well recessed from the dwellings to the south at ground and first floor and will not create any unreasonable amenity impacts to the existing private open space areas.</p>

	<p>metres for every metre of height over 3.6 metres up to 6.9 metres, plus 1 metre for every metre of height over 6.9 metres.</p> <p>Sunblinds, verandahs, porches, eaves, fascias, gutters, masonry chimneys, flues, pipes, domestic fuel or water tanks, and heating or cooling equipment or other services may encroach not more than 0.5 metres into the setbacks of this standard.</p> <p>Landings having an area of not more than 2 square metres and less than 1 metre high, stairways, ramps, pergolas, shade sails and carports may encroach into the setbacks of this standard.</p>	<p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.04-2 Walls on boundaries objective</p> <p>To ensure that the location, length and height of a wall on a boundary respects the existing or preferred neighbourhood character and limits the impact on the amenity of existing dwellings.</p>	<p>Standard B18</p> <p>A new wall constructed on or within 200mm of a side or rear boundary of a lot or a carport constructed on or within 1 metre of a side or rear boundary of lot should not abut the boundary:</p> <ul style="list-style-type: none"> ▪ For a length of more than the distance specified in a schedule to the zone; or ▪ If no distance is specified in a schedule to the zone, for a length of more than: <ul style="list-style-type: none"> ○ 10 metres plus 25 per cent of the remaining length of the boundary of an adjoining lot, or 	<p>The proposed garage wall of Dwelling 1 will be constructed along the eastern boundary adjacent to a non-habitable room window. The overall height and length of the wall will create no unreasonable amenity impacts on the existing dwelling to the east. The garage for Dwelling 3 will also comprise of a boundary wall to the rear along the west. The proposed wall is well recessed from any habitable room windows on the existing dwelling to the west.</p> <p>The objective and standard has therefore been satisfied.</p>

	<ul style="list-style-type: none"> o Where there are existing or simultaneously constructed walls or carports abutting the boundary on an abutting lot, the length of the existing or simultaneously constructed walls or carports, whichever is the greater. <p>A new wall or carport may fully abut a side or rear boundary where slope and retaining walls or fences would result in the effective height of the wall or carport being less than 2 metres on the abutting property boundary.</p> <p>A building on a boundary includes a building set back up to 200mm from a boundary.</p>	
<p>Clause 55.04-3 Daylight to windows objective To allow adequate daylight into existing habitable room windows.</p>	<p>Standard B19 Buildings opposite an existing habitable room window should provide for a light court to the existing window that has a minimum area of 3 square metres and minimum dimension of 1 metre clear to the sky. The calculation of the area may include land on the abutting lot.</p> <p>Walls or carports more than 3 metres in height opposite an existing habitable room window should be set back from the window at least 50 per cent of the height of the new wall if the wall is within a 55 degree arc from the centre of the existing window. The arc</p>	<p>There will be no impacts to any of the existing habitable room windows on the adjoining properties from the proposed development. The existing habitable room windows on the adjoining properties are well recessed from the proposed works on the site.</p> <p>The objective and standard has therefore been satisfied.</p>

	<p>may be swung to within 35 degrees of the plane of the wall containing the existing window.</p> <p>Where the existing window is above ground floor level, the wall height is measured from the floor level of the room containing the window.</p>	
<p>Clause 55.04-4 North facing windows objective To allow adequate solar access to existing north-facing habitable room windows.</p>	<p>Standard B20 If a north-facing habitable room window of an existing dwelling is within 3 metres of a boundary on an abutting lot, a building should be setback from the boundary 1 metre, plus 0.6 metres for every metre of height over 3.6 metres up to 6.9 metres, plus 1 metre for every metre of height over 6.9 metres, for a distance of 3 metres from the edge of each side of the window. A north-facing window is a window with an axis perpendicular to its surface oriented north 20 degrees west to north 30 degrees east.</p>	<p>Dwelling 2 is well recessed from the existing dwellings habitable room windows on the adjoining property to the south. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.04-5 Overshadowing open space objective To ensure buildings do not significantly overshadow existing secluded private open space.</p>	<p>Standard B21 Where sunlight to the secluded private open space of an existing dwelling is reduced, at least 75 per cent, or 40 square metres with minimum dimension of 3 metres, whichever is the lesser area, of the secluded private open space should receive a minimum of five hours of sunlight between 9 am and 3 pm on 22 September. If existing sunlight to the secluded private open space of an existing dwelling is less than the</p>	<p>There will be no areas of secluded private open space which will be unreasonably affected by overshadowing as shown in the proposed development plans tendered as part of this application. The proposed shadow diagrams demonstrate that there will be no unreasonable shadow impacts internally on the proposed dwellings and their private open space areas. The objective and standard has therefore been satisfied.</p>

	requirements of this standard, the amount of sunlight should not be further reduced.	
<p>Clause 55.04-6 Overlooking objective To limit views into existing secluded private open space and habitable room windows.</p>	<p>Standard B22 A habitable room window, balcony, terrace, deck or patio should be located and designed to avoid direct views into the secluded private open space of an existing dwelling within a horizontal distance of 9 metres (measured at ground level) of the window, balcony, terrace, deck or patio. Views should be measured within a 45 degree angle from the plane of the window or perimeter of the balcony, terrace, deck or patio, and from a height of 1.7 metres above floor level. A habitable room window, balcony, terrace, deck or patio with a direct view into a habitable room window of existing dwelling within a horizontal distance of 9 metres (measured at ground level) of the window, balcony, terrace, deck or patio should be either:</p> <ul style="list-style-type: none"> ▪ Offset a minimum of 1.5 metres from the edge of one window to the edge of the other. ▪ Have sill heights of at least 1.7 metres above floor level. ▪ Have fixed, obscure glazing in any part of the window below 1.7 metre above floor level. ▪ Have permanently fixed external screens to at least 1.7 metres above floor level and 	<p>No overlooking will occur internally or externally to adjoining properties as obscure glazing, aluminium louvres and raised sill window sill heights up to 1.7 metres above floor level will be adopted to the relevant habitable room windows on the first floor of each dwelling. The objective and standard has therefore been satisfied.</p>

	<p>be no more than 25 per cent transparent. Obscure glazing in any part of the window below 1.7 metres above floor level may be openable provided that there are no direct views as specified in this standard.</p> <p>Screens used to obscure a view should be:</p> <ul style="list-style-type: none"> ▪ Perforated panels or trellis with a maximum of 25 per cent openings or solid translucent panels. ▪ Permanent, fixed and durable. ▪ Designed and coloured to blend in with the development. <p>This standard does not apply to a new habitable room window, balcony, terrace, deck or patio which faces a property boundary where there is a visual barrier at least 1.8 metres high and the floor level of the habitable room, balcony, terrace, deck or patio is less than 0.8 metres above ground level at the boundary.</p>	
<p>Clause 55.04-7 Internal views objective To limit views into the secluded private open space and habitable room windows of dwellings and residential buildings within a development.</p>	<p>Standard B23 Windows and balconies should be designed to prevent overlooking of more than 50 per cent of the secluded private open space of a lower-level dwelling or residential building directly below and within the same development.</p>	<p>Views internally will be limited by obscure glazing, aluminium louvres and raised window sill heights 1.7 metres above floor level of the relevant windows. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.05-1 Accessibility objective To encourage the consideration of the needs of people with</p>	<p>Standard B25 The dwelling entries of the ground floor of dwellings and residential buildings should be accessible or able to be</p>	<p>Each dwelling entry will be accessible for people with limited mobility. The objective and standard has therefore been satisfied.</p>

limited mobility in the design of developments.	easily made accessible to people with limited mobility.	
<p>Clause 55.05-2 Dwelling entry objective To provide each dwelling or residential building with its own sense of identity.</p>	<p>Standard B26 Entries to dwellings and residential buildings should:</p> <ul style="list-style-type: none"> ▪ Be visible and easily identifiable from streets and other public areas. ▪ Provide shelter, a sense of personal address and a transitional space around the entry. 	<p>Each dwelling entrance is to be easily identifiable.</p> <p>The dwellings will be provided with a portico and each dwelling has its own sense of identity from the streetscape. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.05-3 Daylight to new windows objective To allow adequate daylight into new habitable room windows.</p>	<p>Standard B27 A window in a habitable room should be located to face:</p> <ul style="list-style-type: none"> ▪ An outdoor space clear to the sky or a light court with a minimum area of 3 square metres and minimum dimension of 1 metre clear to the sky, not including land on an abutting lot, or ▪ A verandah provided it is open for at least one third of its perimeter, or ▪ A carport provided it has two or more open sides and is open for at least one third of its perimeter. 	<p>The living areas for Dwelling 1 and 3 will be orientated to the north. The proposed living area of Dwelling 2 will be orientated to the east and south. The living areas will receive adequate levels of sunlight and daylight. The proposed habitable room windows of each dwelling will have adequate access to daylight and sunlight throughout the day. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.05-4 Private open space objective To provide adequate private open space for the reasonable recreation and service needs of residents.</p>	<p>Standard B28 A dwelling or residential building should have private open space of an area and dimensions specified in the schedule to the zone. If no area or dimensions are specified in the schedule to the zone, a dwelling or residential building should have private open space consisting of:</p>	<p>Adequate private open space for reasonable recreation and service needs of residents will be provided for each proposed dwelling.</p> <p>Each dwelling will be provided with a minimum of 25sqm of secluded private open space.</p> <p>The objective and standard has therefore been satisfied.</p>

	<ul style="list-style-type: none"> ▪ An area of 40 square metres, with one part of the private open space to consist of secluded private open space at the side or rear of the dwelling or residential building with a minimum area of 25 square metres, a minimum dimension of 3 metres and convenient access from a living room, or ▪ A balcony of 8 square metres with a minimum width of 1.6 metres and convenient access from a living room, or ▪ A roof-top area of 10 square metres with a minimum width of 2 metres and convenient access from a living room. 	
<p>Clause 55.05-5 Solar Access to Open Space To allow solar access into the secluded private open space of new dwellings and residential buildings.</p>	<p>Standard B29 The private open space should be located on the north side of the dwelling or residential building, if appropriate. The southern boundary of secluded private open space should be set back from any wall on the north of the space at least $(2+0.9h)$ metres, where 'h' is the height of the wall.</p>	<p>The proposed private open space area of Dwelling 2 and 3 is on the south side of the ground and first floor walls. As noted in the development plans the setbacks comply with the standard and we believe the space will receive adequate levels of solar access. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.05-6 Storage To provide adequate storage facilities for each dwelling.</p>	<p>Standard B30 Each dwelling should have convenient access to at least 6 cubic metres of externally accessible, secure storage space.</p>	<p>Storage for each dwelling will be provided within the proposed storage sheds which are all externally accessible. The objective and standard has therefore been satisfied.</p>
<p>Clause 55.06-1 Design Detail To encourage design detail that respects the existing or preferred neighbourhood character.</p>	<p>Standard B31 The design of buildings, including:</p> <ul style="list-style-type: none"> ▪ Façade articulation and detailing, ▪ Window and door proportions, 	<p>The design of the proposed new dwellings has incorporated a number of the dominant design elements from the surrounding area through the following features:</p> <ul style="list-style-type: none"> • The use of brick and lightweight rendered materials finishes

	<ul style="list-style-type: none"> ▪ Roof form, and ▪ Verandahs, eaves and parapets, should respect the existing or preferred neighbourhood character. <p>Garages and carports should be visually compatible with the development and the existing or preferred neighbourhood character.</p>	<ul style="list-style-type: none"> • Tiled pitched roof form, • Articulated first floor and glazed elements, • Window sizes and proportions. • Private open space provision on the ground floor. <p>The objective and standard has therefore been satisfied.</p>
<p>Clause 55.06-2 Front Fences</p> <p>To encourage front fence design that respects the existing or preferred neighbourhood character.</p>	<p>Standard B32</p> <p>The design of front fences should complement the design of the dwelling or residential building and any front fences on adjoining properties.</p> <p>A front fence within 3 metres of a street should not exceed:</p> <ul style="list-style-type: none"> ▪ Streets in a Road Zone, Category 1: 2 metres. ▪ Other streets: 1.5 metres. 	<p>The proposed fencing around the secluded private open space of Dwelling 1 will be 1.8 metres in height however will be recessed back behind the line of Dwelling 1. No fencing is proposed along the front boundary.</p> <p>The objective and standard has been satisfied.</p>
<p>Clause 55.06-3 Common Property</p> <p>To ensure that communal open space, car parking, access areas and site facilities are practical, attractive and easily maintained.</p> <p>To avoid future management difficulties in areas of common ownership.</p>	<p>Standard B33</p> <p>Development should clearly delineate public, communal and private areas.</p> <p>Common property, where provided, should be functional and capable of efficient management.</p>	<p>Not Applicable</p>
<p>Clause 55.06-4 Site Services</p> <p>To ensure that site services can be installed and easily maintained.</p> <p>To ensure that site facilities are accessible, adequate and attractive.</p>	<p>Standard B34</p> <p>The design and layout of dwellings and residential buildings should provide sufficient space (including easements where required) and facilities for services to be installed and maintained efficiently and economically.</p>	<p>The bins for each dwelling will be stored within the private open space areas.</p> <p>Each dwelling will be provided with a mailbox located along the front boundary.</p> <p>The objective and standard has therefore been satisfied.</p>

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	<p>Bin and recycling enclosures, mailboxes and other site facilities should be adequate in size, durable, waterproof and blend in with the development.</p> <p>Bin and recycling enclosures should be located for convenient access by residents.</p> <p>Mailboxes should be provided and located for convenient access as required by Australia Post.</p>	
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3rd September 2021

Ikonomidis Design Studio,
277 Plenty Road,
Preston,
VIC 3072.

Re: 161 Hothlyn Drive, Craigieburn – Construction Impact Assessment

Brief

I was contacted by you and asked to provide a preliminary arborist report to understand the condition of existing and neighbouring vegetation to the site. Following the preliminary arborist report, you have requested the report be revised to provide a Construction Impact Assessment of the proposal on any surrounding vegetation.

Method

The trees were inspected visually; as per Australian standard 4970 – Protection of Trees on Development Sites (AS 4970), as required to facilitate this report. Heights and canopy spreads estimated, Diameter at Breast Height (DBH) and Diameter at Buttress (DAB) measured unless in a neighbouring property which are estimated. No root excavations were carried out and images were taken as required. Some species may require further identification. Any trees we nominate for removal are an opinion we are expressing only and do not provide any authority for tree removal. Prior to the removal of any trees council or the determining authority must be contacted, and property titles checked to ensure no permits are required and tree removal is legal. Date Visited 7/06/2021

The Site

The site is typical to residence in the area, with a single storey brick dwelling and attached garage. To the rear of the block are two sheds. The site is flat with little topographical variation. Vegetation to the site is minimal, with a few ornamental exotic trees. Surrounding vegetation is a mix of exotic palms and conifers, with some native and exotic trees. Following a review of planning overlays on planning.vic.gov.au it appears there are no overlays affecting removal of vegetation from the site.

The Trees



Tree 01 is a Bottlebrush to the nature strip of Hothlyn Drive, adjacent the site. It is maturing in a below average manner, with some structural faults leading to poor form, along with a heavy infestation of scale leading to black sooty mould. It is unlikely to recover and is of a low retention value. Under the proposal it is proposed for removal. Given it is on council land it will require their approval for this to proceed.



Tree 02 is a Paulownia to the neighbouring side of the western boundary. It has been cut back to base previously with two new poorly structured trunks having regrown from the decaying base. It will grow rapidly into a large tree to 12m + and is proposed for removal under the proposal.



Tree 03 is a Canary Island Date Palm to the nature strip of Hothlyn Drive, east of the site. It is maturing typically for the species and will become a substantial palm over time. Given the overhead powerlines it will likely require removal, as pruning around the powerlines will not be feasible.

Under the proposal it would not be impacted. As it is on council land it must be protected prior to the proposal proceeding. Tree Protection Fencing (TPF) will be required to the extent of its Tree Protection Zone (TPZ), as per AS-4970, forming an enclosed space within the lawn area of the nature strip.



Trees 04, 05 and 06 are Queen Palms to the neighbouring side of the eastern boundary. They are maturing typically for the species and will likely mature into moderate sized palms. The proposed driveway and dwelling would encroach 25.4% into the TPZ of Tree 04, 28.5% into the TPZ of Tree 05 and 33.4% into the TPZ of Tree 06. Whilst all encroachments are above the acceptable 10% as per AS-4970, as the proposed works are replacing existing concrete and part of the dwelling the neighbouring trees would not be impacted. Prior to the proposal proceeding they must be protected. TPF will be required along the site boundary running the extent of their TPZ. The existing driveway will provide adequate protection for any underlying roots, however the proposed driveway will need to be laid immediately following its demolition to ensure any minor roots below remain protected.



LANDSCAPES BY DESIGN

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Trees 07, 08, 09, 11 and 13 are Dwarf Golden Biota. Trees 10 and 12 are Golden Pencil Pines. All are maturing typically for the species, with the Biota unlikely to mature further, with Tree 10 and 12 likely to mature further, with minimal canopy spread. Under the proposal there would be 17.8% encroachment into the TPZ of Tree 07, 1.4% into the TPZ of Tree 09, 5.9% into the TPZ of Tree 10, 1.7% into the TPZ of Tree 11, and 4.1% into the TPZ of Tree 12. To mitigate the encroachment into the TPZ of Tree 07 the proposed storage unit will need to be located clear of it and any other trees TPZ. All other trees have less than the acceptable 10% encroachment as per AS-4970. As such assuming the storage unit can be shifted none would be impacted by the proposal. Prior to the proposal proceeding, they must be protected. Ground Protection Measures as per AS-4970 will be require to the extent of their TPZ's between the site boundary and proposed works. Protection measures must be in place for the duration of the development.



Tree 14 is a Mexican Fan Palm to the neighbouring side of the eastern boundary. Its maturing well for the species and likely to mature into a tall palm over time. The proposal would encroach 2.7% into the TPZ of Tree 14, within the acceptable 10% as per AS-4970. As such it would not be impacted by the proposal. As it is neighbouring it will require protection if a proposal proceeds. Tree protection measures are as for Tree 07-13.

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Masters of Landscape Architecture
Graduate Diploma of Arboriculture



Tree 15 is a Dwarf Golden Biota; Tree 16 is a Hedge Pittosporum. Both are located to the south of the site. Both have mature in a poor manner. Tree 16 has poor structure and no clear trunk, impacting the form of Tree 15, as it has matured. Both are of a low retention value and proposed for removal.



Tree 17 is a Pear tree to the neighbouring side of the south-western corner of the site. It has some structural faults that will adversely affect its development into the future. It would not be impacted by the proposal. As it is neighbouring it would require protection if a proposal proceeds. Tree protection measures are as for Tree 04 – 06, with notes on encroachment into a TPZ as for Tree 01.

Site Sketch and Tree Legend as Follows



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TREE REPORTS

CONSULTATION

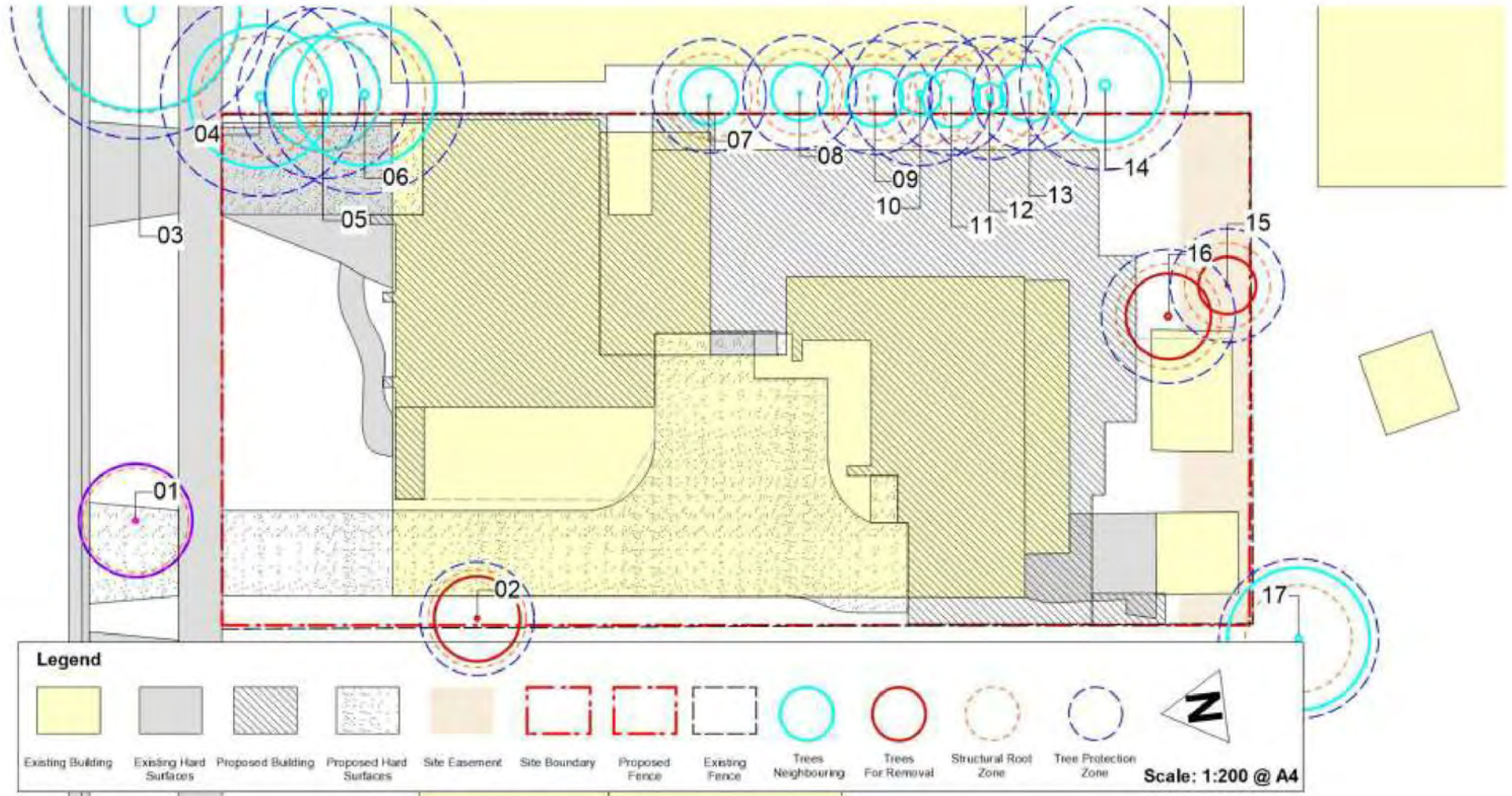
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Site Sketch: 161 Hothlyn Drive, Craigieburn





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Tree Legend

No	Botanical Name	Common Name	Origin	Height	Canopy	DBH @ 1.4 m	TPZ	DAB	SRZ	Condition	ULE	Significance	Vigor	Structure	Form	Ret Value	Age
01	Callistemon viminalis	Weeping Bottlebrush	Native	5000	4000	146	2000	250	1849	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Council	Mature
02	Paulownia tomentosa	Empress Tree	Exotic	5000	3000	128	2000	210	1718	Average	Removal	Less Significant	Average	Poor	Average	Low	Semi-Mature
03	Phoenix canariensis	Canary Island Palm	Exotic	6000	7000	1010	4500	1200	3573	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Council	Mature
04	Syagrus romanzoffiana	Queen Palm	Exotic	8000	5000	310	3500	350	2129	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
05	Syagrus romanzoffiana	Queen Palm	Exotic	6000	4000	300	3000	320	2051	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
06	Syagrus romanzoffiana	Queen Palm	Exotic	7000	5000	310	3500	350	2129	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
07	Thuja orientalis 'Aurea Nana'	Dwarf Golden Biota	Exotic	3000	2000	100	2000	150	1500	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
08	Thuja orientalis 'Aurea Nana'	Dwarf Golden Biota	Exotic	3000	2000	100	2000	150	1500	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
09	Thuja orientalis 'Aurea Nana'	Dwarf Golden Biota	Exotic	3000	2000	100	2000	150	1500	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
10	Cupressus sempervirens 'Aurea'	Golden Pencil Pine	Exotic	7000	1500	210	2520	250	1849	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature



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No	Botanical Name	Common Name	Origin	Height	Canopy	DBH @ 1.4 m	TPZ	DAB	SRZ	Condition	ULE	Significance	Vigor	Structure	Form	Ret Value	Age
11	Thuja orientalis 'Aurea Nana'	Dwarf Golden Biota	Exotic	3000	2000	100	2000	150	1500	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
12	Cupressus sempervirens 'Aurea'	Golden Pencil Pine	Exotic	7000	1000	180	2160	220	1752	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
13	Thuja orientalis 'Aurea Nana'	Dwarf Golden Biota	Exotic	3000	2000	100	2000	150	1500	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature
14	Washingtonia robusta	Mexican Fan Palm	Exotic	6000	4000	350	3000	410	2276	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Semi-Mature
15	Thuja orientalis 'Aurea Nana'	Dwarf Golden Biota	Exotic	3000	2000	63	2000	100	1500	Average	Removal	Less Significant	Average	Poor	Average	Low	Semi-Mature
16	Pittosporum tenuifolium	Hedge Pittosporum	Exotic	4000	3000	196	2352	250	1849	Average	Removal	Less Significant	Average	Poor	Average	Low	Semi-Mature
17	Pyrus domestica	Edible Pear	Exotic	6000	5000	234	2808	260	1879	Average	Medium (16-39 yrs)	Less Significant	Good	Average	Average	Neighbouring	Mature



Definitions

As per Australian Standard 4970 – 2009 – Protection of Trees on Development Sites (AS 4970):

Tree

AS 4970 Defines a Trees as ...

1.4.6 Tree Long lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks (or as defined by the determining authority).

Therefore, unless otherwise required by the determining authority or if it is neighbouring and could be impacted upon, we do not include any plants under this size.

TPZ and SRZ Methodology

Determining the Tree Protection Zone (TPZ)

The radius of the TPZ is calculated for each tree by multiplying its DBH x 12. $TPZ = DBH \times 12$

Where - DBH = trunk diameter measured at 1.4 metres above ground; radius is measured from the centre of the stem at ground level.

A TPZ should not be less than 2 metres and no greater than 15 metres except where crown protection is required. Some instances may require variations to the TPZ.

The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1 metre outside the crown projection.

This area is an estimate of the space required to maintain the health of a tree long term. It is entirely possible to work inside this Zone providing due care is exercised according to AS 4970.

Determining the Structural Root Zone (SRZ)

The SRZ is the area required for tree stability. A larger area is required to maintain a viable tree. The SRZ only needs to be calculated when major encroachment into a TPZ is proposed.

There are many factors that affect the size of the SRZ; e.g. tree height, crown area, soil type, soil moisture etc. The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the following formula:

$$SRZ \text{ radius} = (D \times 50)0.42 \times 0.64$$

Where - D = trunk diameter, in m, measured above the root buttress.

The SRZ for trees with trunk diameters less than 0.15m will be 1.5m.

This is an indicative calculation which generalizes all the conditions influencing the estimate. SRZ is often less than the indicated calculation. A Non-Destructive Root Investigation (NDRI) as per AS 4970 may provide more information regarding extent of these roots.

TPZ and SRZ Encroachment

Any encroachment into TPZ should be advised and supervised by a qualified Arborist

AS 4970 says:

3.3.2 Minor encroachment

If the proposed encroachment is less than 10% of the area of the TPZ and is outside the SRZ detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ.

AS 4970 also says:

3.3.4 TPZ encroachment considerations

When determining the potential impacts of encroachment into the TPZ, the project arborist should consider the following:

(a) Location and distribution of the roots to be determined through non-destructive investigation methods (pneumatic, hydraulic, hand digging or ground penetrating radar). Photographs should be taken and a root zone map prepared.

NOTE: Regardless of the method, roots must not be cut, bruised or frayed during the process.

It is imperative that exposed roots are kept moist and the excavation back filled as soon as possible.

(b) The potential loss of root mass resulting from the encroachment: number and size of roots.

(c) Tree species and tolerance to root disturbance.

(d) Age, vigour and size of the tree.



(e) Lean and stability of the tree.

NOTE: Roots on the tension side are likely to be most important for supporting the tree and are likely to extend for a greater distance.

(f) Soil characteristics and volume, topography and drainage.

(g) The presence of existing or past structures or obstacles affecting root growth.

(h) Design factors.

Tree sensitive construction measures such as pier and beam, suspended slabs, cantilevered building sections, screw piles and contiguous piling can minimize the impact of encroachment.

When siting a structure near to a tree, the future growth of the tree, both above and below ground should be taken into account.

Precautions should be taken at the planning and design stage to minimize potential conflict between trees and new structures

When the root zone is reactive clay, techniques such as localized pier and beam (bridged), screw pile footings or root and soil moisture control barriers may be appropriate to minimize effects on structures.

NOTE: Collaboration may be required between the project arborist and the geotechnical or structural engineer.

Landscapes by Design believes it is vital to ensure that construction is strong enough to withstand any encroachment by the tree as it grows. Pro-active measure like root control barriers and moisture barriers before trees grow to maximum size may be considered.

Tree Protection Fencing

The image to the right provides an example of suitable protective fencing:

Legend:

1. Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2. Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3. Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ. Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.



Tree Protection Fencing must be erected prior to any works of any nature commencing and before any machinery or materials are brought onto the site. Once erected this protective fencing must not be removed or altered until such time as all works associated with the construction are complete, unless approved and supervised by an Arborist. It must have signs attached to it saying "Tree Protection Zone – Stay Out" at maximum 2.4 metres centres or on each panel

Immediately following erection of the Tree Protection Fencing, the Tree Protection Zones are to be weeded and then mulched with 75 mm depth leaf mulch or similar, that has been aged for at least 12 weeks.

No trenching or excavation is to occur within this Tree Protection Zones. If underground services must be routed within the TPZ, they should be installed by directional drilling or in manually excavated trenches. The directional drilling bore should be at least 600 mm deep. The project arborist should assess the likely impacts of boring and bore pits on retained trees. A NDRI may assist in this case. See Later section.

The Tree Protection Fencing Zone should be secured to restrict access.

AS 4687 – Temporary Fencing and Hoardings specifies applicable fencing requirements. Shade cloth or similar should be attached to reduce the transport of dust, other particulate matter and liquids into the protected area.

Fence posts and supports should have a diameter greater than 20 mm and be located clear of roots.

Existing perimeter fencing and other structures may be suitable as part of the protective fencing.



If it is necessary to remove the Tree Protection Fencing to allow works to be carried out it must be reinstated daily immediately following completion of works. If works are carried out within the Tree Protection Zones this work must be supervised by an Arborist. During required work suitable planking should be laid within the Tree Protection Zone to protect against compaction to the roots of the tree / trees from workers and others. It is recommended that machinery does not enter the Tree Protection Zone (see 4.2 from AS 4970 below: "*Activities generally excluded*"), however rumble boards, plates, or sheets of heavy duty materials over mulch and an impervious membrane can be used if vehicles need to move through the zone. Excavation can be carried out by machine using skilled operators briefed by and observed by an Arborist. Mini-excavators should be used and if possible, the vehicle located outside the zone with its tool arms moving within the site. In the case of a NDRI being conducted the workmen and their equipment are only in the area for a short time however extreme care must be taken to protect the trunk, canopy and roots of the tree/s.

Irrigation –

During warmer periods the Tree Protection Zones should be irrigated with 1 litre of clean water for every 1 cm of trunk girth measured at the soil / trunk interface on a weekly basis.

No persons, vehicles or machinery are to enter the Tree Protection Zones unless authorised to do so, preferably with permission from the Determining Authority.

No fuel, oil dumps or chemicals are allowed to be used or stored within the Tree Protection Zones; the servicing and refuelling of equipment and vehicles must be carried out away from the TPZ; no storage of material or equipment is to take place within them; nothing whatsoever, including temporary services wires, nails, screws or any other fixing device, is to be attached to any tree.

4.2 ACTIVITIES RESTRICTED WITHIN THE TPZ

Activities generally excluded from the TPZ include but are not limited to—

- (a) machine excavation including trenching;*
- (b) excavation for silt fencing;*
- (c) cultivation;*
- (d) storage;*
- (e) preparation of chemicals, including preparation of cement products;*
- (f) parking of vehicles and plant;*
- (g) refuelling;*
- (h) dumping of waste;*
- (i) wash down and cleaning of equipment;*
- (j) placement of fill;*
- (k) lighting of fires;*
- (l) soil level changes;*
- (m) temporary or permanent installation of utilities and signs, and*
- (n) physical damage to the tree.*

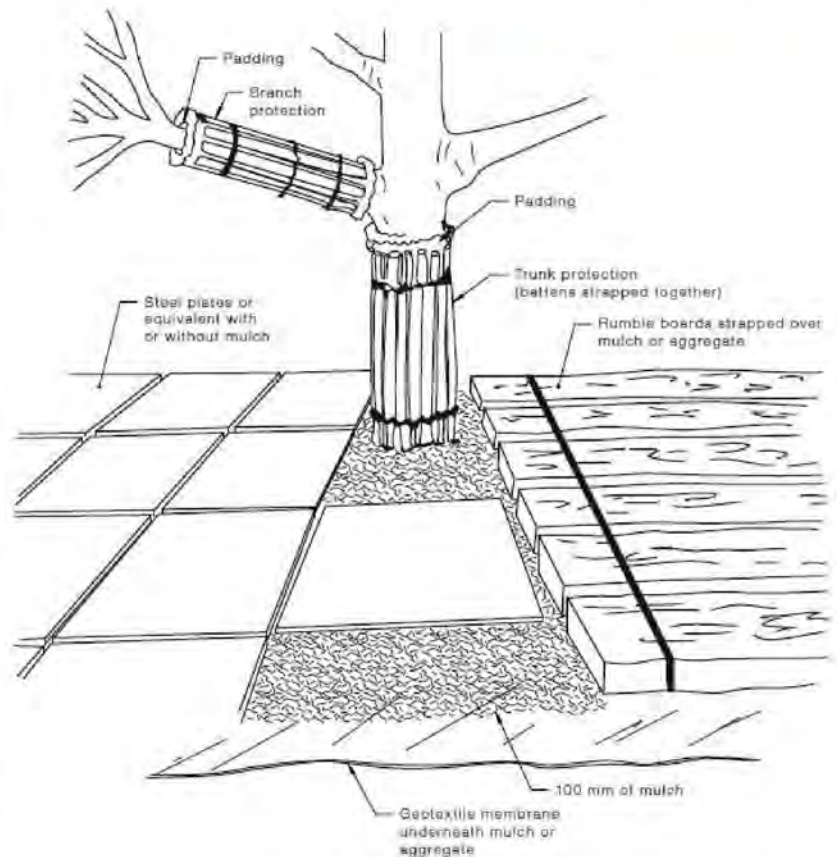
Trunk and Branch Protection

Trees impacted upon by construction works should be protected as per the Sketch 1 below. It is suggested that suitable rubberised padding material be used under 75 by 50 hardwood timber which is strapped with galvanised tin strapping approximately 30 mm wide at 900 mm spacing from bottom of trunk upwards and nailed or screwed to the hardwood timber with 25 mm long galvanised fasteners. The rubberised padding material should be perforated to allow air to the trunk, and not soak water into itself. No nails or screws are to enter the tree trunk or branches and care must be taken to ensure that no materials bite into the tree surface and scar or damage its surface in any way.



Ground Protection

The planking to the right in the sketch following is an example of the planking that could be used. If temporary access for machinery is required within the TPZ, ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Measures should include a permeable membrane such as Geo-textile fabric beneath a layer of mulch or crushed rock, below rumble boards as per sketch 1. Rubber matting and packing plywood may also be used. Under this planking or sheeting within the TPZ, a 75 mm layer of leaf mulch or similar, aged for at least 12 weeks and proven to contain no toxic substances must be installed. These measures may also be applied to root zones beyond the TPZ. Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.



Non-Destructive Root Investigation (NDRI)

A (NDRI) according to AS 4970 may be conducted to provide more information on the extent of a trees SRZ or encroachment over 10% into TPZ. The SRZ is an indicative measure and the actual positions and extent of the roots can only be determined by an investigation. A trench is carefully excavated along a pre-determined line (for example, the edge of a proposed slab or decking posts) to a depth of at least 650 mm and no more than 300mm wide. If roots are located, they must be carefully exposed without any damage to the root. The position and size of any roots found can be photographed, recorded and mapped. If there are too many large roots or root mats found the Arborist may decide to move the trench further out from centre of trunk. A NDRI may indicate that a building can or cannot be placed in the proposed location, or that piers/stumps can be placed between roots, or that roots are not extending far enough to directly damage a building/path/pipe. The NDRI map may lead to design and engineering changes to enable a building, extensions, or earthworks that encroach into the TPZ, to proceed or be moved. Where possible the trenching is done by hand but there are times when machinery or water pressure excavation can be used under the supervision of an Arborist.

Root Protection during Works within the TPZ

Some approved works within the TPZ, such as regrading, installation of piers or landscaping may have the potential to damage roots.

If the grade is to be raised the material should be coarser or more porous than the underlying material. Depth and compaction should be minimized.

Manual excavation is the preferred method and should be carried out under the supervision of an arborist to identify roots critical to tree stability and determine the actual extent of the SRZ. A NDRI may be used with photographs and maps to serve as a guide for designers and workers. Relocation or redesign of construction works may be required. (See preceding section)

Where the project arborist identifies roots to be pruned within or at the outer edge of the TPZ, they should be pruned with a final cut back to undamaged wood. Pruning cuts should be made with sharp tools such as secateurs, pruners, handsaws or chainsaws. Pruning wounds should not be treated with dressings or paints. It is not acceptable for roots within the TPZ to be 'pruned' with machinery such as backhoes or excavators.

Where roots within the TPZ are exposed by excavation, temporary root protection should be installed to prevent them drying out. This may include jute mesh or hessian sheeting as multiple layers over exposed roots and excavated soil profile, extending to the full depth of the root zone. Root protection sheeting should be pegged in place and kept moist during the period that the root zone is exposed.



Other excavation works in proximity to trees, including landscape works such as paving, irrigation and planting can adversely affect root systems. The project arborist should be consulted and supervise any works.

TPZ Encroachment Over 10%

If the proposed building footprint encroaches into the TPZ more than 10%; either the building footprint will have to change to reduce the encroachment to 10% or a NDRI could be carried out by an Arborist to determine the exact location of any roots present. Prior to a NDRI make certain to contact the Determining Authority to see if permission is required. If roots are discovered belonging to the tree that are under 40 mm diameter, they could be cut by an arborist to allow either the entire building footprint to be accommodated, or if that is not possible, a smaller redesigned building footprint to be accommodated. If the TPZ is varied following a NDRI (as per AS 4970) room must be allowed for the lost area to be compensated for elsewhere. Roots greater than 40 mm diameter and fibrous root mats or clumps greater than 50mm diameter should not be cut but need to be worked around. A well-qualified arborist may cut a root greater than 40 mm diameter, but not greater than 50 mm diameter unless given permission to cut from the Determining Authority.

Alternatively, if a NDRI shows it is impossible to vary the TPZ, alternative "tree friendly" construction methods could be employed, such as installing a building slab above grade, pier and beam methods, or building on stumps. Piers and stumps can be relocated to avoid damage to any significant roots discovered by the NDRI. These alternative building methods should be specified by a suitably qualified person.

Installing Underground Services within TPZ

All services should be routed outside the TPZ. If underground services must be routed within the TPZ, they should be installed by directional drilling or in manually excavated trenches. The directional drilling bore should be at least 600 mm deep. The project arborist should assess the likely impacts of boring and bore pits on retained trees.

For manual excavation of trenches, the project arborist should advise on roots to be retained and should monitor the works. Manual excavation may include the use of pneumatic and hydraulic tools.

Crown protection

Tree crowns may be injured by machinery such as excavators, drilling rigs, cranes, trucks, hoarding installation and scaffolding. The TPZ may need to include additional protection of above ground parts of the tree. Where crown protection is required, it will usually be located at least one metre outside the perimeter of the crown (see Figure 2). The erection of scaffolding may require an additional setback from the edge of the crown. Crown protection may include pruning, tying-back of branches or other measures. If pruning is required, requirements are specified in AS 4373 and should be undertaken before the establishment of the TPF. NOTE: Pruning may require approval from the Determining Authority. See following section on Pruning and Removal of Trees

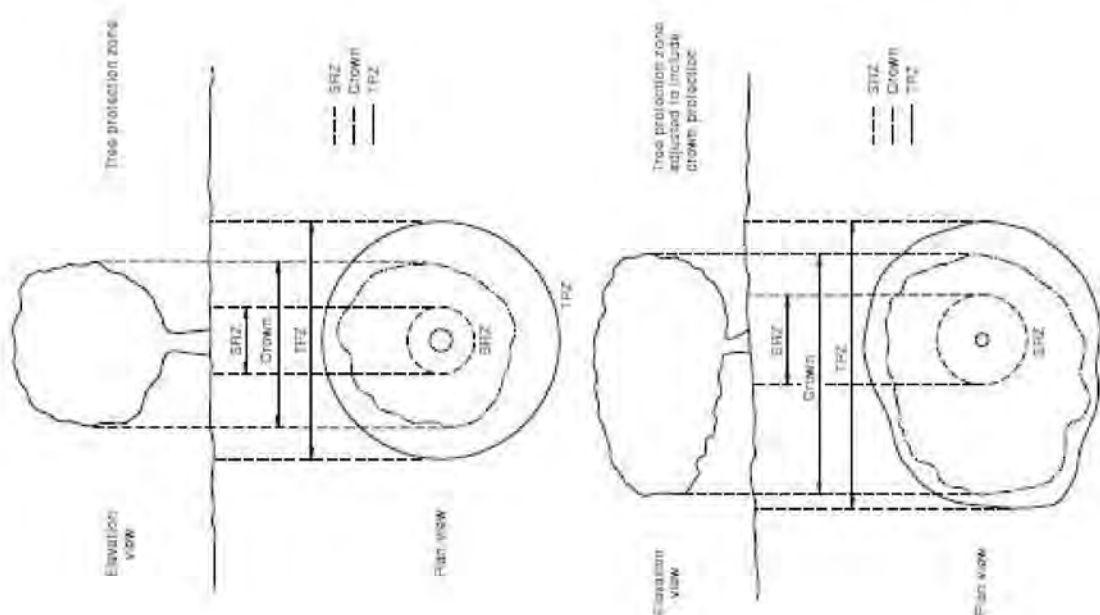


FIGURE 2 - INDICATIVE TREE PROTECTION ZONE



Pruning and Removal of Trees

If pruning is required, it should be carried out in accordance with Australian Standard 4373 - Pruning of Amenity Trees (AS4373) and any root pruning also as per AS 4973 – Specialist advice from a person with a minimum AQF Level 4 in Arboriculture should be sought before any root pruning occurs.

Prior to the pruning of or removal of any tree the Determining Authority, usually the local council must be consulted to be certain the pruning or removal is allowed by them and is lawful.

In any development seek approval for tree removal and encroachment into the TPZ of trees from the Determining Authority; before planning or building preparation and drawings are completed. This is to ensure that building or other drawings are not prepared based on this report, when a relevant Determining Authority does not allow the trees nominated in our report to be removed, or their TPZ's encroached into.

Scaffolding

Where scaffolding is required, it should be erected outside the TPZ. Where it is essential for scaffolding to be erected within the TPZ, branch removal should be minimized. This can be achieved by designing scaffolding to avoid branches or tying back branches. Where pruning is unavoidable it must be specified by the project arborist in accordance with AS 4970 and 4373.

NOTE: Pruning works may require approval by the determining authority.

Ground below the scaffolding should be protected by boarding (e.g. scaffold board or plywood sheeting) as shown in Trunk and Branch Protection earlier. Where access is required, a board walk, or other surface material should be installed to minimize soil compaction. Boarding should be placed over a layer of mulch and impervious sheeting to prevent soil contamination. The boarding should be left in place until the scaffolding is removed.

There is a risk of materials falling off the scaffold decking and into the TPZ, damaging the tree. Care must be exercised, and solid walls or mesh barriers be installed on any scaffolding over the TPZ.

Impervious membrane, mulch, boards or plywood must be used under the scaffold soleplates and no excavation is to be performed for the soleplates. It may be possible to erect secondary fencing inside the general TPZ fencing to further protect the tree from damage.

Parameters – Used as required:

Condition, Vigour, Structure and Form - Each has four parameters: Excellent, Good, Average and Poor.

SULE – Safe Useful Life Expectancy - Has four parameters – Long (40 + years), Medium (16 to 39 years), Short (5 to 15 years) and Removal

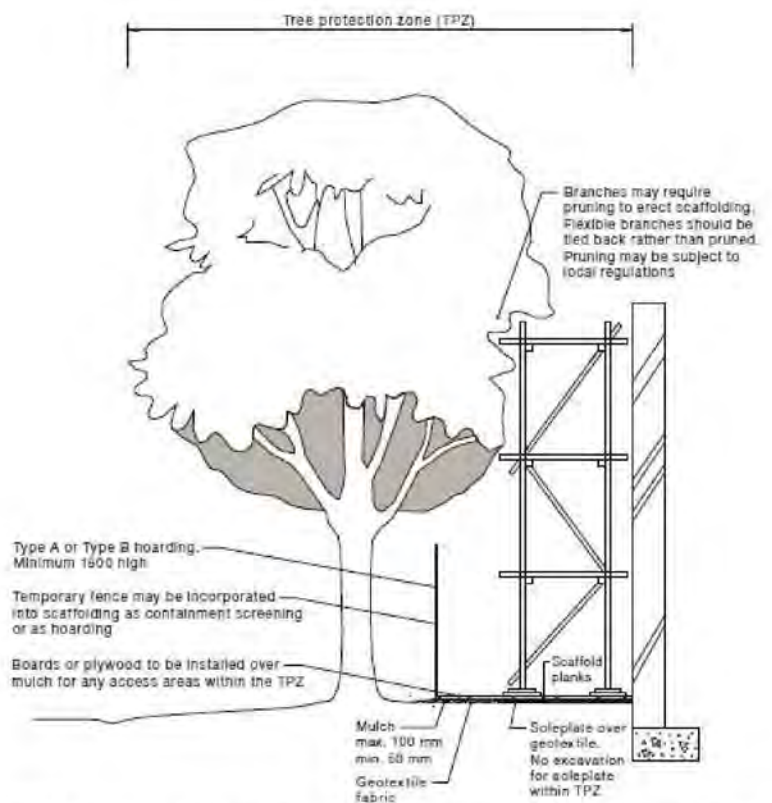
Significance - Has five parameters – Most, Highly, Less, Least and Hazardous

Age – Has four parameters:

Young – Less than one third of expected life span

Semi Mature – Into second third of expected life span

Mature – Into last third of expected life span



NOTE: Excavation required for the insertion of support posts for tree protection fencing should not involve the severance of any roots greater than 20 mm in diameter, without the prior approval of the project arborist.

FIGURE 5 INDICATIVE SCAFFOLDING WITHIN A TPZ



Over Mature – Beyond normal life span or age-related state of decline

Retention Value – has nine parameters High, Moderate, Low, Weed, Neighbouring, Owners Choice, Damaging, Council and Hazardous when required following another parameter. Generally Neighbouring Trees must be retained and protected unless suitable arrangements can be made for their removal with the owner, and that removal is legal. Council trees to streets or neighbouring parks are that Council's responsibility. After a tree report is submitted that includes Council trees, it is suggested that council should inspect their trees to ensure they are safe and worthy of retention.

Definitions - Terms:

Acute Branch Crotch – Angle on the inner side of the branch crotch is less than 90 degrees.

Definitions - Terms:

Acute Branch Crotch – Angle on the inner side of the branch crotch is less than 90 degrees.

Apical Dominance - the main central stem of the plant is dominant over the other branches.

Bacterial Wet Wood - is a bacterial disease of certain trees, primarily elm, cottonwood, poplar, boxelder, ash, aspen, fruitless mulberry and oak.

Branch Union – point where a branch originates from the trunk or another branch; may be referred to as a crotch.

Bracket Fungi or Shelf Fungi - are the fruiting structures of many different fungi that cause heartwood decay in standing trees.

Co-dominant Stems – 'Co-dominant stems are two stems or trunks of equal size that develop from 2 apical buds at the tip of the same stem. Each co-dominant stem is a direct extension of the stem below its origin. There are no branch collars or trunk collars at the base of co-dominant stems' (Dr Alex Shigo) – Similar to Bi-furcated meaning two, Tri-furcated meaning three and Quadrifurcated meaning four.

Compartmentalise – (CODIT: Compartmentalization of Decay in Trees. Dr Alex Shigo) natural process of defence in trees by which they wall off decay in wood and heal wounds.

Crown Gall - plant disease probably caused by the bacteria or invasion of some sort into the tree

Dead Wooding Removal of dead, dying and diseased branches throughout the crown.

De-current – growth habit developing a more rounded form with multiple scaffold branches

Determining Authority – Usually refers to the Council responsible for the property being assessed but includes any government or semi-governmental authority that has control or liability under common law, and the role to encourage and enforce the developmental process including legislation relating to trees and plants.

Epicormic Shoots - An epicormic shoot is a shoot growing from an epicormic bud which lies underneath the bark of a trunk, stem, or branch of a plant. In older wood, epicormic shoots can result from severe defoliation or radical pruning.

Etoliation is a process in plants grown in partial or complete absence of light. It is characterized by long, weak stems; smaller, sparser leaves due to longer internodes; and a pale-yellow colour (chlorosis).

Ex-current - growth habit with pyramidal crown and a central leader

Fall Zone – area under a tree or adjacent to it where if it failed it could impact upon.

Frass – Granular wood particles produced by borer insects that can be fine, medium or coarse depending on the type of insect.

Flush Cut - Pruning technique in which both branch and stem tissue are removed; generally considered poor practice. Flush cuts can allow decay to enter back into the main trunk or branch.

Gall - abnormal outgrowth of tissues and can be caused by various parasites, from fungi and bacteria, to insects and mites. Sometimes called a burl.

Ground Heaving – ground lifting or heaving as the root plate of a trees moves.

Hedges – Are not assessed as trees; therefore, a canopy dimension is represented in drawings not the TPZ.

Included Bark - bark that becomes embedded in a crotch between branch and trunk or Co-Dominant Stems and causes a weak structure.

Indigenous – a plant occurring naturally in the area or region of the subject site.

Kino Sap oozing from a tree caused by structural damage and / or disease or pests.

Later Growth – growth formed later in a tree's life cycle with perhaps poor attachment.

Obtuse Branch Crotch – where the angle on the inner side of the union is greater than 90 degrees.



Phototropism or Phototropic Lean - is the phenomenon in which plants follow or grow towards a light source, most commonly the sun.

Picus Tomograph - used for tree risk assessments in order to measure the thickness of the residual wall of trees with internal defects such as cavities or decay non-invasively with sound waves sent through the tree.

Reaction Wood - tree wood formed as a result of mechanical stress helping to provide strength to affected areas as in leaning trees, wind exposure, over weighting, compartmentalisation of decay etc. A sign a tree could fail.

Scaffold Branch - the permanent or structural branches of a tree

Senescence - the condition or process of growing old especially the condition resulting from the transitions and accumulations of the deleterious aging process. Senescent

Torsional Loading - When a tree generally by the wind has had part of its structure twisted as it grows.

?? - After a tree's name means identity of species may not be exact.

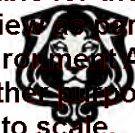
Tree - As defined by AS 4970: A long lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks (or as defined by the determining authority). Landscapes by Design believes that the definition is too loose and too general to include all the plants that we would include in the definition of a tree, however it serves to encompass most plants that we assess. We also assess where required, neighbouring plants other than trees.

Disclaimer etc

No examination of any sort has been carried out to the root systems of these trees. Given factors like environmental, vegetative and other overlays and local or other planning controls it is difficult to accommodate or satisfy all parties when assessing trees and other vegetation. It is very difficult to establish clear outcomes and impossible to determine that a tree can be deemed safe under all circumstances. No guarantee can be given that a tree is totally safe or will remain healthy given short-term adverse weather conditions or long term climatic conditions or other environmental and physical factors. No guarantees can be given for any part of a trees current or future stability. The writer and Landscapes by Design Pty Ltd does not accept any responsibility for any tree or part of it assessed, with regard to its ongoing stability and safety, or its capacity to damage property, other assets or people.

Darrell Mcleod

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KEYSTONE
ALLIANCE
SUSTAINABILITY SOLUTIONS



SUSTAINABLE DESIGN ASSESSMENT

PROPOSED MULTI-UNIT DEVELOPMENT
FOR ASHISH BANSAL

161 Hothlyn Drive,
Craigieburn
P24112

Ref N°: 17160

For

Ikonomidis Design Studio

FEB 2022



KEYSTONE ALLIANCE SUSTAINABILITY SOLUTIONS PTY. LTD.

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MUNICIPALITY

City of Hume

SUBJECT:

161 HOTHLYN DRIVE, CRAIGIEBURN

1 BACKGROUND

Keystone Alliance Sustainability Solutions have been engaged to prepare a Sustainable Design Assessment for the proposed development at **161 Hothlyn Drive, Craigieburn**

2 OBJECTIVE

The report outlines the key Ecologically Sustainable Design (ESD) initiatives for **161 Hothlyn Drive, Craigieburn**
The report addresses most of the ESD requirements for **City of Hume** and provides an overview of the sustainable design initiatives Clause 53.18 for the proposed development and demonstrates how it will be achieved in the project.

3 DOCUMENT REVIEWED

Architectural plans - for **161 Hothlyn Drive, Craigieburn**
Prepared by **Ikonomidis Design Studio**
Ref no. **875 | NOV 2021**

4 INTRODUCTION

The proposed development consists of

- 3 double storey dwellings
- 5 Car spaces

5 SITE ASSESSMENT

SITE AREA
LOCATION
MAP

650 SQM
Craigieburn



6 CATEGORIES

- MANAGEMENT -----> **CLAIMED**
- WATER -----> **CLAIMED**
- ENERGY -----> **CLAIMED**
- STORMWATER -----> **CLAIMED**
- INDOOR ENVIROMENTAL QUALITY (IEQ) -----> **CLAIMED**
- TRANSPORT -----> **CLAIMED**
- URBAN ECOLOGY -----> **CLAIMED**
- INNOVATION -----> **NOT CLAIMED**

7 SUMMARY AND COMMITMENTS

- Water efficient fixtures and fittings (5.0 Star).
- The design exceeds the NCC code for the energy efficiency requirements (6.5 STAR site average)
- Minimum 6 Star Gas instantaneous hot water system.
- LED to be used (4w\m² commitment) .
- Daylight and motion sensors will be used for all external lighting.
- Rainwater tanks and Envisipit are the measures used to treat the stormwater.
- All sanitary flushing, laundries and garden irrigation to operate using rainwater tanks.
- Good level of access to daylight to living areas and bedrooms.
- Double glazing to all windows and doors (habitable rooms).
- External shading devices to west and north orientations are required (TOWNHOUSE 1)
- Electrical design to allow for future car charging point per garage.
- Additional space to accommodate a future green or organic waste bin if required.
- Provide junction box including heavy duty 32mm solar conduit from junction box to fixed wall plate in the garages for future photovoltaic cells.
- Prepare a building user guide

8 BESS SCORE

65%

Issue	Revision	Date Issue	Author
RFI	-	07.02.2022	FS

9. MANAGEMENT

Best practice for building management means that sustainability is integrated from concept design through the construction process. Good decisions made early will always deliver the maximum benefit for the lowest cost. Best practice building management also means giving future occupants the information they need to be able to run their buildings in the most efficient way.

9.1 PRE APPLICATION MEETING | **NOT CLAIMED**

9.2 THERMAL PERFORMANCE MODELLING | **CLAIMED**

OBJECTIVE | To achieve and protect energy efficient dwellings and buildings.
To ensure the orientation and layout of development reduce fossil fuel energy use and make appropriate use of daylight and solar energy.
To ensure dwellings achieve adequate thermal efficiency

UNIT TYPE NO.	STAR RATING	HEATING	COOLING
1	6.7	88.7	20.6
2 & 3	7.1	87.6	9.2

9.3 BUILDING USER GUIDE (BUG) | **CLAIMED**

OBJECTIVE | To encourage and recognise initiatives that will help building users to use the building efficiently

A simple building user guide will be produced and will include information on the building services energy and environmental strategies, monitoring and targeting transport facilities, waste policy, references and any other relevant information.

10. WATER

Best practice water efficiency means using fixtures and appliances with a high WELS rating, and substituting precious drinking water with alternative water sources (such as greywater and rainwater) for uses such as toilet flushing and garden irrigation, where appropriate

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10.1 WATER PROFILE

RAINWATER TANK

Rainwater tanks to be used

10.2 FIXTURES, FITTINGS AND CONNECTIONS

- SHOWERHEADS
- TAPS
- TOILETS
- APPLIANCES

not less than 3 Star WELS between 9.0 and 7.5L\minute
 5 Star WELS
 4 Star WELS
 WITHIN 1 STAR OF THE BEST AVAILABLE

Install 1 additional washing machine stop cocks connected to the RWT and clearly labelled "RECYCLED WATER"

10.3 LANDSCAPE DESIGN

Drought tolerant and native species where applicable – as per local council guidelines

NO.	RAINWATER TANK SIZE (L)	ROOF CATCHMENTS AREA (SQM)
1	2000	50
2	2000	90
3	2000	62



11. ENERGY

Best practice design for energy efficiency means designing buildings that need minimal heating and cooling because they are well insulated, have appropriate summer shading, have good orientation to take advantage of the sun for heating, and have high efficiency fittings and appliances. On-site renewable energy generation is also encouraged to supplement or meet energy needs

11.1 ENERGY PROFILE

RENEWABLE ENERGY

GAS SUPPLY

Provide junction box including heavy duty 32mm solar conduit from junction box to fixed wall plate in the garages for future photovoltaic cells.
Natural Gas

11.2 HEATING AND COOLING

TYPE

Reverse Cycle

ENERGY EFFICIENCY

Within 1 star of the best available

11.3 HOT WATER SYSTEM

SOLAR CONTRIBUTION

6 STAR (instantaneous gas)

n/a

11.4 CLOTHLINES

Outdoor cloth lines

11.5 CLOTH DRYER

Within 1 star if applicable

11.6 LIGHTING

High efficient light fittings (LED – IC rated)

Lighting design not to exceed 4w/m² illumination power density

All external lighting to be controlled with motion sensors or timers

11.7 INSULATION

High level of insulation to be installed



12. STORM WATER MANAGEMENT

Best practice stormwater management means incorporating water sensitive urban design strategies such as rainwater tanks, raingardens, porous paving and landscaping to reduce the volume of run-off and the pollutant load on local waterways.

12.1 STORM SCORE ACHIEVED

100%

12.2 TREATMENTS MEASURES

Rainwater tanks connected to all sanitary flushing, laundries and garden irrigation
1 ENVISS SENTINEL PIT within the main driveway

12.3 STORM REPORT



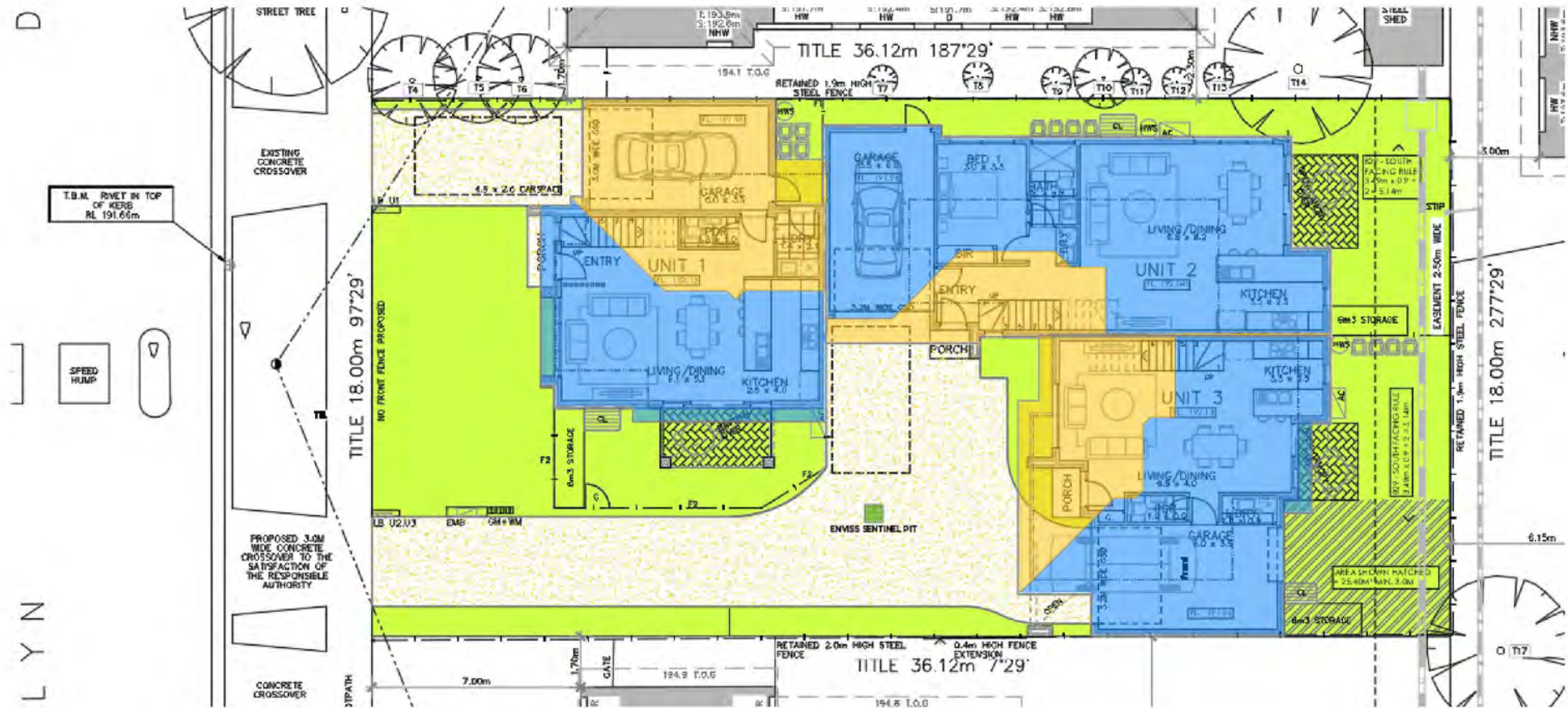
STORM Rating Report

TransactionID: 1314183
 Municipality: HUME
 Rainfall Station: HUME
 Address: 161 Hothlyn Drive
 Craigieburn
 VIC 3064
 Assessor: KASS
 Development Type: Residential - Multiunit
 Allotment Site (m2): 650.00
 STORM Rating %: 100

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
TH1 ROOF TO RWT	50.00	Rainwater Tank	2,000.00	4	170.00	82.00
TH2 ROOF TO RWT	90.00	Rainwater Tank	2,000.00	4	162.20	80.00
TH3 ROOF TO RWT	62.00	Rainwater Tank	2,000.00	3	170.00	82.00
MAIN DRIVEWAY TO 1 X ENVISS PIT	103.00	Raingarden 100mm	0.74	0	100.50	0.00
TH1 DRIVEWAY	22.00	None	0.00	0	0.00	0.00
TH1 ROOF TO LPOD	64.00	None	0.00	0	0.00	0.00
TH2 ROOF TO LPOD	21.00	None	0.00	0	0.00	0.00
TH3 ROOF TO LPOD	30.00	None	0.00	0	0.00	0.00

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WSUD CATCHMENTS MAP



ROOF CATCHMENT DIVERTED TO RWT

IMPERVIOUS SURFACE

PERMEABLE SURFACE

ENVISS PIT

WSUD MIANTENANCE PROGRAM

RAINWATER TANKS

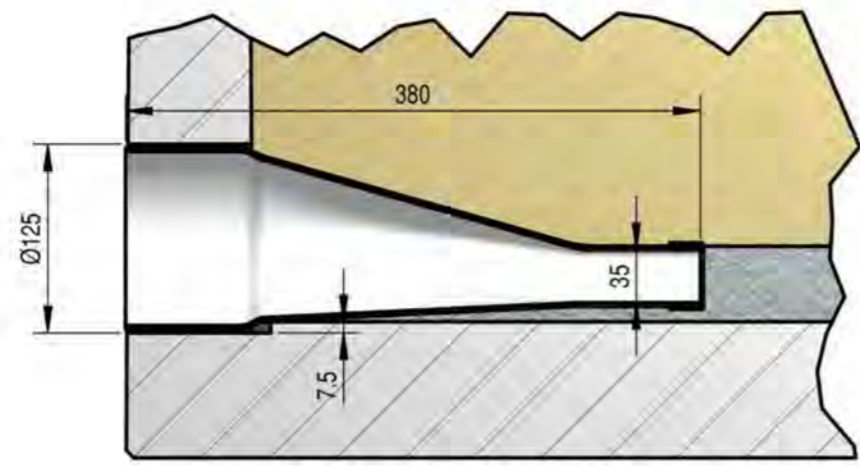
<p>Leaf litter / debris in gutters</p> <p>Regularly clear your gutters. Make sure you cover the tank inlet if you're rinsing down the gutters to avoid debris entering the tank.</p>	<p>Pump not working</p> <p>Check operating instructions for your pump. Check that pumps are kept clear of surface water (flooding), vegetation, and have adequate ventilation. Pumps should be serviced every few years to prolong the pump life.</p>
<p>Blocked downpipe</p> <p>If you see water spilling from the edge of the gutters check that the downpipe is not blocked, removing any debris.</p>	<p>Mains backup or pump not working</p> <p>Have you heard the pump operating? If the mains backup switching device fails many people do not notice for a long time. Consider a manual system if the switching device is problematic and you don't mind operating it manually.</p>
<p>First flush diverter clogging</p> <p>To clean out, unscrew the cap at the base of the diverter and remove the filter. Wash the filter with clean water and the flow restrictor inside the cap.</p>	<p>Overflow</p> <p>Check that the overflow is not blocked and that there is a clear path for water to safely spill from the tank through the overflow pipe when full. Check that a clean mesh screen is safely in place to prevent mosquitoes entering the tank.</p>
<p>Debris on the mesh cover over inlets / outlets</p> <p>The fine stainless steel mesh is similar to flyscreen mesh. It should be cleaned regularly to ensure it does not become blocked with leaves and other material.</p>	<p>Sediment / debris build-up in tank (more than 20mm thick)</p> <p>Over time a small amount of fine sediment will collect in the bottom of your tank and this is harmless and natural. It should not be disturbed until it is approx 20 mm thick which may take many years. To clean your tank out simply empty your tank and wash out with a high-pressure washer or hose.</p>
<p>Dirt and debris around the tank base or side.</p> <p>Keep leaf build-up, sticks, pot plants and other items off the lid of your tank. Use a hose to remove dust and dirt from the outside of the rainwater tank and ensure there is no debris on the base, bottom lip and walls of your tank.</p>	<p>Base area</p> <p>Tanks must be fully supported by a flat and level base. Check for any movement, cracks or damage to the slab or pavers. If damage is observed, empty the tank to remove the weight and have the fault corrected to prevent damage to the tank. There is no warranty from suppliers for damage to a rainwater tank if the base has failed.</p>
<p>Smelly water or mosquitos</p> <p>Rainwater tanks can smell if there is debris in the gutters. Check the gutters and leaf strainers are clean. Mosquitos or wrigglers can make their way into your tank if they are small enough to pass through the inlet strainer. A very small amount of chlorine (approx 4 parts per million) can be put in the tank to kill off mosquitos or the bacteria causing odours. The chlorine will disinfect the water and then evaporate. Chlorine tablets from a pool supplier can be used (but check the recommended dose based on your tank capacity).</p>	<p>Monitoring the water level</p> <p>A range of devices are available to monitor water level. Some simple float systems can be used effectively.</p>

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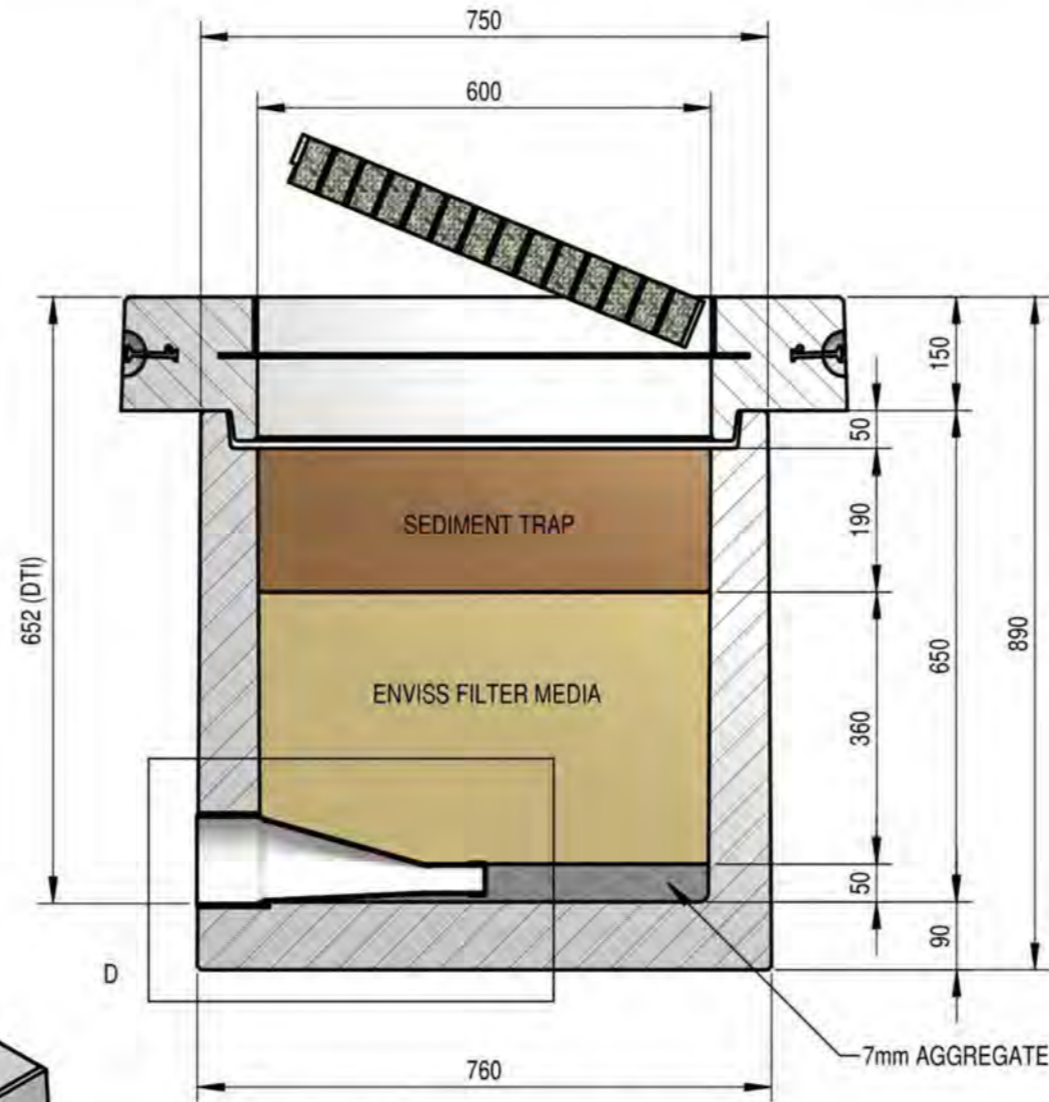
ITEM	KEY ACTIVITIES	INSPECTION FREQUENCY
ROOF GUTTERS AND DOWNPIPES	Ensure they are in good condition and there is no contamination from the roof catchment area.	In accordance with supplier's recommendations (otherwise 3 monthly).
FIRST FLUSH	To clean out, unscrew the cap at the base of the diverter and remove the filter. Wash the filter with clean water and the flow restrictor inside the cap.	
RAINWATER TANK	Check that they are in good structural condition and that there is no evidence of contamination. Keep leaf build-up, sticks, pot plants and other items off the lid of your tank. Use a hose to remove dust and dirt from the outside of the rainwater tank and ensure there is no debris on the base, bottom lip and walls of the tank.	
PUMPS	Check the potable mains backup is not permanently on. Repair or replace pump.	
OVERFLOW	Remove blockages and/or restore connections to stormwater network.	

Maintenance frequency											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Regular maintenance will improve the water quality and extend the life of your system. A well maintained tank isn't likely to need to be cleaned out for up to ten years (when there is more than 20mm of accumulated sediment).											

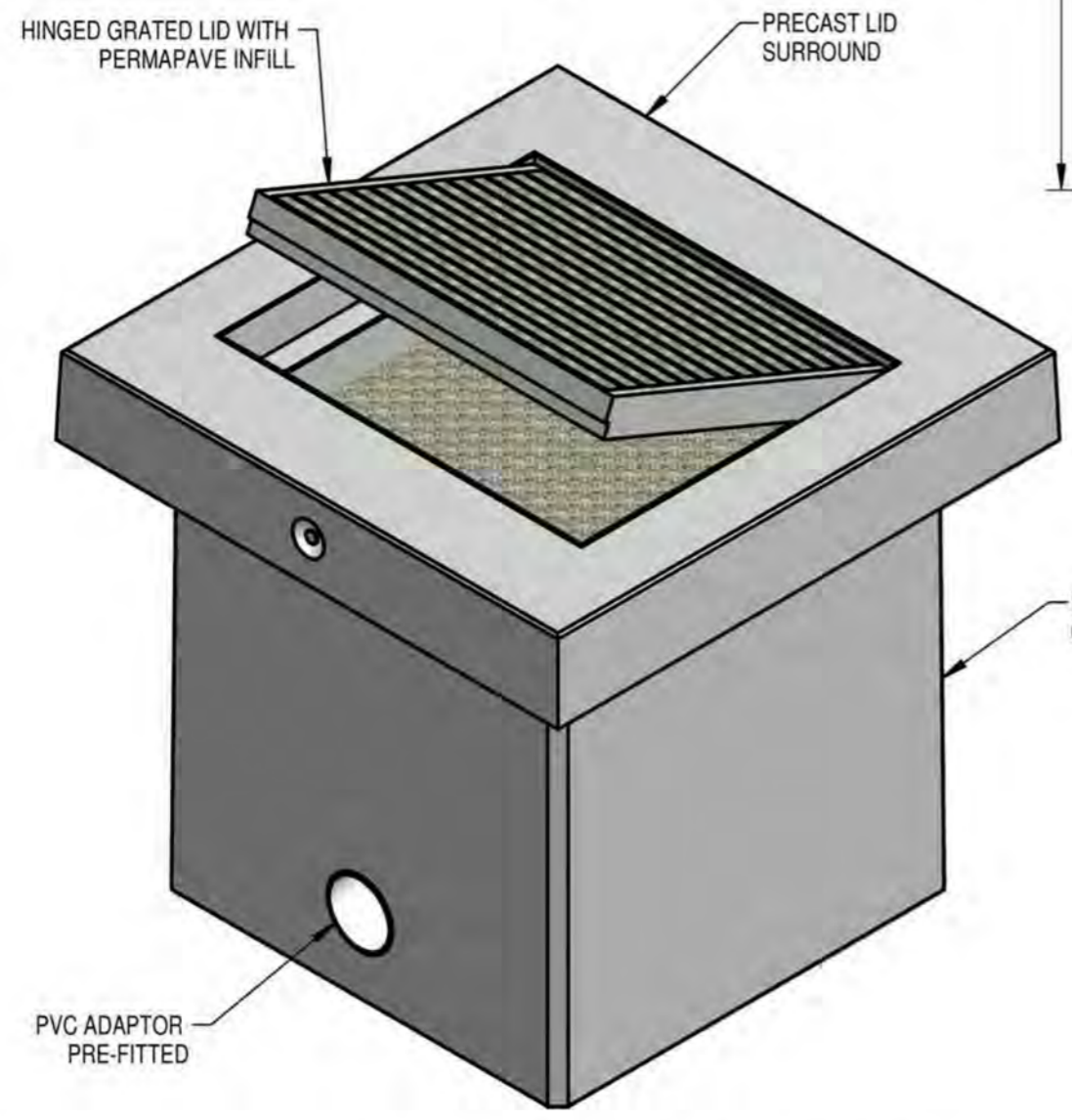
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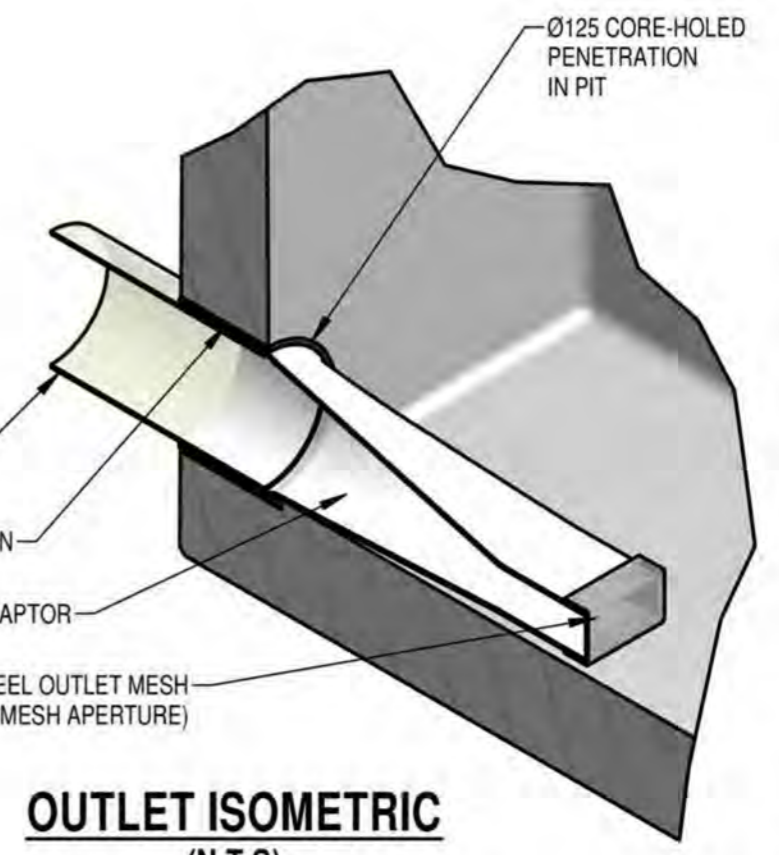
DETAIL D
(1:5)



600x600x650 RKO PIT
(1:10)



SENTINEL PIT AS SUPPLIED
(N.T.S)



OUTLET ISOMETRIC
(N.T.S)

A	DRC	SDB	ISSUED FOR PROPOSAL	12.04.10
REV	DRN	CKD	DESCRIPTION	DATE

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ROCLA ENVISS
600x600x650 SENTINEL PIT
WITH HINGED GRATED LID
GENERAL ARRANGEMENT

APP	SDB	DATE	12/04/2010
CKD	SDB	DATE	12/04/2010
DES	DRC	DATE	
DRN	DRC	DATE	12/04/2010
REF.	RWQ 09198		
Job No.			
SCALE	AS SHOWN (A3 SHEET)		
D	211863		

April 2015

envissSentinel™ Equivalency for STORM Calculator Raingardens

Melbourne Water has an on-line design tool - known as STORM Calculator - to assist in assessing the stormwater treatment requirements for small-scale developments within Melbourne.

The calculator uses basic input information about the subject catchment and assesses the relative compliance of the proposed solution in meeting the Melbourne Water 'Best Practice Environmental Management (BPEM) Guidelines – TSS – 80%, TP – 45%, TN – 45%. The output is presented as a rating (%) relative to these standard target figures.

Treatment measures available for selection include rainwater tanks, ponds, wetlands, infiltration, raingardens & buffer strips. Rocla has undertaken a comparative assessment of its envissSentinel™ Media Filter (using MUSIC V6.1) so as to provide a further option for design consultants to achieve desired treatment outcomes.

The following figures show relative equivalencies of the envissSentinel™ Media Filter to the Storm Calculator's raingarden estimate.

Raingarden Assumptions:

- Filter surface area is equal to ponding area
- Filter depth is 0.5m
- No soil exfiltration
- Hydraulic conductivity is 200mm/hr

Storm Calculator Assumptions:

100% rating = BPEM Guidelines

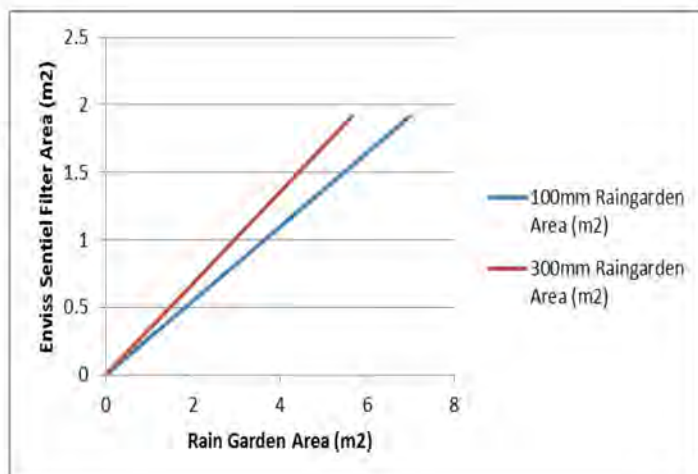
- 80% TSS
- 45% TP
- 45% TN

General MUSIC V6.1 Assumptions:

MUSIC defaults are used except where replaced by Storm Calculator inputs.

envissSentinel™ Assumptions:

- Hydraulic conductivity is 2000mm/hr
- Ponding depth 50mm (flush with surface)

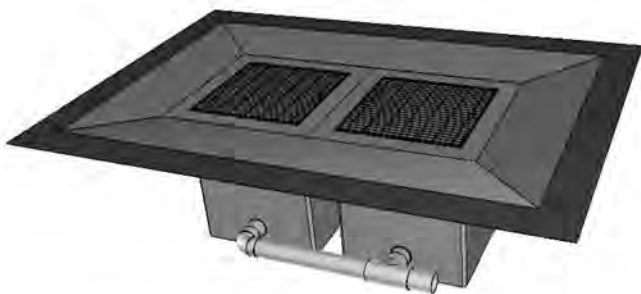


Technical Bulletin

100mm Raingarden* Area (m ²)	300mm Raingarden#* Area (m ²)	EnvissSentinel™ (no. of Pits)
0.70	0.57	1
1.05	0.85	1
1.40	1.13	2
2.10	1.70	2
3.15	2.55	3
4.20	3.40	4
5.25	4.25	4
6.30	5.10	5
7.00	5.67	6

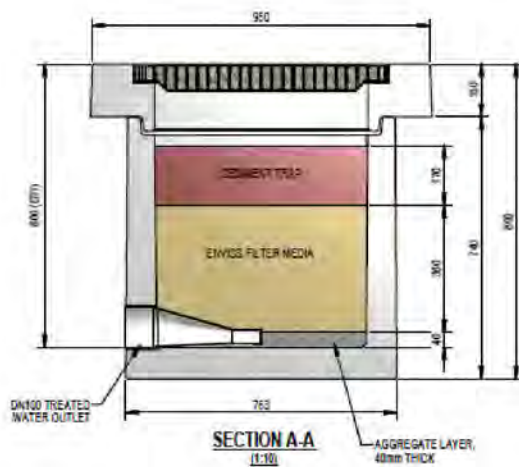
* Ponding depth above media surface with a projected area equal to the raingarden area.

#* Needs to be positioned where extra ponding depth does not cause loss of serviceability or safety hazard



Typical Surface Inlet Arrangement

The comparison makes various assumptions about the options modelled (stated above), but key to the comparison is that the envissSentinel™ requires no pre-designated area be set aside for ponding and functional planting with pits placed directly within paved areas, flush with the surface.



envissSentinel™ requires only 50mm ponding, which is provided between the permeable paver and the top of the sediment trap

envissSentinel™ Media Filter Pit

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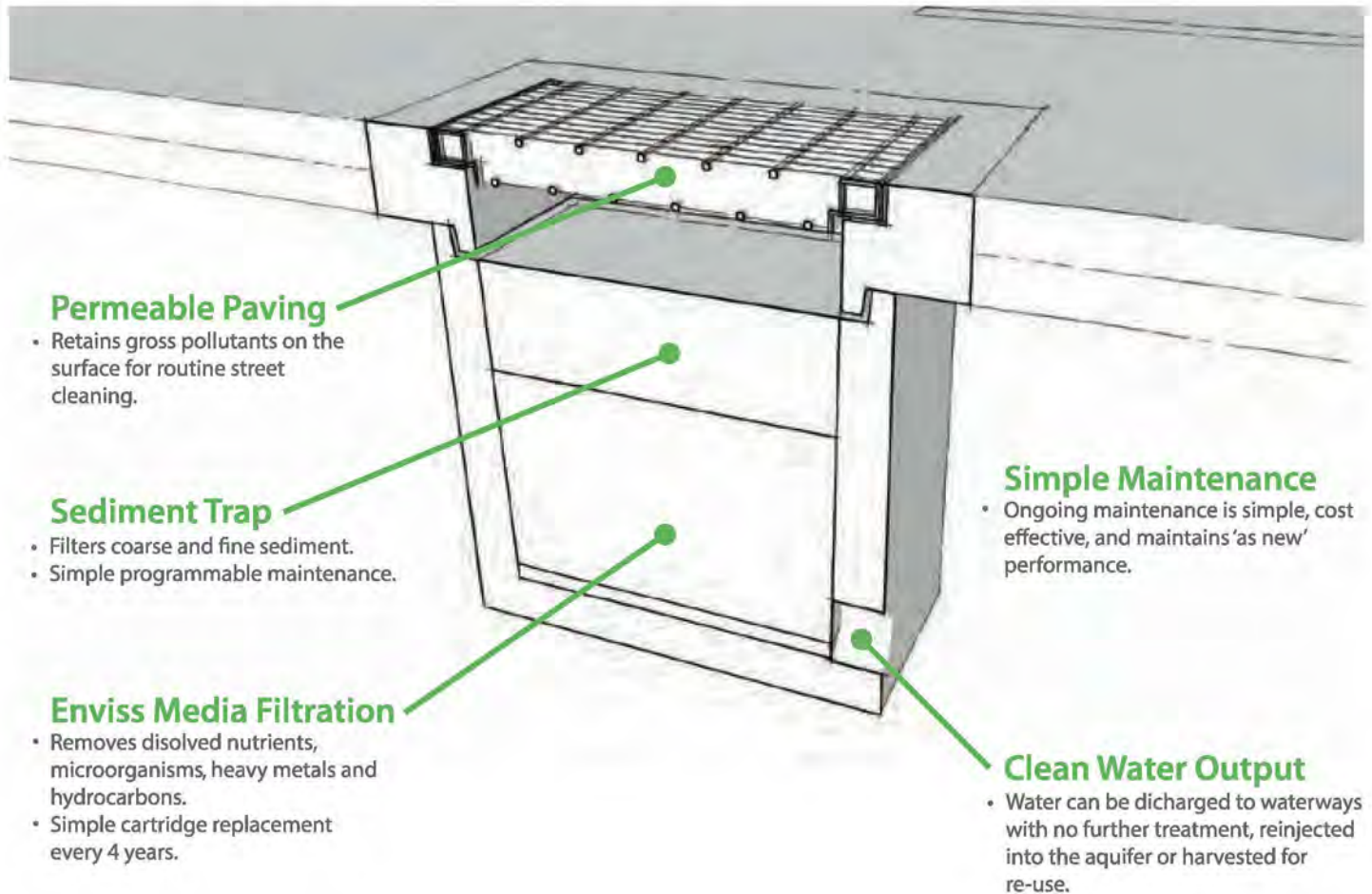
envissSentinel™ Pits

envissSentinel™ Pits are a unique alternative to raingardens and wetlands, to treat stormwater run-off in residential, commercial and industrial areas. Water filtered in the three-stage treatment train can be discharged, reinjected to the aquifer or harvested for re-use.

The unique design allows for increased flexibility in implementation and land area savings of 85% compared to alternatives. The pits are delivered complete, ready to install.

envissSentinel™ Pits

A Distributed Water Treatment Solution



Advantages

Verified Performance

- Developed, tested and verified by Monash University's Engineering Department.
- Reliable and predictable performance.
- Meets regulatory run-off requirements.

85% Space Saving

- Only 15% of equivalent raingarden or wetland surface area required.
- Trafficable surface allows for even greater land saving in high-density areas.

Simple Maintenance Cycle

- Sustainable, predictable and low cost maintenance cycle.
- No degradation in long-term performance.

Flexible, Modular Design

- Engineered to be scalable with low design costs.
- Simple MUSIC integration with EnvissDT modelling software provided.
- Increased design flexibility.

High Flow Rates And Treatment Performance

- Lowers cost of downstream treatment.
- Can target specific pollutants groups for trouble spots.

Removal Rates Exceed Guidelines

Pollutants	Australian Run-off Quality Guidelines	envissSentinel™ Filter Media
Total Suspended Solids	80%	96%
Total Phosphorous	45%*	67%
Total Nitrogen	45%	79%
Aluminium		77%
Cadmium		95%
Chromium		87%
Copper		88%
Iron		85%
Lead		81%
Zinc		94%
Total Poly Aromatic Hydrocarbons		Not Detected
E.coli		N/A

*(60% in South-East Queensland)

Typical Maintenance Comparison

	Raingarden	envissSentinel™ Pits
Annual Maintenance	<ul style="list-style-type: none"> • Remove sediment build-up • Restore surface scouring • Replace dead plants • Remove weeds 	<ul style="list-style-type: none"> • Clean grate and sediment trap.
Replacement	<ul style="list-style-type: none"> • Divert flows around rain garden • Excavate and remove media • Clean under drains • Replace media • Revegetate system 	<ul style="list-style-type: none"> • Replace media cartridge (after 4 years)

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Envirostream Solutions Pty Ltd
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Phone (03) 5470 6800
Email: info@enviviss.com

www.enviviss.com

13. INDOOR ENVIROMENTAL QUALITY (IEQ)

Best practice design for Indoor Environment Quality means that building occupants can enjoy a comfortable space with good air quality, adequate daylight and ventilation. Indoor environment quality is affected by building orientation and layout, window sizes and specification, shading devices, products used for construction and fit-out and neighbouring structures.

13.1 CROSS VENTILTION

CLAIMED

13.2 GLAZING

Install double glazing to all windows and doors – habitable rooms only

13.3 EXTERNAL SHADING

External shading devices are required west and north exposures – Townhouse 1 only

"Building eaves should be designed so their width equals 45% of the window height for the window/door to be considered as adequate shading"

Open pergolas can be considered as external shading only if deciduous creepers / climbing plants are included in the landscape design

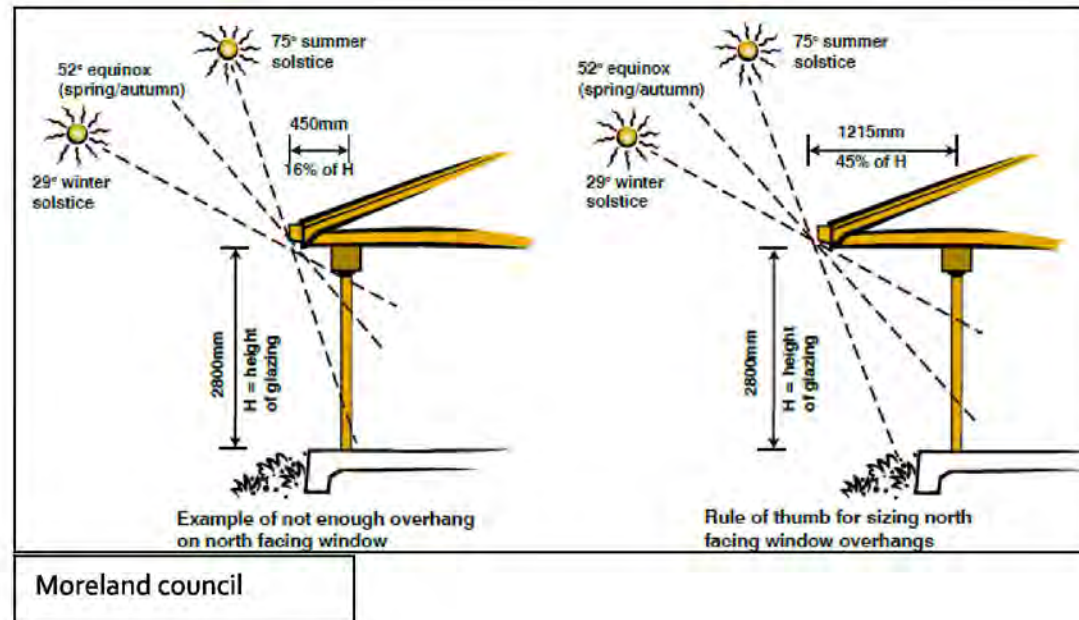
13.4 ORIENTATION

CLAIMED

13.5 INDOOR AIR QUALITY

Low VOC, water based and non-toxic paints to be specified - please refer to attached table

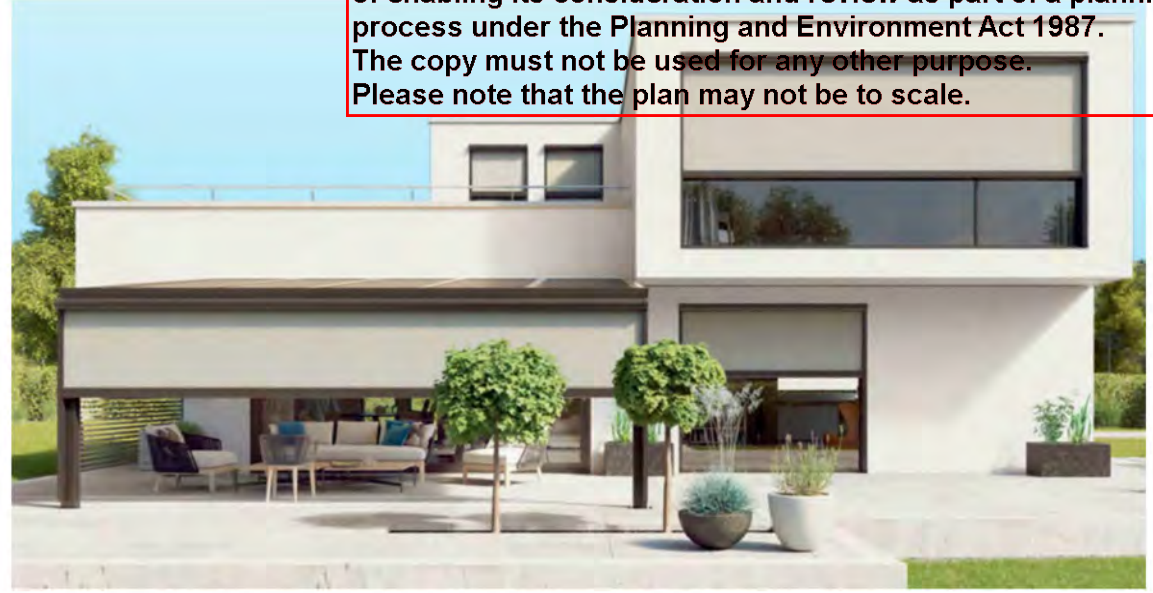
Timber used at the site will be either reused, post-consumer recycled or certified under a forest certification scheme.



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DECIDUOUS CREEPER / OPEN PERGOLA



EXTERNAL SHADING FOR WINDOWS AND DOORS



FOLDING ARM AWNINGS



VERGOLA OUTDOOR ROOF SYSTEM

Max VOC Content Limits for Paints, Varnishes and Protective Coatings

Carpet TVOC Emissions Limits		Max TVOC Emission Limit (mg/m2 per hour)	Max TVOC Content Limits for Paints, Varnishes and Protective Coatings	
Total VOC Limit		0.5	Walls and ceilings – interior semi-gloss	16
4-PC (4-Phenylcyclohexene)		0.05	Walls and ceilings – interior low sheen	16
Max TVOC Content Limits for Adhesives and Sealants			Walls and ceilings – interior flat	16
Product type		Max TVOC Content (g/l of product)	Ceilings – interior flat	14
Indoor carpet adhesive	Latex primer for galvanized iron and		Trim – gloss, semi-gloss, satin,	75
Carpet pad adhesive	Interior latex undercoat		Timber and binding primers	30
Wood flooring and Laminate	Interior sealer		Latex primer for galvanized iron and	60
Rubber flooring adhesive	One and two pack performance coatings for		Interior latex undercoat	65
Sub-floor adhesive	Any solvent-based coatings whose purpose is		Interior sealer	65
Ceramic tile adhesive		65	One and two pack performance	140
Cove base adhesive		50	Any solvent-based coatings whose	200
Dry Wall and Panel adhesive		50		
Multipurpose construction		70		
Structural glazing adhesive		100		
Architectural sealants		250		

14. TRANSPORT

Best practice design for transport means creating buildings that encourage walking, cycling, public transport, car sharing, and the use of lower emissions vehicles.

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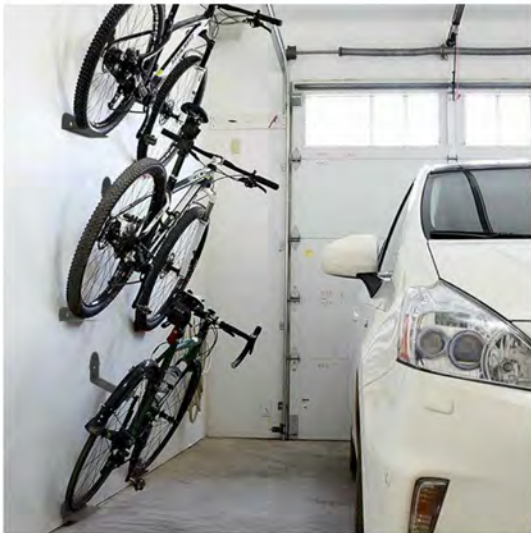
14.1 BICYCLE PARKING

RESIDENTS
VISTORS

1 space per dwelling
n/a

14.2 ELECTRIC VEHICLE INFRASTRUCTURE

Electrical design to allow for future car charging point per garage



15. WASTE

Best practice design for waste means re-using materials during construction where possible, and making sure future building occupants have opportunities to easily re-use and recycle their waste.

15.1 CONSTRUCTION WASTE

DEMOLITION WASTE RECYCLING	70% (by mass)
CONSTRUCTION WASTE RECYCLING	70% (by mass)

- A site induction to all personnel to explain waste plan and ensure that the waste generated is minimised.
- Arranging with recycling contractors to provide clearly marked bins for material separation
- Commitments to recycle or reduce construction waste
- Pre-fabricated materials to be specified in the project to reduce the material waste, off-cuts will be recycled.
- An environmental management plan (EMP) to be implemented to the council guidelines.
- A private contractor to be engaged for waste collection during construction.
- Create measures to minimise on-site litter and remove litter from the site and litter entering the storm water system.

15.2 OPERATIONAL WASTE

ORGANIC WASTE	Dual bins in kitchen joinery to be provided.
GARDEN WASTE	REFER TO WASTE MANAGEMENT PLAN ALLOCATE AN ADDITIONAL SPACE TO ACCOMMODATE AN ORGANIC WASTE BIN

15.3 MATERIAL SELECTION

CONCRETE	Subject to structural engineer design. Concrete mixes to incorporate at least 40% replacement of coarse aggregate with slag. Concrete mixes to incorporate at least 50% reclaimed water. Concrete mixes to incorporate at least 30% reduction in Portland cement. 75% of steel reinforcement manufactured using energy reducing strategies.
TIMBER	Forest stewardship Council (FSC), Program for the Endorsement of Forest Certification (PEFC) or recycled. 20% of the project timber cost to be directed for recycled timber
JOINERY	Locally manufactured
FLOORING	75% of cables, pipes and flooring either do not contain PVC or meet Best Practice Guidelines for PVC.

ALL MATERIALS USED TO BE CERTIFIED GOOD ENVIRONMENTAL CHOICE AUSTRALIA (GECA) OR ECOSPECIFIER
NON-TOXIC AND DURABLE



16. URBAN ECOLOGY

Best practice for urban ecology means creating more green spaces for a range of health, social, environmental, biodiversity and economic benefits.

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16.1 VEGETATION PERCENTAGE	20%
16.2 GREEN ROOFS	N/A
16.3 GREEN WALLS	N/A
16.4 PRIVATE OPEN SPACES (BALCONY / COURTYARD)	PROVIDE A TAP AND FLOOR WASTE
16.5 FOOD PRODUCTION AREA	N/A

HEAT ISLAND EFFECT

- Light color roofs is encouraged
- All insulation used must not contain any Ozone depleting substances
- All HVAC selected to have zero Ozone Depletion Potential

COOLING, HABITAT AND ENJOYABLE SPACES

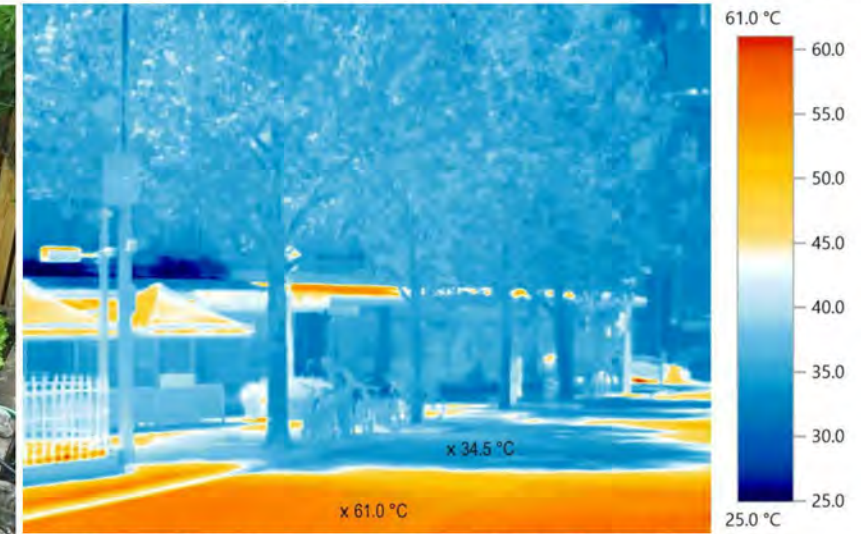
The proposed landscape for the site, including common open space areas contribute to providing the combined benefits of cooling and adding enjoyable aesthetics for occupants and visitors. The inclusion of trees as well as gardens spaces provide additional urban heat island reduction, biodiversity, food production and social benefits.



VERTICAL GREEN WALL



FOOD PRODUCTION AREA



HEATWAVE SHOW THE IMPACT OF URBAN HEAT ISLANDS IN MELBOURNE

17 INNOVATION To encourage design features and technologies that are not recognised elsewhere within BESS because they go well beyond the best practice standard in BESS.

The proposed development is not claiming credits for this criteria

18 CONCLUSION This report addresses all the features incorporated into the design and specifications of the development. The development exceeds the Built Environment Sustainability Scorecard (BESS) and also the National Construction Code standards.

In addition, the proposed development is able to reduce the site stormwater run-off and re-using it within the proposed building. This development is able to achieve the industry best practice.

19. APPLICATIONS AND COMMISSIONING

All recommendation in this report to be included in the architectural plans, Ensure the report is endorsed with the town planning drawings

Actions	Requirements	Responsibility
Building tuning	n/a	Building manager
Building Users Guide	Prepare a building user guide	Developer
Low VOC paints, Sealants, Adhesives	use low VOC paints, Sealants, Adhesives sealants and adhesives	Architect, Builder
Construction Management Plan	Prepare Construction Waste Management Plan to maximise recycling of construction waste	Builder
Material Re-use	n/a	Architect, Builder
Timber	All timber to be FSC or AFS certified	Architect, Builder
Water efficient appliances	Specify and install minimum 4 star WELS	Architect, Builder
Water efficient showers	install minimum 3 star Showerheads ($\geq 9.0 \leq 7.5$)	Architect, Builder
Water efficient taps	Specify and install minimum 5 star WELS	Architect, Builder
Water efficient toilets	Specify and install minimum 4 star WELS	Architect, Builder
Rainwater tank	6000L RWT total capacity	Architect, Builder
Driveway drainage	1 ENVISS pit – main driveway	Architect, Builder
NATHERS	6.5 star site average	Architect, Builder
Car charging	Electrical design to allow for future car charging point per garage (20 – 32 amp)	Architect, Builder
Bicycle spaces	1 space per dwelling	Architect, Builder
Renewable energy	Provide junction box including heavy duty 32mm solar conduit from junction box to fixed wall plate in the garages for future photovoltaic cells	Architect, Builder
Clothes drying	Clothesline to be provided	Architect, Builder
Motion/time switch controls	External lighting to be controlled by motion sensors	Builder
Lighting	4W/m ² commitment –	Architect, Builder
Hot water heating	6 Star Gas instantaneous HWS	Architect, Builder
Insulation and sealing	R2.5 walls, R5.0 ceilings	Architect, Builder
Glazing	Double glazing to windows and doors habitable rooms	Architect, Builder
Shading devices	West and north – townhouse 1 only	
Organic Waste	Allocate an additional space to accommodate a future organic/green waste bin	Architect, Builder
HVAC	WITHIN 1 STAR OF THE BEST AVAILABLE	Architect, Builder
Energy efficient appliances	All appliances installed by the developer will be specified within half an energy efficiency star of the best available	Architect, Builder
Water quality protection	Implement water quality protection measures during construction	Builder
Waste separation	Design and install of waste and recycling bins in cabinetry	Architect, Builder

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20. APPENDICES

BESS Report

Built Environment Sustainability Scorecard

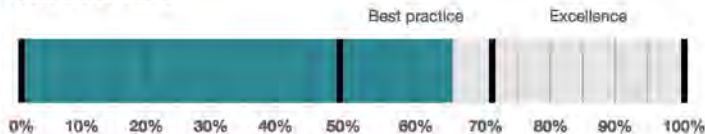
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This BESS report outlines the sustainable design commitments of the proposed development at 161 Hothlyn Dr Craigieburn VIC 3064. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Hume City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score



65%

Project details

Address	161 Hothlyn Dr Craigieburn VIC 3064
Project no	58D6E806-R1
BESS Version	BESS-6
<hr/>	
Site type	Multi dwelling (dual occupancy, townhouse, villa unit etc)
Account	fadi@keystonealliance.com.au
Application no.	P24112
Site area	650 m ²
Building floor area	360.0 m ²
Date	07 February 2022
Software version	1.7.0-B.377



Performance by category

● Your development ● Maximum available

Category	Weight	Score	Pass
Management	5%	50%	-
Water	9%	50%	✓
Energy	28%	65%	✓
Stormwater	14%	100%	✓
IEQ	17%	80%	✓
Transport	9%	100%	-
Waste	6%	50%	-
Urban Ecology	8%	50%	-
Innovation	9%	0%	-

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Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Townhouse			
Townhouse 2 & 3	2	120 m ²	66%
Townhouse 1	1	120 m ²	33%
Total	3	360 m²	100%

Supporting information

Floorplans & elevation notes

Credit	Requirement	Response	Status
Water 3.1	Water efficient garden annotated		-
Energy 3.3	External lighting sensors annotated		-
Energy 3.4	Clothes line annotated (if proposed)		-
Stormwater 1.1	Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips)		-
IEQ 2.2	Dwellings meeting the requirements for having 'natural cross flow ventilation'		-
IEQ 3.1	Glazing specification to be annotated		-
IEQ 3.3	North-facing living areas		-
Transport 1.1	All nominated residential bicycle parking spaces		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Waste 2.1	Location of food and garden waste facilities		-
Urban Ecology 2.1	Vegetated areas		-
Urban Ecology 2.4	Taps and floor waste on balconies / courtyards		-

Supporting evidence

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Energy 3.5	Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used.		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 2.2	A list of dwellings with natural cross flow ventilation		-
IEQ 3.1	Reference to floor plans or energy modelling showing the glazing specification (U-value and Solar Heat Gain Coefficient, SHGC)		-
IEQ 3.3	Reference to the floor plans showing living areas orientated to the north.		-





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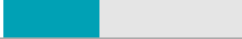

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Credit summary














Management Overall contribution 45%

		Minimum required 50%	50%	✓ Pass
1.1 Pre-Application Meeting			0%	
2.2 Thermal Performance Modelling - Multi-Dwelling Residential			100%	
4.1 Building Users Guide			100%	

Water Overall contribution 9.0%

		Minimum required 50%	50%	✓ Pass
1.1 Potable water use reduction			40%	
3.1 Water Efficient Landscaping			100%	

Energy Overall contribution 27.5%

		Minimum required 50%	65%	✓ Pass
1.2 Thermal Performance Rating - Residential			50%	
2.1 Greenhouse Gas Emissions			100%	
2.2 Peak Demand			0%	
2.3 Electricity Consumption			100%	
2.4 Gas Consumption			100%	
2.5 Wood Consumption			N/A	✦ Scoped Out
No wood heating system present				
3.2 Hot Water			100%	
3.3 External Lighting			100%	
3.4 Clothes Drying			100%	
3.5 Internal Lighting - Residential Single Dwelling			100%	
4.4 Renewable Energy Systems - Other			N/A	⊘ Disabled
No other (non-solar PV) renewable energy is in use.				
4.5 Solar PV - Houses and Townhouses			N/A	⊘ Disabled
No solar PV renewable energy is in use.				

Stormwater Overall contribution 13.5%

		Minimum required 100%	100%	✓ Pass
1.1 Stormwater Treatment			100%	

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IEQ Overall contribution 16.5%

		16.5%
2.2 Cross Flow Ventilation		100%
3.1 Thermal comfort - Double Glazing		100%
3.2 Thermal Comfort - External Shading		0%
3.3 Thermal Comfort - Orientation		100%

Transport Overall contribution 9.0%

		9.0%
1.1 Bicycle Parking - Residential		100%
1.2 Bicycle Parking - Residential Visitor		N/A ✦ Scoped Out Not enough dwellings.
2.1 Electric Vehicle Infrastructure		100%

Waste Overall contribution 5.5%

		5.5%
1.1 - Construction Waste - Building Re-Use		0%
2.1 - Operational Waste - Food & Garden Waste		100%

Urban Ecology Overall contribution 5.5%

		5.5%
2.1 Vegetation		75%
2.2 Green Roofs		0%
2.3 Green Walls and Facades		0%
2.4 Private Open Space - Balcony / Courtyard Ecology		100%
3.1 Food Production - Residential		0%

Innovation Overall contribution 9.0%

		9.0%
1.1 Innovation		0%

Credit breakdown**Management**

Overall contribution

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1.1 Pre-Application Meeting	0%
Score Contribution	This credit contributes 50.0% towards the category score.
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?
Question	Criteria Achieved ?
Project	No
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	100%
Score Contribution	This credit contributes 33.3% towards the category score.
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?
Question	Criteria Achieved ?
Townhouse	Yes
4.1 Building Users Guide	100%
Score Contribution	This credit contributes 16.7% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	Yes

Water Overall contribution 4%

Minimum required 50%

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Please note that the plan may not be to scale.

Water Approach	
What approach do you want to use for water?	Use the built calculation tools
Project Water Profile Question	
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
Water fixtures, fittings and connections	
Showerhead: All	3 Star WELS (>= 7.5 but <= 9.0) (minimum requirement)
Bath: All	Medium Sized Contemporary Bath
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	Default or unrated
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	Occupant to Install
Which non-potable water source is the dwelling/space connected to?:	
Townhouse 1	RWT 1
Townhouse 2 & 3	RWT 2 & 3
Non-potable water source connected to Toilets: All	Yes
Non-potable water source connected to Laundry (washing machine): All	Yes
Non-potable water source connected to Hot Water System: All	No
Rainwater Tanks	
What is the total roof area connected to the rainwater tank?:	
RWT 1	50.0 m ²
RWT 2 & 3	152 m ²
Tank Size:	
RWT 1	2,000 Litres
RWT 2 & 3	4,000 Litres
Irrigation area connected to tank:	
RWT 1	50.0 m ²
RWT 2 & 3	50.0 m ²
Is connected irrigation area a water efficient garden?:	
RWT 1	Yes
RWT 2 & 3	Yes
Other external water demand connected to tank?:	
RWT 1	-
RWT 2 & 3	-

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1.1 Potable water use reduction		40%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.	
Output	Reference	
Project	588 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	525 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	424 kL	
Output	% Reduction in Potable Water Consumption	
Project	27 %	
Output	% of connected demand met by rainwater	
Project	56 %	
Output	How often does the tank overflow?	
Project	Never / Rarely	
Output	Opportunity for additional rainwater connection	
Project	123 kL	
3.1 Water Efficient Landscaping		100%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Will water efficient landscaping be installed?	
Question	Criteria Achieved ?	
Project	Yes	


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Energy Overall contribution 18% Minimum required 50%

Dwellings Energy Approach	
What approach do you want to use for Energy?	Use the built calculation tools
Project Energy Profile Question	
Are you installing any solar photovoltaic (PV) system(s)?:	No
Are you installing any other renewable energy system(s)?:	No
Gas supplied into building:	Natural Gas
Dwelling Energy Profiles	
Below the floor is:	All Ground or Carpark
Above the ceiling is:	All Outside
Exposed sides:	
Townhouse 1	4
Townhouse 2 & 3	3
NatHERS Annual Energy Loads - Heat:	
Townhouse 1	88.7 MJ/sqm
Townhouse 2 & 3	87.6 MJ/sqm
NatHERS Annual Energy Loads - Cool:	
Townhouse 1	20.6 MJ/sqm
Townhouse 2 & 3	9.2 MJ/sqm
NatHERS star rating:	
Townhouse 1	6.7
Townhouse 2 & 3	7.1
Type of Heating System:	All D Reverse cycle space
Heating System Efficiency:	All std/MEPS
Type of Cooling System:	All Refrigerative space
Cooling System Efficiency:	All Current Default / MEPS
Type of Hot Water System:	All J Gas Instantaneous 6 star
% Contribution from solar hot water system:	All -
Is the hot water system shared by multiple dwellings?:	All No
Clothes Line:	All D Private outdoor clothesline
Clothes Dryer:	All Occupant to Install
1.2 Thermal Performance Rating - Residential 50%	
Score Contribution	This credit contributes 30.0% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Townhouse	7.0 Stars

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2.1 Greenhouse Gas Emissions		100%
Score Contribution	This credit contributes 5.0% towards the category score.	
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?	
Output	Reference Building with Reference Services (BCA only)	
Townhouse	22,445 kg CO2	
Output	Proposed Building with Proposed Services (Actual Building)	
Townhouse	7,671 kg CO2	
Output	% Reduction in GHG Emissions	
Townhouse	65 %	
2.2 Peak Demand		0%
Score Contribution	This credit contributes 5.0% towards the category score.	
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?	
Output	Peak Thermal Cooling Load - Baseline	
Townhouse	36.6 kW	
Output	Peak Thermal Cooling Load - Proposed	
Townhouse	35.1 kW	
Output	Peak Thermal Cooling Load - % Reduction	
Townhouse	4 %	
2.3 Electricity Consumption		100%
Score Contribution	This credit contributes 10.0% towards the category score.	
Criteria	What is the % reduction in annual electricity consumption against the benchmark?	
Output	Reference	
Townhouse	19,436 kWh	
Output	Proposed	
Townhouse	5,615 kWh	
Output	Improvement	
Townhouse	71 %	
2.4 Gas Consumption		100%
Score Contribution	This credit contributes 10.0% towards the category score.	
Criteria	What is the % reduction in annual gas consumption against the benchmark?	
Output	Reference	
Townhouse	50,976 MJ	
Output	Proposed	
Townhouse	37,802 MJ	
Output	Improvement	
Townhouse	25 %	
2.5 Wood Consumption		N/A  Scoped Out
This credit was scoped out	No wood heating system present	

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3.2 Hot Water		100%
Score Contribution		
Criteria	What is the % reduction in annual hot water system energy use (gas and electricity) against the benchmark?	
Output	Reference	
Townhouse	14,160 kWh	
Output	Proposed	
Townhouse	10,639 kWh	
Output	Improvement	
Townhouse	24 %	
3.3 External Lighting		100%
Score Contribution	This credit contributes 5.0% towards the category score.	
Criteria	Is the external lighting controlled by a motion detector?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.4 Clothes Drying		100%
Score Contribution	This credit contributes 5.0% towards the category score.	
Criteria	Does the combination of clothes lines and efficient dryers reduce energy (gas+electricity) consumption by more than 10%?	
Output	Reference	
Townhouse	1,825 kWh	
Output	Proposed	
Townhouse	365 kWh	
Output	Improvement	
Townhouse	80 %	
3.5 Internal Lighting - Residential Single Dwelling		100%
Score Contribution	This credit contributes 5.0% towards the category score.	
Criteria	Does the development achieve a maximum illumination power density of 4W/sqm or less?	
Question	Criteria Achieved?	
Townhouse	Yes	
4.4 Renewable Energy Systems - Other		N/A <input checked="" type="checkbox"/> Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.	
4.5 Solar PV - Houses and Townhouses		N/A <input checked="" type="checkbox"/> Disabled
This credit is disabled	No solar PV renewable energy is in use.	

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Stormwater Overall contribution 100% Minimum required 100%


Which stormwater modelling software was used?	
1.1 Stormwater Treatment	100%
Score Contribution	This credit contributes 100.0% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Question	STORM score achieved
Project	100
Output	Min STORM Score
Project	100

IEQ Overall contribution 13% Minimum required 50%

2.2 Cross Flow Ventilation	100%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?
Question	Criteria Achieved ?
Townhouse	Yes
3.1 Thermal comfort - Double Glazing	100%
Score Contribution	This credit contributes 40.0% towards the category score.
Criteria	Is double glazing (or better) used to all habitable areas?
Question	Criteria Achieved ?
Townhouse	Yes
3.2 Thermal Comfort - External Shading	0%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Is appropriate external shading provided to east, west and north facing glazing?
Question	Criteria Achieved ?
Townhouse	No
3.3 Thermal Comfort - Orientation	100%
Score Contribution	This credit contributes 20.0% towards the category score.
Criteria	Are at least 50% of living areas orientated to the north?
Question	Criteria Achieved ?
Townhouse	Yes

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Transport Overall contribution 100%

1.1 Bicycle Parking - Residential		100%
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	Is there at least one secure bicycle space per dwelling?	
Question	Bicycle Spaces Provided ?	
Townhouse	3	
Output	Min Bicycle Spaces Required	
Townhouse	3	
1.2 Bicycle Parking - Residential Visitor		N/A  Scoped Out
This credit was scoped out	Not enough dwellings.	
2.1 Electric Vehicle Infrastructure		100%
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	Yes	

Waste Overall contribution 3%

1.1 - Construction Waste - Building Re-Use		0%
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?	
Question	Criteria Achieved ?	
Project	No	
2.1 - Operational Waste - Food & Garden Waste		100%
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	Are facilities provided for on-site management of food and garden waste?	
Question	Criteria Achieved ?	
Project	Yes	

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Urban Ecology

Overall contribution 20%

2.1 Vegetation		
Score Contribution	This credit contributes 50.0% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	20 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
2.3 Green Walls and Facades		0%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Does the development incorporate a green wall or facade?	
Question	Criteria Achieved ?	
Project	No	
2.4 Private Open Space - Balcony / Courtyard Ecology		100%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony / in every courtyard?	
Question	Criteria Achieved ?	
Townhouse	Yes	
3.1 Food Production - Residential		0%
Score Contribution	This credit contributes 12.5% towards the category score.	
Criteria	Is there at least 0.25m ² of space per resident dedicated to food production?	
Question	Food Production Area	
Townhouse	-	
Output	Min Food Production Area	
Townhouse	3 m ²	

Innovation

Overall contribution 0%

1.1 Innovation		0%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?	

Disclaimer

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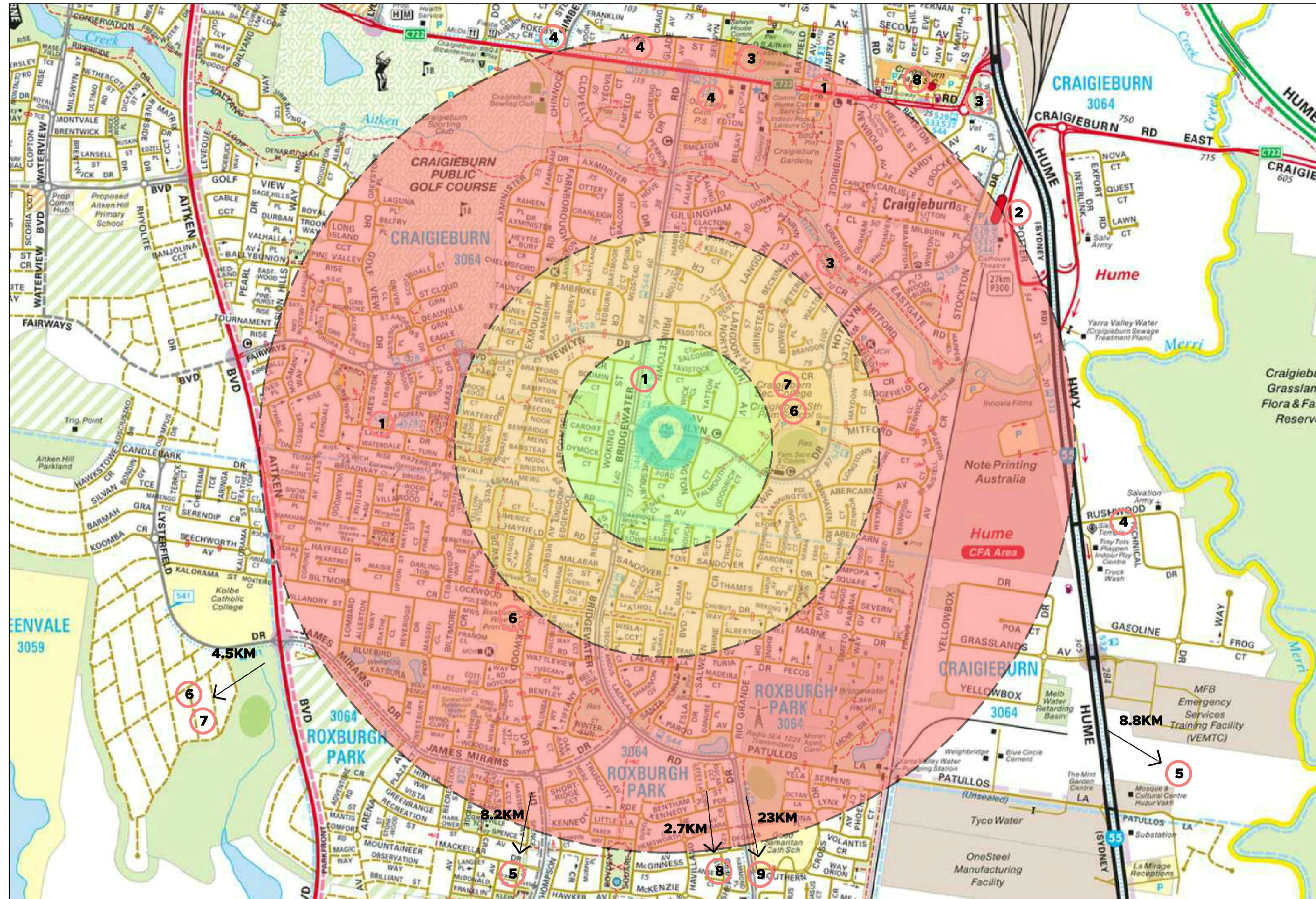
161 HOTHLYN DRIVE, CRAIGIEBURN

TOWN PLANNING SUBMISSION

CONTENTS

TP01	COVER PAGE
TP02	SITE CONTEXT PLAN
TP03	SITE ANALYSIS & PHOTOS
TP04	EXISTING SITE PLAN
TP05	DEMOLITION PLAN
TP06	DESIGN RESPONSE & GROUND FLOOR PLAN
TP07	FIRST FLOOR PLAN
TP08	GARDEN AREA PLAN
TP09	TREE PROTECTION ENCROACHMENT PLAN
TP10-TP16	EXISTING SHADOW DIAGRAM
TP17-TP23	PROPOSED SHADOW DIAGRAM
TP24	ELEVATIONS
TP25	STREETSCAPE ELEVATION
TP26	3D VISUALISATIONS

SITE CONTEXT

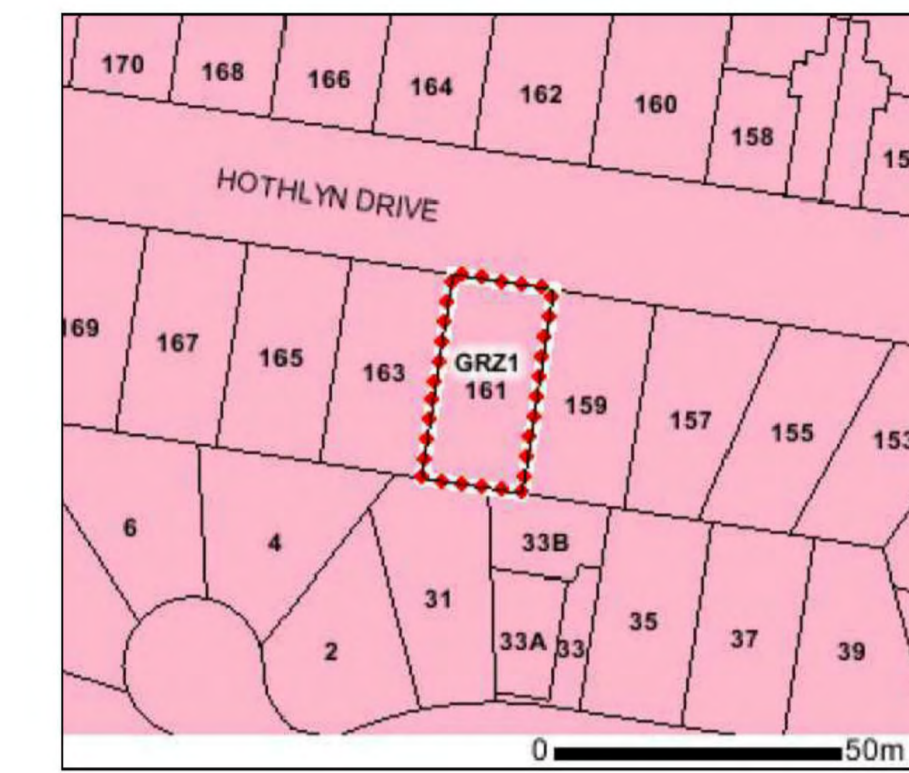


LEGEND

- 400m RADIUS (2 min WALK)
- 800m RADIUS (4 min WALK)
- 1.5km RADIUS (8 min WALK)

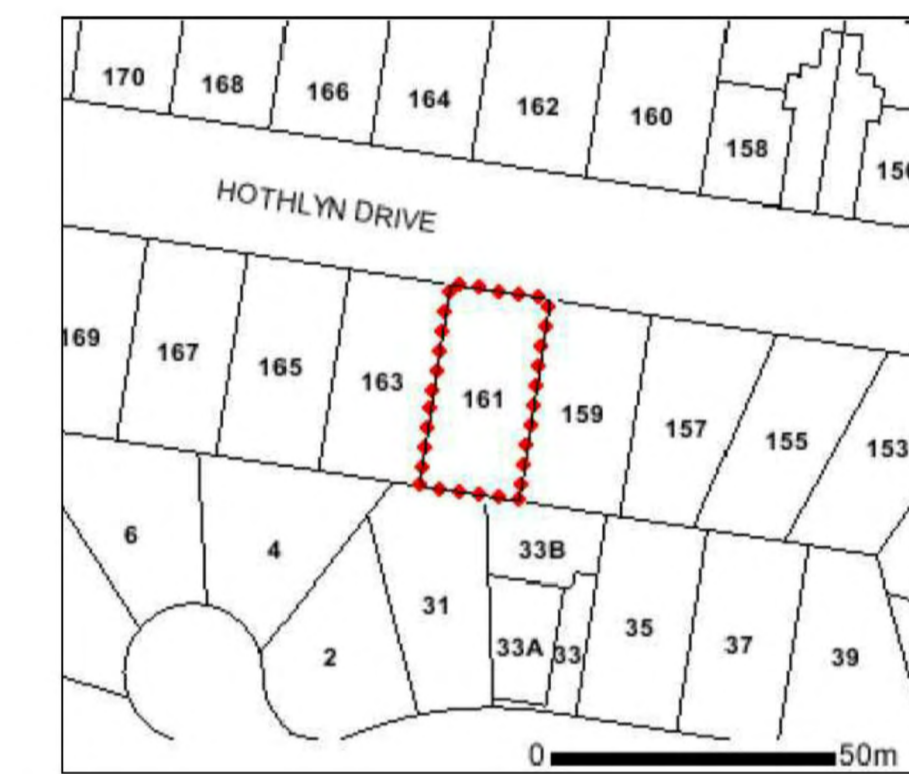
- | | | |
|--|---|--|
| <ul style="list-style-type: none"> 1 ACCESS TO PUBLIC TRANSPORT
BUS ROUTE 528, 544
BUS ROUTE 529, 537, 544 2 TRAIN STATIONS
CRAIGIEBURN TRAIN STATION 3 PARKS / RESERVES
CRAIGIEBURN GARDENS
AITKEN D.S. RESERVE
SULLIVAN MEMORIAL PARK 4 PLACES OF WORSHIP
OUR LADY'S CATHEDRAL
ANGLICAN CHURCH OF AUSTRALIA
DIOCESE OF MELBOURNE
SIKH TEMPLE | <ul style="list-style-type: none"> 5 HOSPITALS/HEALTH CENTRES
BROADMEADOWS COMMUNITY
MENTAL HEALTH CLINIC
THE NORTHERN HOSPITAL 6 PRIMARY SCHOOLS
AITKEN COLLEGE
CRAIGIEBURN SOUTH PRIMARY
SCHOOL
ROXBURGH RISE PRIMARY SCHOOL 7 SECONDARY SCHOOLS
AITKEN COLLEGE
CRAIGIEBURN SECONDARY
COLLEGE | <ul style="list-style-type: none"> 8 SHOPPING/ENTERTAINMENT FACILITIES
CRAIGIEBURN PLAZA
ROXBURGH PLAZA 9 DISTANCE TO CBD
APPROX. 23KM |
|--|---|--|

ZONING MAP



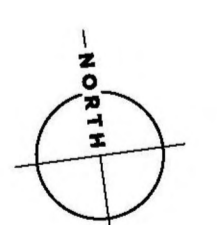
- GENERAL RESIDENTIAL ZONE (GRZ) SCHEDULE 1 (GRZ1)

OVERLAY MAP



- NO OVERLAYS AFFECTING THIS LAND

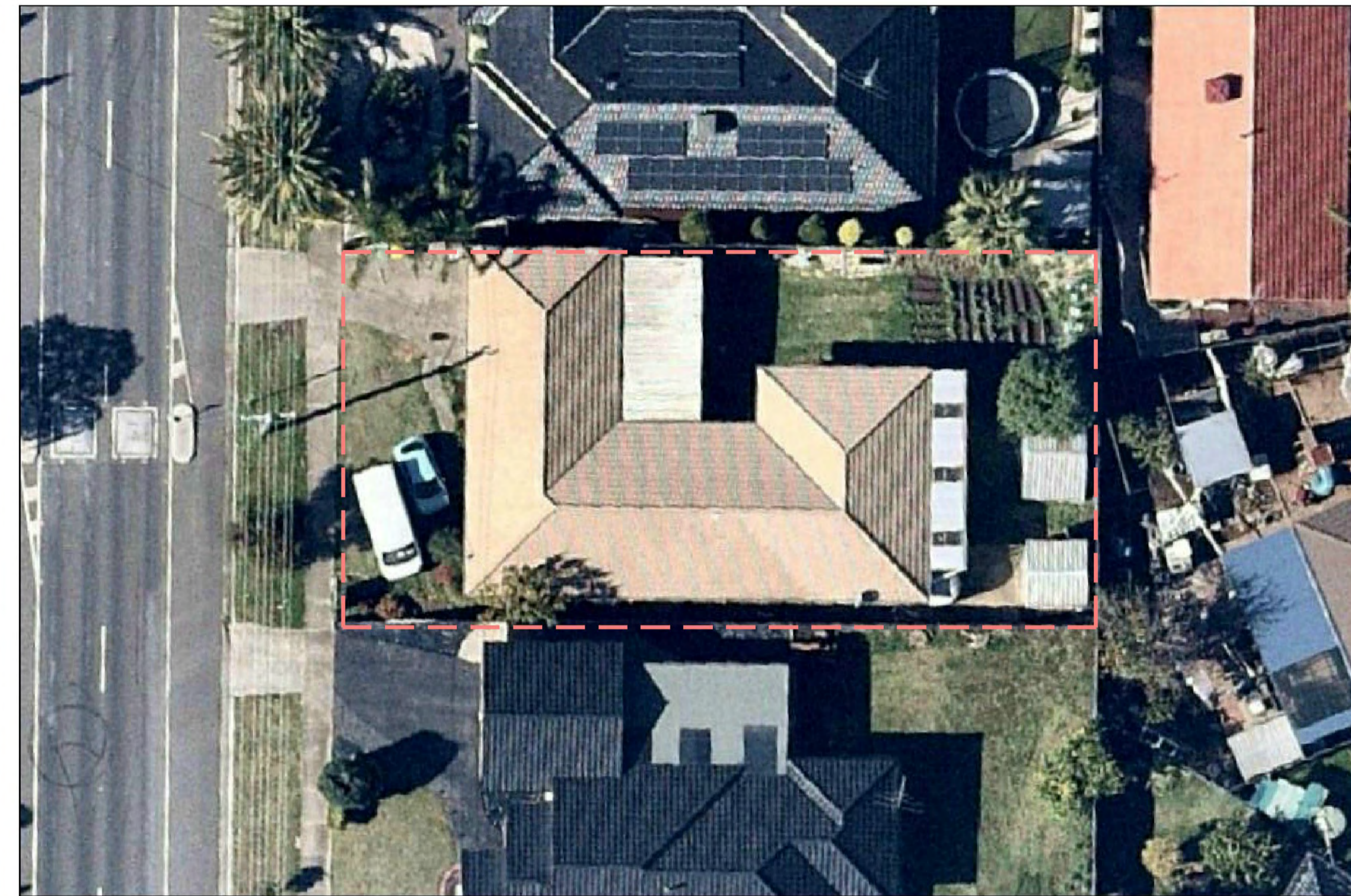
TPO2 B
161 HOTHLYN DRIVE, CRAIGIEBURN
MULTI UNIT DEVELOPMENT
SITE CONTEXT PLAN



SITE ANALYSIS



SUBJECT SITE



LEGEND

- STREET SETBACK
- PRIVATE OPEN SPACE
- EXISTING VEHICLE CROSSING
- HABITABLE WINDOWS
- STREET LIGHT / ELEC. POLE
- PHOTO MARKER

SITE PHOTOS



SEWER & DRAINAGE

150 mm Ø VC MAIN SEWER PIPE - AVG. DEPTH 1.64m INVERTED LEVEL. 1.00M OFFSET SOUTH FROM SOUTH BOUNDARY - CONFIRM EXACT POSITION ON SITE PRIOR TO CONSTRUCTION

COUNCIL STORMWATER PIPE UNKNOWN DIAM. PIPE - DEPTH: INVERTED LEVEL UNKNOWN & OFFSET UNKNOWN - CONFIRM EXACT POSITION ON SITE PRIOR TO CONSTRUCTION

LEGEND

- INTERNAL / BOUNDARY FENCE
- MAJOR CONTOURS - 1m INTERVALS
- MINOR CONTOURS - 0.20m INTERVALS
- STIP SEWER TIE IN POINT - RELOCATE TO LOCAL AUTHORITY REQUIREMENTS IF REQUIRED
- TBM
- EXISTING SITE LEVELS
- ELECTRICITY POLE & OVERHEAD WIRES
- TEL TELECOMMUNICATIONS PIT
- ROAD SIGN
- EXISTING GAS METER
- EXISTING WATER METER
- EXISTING WATER METER
- HW HABITABLE ROOM WINDOW
- NHW NON HABITABLE ROOM WINDOW
- D DOOR
- GD GLASS DOOR
- T.O.G. TOP OF GUTTER
- POS PRIVATE OPEN SPACE
- TREE NUMBER AS PER ARBORICULTURAL REPORT
- EXISTING TREES
- STRUCTURAL ROOT ZONE AS PER ARBORICULTURAL REPORT
- TREE PROTECTION ZONE AS PER ARBORICULTURAL REPORT

ARBORIST REPORT

LANDSCAPES BY DESIGN - CONSULTING ARBORISTS
 5 OAKLEY ST, MOUNT DANDENONG, VIC 3767
 PH: [REDACTED]
 DATE: 16/06/2021
 DERIVED FROM ARBORICULTURAL REPORT CARRIED OUT BY LANDSCAPES BY DESIGN ON 16TH JUNE 2021.

- LOW RETENTION VALUE
- MEDIUM RETENTION VALUE
- HIGH RETENTION VALUE

TREE NO.	TPZ(mm)	SRZ(mm)	RET. VALUE
TREE 1	2000	1849	COUNCIL
TREE 2	2000	1718	LOW
TREE 3	4500	3573	COUNCIL
TREE 4	3500	2129	NEIGHBOURING
TREE 5	3000	2051	NEIGHBOURING
TREE 6	3500	2129	NEIGHBOURING
TREE 7	2000	1500	NEIGHBOURING
TREE 8	2000	1500	NEIGHBOURING
TREE 9	2000	1500	NEIGHBOURING
TREE 10	2520	1849	NEIGHBOURING
TREE 11	2000	1500	NEIGHBOURING
TREE 12	2160	1752	NEIGHBOURING
TREE 13	2000	1500	NEIGHBOURING
TREE 14	3000	2276	NEIGHBOURING
TREE 15	2000	1500	LOW
TREE 16	2352	1849	LOW
TREE 17	2808	1879	NEIGHBOURING

TP04



161 HOTHLYN DRIVE,
 CRAIGIEBURN
 MULTI UNIT DEVELOPMENT

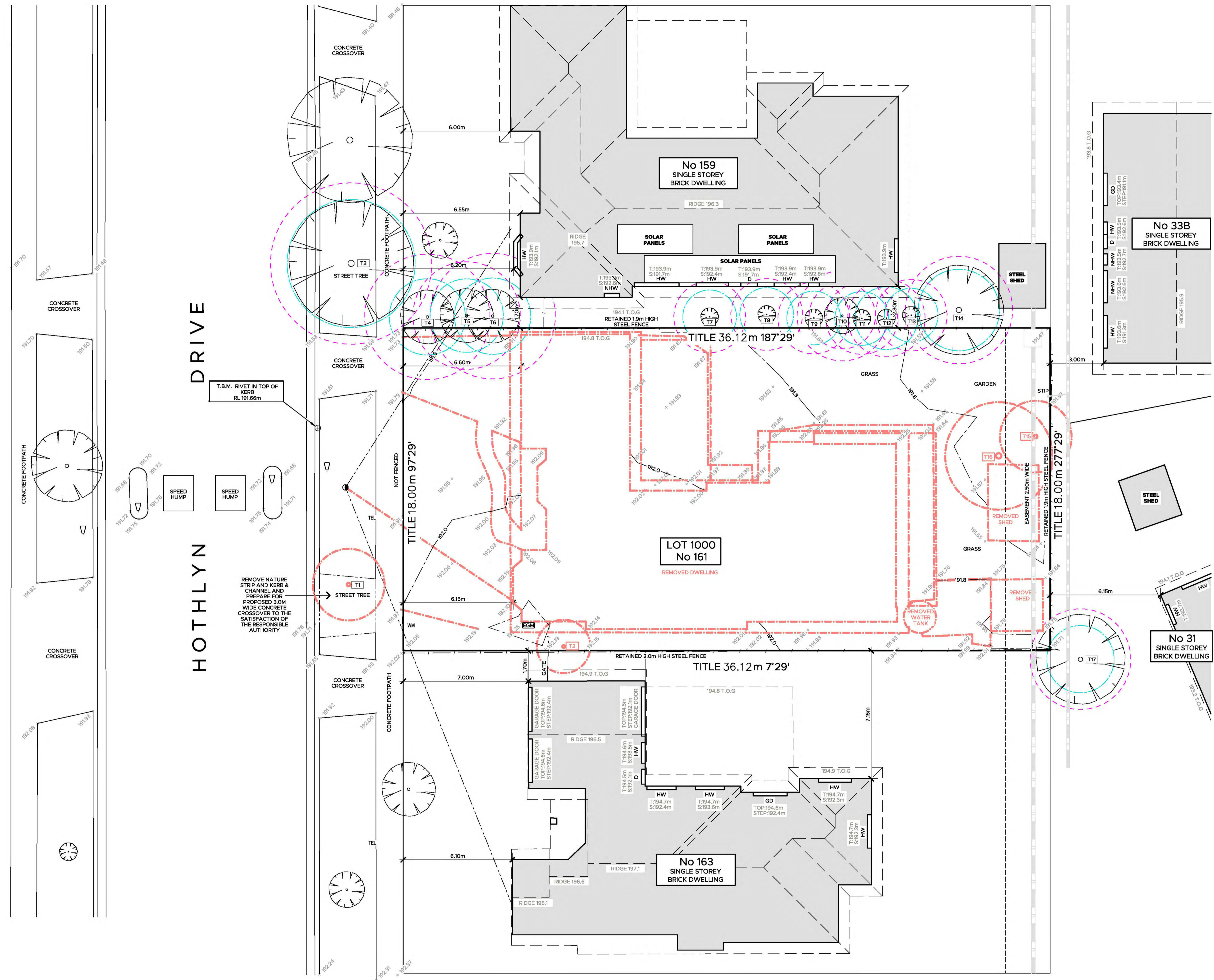
EXISTING SITE PLAN
 JOB NO. 00875 SCALE 1:100 @ A1
 IKONDS.COM.AU



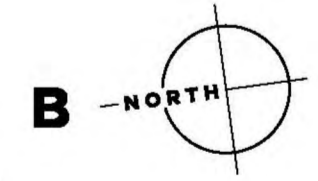
LEGEND



EXISTING TREES TO BE REMOVED
DENOTES DEMOLISHED BUILDINGS / SITE FEATURES



TP05



**161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT**

DEMOLITION PLAN

JOB NO. 00875 SCALE 1:100 @ A1
IKONDIS.COM.AU

IKONDIS
DESIGN STUDIO

A	OCT21	TOWN PLANNING APPLICATION	SB
B	NOV21	COUNCIL RFI	SB

AREA SCHEDULE

SITE	650.16m ²		
SITE COVERAGE	280.66m ²	(43.19%)	
GARDEN AREA	228.71m ²	(35.17%)	
PERMEABILITY	230.59m ²	(35.46%)	
NO. OF DWELLINGS	3		
	UNIT 1	UNIT 2	UNIT 3
GF	61.13m ²	83.45m ²	51.02m ²
FF	60.03m ²	43.90m ²	64.92m ²
GAR	24.06m ²	23.05m ²	26.82m ²
POR	2.15m ²	2.36m ²	1.86m ²
TOTAL	147.37m²	152.76m²	131.78m²
	15.84 SQ	16.42SQ	14.16m ²
P.O.S	98.35m ²	58.64m ²	59.88m ²
S.P.O.S	29.05m ²	38.40m ²	59.88m ²
S.P.O.S ± 3m	25.05m ²	38.40m ²	59.88m ²

COVENANT

- THAT HE WILL NOT BUILD OR CAUSE TO BE BUILT ON ANY PART OF THE LAND TRANSFERRED ANY DWELLING
- HAVING AN EXTERNAL SURFACE CONSTRUCTED WITH LESS THAN EIGHTY PER CENT (80%) BRICK OR BRICK VENEER EXCLUDING GLAZING
- CLADDING SURFACE AREA **460.04m²**
- BRICK VENEER WALL AREA **370.02m² (80.43%)**
- SHALL NOT HAVE A LIVING AREA LESS THAN 115m²
- LIVING AREA TOTALS:
 U1 = 121.16m²
 U2 = 127.35m²
 U3 = 116.05m²
- OR HAVE A ROOF CONSTRUCTED OR CLAD WITH REFLECTIVE MATERIAL
- CHARCOAL ROOF TILES HAVE BEEN SELECTED

LEGEND

- INTERNAL / BOUNDARY FENCE
- CONTOURS
- STIP SEWER TIE IN POINT - RELOCATE TO LOCAL AUTHORITY REQUIREMENTS IF REQUIRED
- TBM
- EXISTING SITE LEVELS
- S.E.P SIDE ENTRY PIT
- TOT TREE NUMBER AS PER ARBORICULTURAL REPORT
- EXISTING TREES
- HWS HOT WATER SYSTEM
- CL CLOTHES LINE
- G FENCE GATE
- BINS
- RWT 2000L RAINWATER TANK IN ACCORDANCE WITH THE SDA REPORT
- R/W RETAINING WALL
- AC AIR CONDITIONING UNITS
- GM GAS METER - LOCATION TO BE CONFIRMED ON SITE WITH RELEVANT AUTHORITY
- WM WATER METER - LOCATION TO BE CONFIRMED ON SITE WITH RELEVANT AUTHORITY
- EMB ELECTRICAL METER BOX - LOCATION TO BE CONFIRMED ON SITE WITH RELEVANT AUTHORITY
- LB LETTER BOX FOR EACH UNIT
- OP OPERABLE OPAQUE GLAZING
- OB FIXED OBSCURED GLAZING TO 1.7M HIGH ABOVE FFL MAX 25% TRANSPARENCY
- SC PERMANENTLY FIXED 1.7m HIGH EXTERNAL LOUVER SCREEN WITH 25% MAXIMUM TRANSPARENCY
- GSD GARAGE SECTIONAL DOOR
- GRD GARAGE ROLLER DOOR
- EP ENVIS PIT IN ACCORDANCE WITH SDA REPORT
- ESD EXTERNAL SHADING DEVICE - OPERABLE

PEDESTRIAN VISIBILITY SPLAY NOTE:
 ACCESSWAYS MUST HAVE A CORNER SPLAY OR AREA AT LEAST 50 PER CENT CLEAR OF VISUAL OBSTRUCTIONS EXTENDING AT LEAST 2 METRES ALONG THE FRONTAGE ROAD FROM THE EDGE OF AN EXIT LANE AND 2.5 METRES ALONG THE EXIT LANE FROM THE FRONTAGE, TO PROVIDE A CLEAR VIEW OF PEDESTRIANS ON THE FOOTPATH OF THE FRONTAGE ROAD. THE AREA CLEAR OF VISUAL OBSTRUCTIONS MAY INCLUDE AN ADJACENT ENTRY OR EXIT LANE WHERE MORE THAN ONE LANE IS PROVIDED, OR ADJACENT LANDSCAPED AREAS, PROVIDED THE LANDSCAPING OR STRUCTURES IN THOSE AREAS IS LESS THAN 900mm IN HEIGHT.

TP06 **B** NORTH

161 HOTHLYN DRIVE, CRAIGIEBURN
 MULTI UNIT DEVELOPMENT

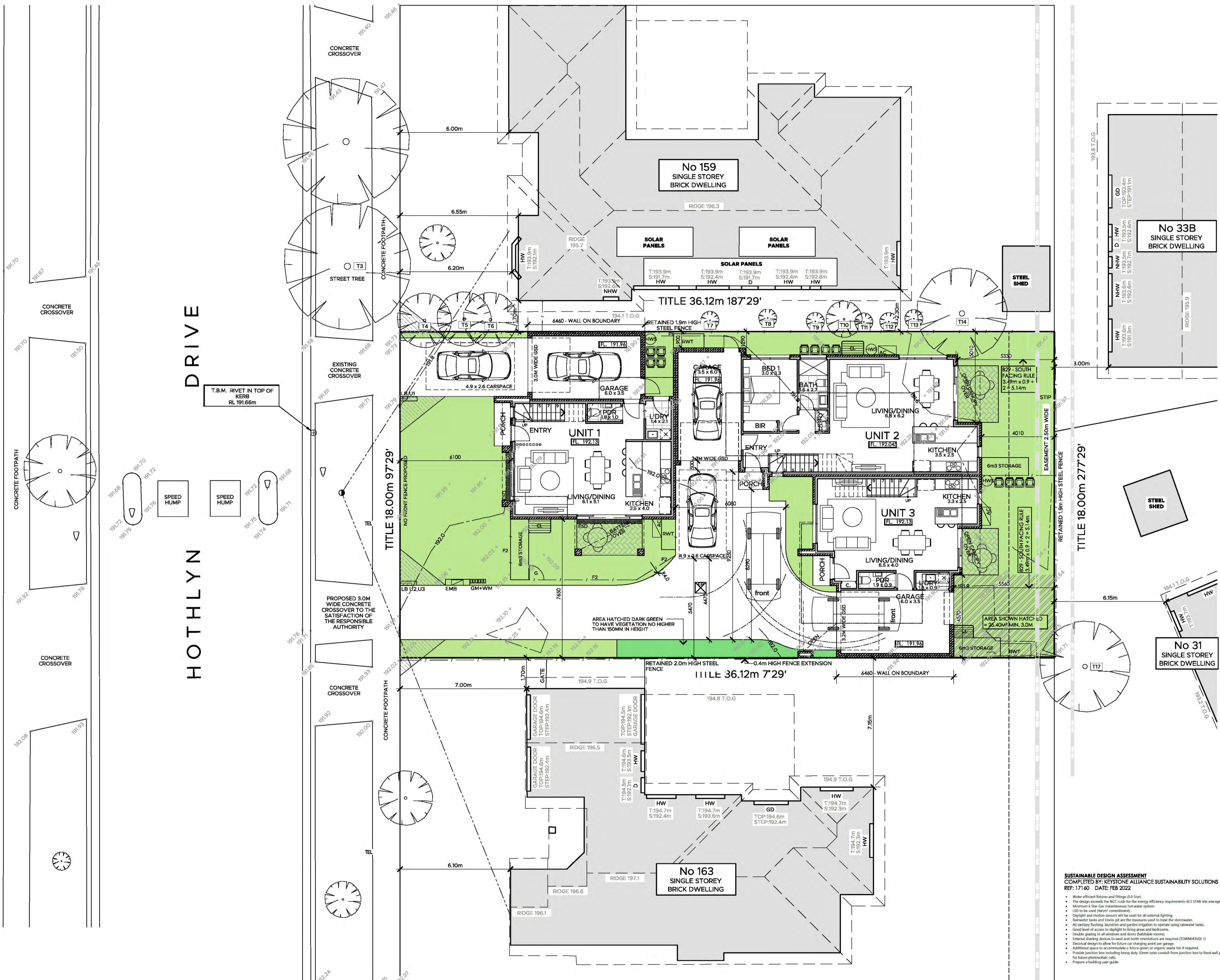
DESIGN RESPONSE & GROUND FLOOR PLAN

JOB NO. 00875 SCALE 1:100 @ A1
 IKONDIS.COM.AU

IKONDIS
 DESIGN STUDIO

SUSTAINABLE DESIGN ASSESSMENT
 COMPLETED BY: KEYSTONE ALLIANCE SUSTAINABILITY SOLUTIONS
 REF: 17160 DATE: FEB 2022

- Water efficient fixtures and fittings (5.0 Star)
- The design exceeds the NCC code for the energy efficiency requirements (6.5 STAR site average)
- Minimum 6 Star gas instantaneous hot water system
- LED to be used (where commitment)
- Daylight and motion sensors will be used for all external lighting
- Rainwater tanks and Envis pit are the measures used to treat the stormwater
- All sanitary flushing hardware and garden irrigation to operate using rainwater tanks
- Good level of access to daylight to living areas and bedrooms
- Double glazing to all windows and doors (habitable rooms)
- External shading devices to west and north orientations are required (DOWNHOUSE 1)
- Electrical design to allow for future car charging point per garage
- Additional space to accommodate a future green or organic waste bin if required
- Provide junction box including heavy duty 30mm solar conduit from junction box to fixed wall plate in the garage for future photovoltaic cells
- Prepare a building user guide



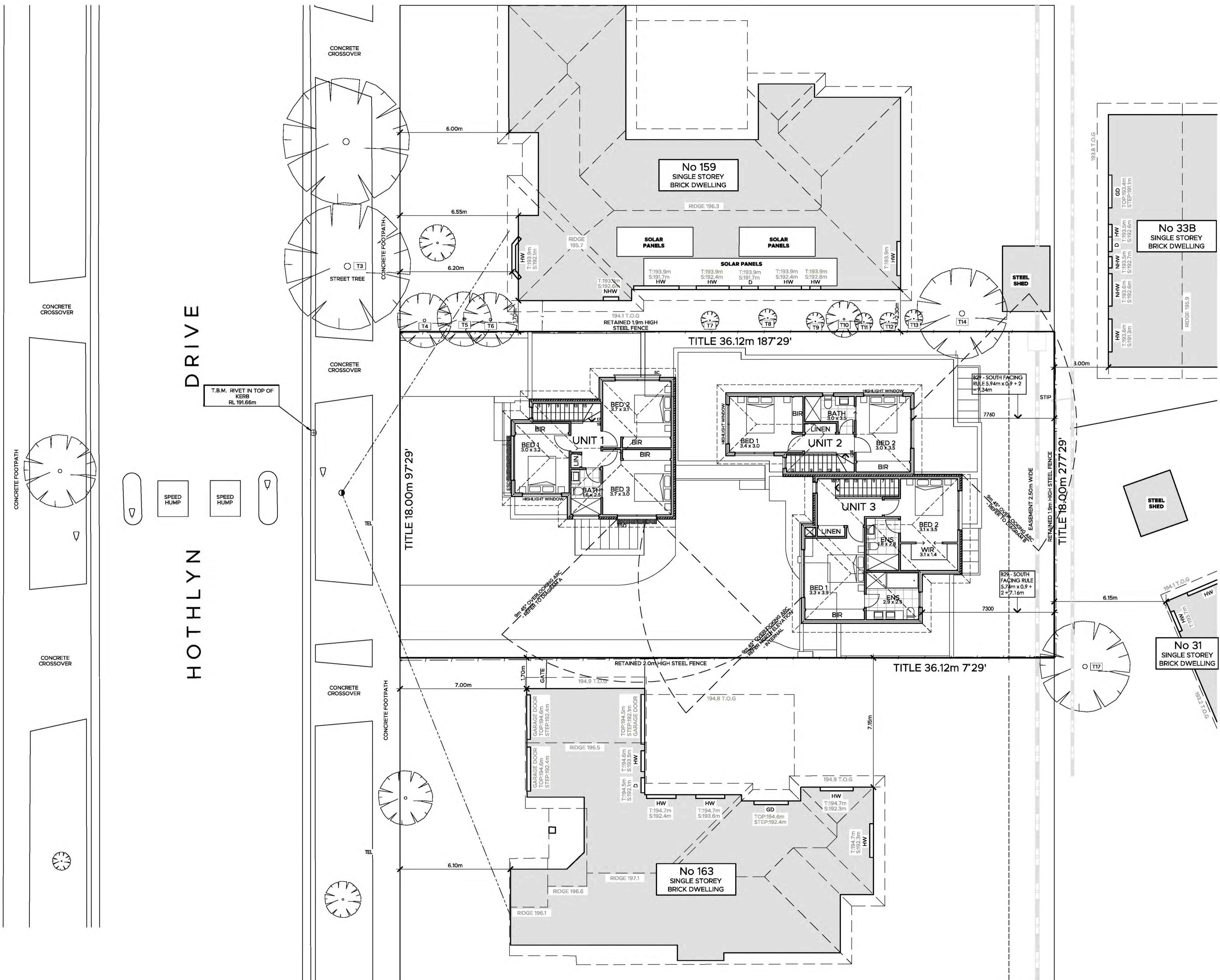
HOTHLYN DRIVE

No 159
SINGLE STOREY
BRICK DWELLING

No 33B
SINGLE STOREY
BRICK DWELLING


No 31
SINGLE STOREY
BRICK DWELLING

No 163
SINGLE STOREY
BRICK DWELLING



NOTES

SITE AREA	650.16m ²
MINIMUM AREA REQUIRED	227.55m ²
TOTAL AREA PROVIDED	228.71m ²
GARDEN AREA PERCENTAGE	35.17%

 DENOTES GARDEN AREA



NOTES

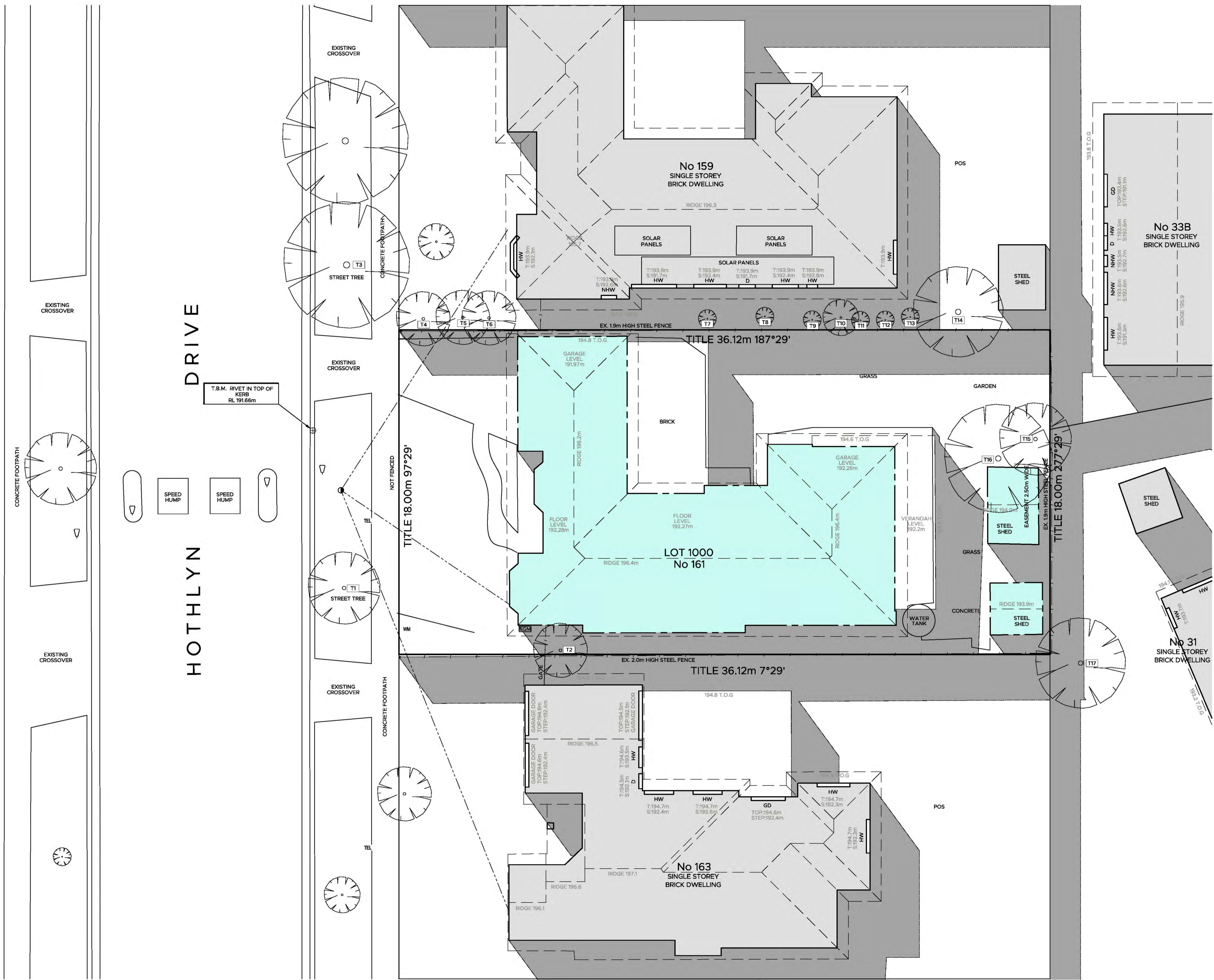
 DENOTES TREE PROTECTION ZONE ENCROACHMENT
 RULE: MAX 10% OF TOTAL TPZ AREA

TREE #	TPZ(m²)	MAX.	PROPOSED
TREE 4	38.48m²	3.84m²	9.57m² (24.87%)
TREE 5	28.27m²	2.82m²	5.24m² (18.53%)
TREE 6	38.48m²	3.84m²	12.76m² (33.05%)
TREE 7	12.56m²	1.25m²	0.84m² (6.68%)
TREE 9	12.56m²	1.25m²	0.15m² (1.19%)
TREE 10	19.95m²	1.99m²	1.77m² (8.87%)
TREE 11	12.56m²	1.25m²	0.20m² (1.59%)
TREE 12	14.65m²	1.46m²	0.49m² (3.33%)
TREE 14	28.27m²	2.82m²	0.94m² (3.32%)



NOTES

■ EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES & EXISTING BUILDINGS



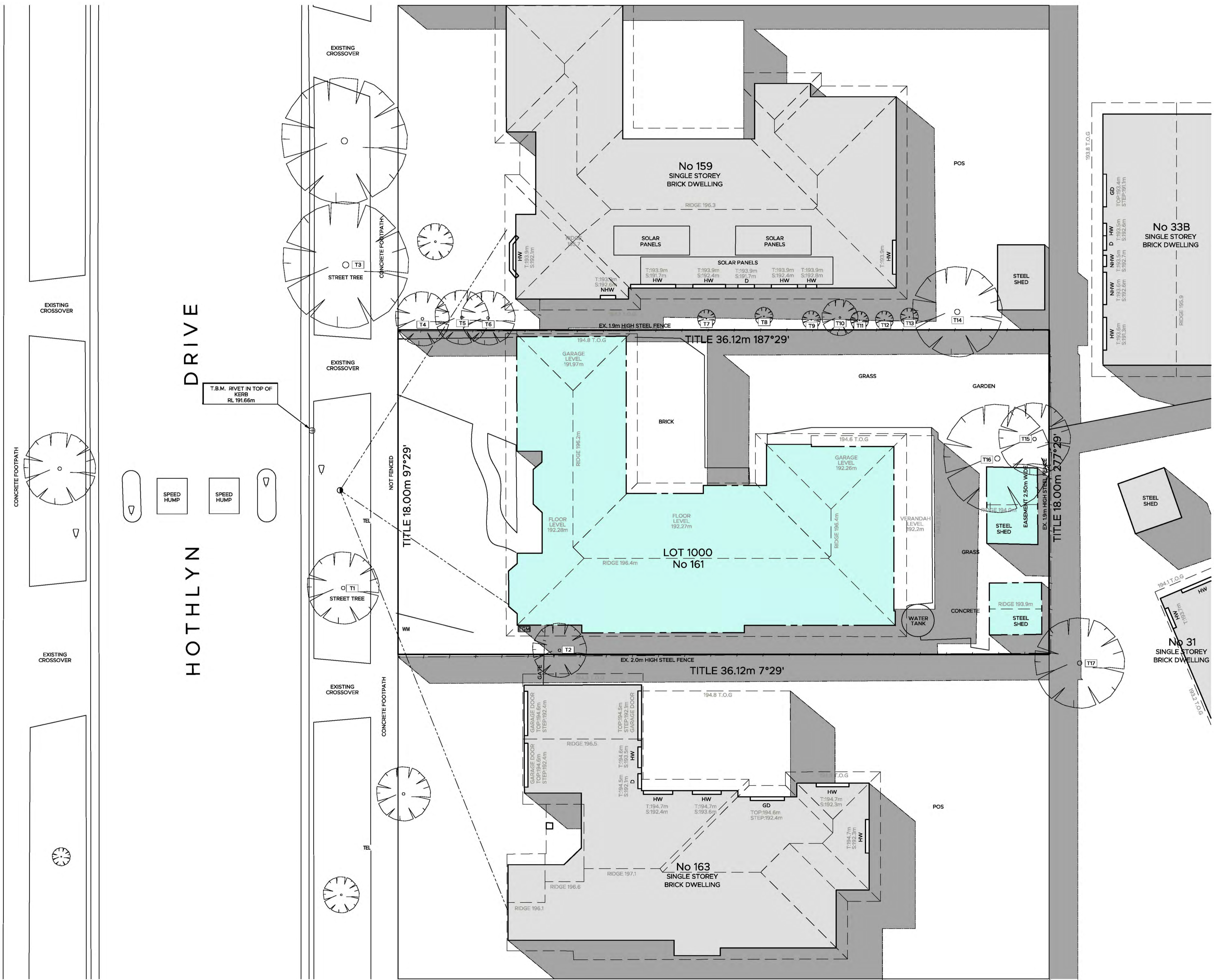
HOTHLYN DRIVE

TP10
161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT

EXISTING SHADOW DIAGRAM - 9AM
JOB NO. 00875 SCALE 1:100 @ A1

NOTES

■ EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES & EXISTING BUILDINGS

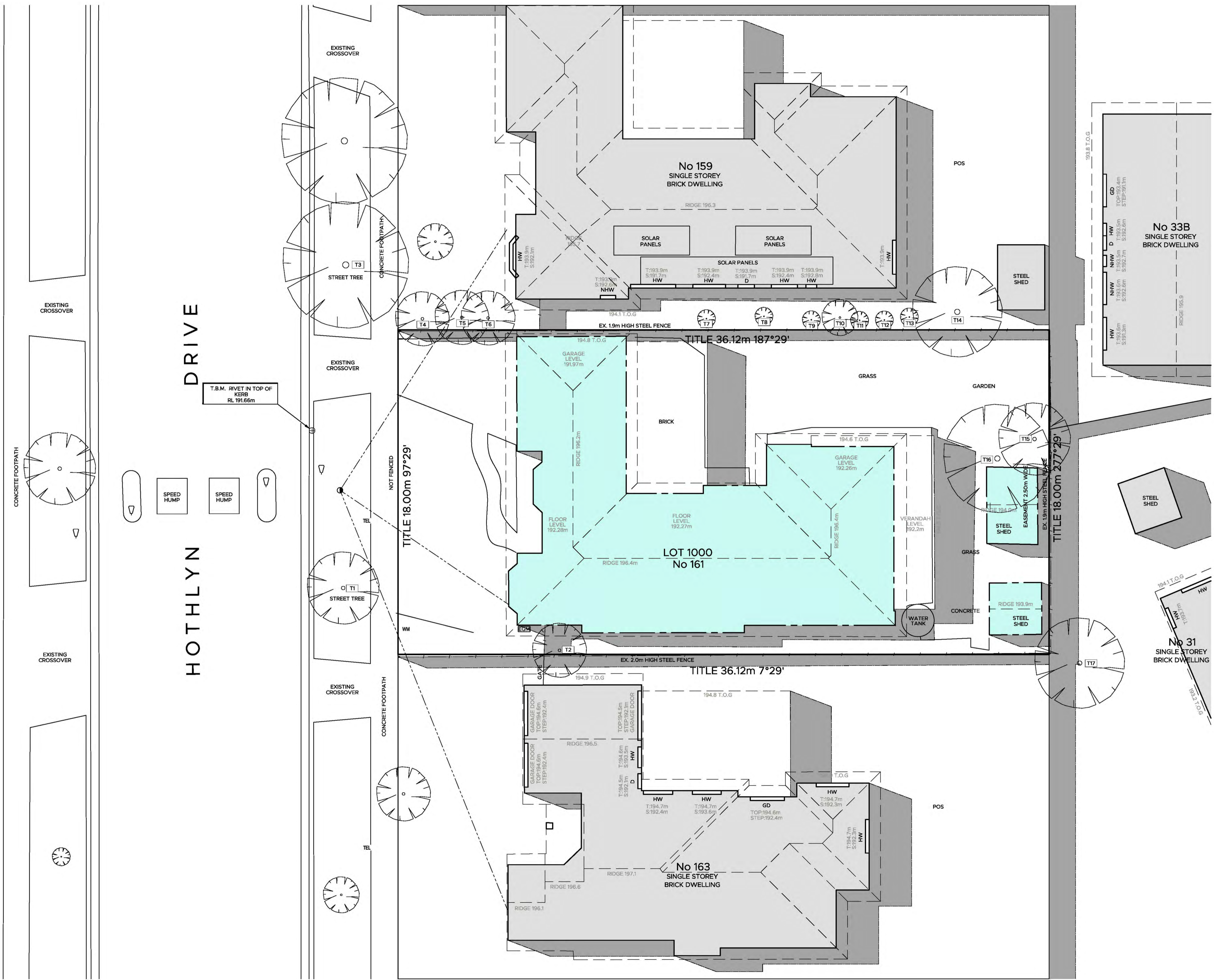


TP11
161 HOTHLYN DRIVE, CRAIGIEBURN
MULTI UNIT DEVELOPMENT

EXISTING SHADOW DIAGRAM - 10AM
JOB NO. 00875 SCALE 1:100 @ A1

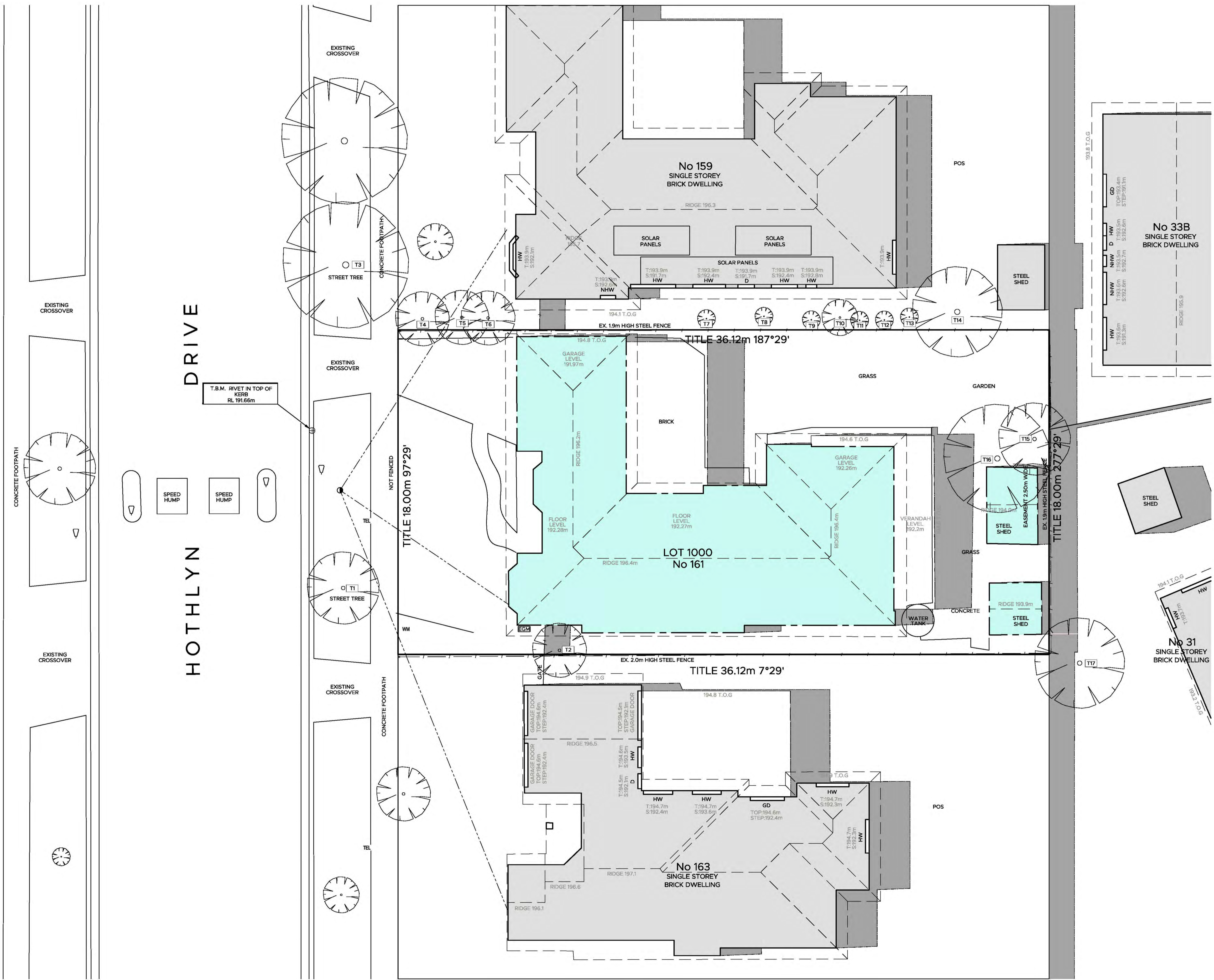
NOTES

■ EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES & EXISTING BUILDINGS



NOTES

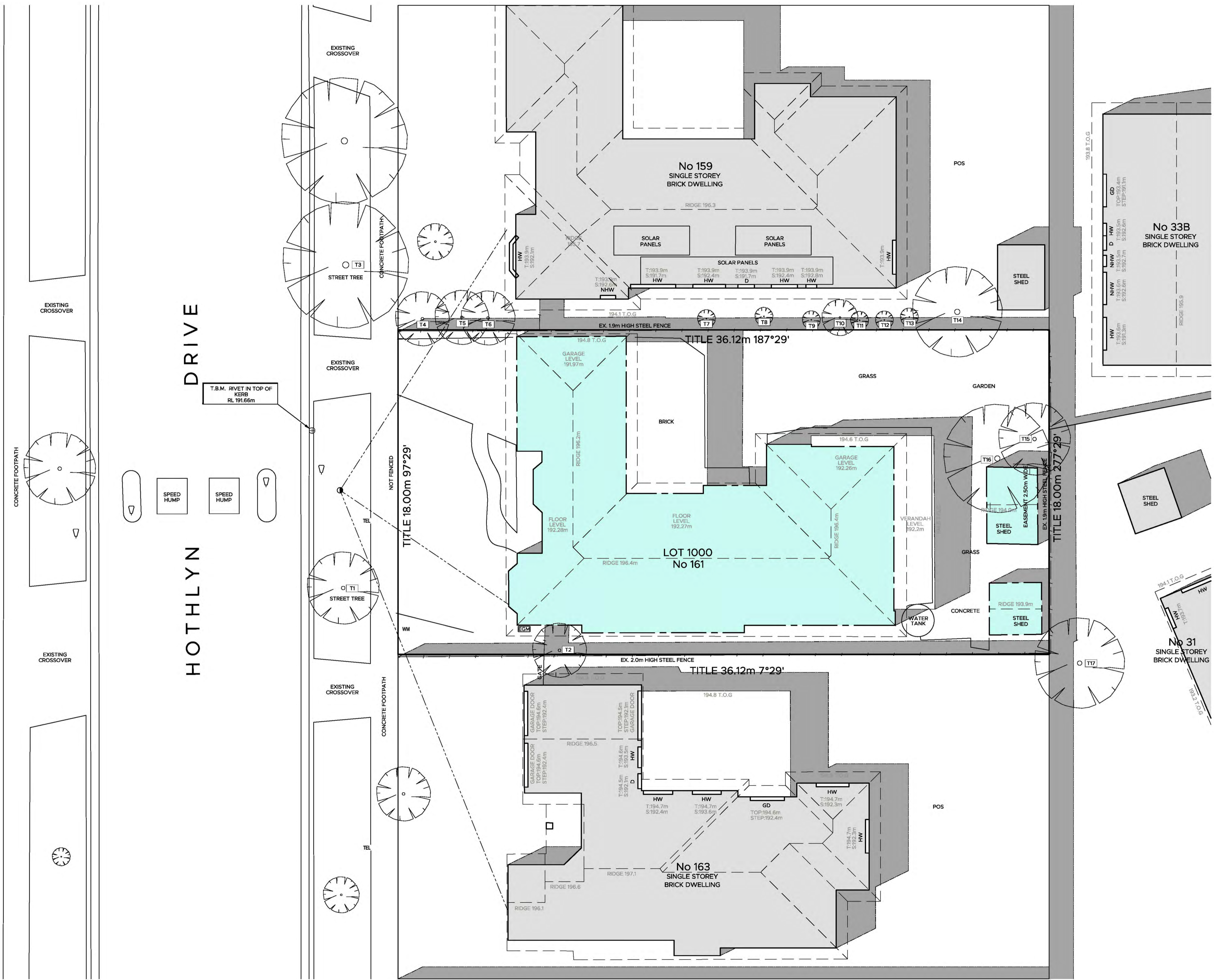
■ EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES & EXISTING BUILDINGS



HOTHLYN DRIVE

NOTES

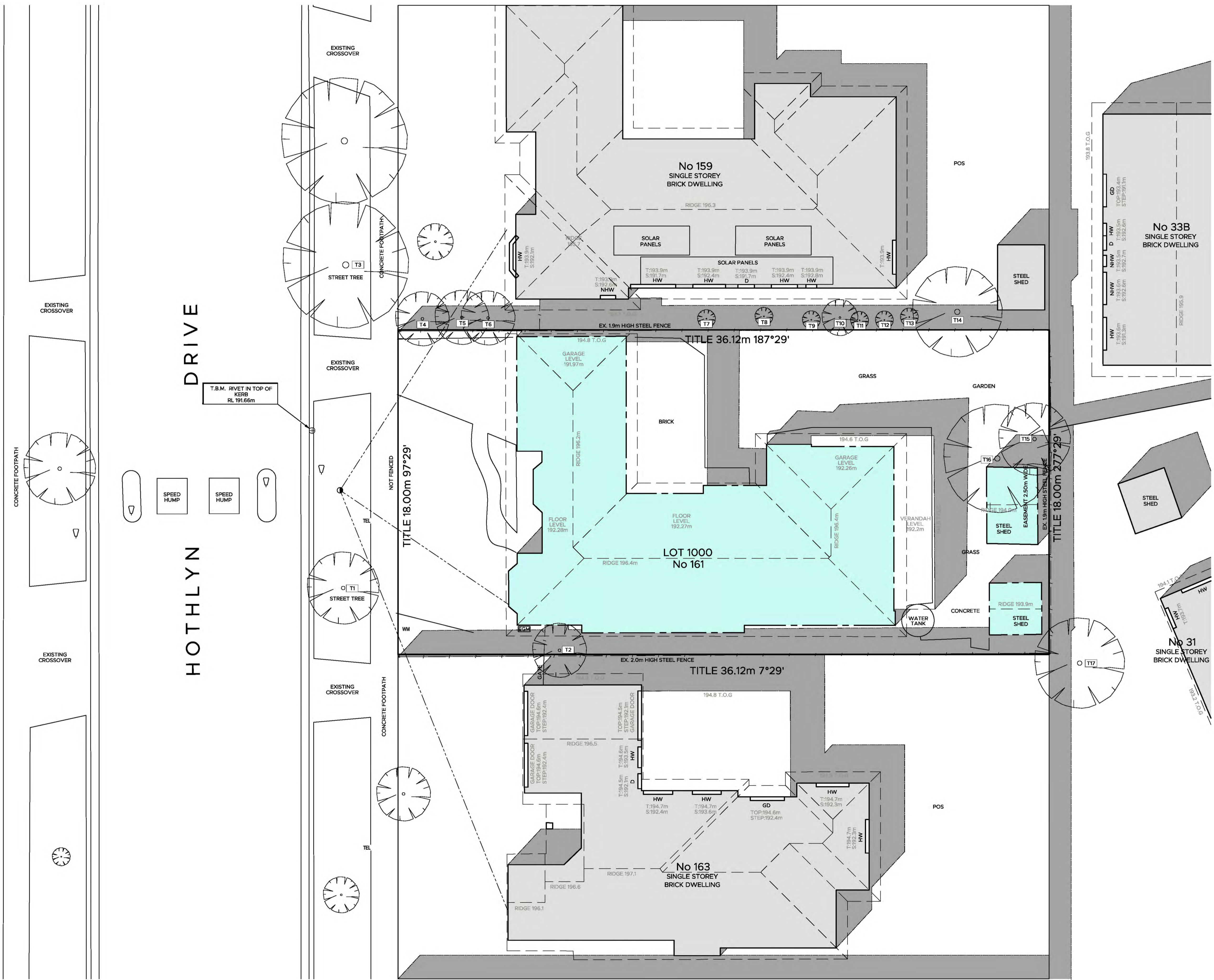
■ EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES & EXISTING BUILDINGS



HOTHLYN DRIVE

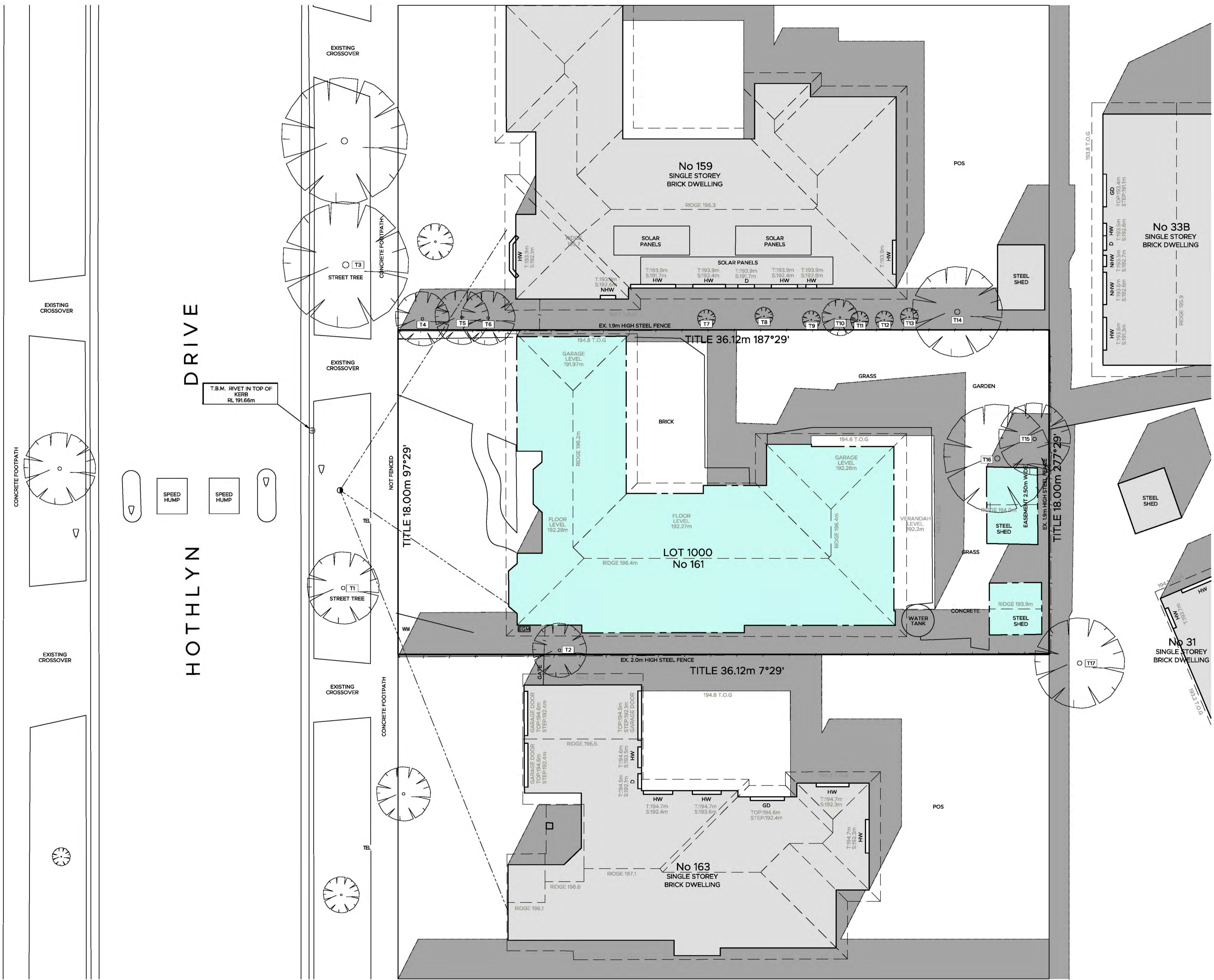
NOTES

■ EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES & EXISTING BUILDINGS



NOTES

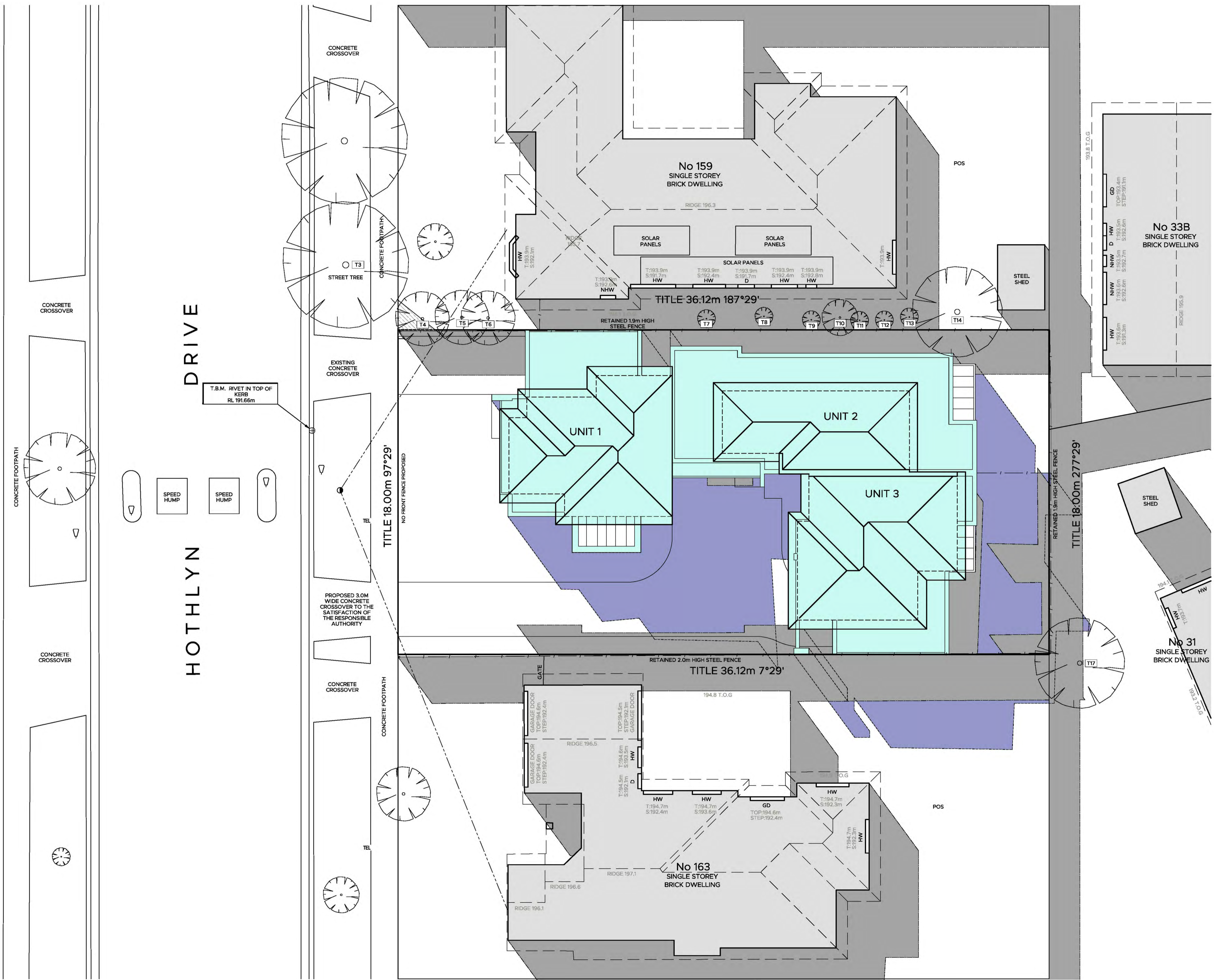
■ EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES & EXISTING BUILDINGS



HOTHLYN DRIVE

NOTES

- EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES, EXISTING BUILDINGS & OUTBUILDINGS
- EXTENT OF SHADOW CAST BY PROPOSED FENCES, PROPOSED BUILDINGS & OUTBUILDINGS

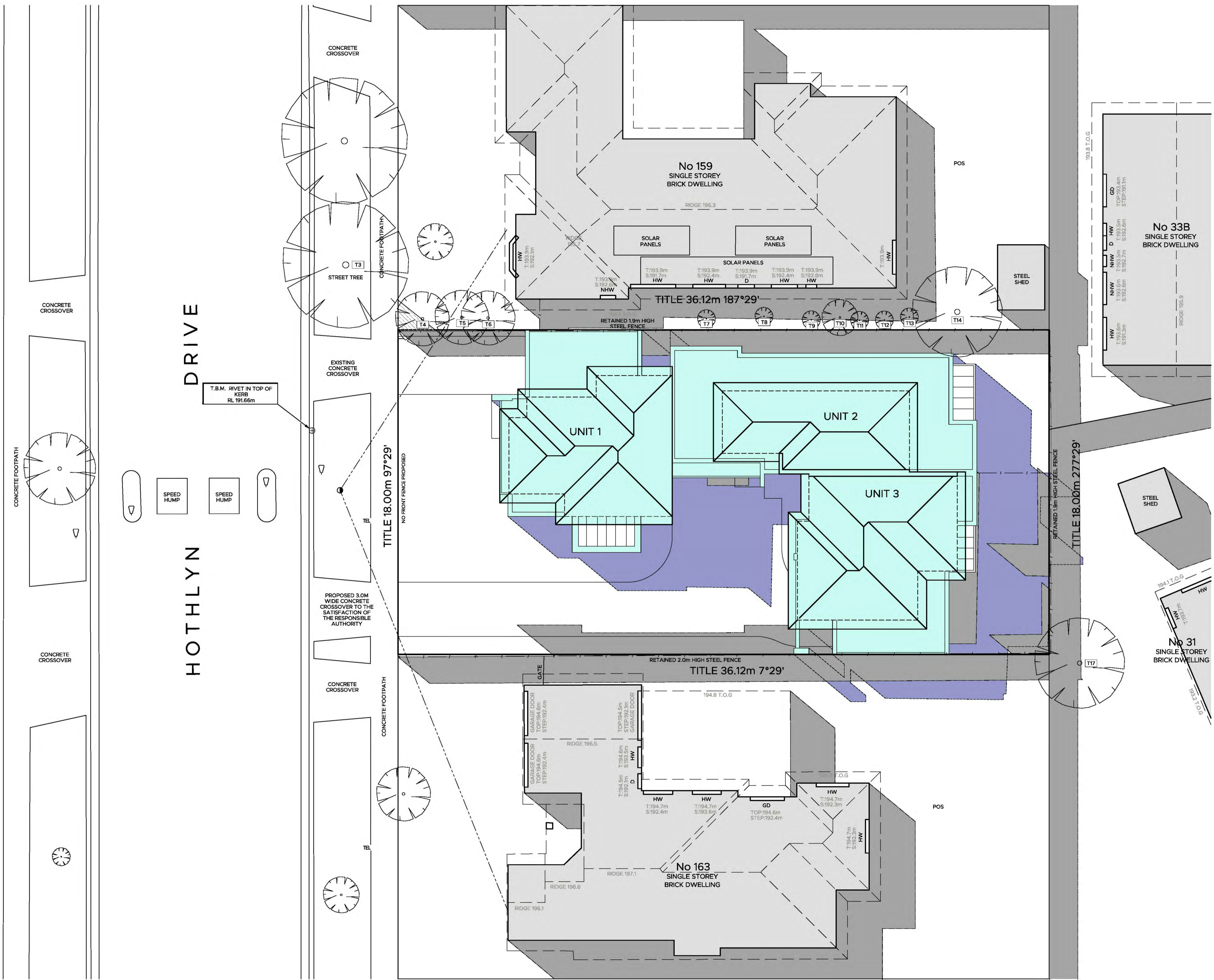


TP17
B - NORTH
 161 HOTHLYN DRIVE,
 CRAIGIEBURN
 MULTI UNIT DEVELOPMENT

PROPOSED SHADOW DIAGRAM - 9AM
 JOB NO. 00875 SCALE 1:100 @ A1
 IKONDS.COM.AU

NOTES

- EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES, EXISTING BUILDINGS & OUTBUILDINGS
- EXTENT OF SHADOW CAST BY PROPOSED FENCES, PROPOSED BUILDINGS & OUTBUILDINGS



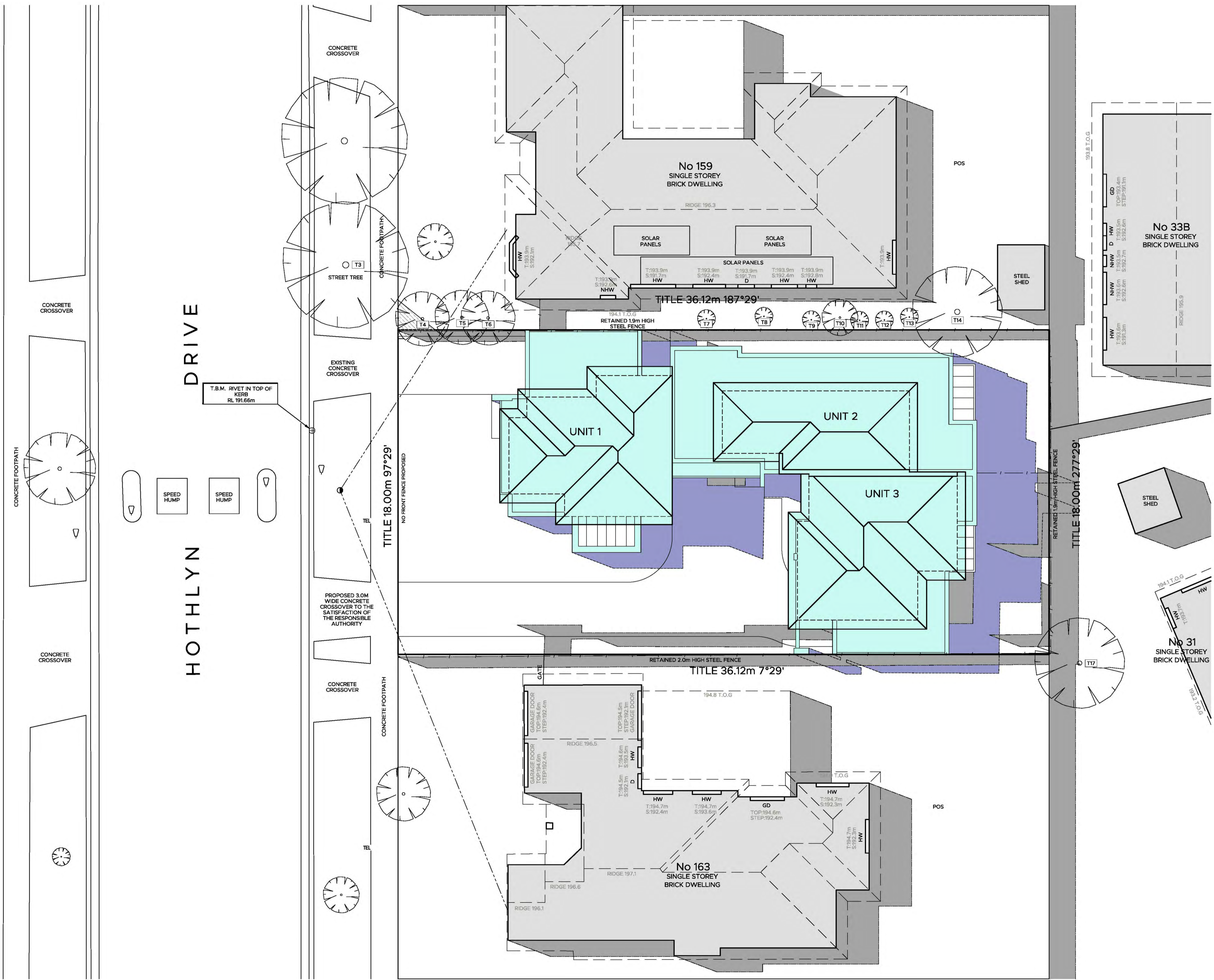
HOTHLYN DRIVE

TP18
161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT

PROPOSED SHADOW DIAGRAM - 10AM
JOB NO. 00875 SCALE 1:100 @ A1

NOTES

- EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES, EXISTING BUILDINGS & OUTBUILDINGS
- EXTENT OF SHADOW CAST BY PROPOSED FENCES, PROPOSED BUILDINGS & OUTBUILDINGS



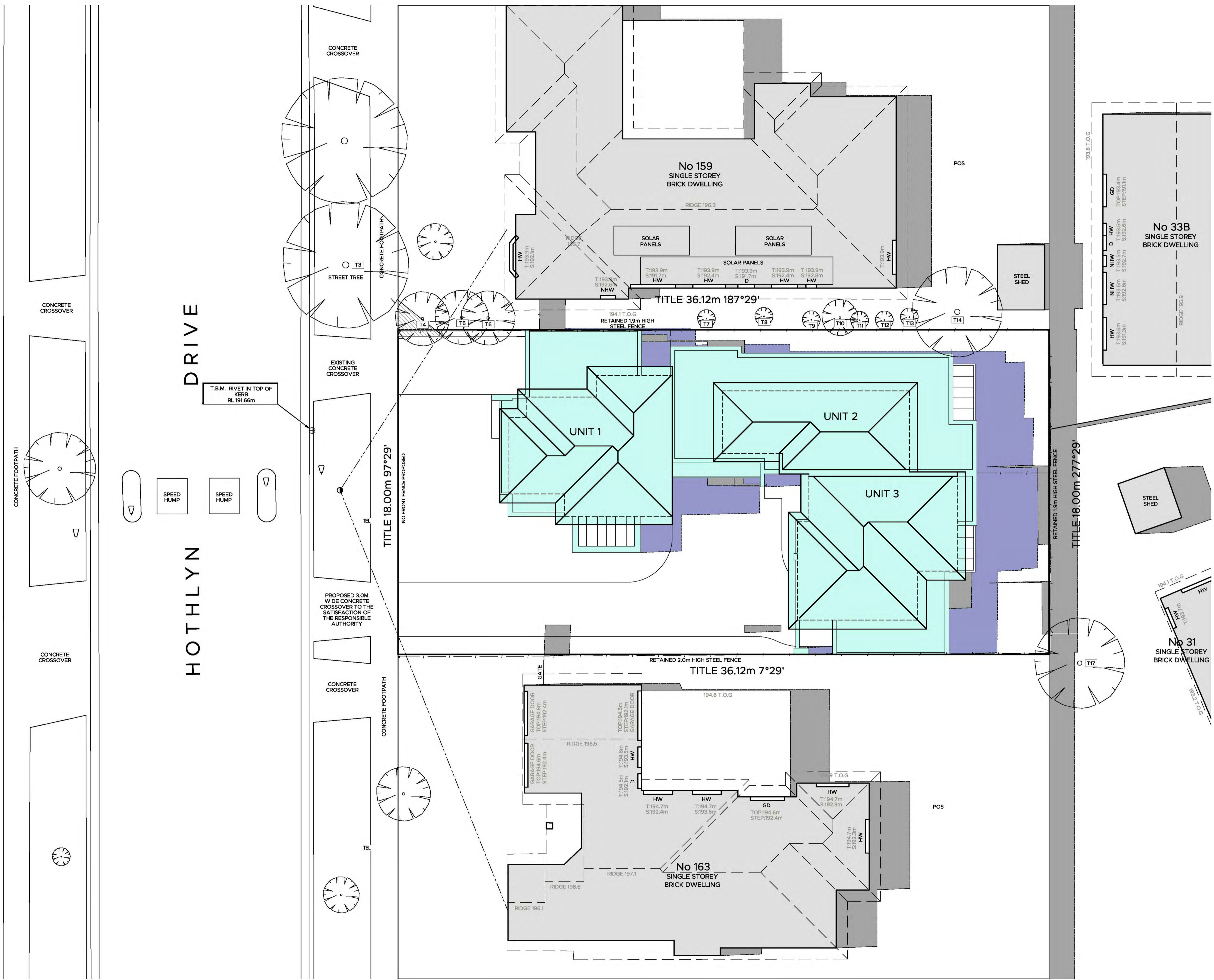
TP19
161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT



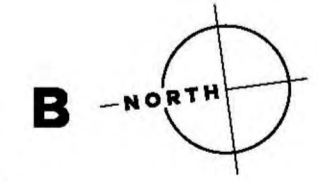
PROPOSED SHADOW DIAGRAM - 11AM
JOB NO. 00875 SCALE 1:100 @ A1

NOTES

- EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES, EXISTING BUILDINGS & OUTBUILDINGS
- EXTENT OF SHADOW CAST BY PROPOSED FENCES, PROPOSED BUILDINGS & OUTBUILDINGS



TP20



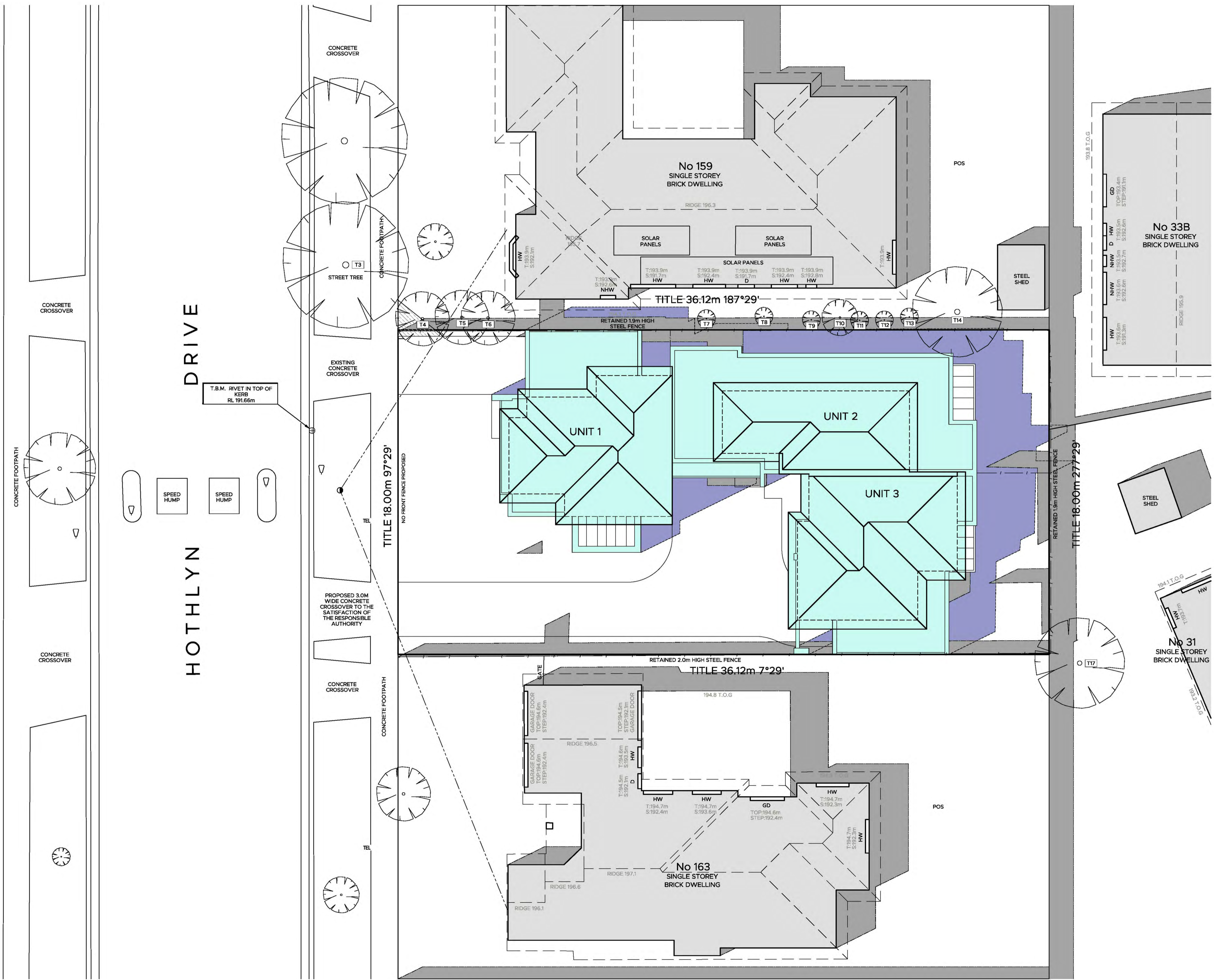
161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT

PROPOSED SHADOW DIAGRAM - 12PM
JOB NO. 00875 SCALE 1:100 @ A1

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NOTES

- EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES, EXISTING BUILDINGS & OUTBUILDINGS
- EXTENT OF SHADOW CAST BY PROPOSED FENCES, PROPOSED BUILDINGS & OUTBUILDINGS



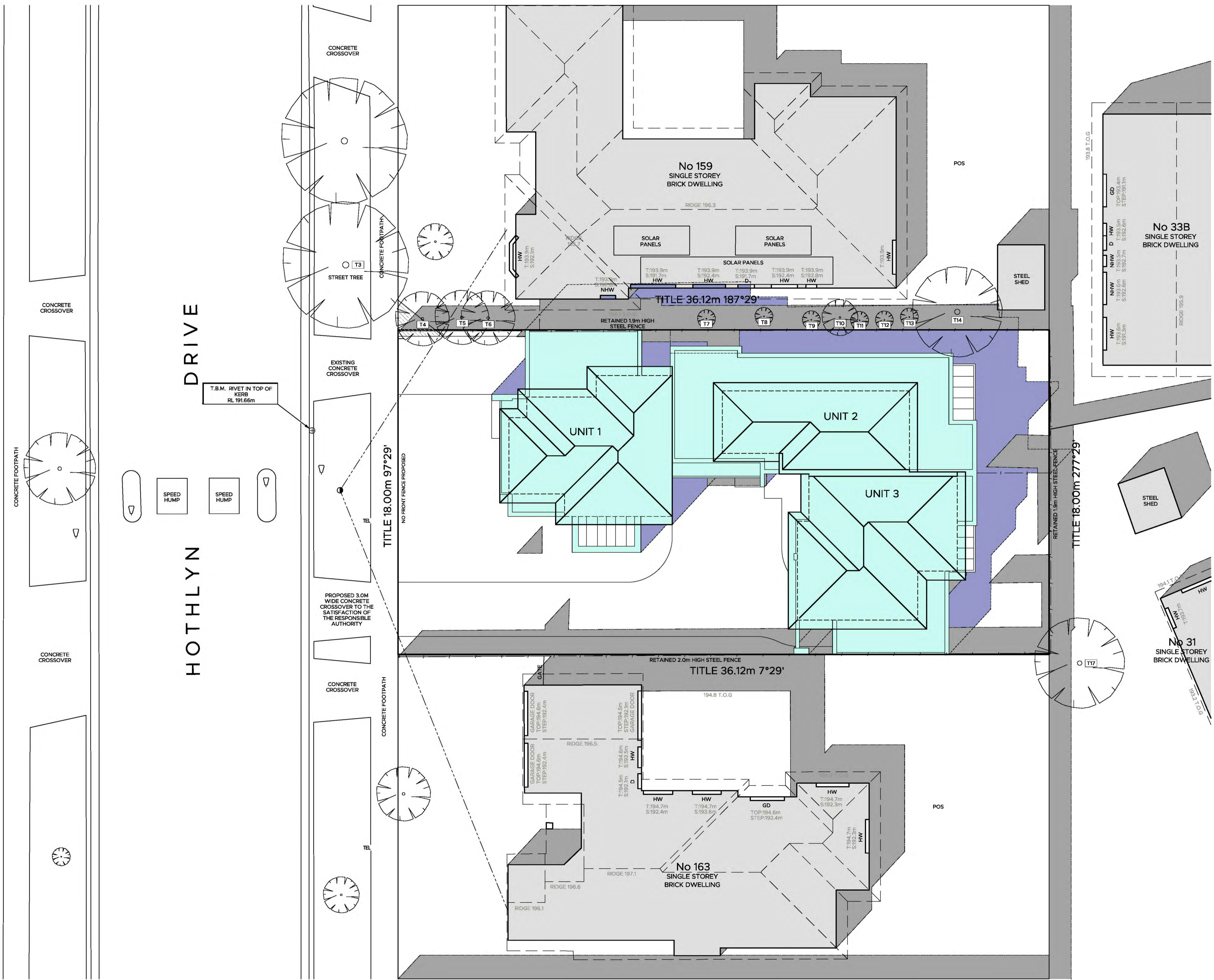
TP21
161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT



PROPOSED SHADOW DIAGRAM - 1PM
JOB NO. 00875 SCALE 1:100 @ A1

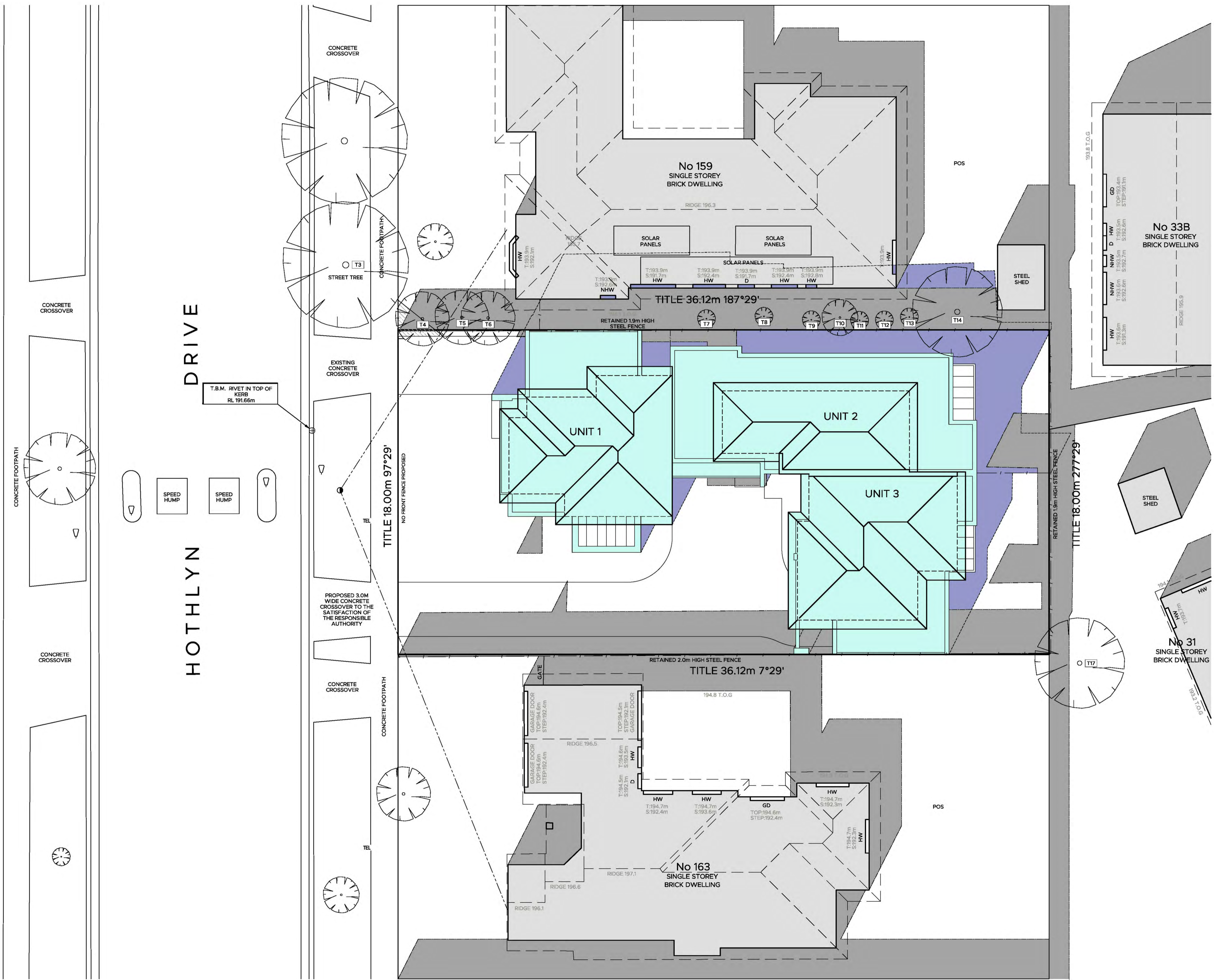
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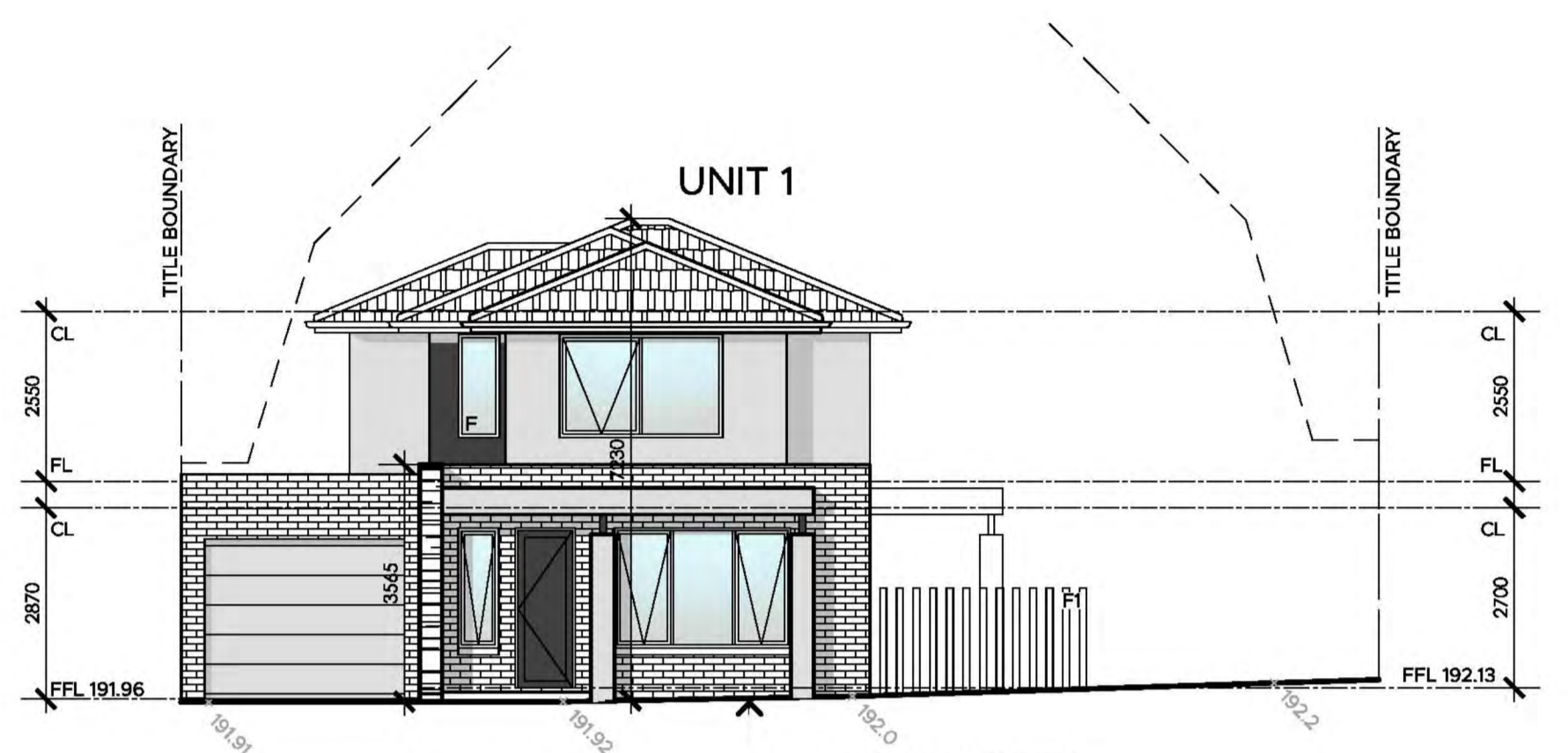
- EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES, EXISTING BUILDINGS & OUTBUILDINGS
- EXTENT OF SHADOW CAST BY PROPOSED FENCES, PROPOSED BUILDINGS & OUTBUILDINGS



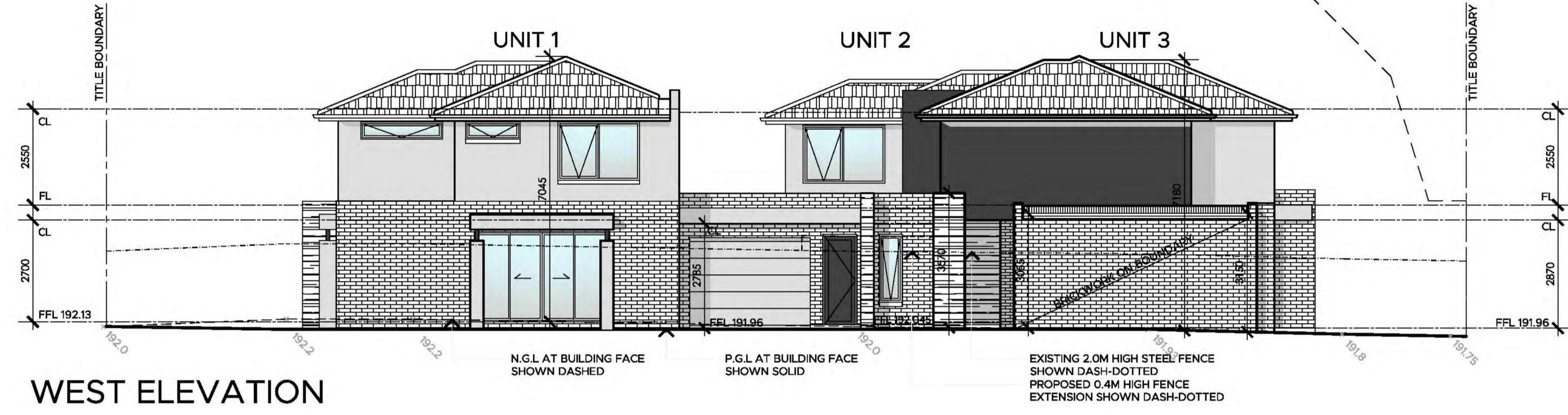
NOTES

- EXTENT OF SHADOW CAST BY EXISTING BOUNDARY FENCES, EXISTING BUILDINGS & OUTBUILDINGS
- EXTENT OF SHADOW CAST BY PROPOSED FENCES, PROPOSED BUILDINGS & OUTBUILDINGS

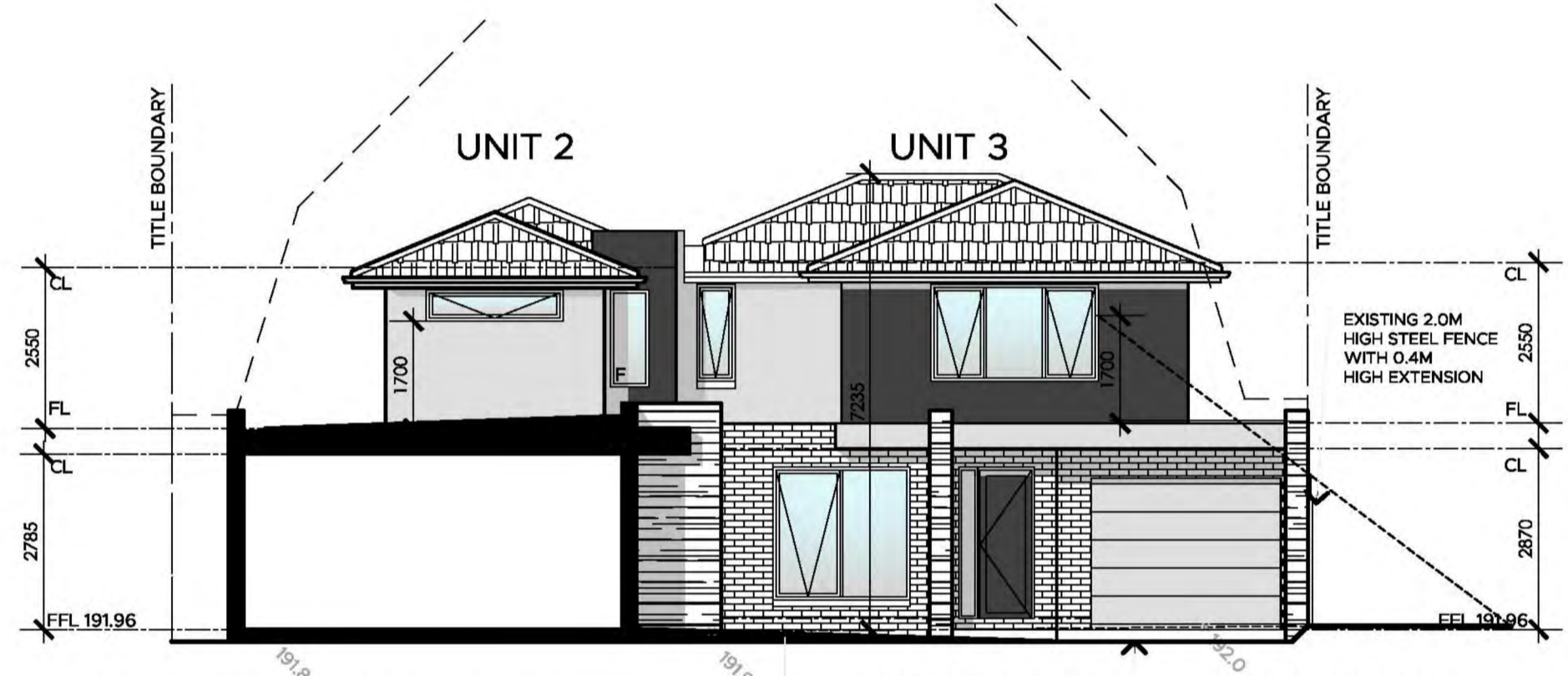




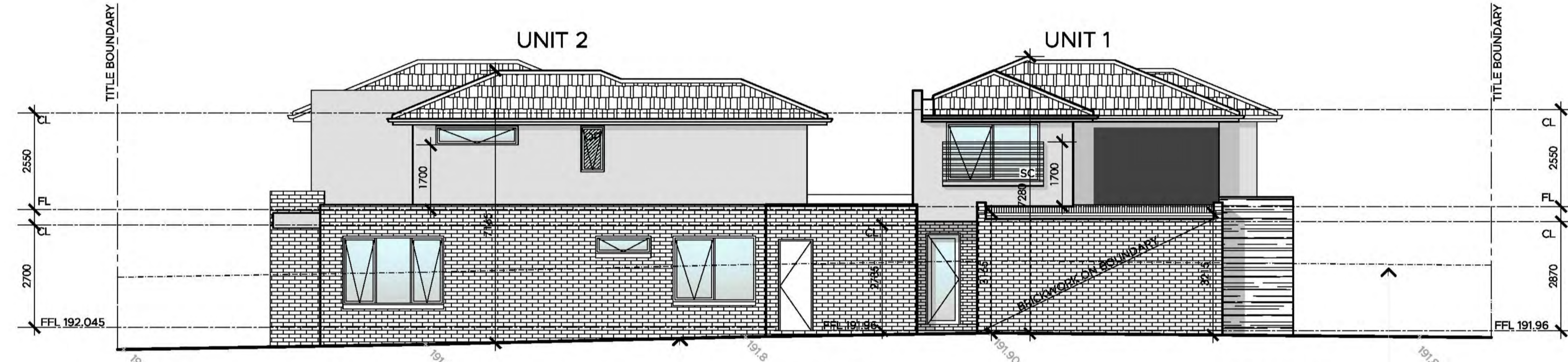
NORTH ELEVATION



WEST ELEVATION



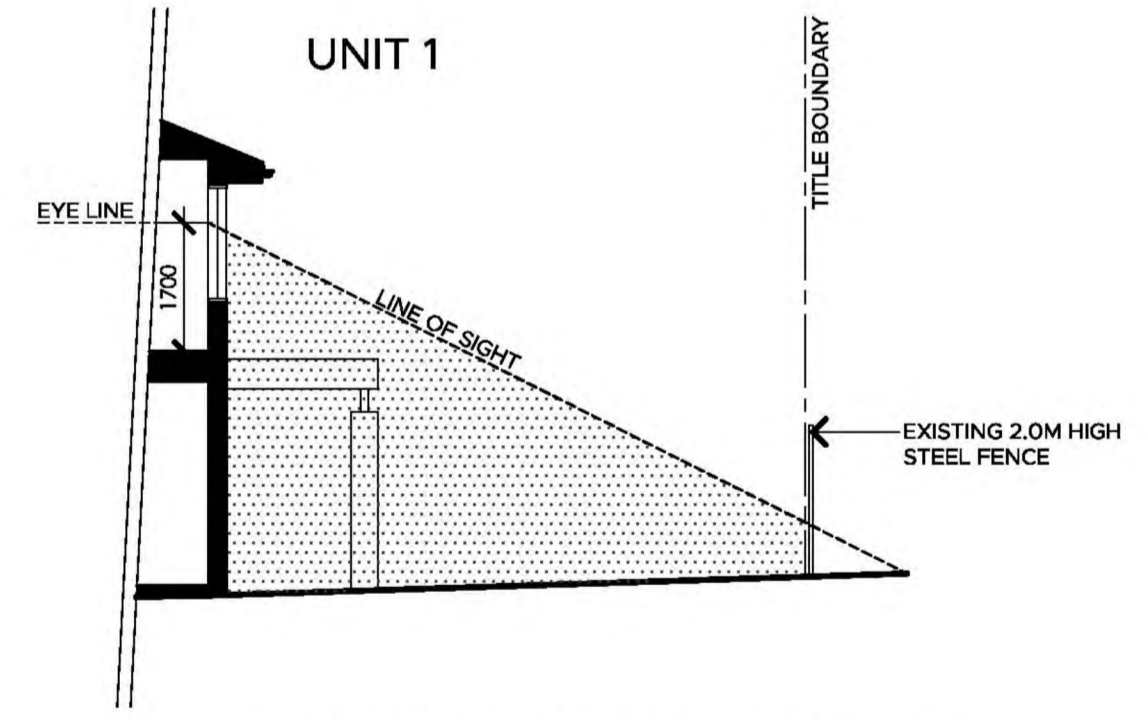
NORTH ELEVATION - INTERNAL



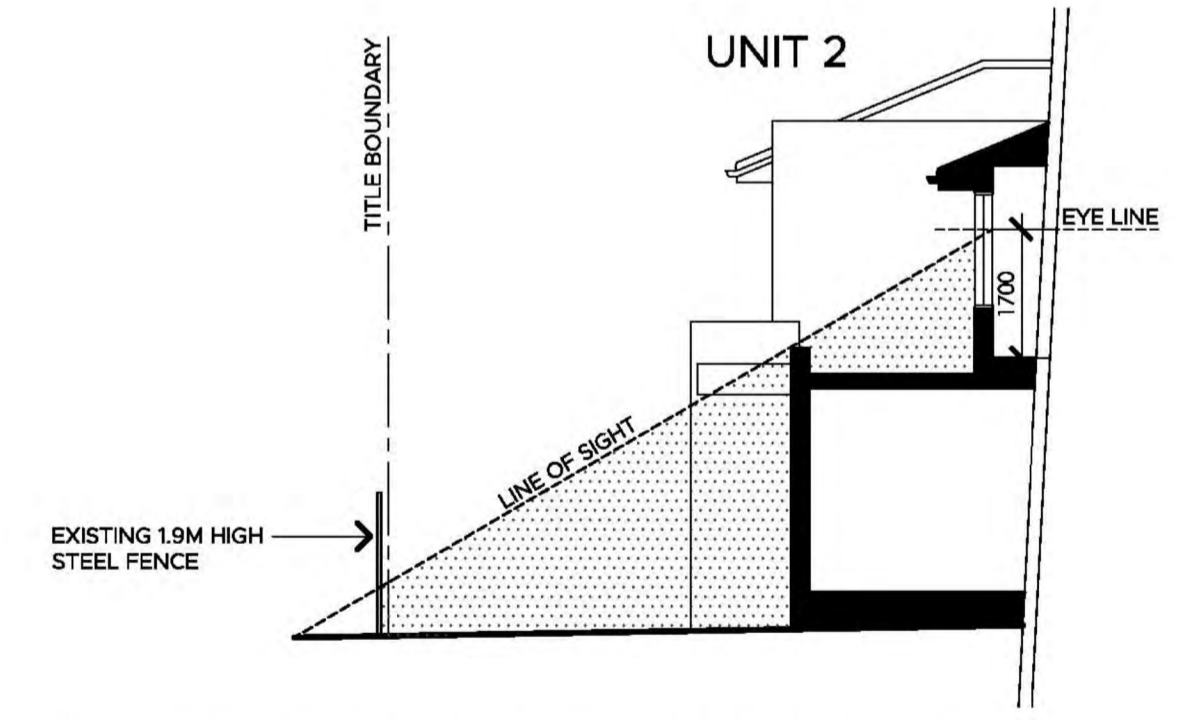
EAST ELEVATION



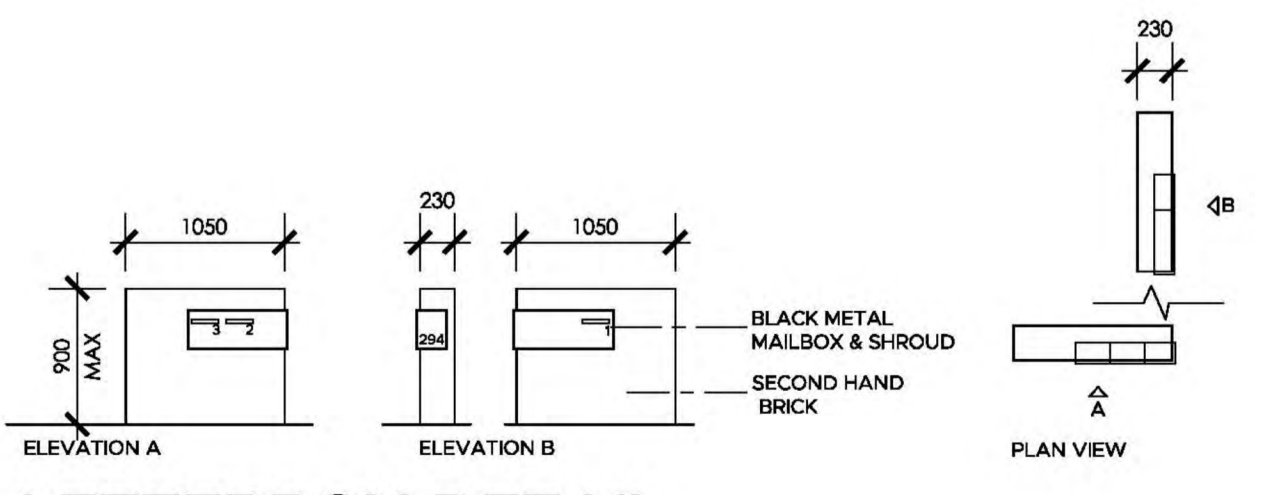
SOUTH ELEVATION



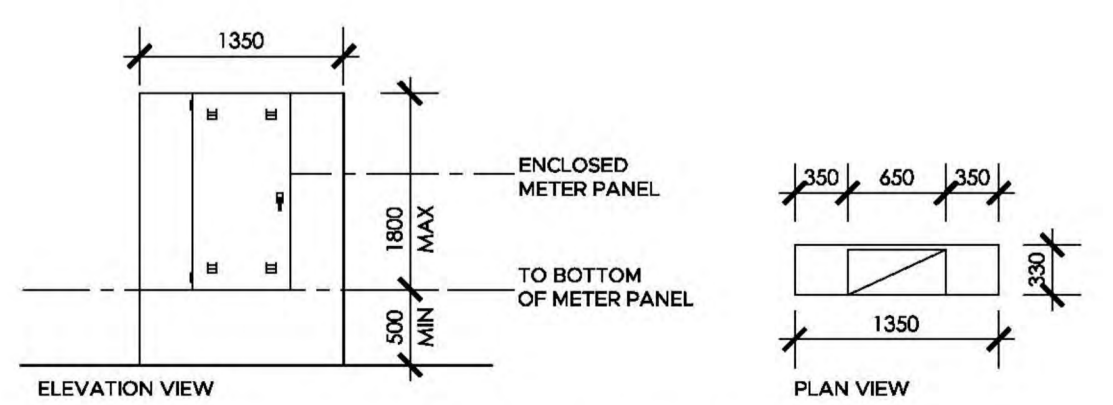
OVERLOOKING DIAGRAM - A



OVERLOOKING DIAGRAM - B


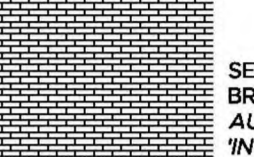





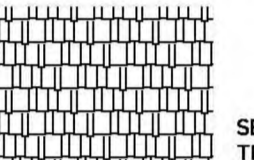



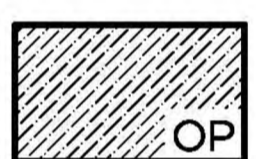




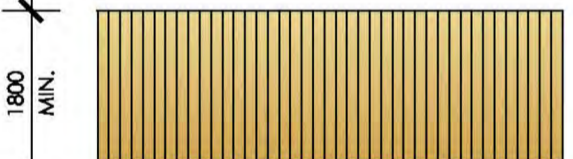

LETTERBOX DETAIL
SCALE 1:50



ELECTRICITY PILLAR DETAIL
SCALE 1:50

COLOUR & MATERIAL SCHEDULE

-   SELECTED BRICKWORK AUSTRAL INDUSTRIAL CHAR
-   RENDER FINISH #1 GREY
-   RENDER FINISH #2 DARK GREY
-   SELECTED ROOF TILES CHARCOAL
-   SELECTED FEATURE CLADDING TILE/STONE
-  SELECTED WINDOWS 'MONUMENT' ALUMINIUM FRAMED
-  SELECTED DRIVEWAY COLOURED CONCRETE - GREY
-  OPAQUE OPERABLE GLASS
-  GARAGE SECTIONAL DOOR GREY
-  1.7m HIGH SCREENING MAX 25% TRANSPARENCY
-  GUTTERS, DOWNPIPES, FASCIA & RAINHEADS 'DULUX MONUMENT'

-  1800 MIN. MIN. 1.8m HIGH TIMBER PALING FENCE
-  MIN. 1.8m HIGH TIMBER PALING FENCE

TP24 B

161 HOTHLYN DRIVE, CRAIGIEBURN
MULTI UNIT DEVELOPMENT

ELEVATIONS
JOB NO. 00875 SCALE 1:100 @ A1

A	OCT21	TOWN PLANNING APPLICATION	SB
B	NOV21	COUNCIL RFI	SB



HOTHLYN DRIVE STREETScape - EXISTING
SCALE 1:200



HOTHLYN DRIVE STREETScape - PROPOSED
SCALE 1:200

TP25 B
161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT



NOTES

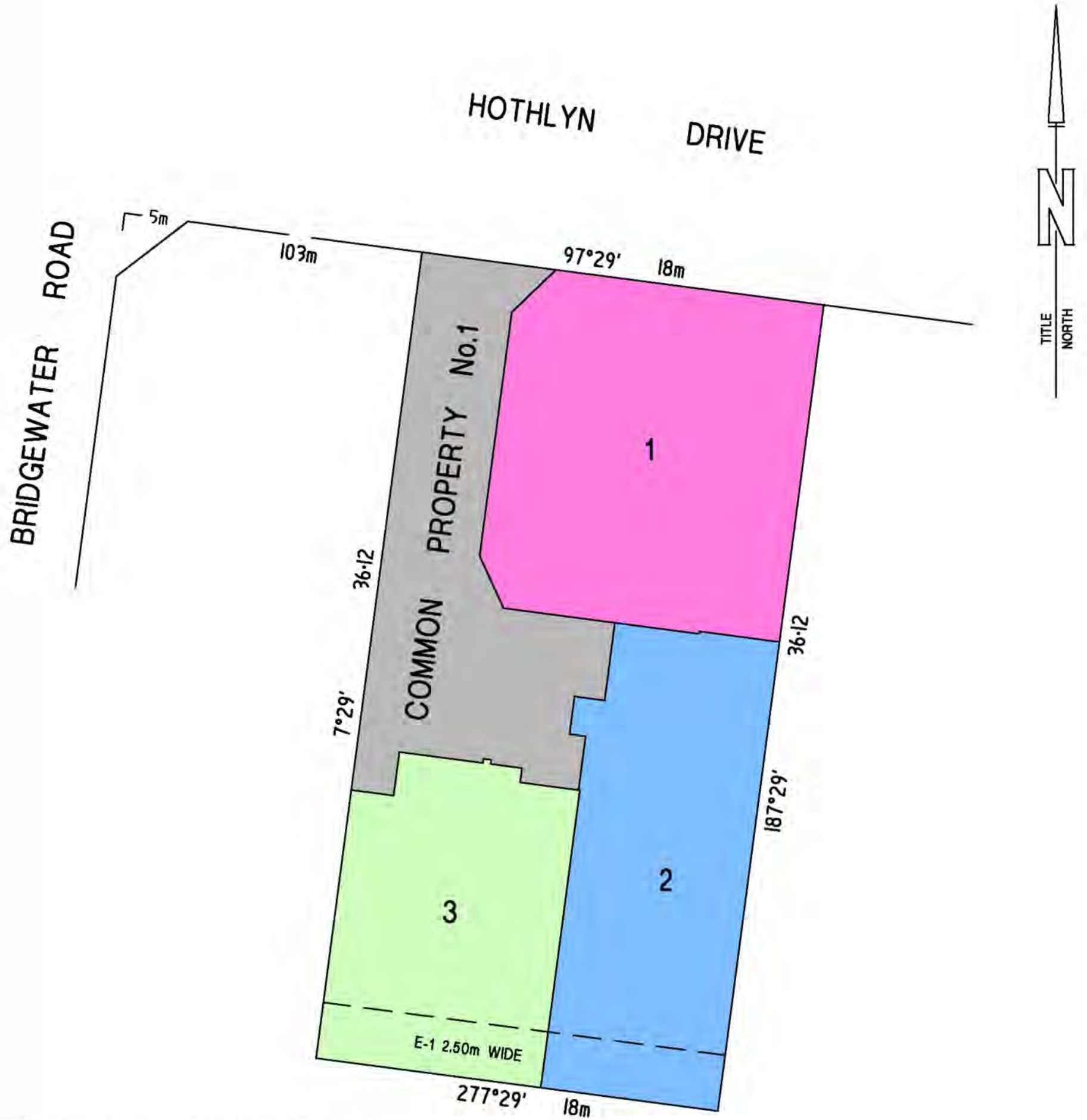
1. VIEW FROM HOTHLYN DRIVE TOWARDS UNIT 1
2. VIEW FROM DRIVEWAY TOWARDS UNIT 1
3. VIEW FROM DRIVEWAY TOWARDS UNIT 1 POS AND UNIT 2 & 3
4. VIEW FROM DRIVEWAY TOWARDS UNIT 2 & 3

TP26 **B**
161 HOTHLYN DRIVE,
CRAIGIEBURN
MULTI UNIT DEVELOPMENT

3D VISUALISATIONS
JOB NO. 00875 SCALE 1:100 @ A1
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IKONOMIDIS
DESIGN STUDIO

PLAN OF PROPOSED SUBDIVISION AREAS



- UNIT 1 SUBDIVISION BOUNDARY
- UNIT 2 SUBDIVISION BOUNDARY
- UNIT 3 SUBDIVISION BOUNDARY
- COMMON PROPERTY (DRIVEWAY)

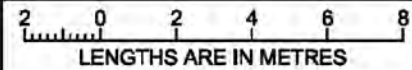


SUITE 107/91 MURPHY STREET
 RICHMOND 3121
 POSTAL ADDRESS:
 PO BOX 7, IVANHOE 3079
 PHONE: (03) 9425 9944
 EMAIL: mail@jrl.net.au

SURVEYORS REF:
21-119

ORIGINAL SHEET
SIZE: A3

SCALE
1:200



SHEET 1 OF 1

LICENSED SURVEYOR: RYAN LANSFIELD
 VERSION: 1