

# Wollongong Local Planning Panel Assessment Report | 25 September 2019

<b>WLPP No.</b>	Item 2
<b>DA No.</b>	DA-2019/527
<b>Proposal</b>	Residential - Dwelling house with attached garage, swimming pool and tree removal
<b>Property</b>	33C Woodlawn Avenue, Mangerton
<b>Applicant</b>	PDC Planners
<b>Responsible Team</b>	Development Assessment and Certification - City Centre Team (RW)

## ASSESSMENT REPORT AND RECOMMENDATION

### Executive Summary

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#### Reason for consideration by Wollongong Local Planning Panel (WLPP) - Determination

The proposal has been referred to WLPP for determination pursuant to clause 2.19(1)(a) of the Environmental Planning and Assessment Act 1979. The proposal is captured by Clause 2(b) of Schedule 2 of the Local Planning Panels Direction of 1 March 2018, having received over 10 unique submissions by way of objection.

#### Proposal

The proposal is for construction of a two storey dwelling with attached garage, swimming pool and tree removal.

#### Permissibility

The site is zoned R2 Low Density Residential pursuant to Wollongong local Environmental Plan 2009. The proposal is categorised as a *dwelling house* and is permissible in the zone with development consent.

#### Consultation

The proposal was notified in accordance with Council's Notification Policy and received 24 submissions (including one letter of support) which are discussed at section 1.5 of the assessment report.

#### Main Issues

The main issues are:

- Building within a building exclusion zone
- Tree removal
- Amenity impacts
- Submissions

#### RECOMMENDATION

It is recommended that the application be refused.

## 1 APPLICATION OVERVIEW

### 1.1 PLANNING CONTROLS

The following planning controls apply to the development:

#### State Environmental Planning Policies:

- SEPP No. 55 – Remediation of Land
- SEPP (Building Sustainability Index: BASIX) 2004

#### Local Environmental Planning Policies:

- Wollongong Local Environmental Plan (WLEP) 2009

#### Development Control Plans:

- Wollongong Development Control Plan 2009

#### Other policies

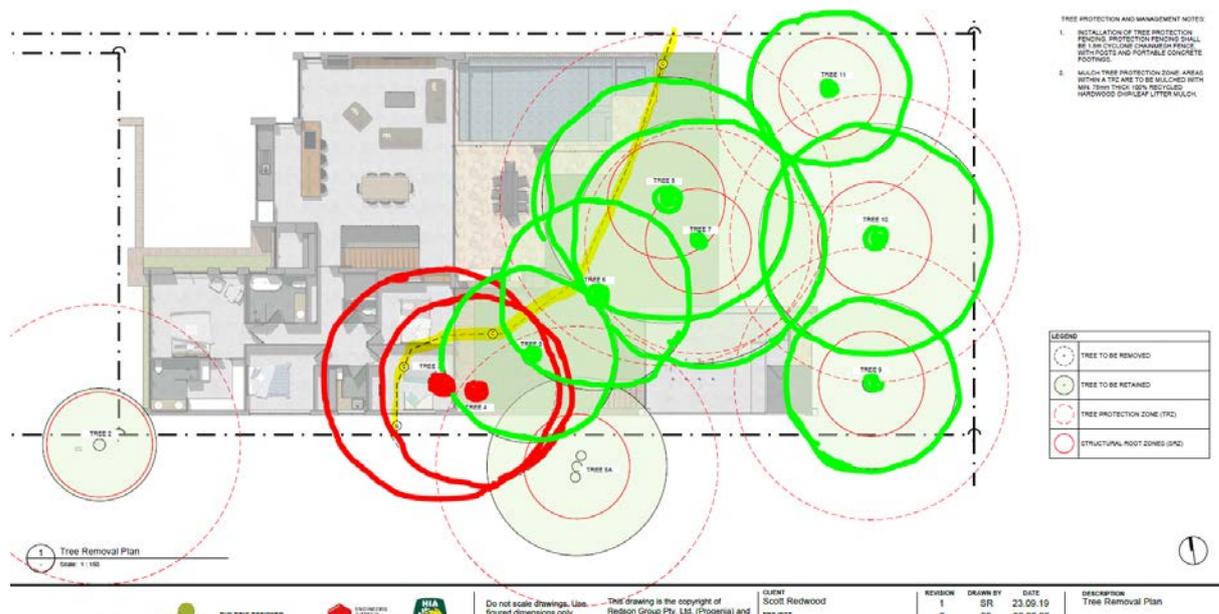
- Wollongong City Wide Development Contributions Plan 2018
- Urban Greening Strategy

### 1.2 DETAILED DESCRIPTION OF PROPOSAL

The proposal comprises the following:

#### Site preparation

- Tree removal is proposed as part of the development. A total of two (2) trees are proposed for removal identified as 'Tree 3' and Tree 4' on the plans and in the Arborist report. The location of Tree No. 3 (*Araucaria cunninghamiana* - Hoop Pine) and Tree no. 4 (*Eucalyptus saligna x botryoides* - Wollongong Woollybutt) are indicated below and on Dwg No. L-099 within Attachment 2. These trees are proposed for removal as they are within the proposed building footprint and are identified in the arborist report as displaying 'poor health, vigour, shape and structure'.



**Figure 1: Site plan showing boundary of building exclusion zone (highlighted in yellow), proposed removal of Tree 3 and Tree 4 (shown in red) and other trees to be retained (shown in green) (also refer full sized plan in Attachment 2). Note: The other two (2) trees to the south of the site is also proposed to be retained.**

- Earthworks – cut and fill is proposed as part of the development, including excavation up to 2.8m associated with the eastern portion of the ground floor and for the swimming pool/spa. Filling is also proposed at the rear of the dwelling to provide a level private open space area and filling under the pool room.

#### Works / Construction / building details

- A two storey dwelling is proposed. The two storey dwelling has a large double garage and workshop with internal access to a home office and wine room. The ground floor also comprises and large theatre room with spare bedroom, bathroom and what appears to be space for a lift (not labelled on plans). The first floor comprises 4 bedrooms, an open plan kitchen/dining/living area and bathrooms and a laundry.
- An in-ground swimming pool and spa is proposed in the northern portion of the site.
- A detached pool/billiard room is proposed in the south-eastern corner of the site, including a kitchen area and separate room (unidentified room use on the plan). This outbuilding is located within the building exclusion zone.

#### Traffic, parking and servicing

- Two (2) car spaces are proposed for the dwelling in the form of a large garage (approximately 70m<sup>2</sup>).
- Vehicle access is via the existing battle-axe driveway, constructed as part of the subdivision works.

### **1.3 BACKGROUND**

#### **Previous applications relevant to the proposal.**

- DA-2014/1093 – Subdivision – Torrens Title – six (6) residential lots – approved 5 February 2015
- DA-2014/1093/A - Subdivision – Torrens Title – six (6) residential lots – Modification A – to modify the building envelope to be a building exclusion zone – approved 9 September 2015 (refer Attachment 4)
- DA-2017/176 – Two storey dwelling house with double garage and pool, and secondary dwelling – rejected on 24 February 2017
- DA-2017/265 lodged on 13 March 2017 seeking approval for a two storey dwelling with secondary dwelling, in-ground pool and removal of trees within the above mentioned building exclusion zone. The application was referred to the (then) Independent Hearing and Assessment Panel ('IHAP') on 30 August 2017 for advice. The Panel recommended the development application be deferred for the applicant to submit amended plans to reduce the building form to retain the protected trees on the site. The applicant submitted revised plans requesting complete removal of the building exclusion zone on the title and subsequent removal of all 9 protected trees. The DA was refused under delegation on 3 October 2017.
- The applicant lodged an appeal with the Land and Environment Court on 20 October 2017 against refusal of DA-2017/265. This appeal was discontinued by the applicant on 21 March 2018. A new appeal was lodged on 26 March 2018. On 6 December 2018 the Court dismissed the appeal and refused DA-2017/265 for reasons including the proposed tree removal, the development not responding to the site constraints and not adequately addressing the provisions of Wollongong Development Control Plan 2009.
- A Tree Management Order was lodged on 6 December 2018 seeking approval to remove 4 trees in the southern portion of the site (TMO-2018/1221). Removal of these trees was not approved however consent to prune the trees with conditions was granted.

## Current application DA-2019/527

- 28 May 2019 - application lodged
- 30 May – 13 June 2019 – public notification period (19 submissions received)
- 17 June 2019 – application reassigned from building team to City Centre Planning team
- 17 July 2019 – letter sent to applicant inviting withdrawal of the application due to extent of tree removal and building footprint proposed within building exclusion zone
- 8 August 2019 – applicant submitted revised plans
- 9 August to 23 August 2019 – revised plans renotified (a further 5 submissions received)

No pre-lodgement meeting was held for the proposal.

### Customer service actions

There are no outstanding customer service requests of relevance to the development. It is noted that Council's Regulation and Enforcement Division investigated the construction of raised timber decks around a number of trees on the site in June 2019 (628816). These decks are identified on the originally submitted landscape plans under the current application. The area and height of these decks falls under Exempt Development. The outcome of the current application may necessitate further investigation with regard to any breaches of the 88B instrument.

## 1.4 SITE DESCRIPTION

The site is located at 33C Woodlawn Ave, Mangerton and the title reference is Lot 6 DP 1208517.

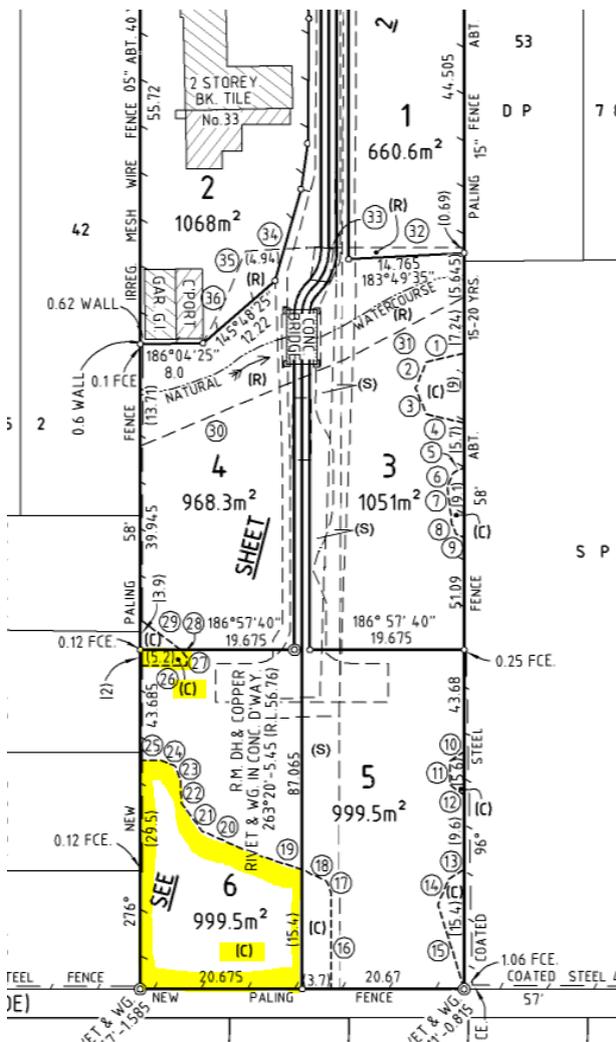
Lot 6 is one of two rear battle-axe allotments at the end of the internal access driveway. The subject lot is the southern lot and adjoins three lot boundaries to the south (38, 40 & 42 Norman Street). To the east is a public walkway approximately 3.3m wide, with 16 and 18 Elizabeth Street located to the east of this walkway. The site has an area of 999.5sqm and has a fall of approximately 7m from the rear to the end of the access handle servicing the rear lots.

Numerous trees are present on the site within a building exclusion zone identified as Restriction 'C' on the 88B Instrument. A copy of DP 1208517 forms Attachment 4. These trees are listed below to correlate with the tree numbering on the submitted plans and Arborist report:

<i>Tree Number</i>	<i>Tree species</i>	<i>Approximate location</i>
2	<i>Melaleuca stphelloides</i> (Prickly-Leaf Paperbark)	<i>Adjoining property to the south-west corner of site</i>
3	<i>Aracaria cunninghamiana</i> (Hoop Pine)	Centre of site near southern boundary
4	<i>Eucalyptus saligna x botryoides</i> (Wollongong Wollybutt)	Centre of site near southern boundary
5	<i>Corymbia maculata</i> (Spotted Gum)	Centre of site near southern boundary
5a	<i>Melaleuca stphelloides</i> (Prickly-Leaf Paperbark)	<i>Adjoining property to the south of site</i>
6	<i>Corymbia maculata</i> (Spotted Gum)	Centre of site
7	<i>Angophora costata</i> (Smooth Bark Apple – Sydney Red Gum)	Centre of site
8	<i>Corymbia maculata</i> (Spotted Gum)	Centre of site

9	<i>Eucalyptus saligna x botryoides</i> (Wollongong Wollybutt)	Rear of site
10	<i>Eucalyptus saligna x botryoides</i> (Wollongong Wollybutt)	Rear of site
11	<i>Corymbia maculata</i> (Spotted Gum)	Rear of site

The Figure below identifies Lot 6 (the subject site), with the building exclusion zone identified as Restriction 'C' (highlighted):



**Figure 2: Screen grab of DP 1208517 identifying the building exclusion zone.**

The site shares an internal common driveway servicing 4 battle-axe allotments. There is an existing dwelling on Lot 5 (directly adjoining the site to the north); construction of a dwelling on the lot adjoining the subject site to the west (Lot 4 known as 33B Woodlawn Ave) is nearing completion, however the central lot on the northern side of the access driveway (Lot 3) is currently vacant.

The adjoining lots to the south fronting Norman Street are deep lots (around 100m in depth) with single dwellings located in the front portion of the lots with trees and vegetation to the rear (as shown in the aerial photo in Attachment 1).

The locality is characterised by residential development, varying from older single dwellings on large lots to more contemporary larger dwellings, with multi-dwelling housing also in the vicinity. Mangerton is a leafy suburb with established trees providing an identifiable character to the residential area.

### Property constraints

- Council records identify the land as being located within an uncategorised flood risk precinct. It is noted that the subject site is at a higher ground level than the central portion of the parent lot, which is where the intermittent watercourse is located. Council's Development Engineer has identified that the site is outside the floodplain and no objections were raised.
- The subject site (Lot 6) has the following restrictions on the title:

<i>Restriction/covenant</i>	<i>Burdened or benefited</i>	<i>Comment</i>
Easement for water supply purposes 2.5 wide (A)	Lot 6 Burdened (Sydney Water Benefited)	The proposed structures are located outside this easement
Right of Access variable width (B)	Lot 6 Burdened and benefitted	Vehicle access to the garage utilises this right of access
Easement for Drainage of Water Variable Width (B)	Lot 6 Burdened and benefitted	Easements within driveway access – no concerns are raised.
Easement for Services Variable width (D)	Lot 6 Burdened and benefitted	As above
Restriction on the Use of the Land Variable Width (E)	Lot 6 Burdened (WCC authority empowered to release/vary or modify)	Relates to on-site stormwater detention system located below access driveway – no concerns raised.
Positive Covenant numbered 6 in the plan	Lots 3-6 Burdened (WCC authority empowered to release/vary or modify)	Relates to on-going maintenance of OSD system on the land marked 'E' – no concerns raised.
<b>Restriction on the Use of Land (C) Variable Width</b>	Lots 3-6 Burdened (WCC authority empowered to release/vary or modify)	No building or structures are permitted to be erected, placed or permitted to remain within the area identified as 'C'. The area identified as 'C' impacts on the rear portion of Lot 6 (the subject lot). This building exclusion zone was imposed to protect the existing vegetation and tree cover and also impacts on a small portion of Lots 3 and 5. The current application seeks to vary this restriction.
Restriction on the Use of Land (numbered 11)	All lots burdened. Every other lot benefits.	Relates to restrictions regarding fencing, temporary structures, run-off while the adjoining land is under original ownership. No concerns are raised in this regard.
Restriction on the Use of Land variable width (R)	Pt1- Pt6 inclusive designated (R)	This restriction relates to minimum habitable floor levels; however Lot 6 is not burdened by this restriction.

## 1.5 SUBMISSIONS

The application was notified from 9 August 2019 to 26 August 2019 in accordance with WDCP 2009 Appendix 1: Public Notification and Advertising, including re-notification of the revised plans. A total of 24 submissions were received, including one letter in support of the original dwelling design's sustainability credentials. The concerns raised in the submissions are discussed below.

**Table 1: Submissions**

Concern	Comment
<p>1. Proposed tree removal with concerns outlined below:</p> <ul style="list-style-type: none"> <li>- visual/residential amenity</li> <li>- habitat for birds and other wildlife</li> <li>- canopy cover</li> <li>- screening for privacy</li> <li>- replacement plantings will take 15-20 years to reach maturity-</li> <li>- not in the public interest</li> </ul>	<p>The proposal as originally submitted sought approval for the removal of 4 trees (Tree numbers 3,4,5 &amp; 6).</p> <p>The amended design reduced the number of trees proposed for removal to two (2) trees (Tree numbers 3 and 4).</p> <p>The two (2) trees proposed for removal are within the building exclusion zone. Tree 3 is a Hoop Pine and tree 4 is a Wollongong Woollybutt. The trees are proposed for removal due to poor health and structure and that the trees are located within the proposed building footprint. The health of these trees is discussed in more detail in Parts 1.6 and 2.3.1 of this report. Council's Landscape Division have considered the Arborist report and did not object to their removal on the basis of the condition of the trees.</p> <p>However, both trees are located within the building exclusion zone identified as Restriction 'C' on the title of the subject lot. These trees are part of a stand of trees that are protected by the 88B Instrument applying to the land. Supporting the removal of these trees is considered contrary to the intent behind the creation of the building exclusion zone. No building footprint should necessitate the removal of the protected trees.</p> <p>Removal of the trees is contrary to numerous provisions of Wollongong DCP 2009 (Chapters B1, D1 and E17) as discussed in Part 2.3.1 of this report.</p> <p>A fauna assessment was submitted with the application assessing the impact of the removal of 4 trees, as originally proposed. The Fauna report noted that the largest trees present on the site provide the greatest habitat for native fauna and concluded that the removal of the 4 trees was unlikely to impact on biodiversity values. Table 1 of the report identified wildlife recording that did identify some native fauna using the 4 trees planned for removal (as well as feral birds and mammals), however the specific trees used were not identified.</p> <p>The retention of the trees contributes to the visual amenity of the area and may provide some limited habitat for fauna.</p>
<p>2. Structures within restricted building</p>	<p>A portion of the dwelling and the detached pool room are proposed within the building exclusion zone. Given</p>

Concern	Comment
<p>area</p>	<p>this restricted area is a known constraint on the site and was imposed to retain and protect the existing significant trees, the proposed structures are not supported within this restricted area.</p> <p>The dwellings' proximity to existing protected trees may also compromise retention of the trees into the future. The current design results in some trees being within 3m of the proposed building footprint and structures which may enable these trees to be removed without further application to Council (refer discussion under Chapter E17). The proximity of the trees to the dwelling may lead to future hazard and maintenance issues that create additional pressure for their removal in the future.</p>
<p>3. The Land and Environment Court have refused the previous development application (Da-2017/265) and the proposed development has not changed. Request that Council adhere to the judgement of the Court and consider the reasons for the refusal of DA-2017/265.</p>	<p>The original dwelling design had a comparable footprint to the proposal refused by the Land and Environment Court. The applicant was advised that the application could not be supported and has since amended the design, which is the subject of this report.</p> <p>The amended design has reduced the number of trees removed to two (2) trees, however still proposes building within the building exclusion zone and is not considered to reasonably respond to the existing site constraints.</p>
<p>4. The purpose of creating the vegetation preservation zone was for the permanent protection of the existing vegetation on the site under the original subdivision application. This was deemed acceptable by the community and the Council at that time. DA-2019/527 has been lodged contrary to the S88B instrument which Council and the community accepted as part of the subdivision (DA-2014/1093). If Council agrees to vary the covenant to permit development in the land reserved for tree protection, this would be contrary to Clause 5.9 of the LEP and Council's undertaking to the community.</p>	<p>DA-2014/1093/A approved the subdivision that created the subject site, with the restriction identified as 'C' required to be imposed on the 88B Instrument for a building exclusion zone to protect the existing significant trees.</p> <p>The proposed dwelling footprint encroaches into the building exclusion zone and involves the removal of two (2) trees. The proposed development does not respond to the site's constraints and is recommended for refusal.</p> <p>It is noted that Clause 5.9 Preservation of trees or vegetation of the LEP was repealed in August 2017 upon commencement of the SEPP (Vegetation in Non-Rural Areas) 2017.</p>
<p>5. Council is empowered to vary the restriction 'C' and allow building work to be undertaken in the building exclusion zone. If Council determines to release or vary the S88B Instrument, they should ensure that the release of the S88B instrument does not occur until after</p>	<p>Noted. The terms of the S88B Instrument identify Council as the body able to vary or modify the building exclusion zone under Restriction 'C'.</p> <p>Any dwelling design should be located wholly outside this restricted area and there is no adequate justification for encroaching into the building exclusion zone. The current application is recommended for</p>

Concern	Comment
the dwelling has been completed.	refusal therefore no changes to the S88B Instrument are required.
6. Council should engage its own expert arborist report to determine the actual state of health and safety of the trees proposed to be removed.	<p>Expert Arborist reports were prepared as part of the recent Land and Environment Court appeal (on behalf of both the applicant and Council). Given that the Court appeal was less than 1 year ago, the assessments on the trees proposed for removal are unlikely to have changed significantly.</p> <p>The experts in the recent Land and Environment Court judgement disagreed on whether Tree 3 should be removed or retained, with Council's expert concluding that it is part of a group of trees with high landscape value.</p> <p>Both experts agreed that Tree 4 had a short useful life expectancy, was of moderate landscape value.</p> <p>Council's Landscape Division has provided an unsatisfactory referral but did not raise objections to the removal of Tree 3 and Tree 4 given their health/condition.</p>
7. The site when advertised for sale in 2016 clearly identified a separate vegetation zone on the site.	The building exclusion zone identified as Restriction 'C' was on the title of Lot 6 when it was sold in 2016. This was a known constraint on the land for any prospective purchaser.
8. Contrary to the character of Mangerton. Mangerton is known as a leafy suburb and people move there because of its tree cover. Council has a responsibility to value and ensure the long life of these trees.	The proposed development is considered inconsistent with the desired future character of Mangerton as outlined in Chapter D1 of WDCP 2009 (see Part 2.3.1 of this report).
9. Existing tree cover provides a rich habitat for all types of native and migrating birds. Replacing existing trees do not provide an equivalent habitat to the trees that have been lost.	The proposed development involves the removal of two (2) trees. Although the health/structure of these trees has not been identified as high, they contribute to the habitat provided by the stand of protected trees within the building exclusion zone on the site.
10. Concern that the claimed ecologically sustainable dwelling is more compelling than preservation of an established stand of trees.	The originally submitted dwelling design was identified as being 'zero carbon' with high sustainability credentials. The amended design appears to remove a number of the sustainable design elements, including the green roof and solar panels. A sustainable dwelling design is supported and encouraged, however this could be achieved without the dwelling footprint encroaching into the building exclusion zone.
11. Council recognises the benefit of vegetation to enhance residential amenity and allocates funds to maintain and extend areas of	Council's Urban Greening Strategy was endorsed by Council in 2017. The strategy provides a framework for a consistent approach to managing the urban forest as a

Concern	Comment
greenspace throughout the city. Any loss of existing vegetation is contrary to Council policy and should be opposed.	whole on both public and private land. One goal of the strategy is to 'Manage' which involves protecting and maintaining existing vegetation. Any development on the lot needs to respond to the known constraints of the site and have any dwelling footprint wholly outside the building exclusion zone to protect and maintain the existing vegetation to better align with this strategy.
12. The site remains a residential lot which can be built upon without damage being incurred to existing trees.	It is acknowledged that the building exclusion zone occupies a large part of the subject site and therefore limits the siting and size of a future dwelling. The available area of the site where a dwelling can be built is sufficient for a dwelling design that meets contemporary living standards.
13. Concern regarding removal of trees on adjacent site at 31C Woodlawn Avenue	The adjoining northern lot contains a large dwelling. The assessment of this dwelling involved the removal of four (4) trees which was approved.
14. Request confirmation of which trees are to be removed – just trees numbered 3 and 4, or trees numbered 3,4,5 & 6?	The revised proposal seeks approval for the removal of a total of two (2) trees numbered Tree 3 and Tree 4 on the plans.
15. Seeking clarification on the lot size and floor space ratio (FSR). Access handle should not be included in lot area for the purpose of calculating FSR.	The subject lot has a total area of 999.5sqm which includes the 1m wide access handle servicing the site. The battle-axe is excluded from site area calculations for the purpose of subdivision under Clause 4.1(4A). Under Clause 4.5 Calculation of floor space ratio and site area, the <b>site area</b> under subclause 3 is taken to be: <i>(a) if the proposed development is to be carried out on only one lot, the area of that lot,..'</i> The subject site has an area of 999.5sqm, including the access handle that has a total area of 100sqm. The calculation of site area under Clause 4.5 does not expressly exclude the area of the access handle.
16. Is the pool room a habitable room and does it have potential to be turned into a granny flat?	The proposed pool room appears to be a habitable structure. It has not been assessed as a secondary dwelling ('granny flat'). Separate approval would be required for the use of this detached building for the purpose of a secondary dwelling.
17. The amended design is an improvement however still seeks approval for the removal of two (2) trees (trees 3 and 4) within the area of land designated by Council for the preservation of these trees.	The amended design has reduced the number of trees proposed for removal from four (4) to two (2). Refer previous comments regarding tree removal and the building exclusion zone.
18. Landscaping works have recently been undertaken on the land within the	The decks constructed on the site are contrary to the Restriction 'C' on the title of the lot (building exclusion

Concern	Comment
<p>area for tree preservation and without the prior written consent of Council. This should not be ignored if the landscape works threatens the preservation of the trees on the land.</p>	<p>zone) which restricts any building or structures within the restricted area. Subject to the outcome of the current application, further investigations may be required with regard to breaches of the 88B Instrument.</p>
<p>19. Any development which threatens the health and longevity of the existing trees should be refused (e.g pool room, servicing requirements and fill material)</p>	<p>Aside from the two (2) trees proposed for removal, the proposed development involves excavation and filling that may impact on the health and/or longevity of the trees proposed to be retained on the site.</p> <p>The proposed building footprint would result in the trunk of some trees being within 3m of the dwelling and pool room (Trees 2 and 5a on adjoining sites and Trees 6 and 7 within the site) which may facilitate the future removal of these trees due to proximity of the dwelling footprint to the trees (Chapter E17 Tree Preservation). Future pressure to remove the retained trees for safety and maintenance reasons may occur if the development is approved in its current form.</p>
<p>20. Storage and placement of construction or excavation materials should not be permitted within close proximity of the trees to avoid damage</p>	<p>The submitted site waste minimisation plan (Dwg G-300) indicates waste bays and material storage within the building exclusion zone. Where consent is granted to a dwelling on the site, appropriate tree protection fencing would be required, and the storage of materials and construction methods would require supervision by a supervising Arborist to ensure no damage to the health of the trees results during the construction works.</p>
<p>21. Large windows and glass doors proposed close to the boundary will look into and tower over adjoining living areas, leading to visual and noise impacts. Request these be changed to highlight windows or glass brick walls to preserve privacy</p>	<p>The design of the dwelling proposes the Level 1 master bedroom and the ground level theatre room facing the western boundary. The glass sliding doors of the theatre room are located 2.56m from the western boundary. The level 1 master bedroom windows are 1.566m from the western boundary. Some screen planting is proposed adjacent to the western boundary.</p> <p>The proximity of the dwelling and the expanse of windows does not adequately respond to the site context and will lead to unreasonable privacy and amenity issues (visual bulk and acoustic privacy), as discussed in Part 2.3.1 of this report.</p>
<p>22. The building will physically tower over adjoining western lot.</p>	<p>The setbacks to the western boundary are minimal and the two storey portion of the dwelling in the south western corner of the site is visually bulky and imposing. Where a two storey dwelling is pursued on the subject site, any two storey element would require increased setbacks to minimise the visual bulk and amenity impacts on the adjoining western lot.</p>

## **1.6 CONSULTATION**

### **1.6.1 INTERNAL CONSULTATION**

#### **Landscape Architect**

Council's Landscape Officer has reviewed the application and given an unsatisfactory referral. Although the removal of trees 3 and 4 were supported, the following concerns were raised with the development (summarised)

- The design extends into the no build zone and impacts on the Tree Protection Zones (TPZ) and Structural Root Zone (SRZ) of Trees 2,5,5a,6,7,8,9,10 and 11.
- The dwelling impacts on the SRZ of Tree 2 on the neighbouring site to the south. No root mapping has been done and it is likely that the canopy of this tree would also be affected by the dwelling. Scaffolds during construction, as well as excavation for footings and services are likely to create adverse impacts to the tree. Once completed the proposed dwelling will be less than 3m from tree 2.
- The dwelling encroaches into the building exclusion zone and impacts on the TPZ of Tree 5 and 6 and to achieve the level of the ground floor, the SRZ would also be compromised.
- The pool room intrudes into the TPZ of Trees 5,6,7,9 and 10.
- The services for the pool room will further impact on Trees 5, 5a and 6.
- The filling under trees 6 and 8 is not supported.

The Landscape referral requested that the design be revised to include the removal of the pool room, removal of fill over the TPZ/SRZ of Trees 5,6,7 and 8 and checks for impacts to Tree 2 by root mapping and an elevation of the tree and dwelling to establish horizontal and vertical clearances.

Note: As the revised proposal is unsatisfactory from a broader planning perspective, the applicant was not advised of the landscape comments as the development will require a redesign to better respond to the site constraints. The concerns outlined above could be addressed in any future application.

#### **Stormwater Engineer**

Council's Stormwater engineer has considered the application and not raised any objections, noting that the site is not flood affected.

### **1.6.2 EXTERNAL CONSULTATION**

None required

## **2 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 – 4.15 EVALUATION**

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### **2.1 SECTION 4.15(1)(A)(1) ANY ENVIRONMENTAL PLANNING INSTRUMENT**

#### **2.1.1 STATE ENVIRONMENTAL PLANNING POLICY NO. 55 – REMEDIATION OF LAND**

A history of previous land uses and development applications does not indicate any historic use that would contribute to the contamination of the site. Although there are earthworks proposed, the proposal does not comprise a change of use. Suitability for the site for residential development was considered under the application for Torrens title subdivision to create the subject site (DA-2014/1093).

DA-2014/1093 (as modified) approved a six (6) lot Torrens subdivision to create the subject site (Lot 6). A preliminary site investigation was carried out by Coffey Geotechnics Australia Pty Ltd (Report

GEOTWOLLO3668AA-AA) which identified a low likelihood of contamination being present and the potential areas of concern ('AEC') were not considered significant.

As of relevance to the subject site, the Coffey Report submitted with DA-2014/1093 (Record No. 140909/40242) identified that there may be hazardous materials from former demolished structures in the south-east corner of the subject site. It was identified that localised impact could be managed at construction stage if identified. Any approval granted would be required to include a condition of consent for a hazardous materials survey to be carried out prior to works commencing.

The land is capable of being made suitable for the purpose for which the development is proposed. No concerns are raised in regard to contamination as relates to the intended use of the land and the requirements of clause 7.

#### 2.1.2 STATE ENVIRONMENTAL PLANNING POLICY (BUILDING SUSTAINABILITY INDEX: BASIX) 2004

SEPP BASIX applies to the development.

In accordance with Schedule 1 of the Regulations and SEPP 2004 a BASIX Certificate has been submitted in support of the application demonstrating that the proposed scheme achieves the BASIX targets.

The revised BASIX Certificate requires that the swimming pool must not have a volume greater than 50kL whereas the capacity of the pool as shown on the plans exceeds this with a volume of 64kL. The volume of the spa is not identified on the plans but is required to have a maximum volume of 2.8kL. These matters would need to be addressed if the application were recommended for approval noting that the development just meets the minimum water target of 40.

#### 2.1.3 WOLLONGONG LOCAL ENVIRONMENTAL PLAN 2009

##### **Part 1 Preliminary**

##### Clause 1.9A Suspension of covenants, agreements and instruments

This clause states:

- (1) *For the purpose of enabling development on land in any zone to be carried out in accordance with this Plan or with a consent granted under the Act, any agreement, covenant or other similar instrument that restricts the carrying out of that development does not apply to the extent necessary to serve that purpose.*

The subject site contains numerous easements and restrictions. The primary limiting restriction for the site is the building exclusion zone identified as Restriction 'C'. Council required this restriction to be registered on the title as part of the Torrens subdivision under DA-2014/1093/A. Clause 2(a) states that this clause does not apply "to a covenant imposed by the Council or that the Council requires to be imposed..."

##### **Part 2 Permitted or prohibited development**

##### Clause 2.3 – Zone objectives and land use table

The objectives of the zone are as follows:

- *To provide for the housing needs of the community.*
- *To provide for a variety of housing types and densities.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*

The proposal is satisfactory with regard to the above objectives.

The land use table permits the following uses in the zone.

- 2 *Permitted without consent*  
*Home occupations*

### 3 Permitted with consent

*Attached dwellings; Bed and breakfast accommodation; Boarding houses; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Environmental facilities; Exhibition homes; Group homes; Hostels; Multi dwelling housing; Neighbourhood shops; Places of public worship; Recreation areas; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Serviced apartments; Shop top housing; Signage*

### 4 Prohibited

*Any development not specified in item 2 or 3*

The proposal is categorised as a *dwelling house* as described below. The *dwelling house* is permissible in the zone with development consent.

#### Clause 1.4 Definitions

**dwelling house** means a building containing only one dwelling.

Note. **Dwelling houses** are a type of residential accommodation—see the definition of that term in this Dictionary.

**residential accommodation** means a building or place used predominantly as a place of residence, and includes any of the following:

- (a) attached dwellings,
- (b) boarding houses,
- (c) dual occupancies,
- (d) dwelling houses,
- (e) group homes,
- (f) hostels,
- (g) multi dwelling housing,
- (h) residential flat buildings,
- (i) rural workers' dwellings,
- (j) secondary dwellings,
- (k) semi-detached dwellings,
- (l) seniors housing,
- (m) shop top housing,

but does not include tourist and visitor accommodation or caravan parks.

#### **Part 4 Principal development standards**

##### Clause 4.1 Minimum subdivision lot size

Not applicable – no subdivision is proposed.

##### Clause 4.3 Height of buildings

The proposal satisfies the maximum of 9m permitted for the site, with a maximum building height of 7.65m.

##### Clause 4.4 Floor space ratio

###### *Gross floor areas*

Single dwelling\* = 436.6m<sup>2</sup>

Maximum FSR permitted for the zone: 0.5:1

FSR proposed: 436.6m<sup>2</sup>/999.5m<sup>2</sup> = 0.44:1

The proposed FSR is below the maximum permitted FSR of 0.5:1, therefore satisfying this clause.

*\*GFA includes stairs, garage areas above 36m<sup>2</sup> and detached pool room 38.6m<sup>2</sup> and the applicant's calculations provided have been checked using Council's Trapeze software.*

## **Part 5 Miscellaneous provisions**

Not applicable

## **Part 6 Urban release areas**

Not applicable

## **Part 7 Local provisions – general**

### Clause 7.1 Public utility infrastructure

Servicing of each lot was considered as part of the subdivision development application and could be satisfied through the imposition of appropriate conditions if approval were recommended.

### Clause 7.2 Natural resource sensitivity – biodiversity

It is noted that the site is not identified as being affected by “Natural Resource Sensitivity – Biodiversity” on the Natural Resource Sensitivity – Biodiversity Map.

### Clause 7.3 Flood planning area

Council’s Stormwater Engineer has assessed the application in this regard and has not raised any objections from a flooding perspective.

### Clause 7.4 Riparian lands

Although the parent lot has an intermittent stream located in the central portion of the site (i.e. to the west of Lot 6), the subject site or adjoining lots are not identified in the Riparian Land Map as containing “riparian land”.

### Clause 7.6 Earthworks

The objectives of this clause are:

- (a) to ensure that any earthworks will not have a detrimental impact on environmental functions and processes, neighbouring uses or heritage items and features surrounding land,*
- (b) to allow earth works of a minor nature without separate development consent.*

The proposal comprises excavation for the dwelling’s garage/wine cellar area as well as some excavation in association with the swimming pool and spa. Some filling outside the building footprint is also proposed to the rear of the proposed dwelling. Concerns have been raised over the impact of the proposed earthworks on the protected trees. The proposed development has not demonstrated that the objectives of this clause have been met.

## **2.2 SECTION 4.15(1)(A)(II) ANY PROPOSED INSTRUMENT**

Nil

## **2.3 SECTION 4.15(1)(A)(III) ANY DEVELOPMENT CONTROL PLAN**

### **2.3.1 WOLLONGONG DEVELOPMENT CONTROL PLAN 2009**

A compliance table assessing the proposed development forms Attachment 5, only variations have been discussed below.

## **CHAPTER A1 – INTRODUCTION**

### **8 Variations to development controls in the DCP**

The application involves variations to Chapter B1 Residential Development, Maximum Number of Storeys, Side and rear setbacks, landscape areas, building character and form, swimming pools and spas as discussed below:

## Part 4.1 Maximum Number of Storeys

Part 4.1.2.1 requires that:

1. *Dwelling houses on battle-axe allotments are restricted to 1 storey unless it can be demonstrated that the proposed development achieves the objectives in Clause 4.1.1 and complies with the maximum height maps in the LEP.*

The proposed development seeks approval for a two-storey dwelling on a battle-axe allotment. The submitted Statement of Environmental Effects does not acknowledge that the proposed design represents a variation to the two storey dwelling height on battle-axe allotments under Part 4.1.2.1 and no variation statement has been submitted.

The dwelling is two storeys in height across the full width of the site and is located between 1.5m-2.5m from the western boundary in the southern portion of the site. The design appears visually prominent noting that the site slopes upwards from Woodlawn Avenue to the rear boundary of the subject site.



**Figure 3: Western elevation**

It is noted that a two storey dwelling has been constructed on the adjoining northern lot. Consideration could be given to varying the single storey control on battle-axe allotment subject to:

- changes to the dwelling design including (but not limited to) increasing the setback of the upper level and minimising the extent of windows on the western elevation at both levels; and
- submission of a variation statement being provided in accordance with Part 8 of this chapter.

Part 4.1.2.2 requires that:

2. *Ancillary structures are restricted to 1 storey unless it can be demonstrated that the proposed development achieves the objectives in Clause 4.1.1 and complies with maximum height maps in the LEP.*

The proposed pool room is located within the building exclusion zone and involves substantial fill resulting in its floor level being 1.7m above existing ground level (refer Figure 4 below). Given the slope of the site towards the rear boundary, the pool room will be visible above the roof line of the proposed dwelling. The pool room location and design is not sympathetic to the site constraints.



**Figure 4: Southern elevation showing pool room at rear of proposed dwelling**

In its current form, the dwelling design is visually dominant, the pool room does not address the site constraints and the western elevation of the dwelling does not minimise the potential for overlooking of the dwelling on the adjoining western lot. The proposed dwelling complies with the maximum height maps in WLEP2009 however the current design does not achieve the objectives of Clause 4.1.1 and a variation is not supported in the circumstances.

#### Part 4.3 Side and rear setbacks

Part 4.3.2.5 requires that:

5. *All balconies and windows of habitable rooms (excluding bedrooms) within a proposed dwelling-house or secondary dwelling must be designed to minimise any direct overlooking impact upon any adjoining property.*

Figure 3 above shows the western elevation of the proposed dwelling. The southern side of the dwelling has a setback to the façade of between 1.5m -2.5m from the western boundary. The bedroom occupies the first floor which is excluded from this control. The ground level has expansive glass sliding doors to the theatre room. As the subject site sits higher than the adjoining western lot, the potential overlooking, and amenity impacts from this design are heightened and are unacceptable. Despite landscape screening being shown adjacent to the western boundary, acoustic impacts are still likely to occur, and the built form outcome should minimise amenity impacts. The minimal setbacks to the western boundary and extent of glazed areas do not adequately respond to this control or the objectives of Part 4.3.1.

#### Part 4.5 Landscaped Area

Part 4.5.2.1 requires that:

5. *Significant trees are to be maintained on site.*

The proposed development involves the removal of two (2) trees and construction within the building exclusion zone that has potential to compromise the health and/or longevity of existing protected trees. It is noted that a number of native trees have been planted on the site. Despite this, the development does not preserve and retain existing native trees and is considered to be contrary to the objectives of this part.

#### Part 4.8 Building character and form

Part 4.8.2.1 requires that:

*The design, height and siting of a new development must respond to its site context taking into account both natural and built form features of that locality. The design of the development must have particular regard to the topography of the site to minimise the extent of cut and fill associated with dwelling construction.*

The site is steeply sloping and is constrained by the building exclusion zone in the rear portion of the site. The proposed dwelling does not respond to its site context for the following reasons:

- The siting of the dwelling and pool room does not respond to the existing site constraints as construction is proposed within the building exclusion zone;
- Significant excavation is proposed to provide for the large garage, workshop, wine room on ground level;
- The proposed pool room involves substantial fill to create a level outbuilding on the sloping site and will be visible above the roof line of the proposed dwelling;

Based on the above, the design of the proposed development is contrary to the provisions and objectives of Part 4.8 Building character and form.

#### Part 4.18 Swimming pools and spas

Part 4.18 5(a) states that a swimming pool or spa must not be located over an easement or restricted building zone.

The submitted Site plan and Level 1 plan (Drawing A-100 and A-201 in Attachment 2) indicate that a small corner of the proposed spa is located within the building exclusion zone identified as Restriction 'C', thereby not complying with this control.

The submitted Statement of Environmental Effects does not identify this variation and notes that the proposed pool is compliant in this regard. A variation to this control is not supported given the potential adverse impacts on the health of the protected trees located within the building exclusion zone.

### **CHAPTER B1 – RESIDENTIAL DEVELOPMENT**

The proposed development involves tree removal of protected trees on the lot, construction within a building exclusion zone, variations to controls under the DCP and does not respond to the site constraints. The design of the dwelling also leads to privacy and amenity impacts on the neighbouring western property and does not respond to the constraints of the site. On this basis, the development in its current form does not respond to objectives (a), (b), (c), and (d) of Chapter B1 as outlined above.

### **CHAPTER D1 – CHARACTER STATEMENTS**

The key objectives of this chapter are to protect and enhance the existing character that distinguishes the identity of each suburb and provide character statements to enable an assessment of whether a proposed development is compatible with the desired future character of the locality/suburb.

The existing and desired character of Mangerton is identified as follows:

#### **Existing character**

Mangerton is a leafy residential suburb which is characterised by predominantly single to two storey weatherboard bungalows and brick dwelling-houses with some pockets of medium density housing in the form of villas, townhouses and walk-up residential flats.

Mangerton also contains a number of streets lined with Brush Box (*Lophostemon confertus*), Blackbutt (*Eucalyptus patens*), Turpentine (*Syncarpia glomulifera*), Hills Fig (*Ficus macrocarpa* var. *hillii*) trees, which add to the streetscape and leafy character of the suburb.

A large remnant stand of Spotted Gum (*Eucalyptus maculata*) trees exists at Mt Drummond, WIN TV station site and the former RAAF site. Cabbage Tree Palms (*Livistona australis*), Lemon-scented gum (*Eucalyptus citridoria*), Brush box (*Lophostemon confertus*), Blackbutt (*Eucalyptus pilularis*), and Jacaranda (*Jacaranda mimosifolia*) trees also provide a leafy backdrop to the suburb.

The Illawarra Grammar School (TIGs) is located within the western edge of Mangerton and adjoins the St Therese Catholic primary school on Powell Street.

#### **Desired Future Character**

Mangerton will remain a low density residential suburb with a mix of housing types, including detached dwelling-houses as well as some additional medium density villa and townhouse developments occurring within reasonable walking distance to bus stops in the suburb.

The retention of the significant remnant stands of trees is important, in order to maintain the leafy character of Mangerton.

The Illawarra Grammar School (TIGs) will continue to be a base of educational excellence and will be encouraged to maintain or improve its traffic management capabilities around the school.

#### Comment

The proposed development involves the removal of two (2) trees that are located within a building exclusion zone identified as Restriction 'C' on the 88B Instrument for the subject site. Although it is acknowledged that these two specific trees have been identified as having poor health or structure, they form part of a stand of trees that, as a group, have been identified as significant enough to warrant being part of the nominated building exclusion zone. The existing trees on the subject site contribute to the leafy character of Mangerton.

Any future dwelling should respond appropriately to the restriction on the land by siting a dwelling wholly outside the building exclusion zone.

In its current form, the proposed development is not considered to be compatible with the desired future character of Mangerton.

### **CHAPTER E17 PRESERVATION AND MANAGEMENT OF TREES AND VEGETATION**

It is noted that an Arborist report was submitted in accordance with the requirements of this chapter which nominated Tree 3 and Tree 4 for removal, due to the trees being within the building footprint and being of poor health and/or structure. The proposed removal of two (2) trees has been supported by an arborist's report and this tree removal was accepted by Council's Landscape Division given the current condition of these two (2) trees.

#### Part 7.2 Tree and vegetation Management as part of a Development Proposal

Part 7.2.3 of this chapter states that:

*Where Council has issued a Development Consent for a structure or building, any tree with its base within 3 metres of that building or structure on the subject land may be removed without further application to Council, provided the Council's Tree Management Officer is satisfied before the tree is removed that its base is within the 3 metre limit.*

The current proposal would result in a building or structure being within 3 metres from the base of Trees 2 and 5a (adjoining sites) and Trees 6 and 7 on the subject site. The building footprint is also marginally outside the 3m distance from Tree 5 and 8. This is of concern as the development as proposed may enable removal of protected trees following construction.

The provisions of this chapter have been considered. The proposed development involves tree removal and construction works within the area nominated on the site for the protection of existing trees. The development also involves excavation and filling of land that is likely to compromise the ongoing health of protected trees on the site. On this basis, the development is considered to be inconsistent with objectives (a), (b), (c), (e) and (g) of this chapter.

#### **2.3.2 WOLLONGONG CITY WIDE DEVELOPMENT CONTRIBUTIONS PLAN 2018**

The estimated cost of works is >\$100,000 and a levy of 1% would be applicable to any consent granted under this plan as the threshold value is \$100,000.

**2.4 SECTION 4.15(1)(A)(IIIA) ANY PLANNING AGREEMENT THAT HAS BEEN ENTERED INTO UNDER SECTION 7.4, OR ANY DRAFT PLANNING AGREEMENT THAT A DEVELOPER HAS OFFERED TO ENTER INTO UNDER SECTION 7.4**

There are no planning agreements entered into or any draft agreement offered to enter into under S7.4 which affect the development.

**2.5 SECTION 4.15(A)(IV) THE REGULATIONS (TO THE EXTENT THAT THEY PRESCRIBE MATTERS FOR THE PURPOSES OF THIS PARAGRAPH)**

92 What additional matters must a consent authority take into consideration in determining a development application?

No demolition work is proposed (vacant site) and the site is not located within the coastal zone.

**2.6 SECTION 4.15(1)(B) THE LIKELY IMPACTS OF DEVELOPMENT**

In its current form, the development is not considered to reasonably respond to the known constraints of the site and would result in adverse visual, amenity and environmental impacts on the site, adjoining properties and the surrounding locality.

**2.7 SECTION 4.15(1)(C) THE SUITABILITY OF THE SITE FOR DEVELOPMENT**

Does the proposal fit in the locality?

The construction of a dwelling house that is sensitively designed to be wholly outside the building exclusion zone and does not lead to adverse impacts on adjoining properties is considered appropriate for the site. The proposal in its current form leads to negative impacts on the amenity of the locality and adjoining developments.

Are the site attributes conducive to development?

The site is constrained by existing significant trees, the building exclusion zone as well as the slope of the site. The site is suitable for a site responsive residential development that does not encroach into the restricted area, does not impact on the health of the protected trees and does not compromise the amenity of adjoining properties.

**2.8 SECTION 4.15(1)(D) ANY SUBMISSIONS MADE IN ACCORDANCE WITH THIS ACT OR THE REGULATIONS**

Refer Part 1.5

**2.9 SECTION 4.15(1)(E) THE PUBLIC INTEREST**

The application in its current form is expected to have unreasonable impacts on the environment, adjoining properties and the visual amenity of the locality. The development involves a number of variations to Council policy and seeks to vary an existing restriction on the title of the lot, imposed by Council to protect existing significant trees on the site. It is considered inappropriate with consideration to the character of the area and is therefore considered to be contrary to the public interest.

**3 CONCLUSION**

---

This application has been assessed as unsatisfactory having regard to the Heads of Consideration under Section S4.15(1) of the Environmental Planning and Assessment Act 1979, the provisions of Wollongong Local Environmental Plan 2009 and all relevant Council DCPs, Codes and Policies.

The site has a number of known constraints, the main constraint being the building exclusion zone that was imposed for the purpose of retaining and protecting existing trees on the site. This restriction was identified on the title of Lot 6 since registration of the subdivision in 2016. The proposed development has not been designed having adequate regard to the existing site

constraints, including the building exclusion zone, the slope of the site and protection of the protected trees.

The application involves a number of variations to the provisions of Wollongong Development Control Plan. These variations have not been acknowledged in the supporting documentation and compromise the relevant objectives being met for the development. The design of the dwelling in its current form leads to adverse visual and amenity impacts on adjoining properties and the locality.

The submissions and internal referral have raised matters which have been addressed above.

#### **4 RECOMMENDATION**

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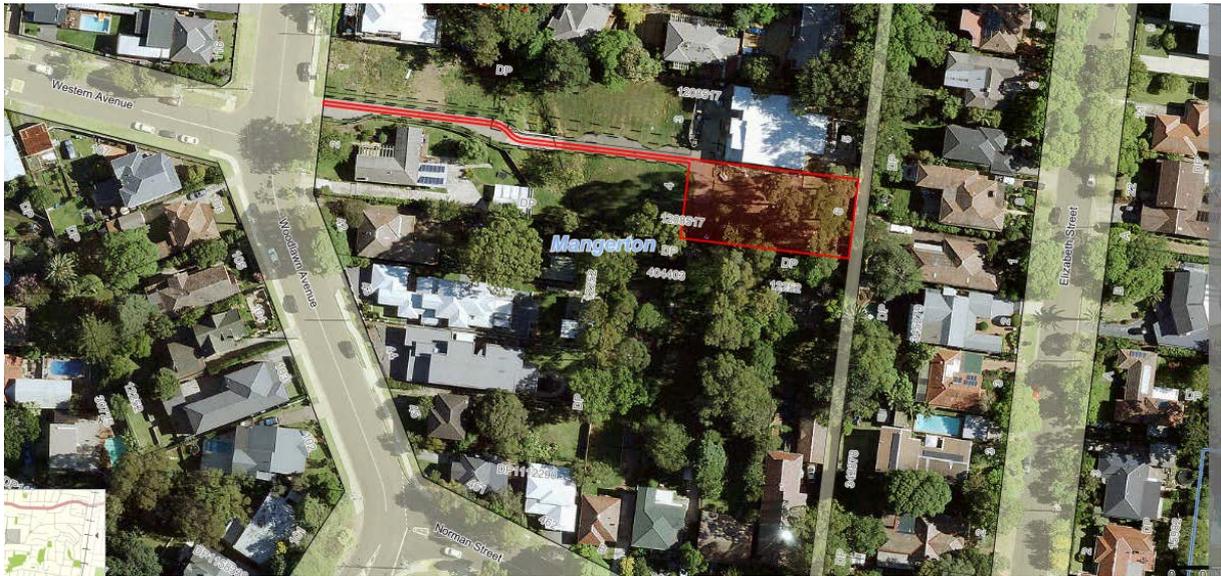
It is recommended that development application DA-2019/527 be refused for the reasons outlined at attachment 6:

#### **5 ATTACHMENTS**

---

- 1 Aerial photo and Wollongong Local Environmental Plan 2009 zoning map
- 2 Plans
- 3 Arborist report
- 4 Building exclusion zone identified as Restriction 'C' on Plan of subdivision approved under DA-2014/1093/A and copy of Deposited Plan 1208517
- 5 Wollongong Development Control Plan 2009 assessment
- 6 Reasons for refusal

**Attachment 1: Aerial photo and WLEP zoning map**



**Figure 1: Aerial photo**



**Figure 2: Zoning map under Wollongong LEP 2009**



Certificate no.: 0004051421-01  
 Assessor Name: Simon Faulks  
 Accreditation no.: 101492  
 Certificate date: 25 Jul 2019  
 Dwelling Address:  
 33C Woodlawn Avenue  
 Mangerton, NSW  
 2500  
 www.nathers.gov.au



# REDWOOD RESIDENCE

NEW DWELLING AT 33C WOODLAWN AVE, MANGERTON

LOT 6 D.P. 1208517

## DRAWING LIST

G-000	General Cover Sheet
G-100	General Site Plan
G-200	Shadow Diagrams
G-300	Site Waste Minimisation Plan
L-099	Tree Removal Plan
A-100	Site Analysis Plan
A-200	Ground Floor Plan
A-201	First Floor Plan
A-203	Swimming Pool Plan
A-300	Roof Plan
A-250	North and East Elevation
A-251	South and West Elevation
A-400	Section 1 & Section 2
A-500	Window Schedule



**BUILDING DESIGNER**  
 Redson Group Pty. Ltd.  
 trading as 'Progenia'  
 Wollongong, NSW 2500  
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 A.B.N 21 158 799 663



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CLIENT  
 Scott Redwood  
 PROJECT  
 Redwood Residence  
 LOCATION  
 33C Woodlawn Avenue, Mangerton  
 NSW 2500  
 PROJECT NUMBER  
 #001.17

REVISION	DRAWN BY	DATE
1	SR	23.09.19
#	##	###.##
#	##	###.##
#	##	###.##
#	##	###.##
#	##	###.##

ISSUED FOR DA

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 General Cover Sheet

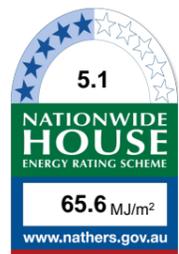
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PAGE SIZE  
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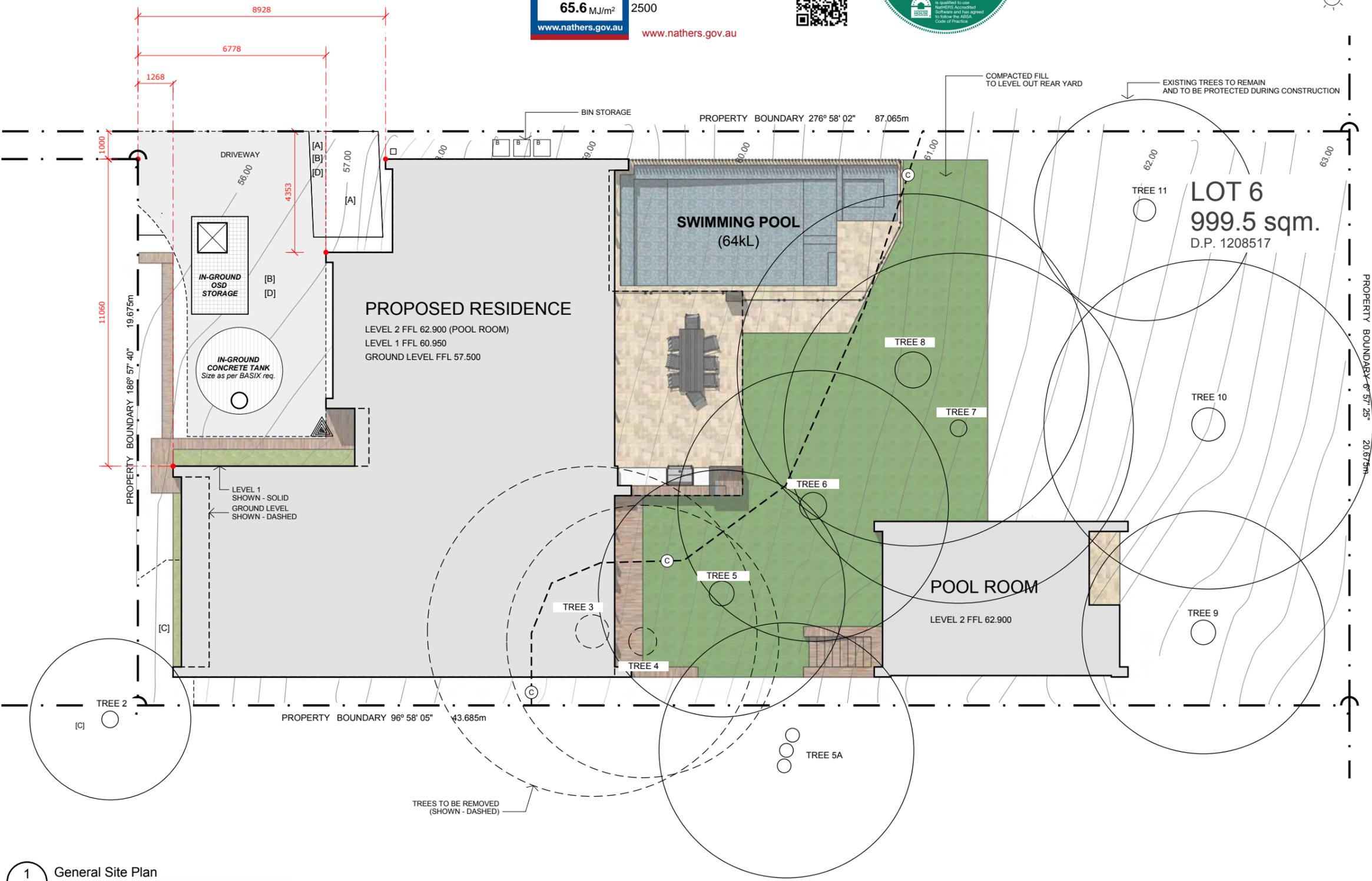
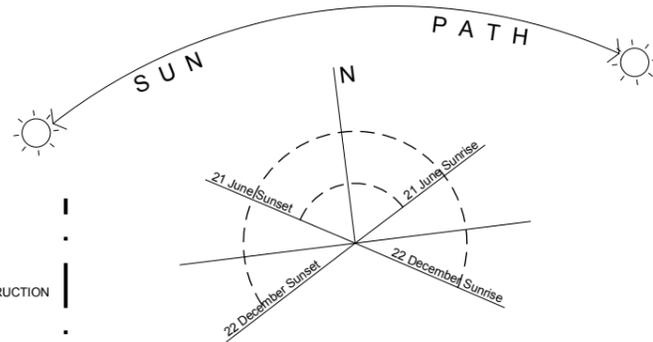
# G-000

CONSTRUCTION NOTES:

1. ALL CONSTRUCTION WORK TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA (BCA), RELEVANT AUSTRALIAN STANDARDS, LOCAL GOVERNMENT CODES AND AUTHORITY REGULATIONS AND REQUIREMENTS.
  2. ALL LEVELS AND DIMENSIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION. SURVEY CHECK MAY BE REQUIRED.
  3. JOINERY DESIGN, FLOORS, TILES AND INTERIORS TO BE SELECTED BY OWNER.
- [A] EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE
  - [B] RIGHT OF ACCESS VARIABLE WIDTH
  - [C] RESTRICTION ON THE USE OF LAND
  - [D] EASEMENT FOR SERVICES VARIABLE WIDTH



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1 General Site Plan  
 Scale: 1 : 150



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**CLIENT**  
 Scott Redwood

**PROJECT**  
 Redwood Residence

**LOCATION**  
 33C Woodlawn Avenue, Mangerton NSW 2500

**PROJECT NUMBER**  
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1	SR	23.09.19
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#	##	###.##

ISSUED FOR DA

**DESCRIPTION**  
 General Site Plan

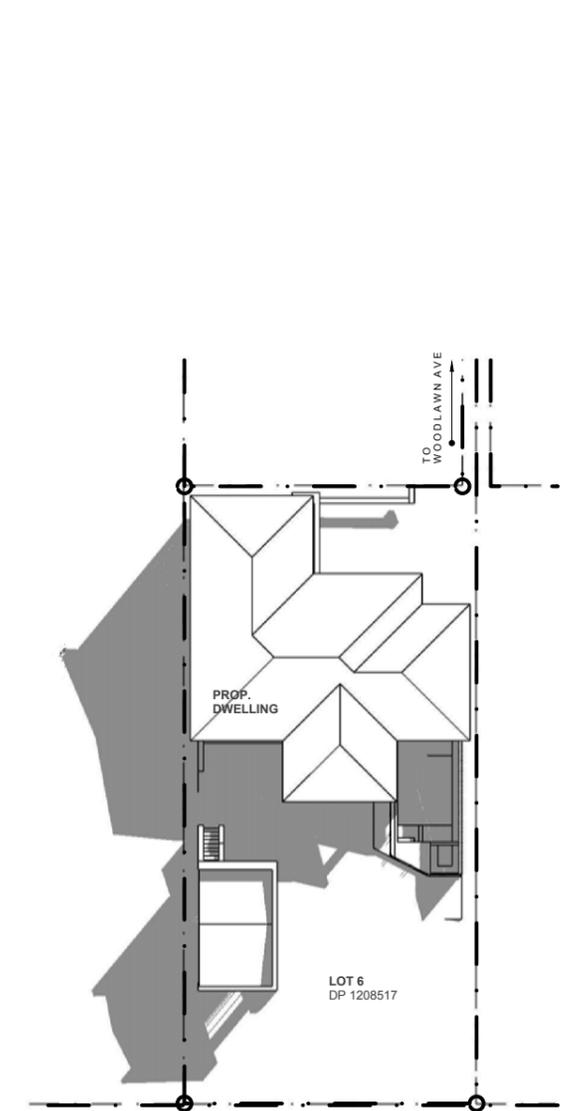
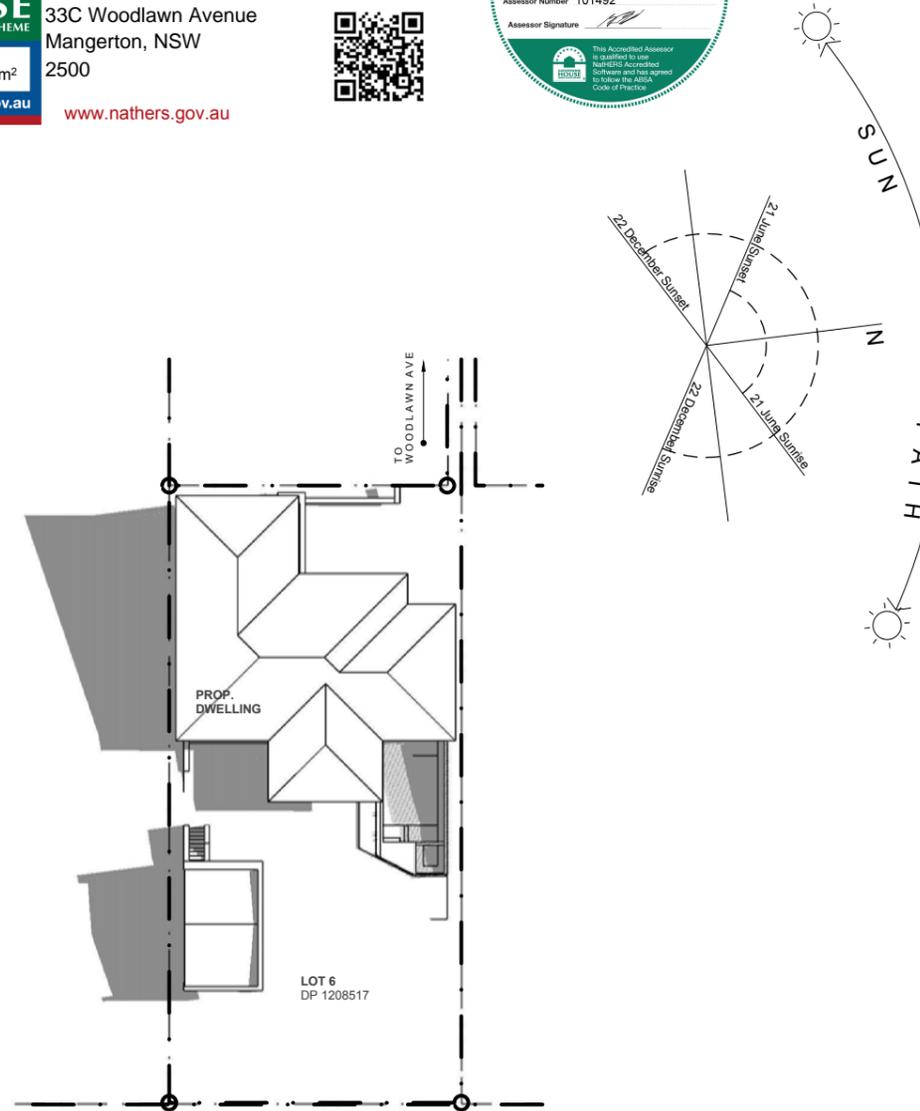
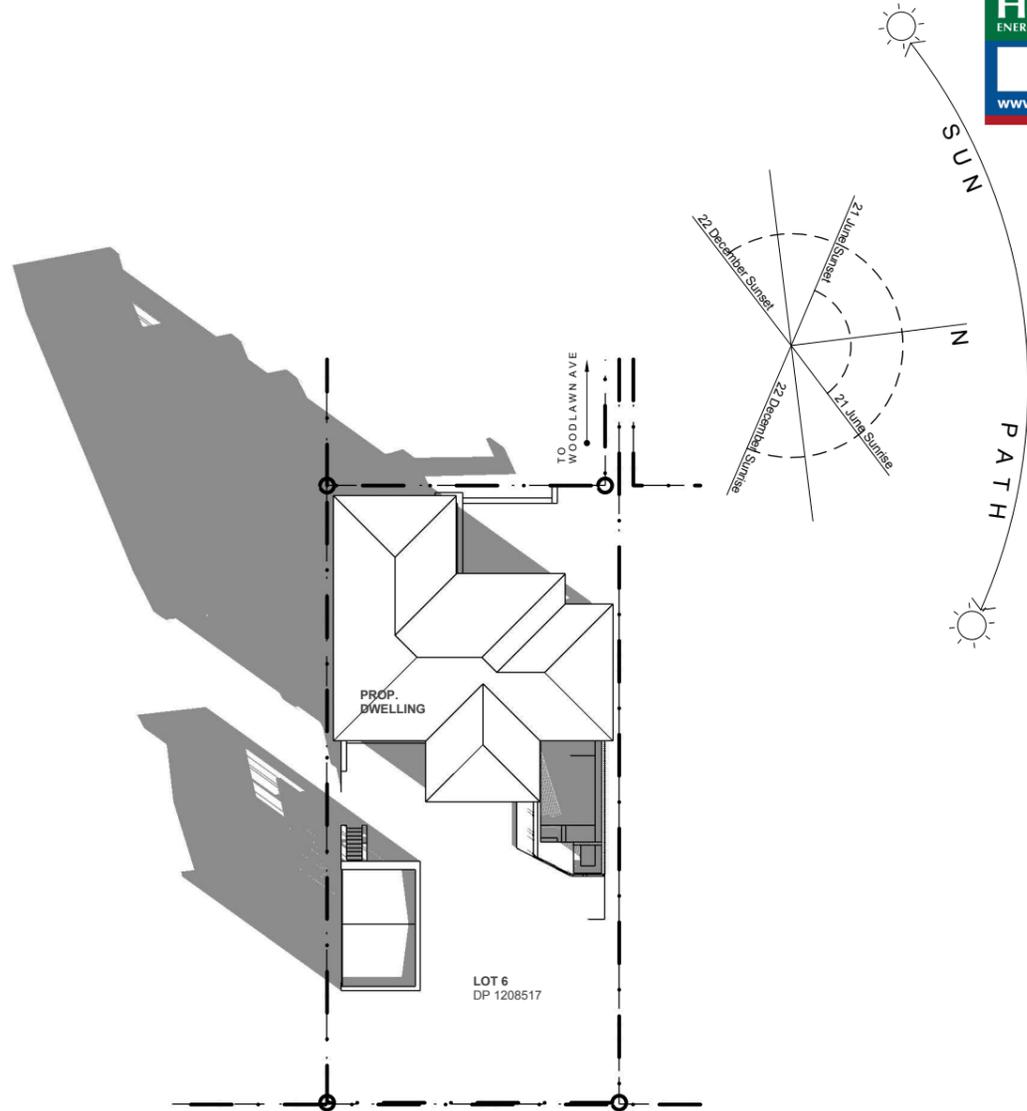
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**G-100**



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1 21 June - 9am  
 G-200 Scale: 1 : 500

2 21 June - 12pm  
 G-200 Scale: 1 : 500

3 21 June - 3pm  
 G-200 Scale: 1 : 500



WASTE MANAGEMENT NOTES:

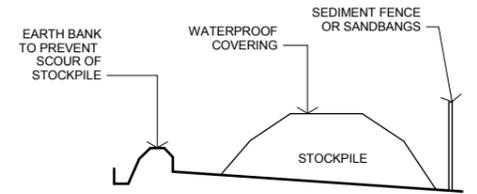
1. VEHICLES TO BE HOSED DOWN TO PREVENT SOIL/EXCAVATED MATERIAL BEING DEPOSITED ON ROADWAY.
2. CONCRETE PUMPING, DELIVERY OF MATERIAL, LOADING AND UNLOADING OF MATERIAL TO BE DONE WITHIN THE CONFINES OF THE PROPERTY.
3. WASTE BAYS ARE TO BE CONSTRUCTED USING SHADE CLOTH OR SEDIMENT FENCING. WHERE THE WASTE STREAM IS MADE UP OF LIGHT MATERIAL SUCH AS PAPER AND CARDBOARD, THE WASTE BAYS MUST CONSIST OF A CONTAINER FOR THE STORAGE OF THIS MATERIAL.
4. A METAL WASTE CONTAINER (5) WITH A MINIMUM CAPACITY OF FOUR CUBIC METRES MUST BE PROVIDED ON SITE FOR THE DISPOSAL OF 'GENERAL WASTE' DESIGNATED FOR LANDFILL.

SOIL EROSION/SEDIMENT CONTROL NOTES:

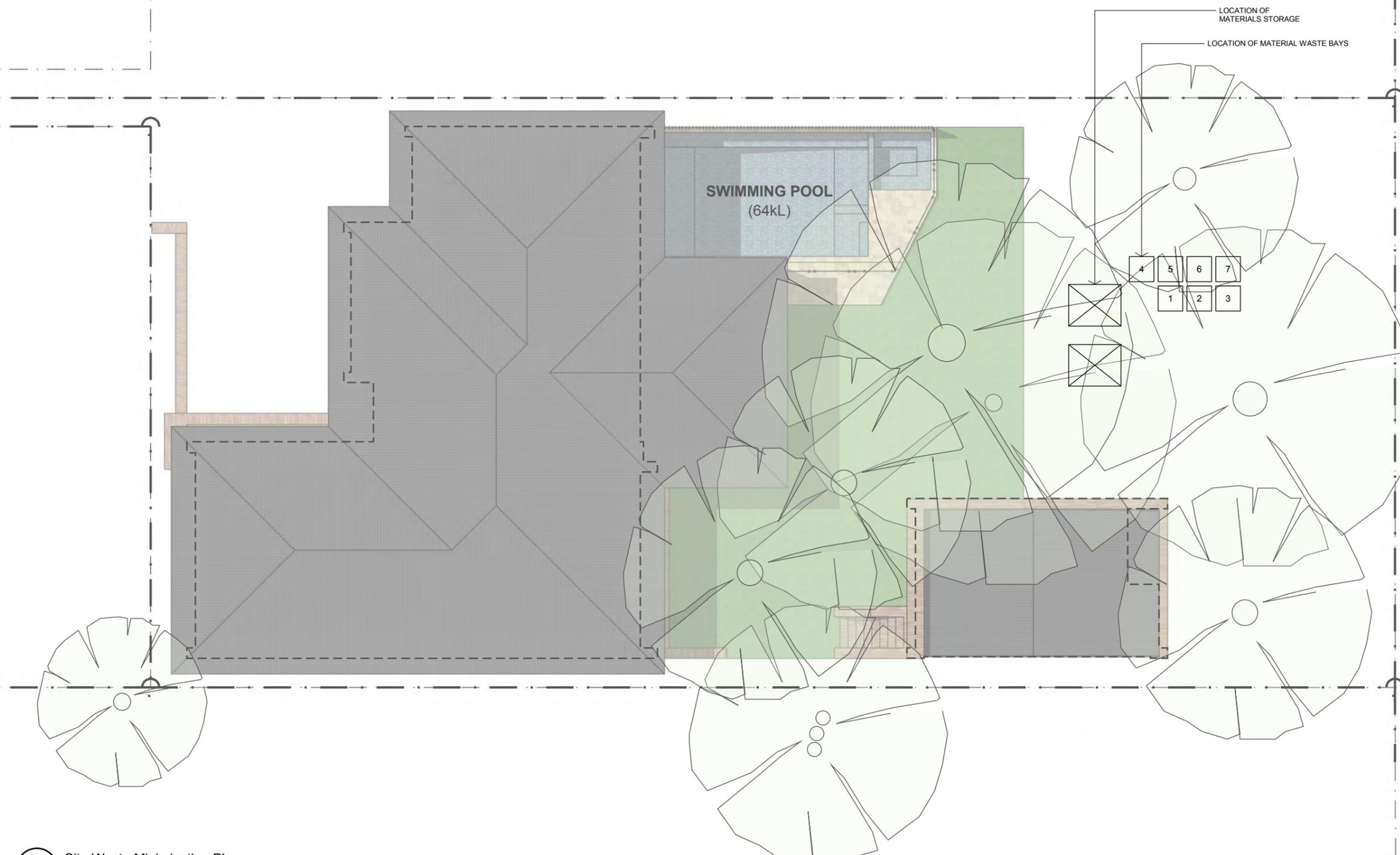
1. SEDIMENT FABRIC SUCH AS TERRAAM 100, POLFELT TS 500, BIDIM U24, GEOFAB, ENVIROFENCE OR EQUIVALENT TO BE PROVIDED ON ALL BOUNDARIES AS REQUIRED.
2. FABRICK IS ATTACHED TO A STRAND WIRE (ORDINARY FENCE WIRE) OR WIRE MESH (14 GAUGE AND 150mm X 150mm OR OPENING).
3. THE LOWER END OF THE FABRIC MESH TO BE EMBEDDED 200mm INTO THE GROUND.
4. FILTER CLOTH TO BE FASTENED SECURELY TO WIRE FENCE WITH TIES SPACED EVERY 600mm.
5. GENERALLY FOLLOW THE CONTOUR OF THE LAND.
6. WHEN 2 SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 150mm AND FOLDED OVER.
7. STOCK PILES ARE TO BE SET UP WITH SEDIMENT CONTROL DEVICES ON THE LOWER SLOPE.



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1 Building Material Stockpiles Detail  
 Scale: NTS



WASTEBAYS	
STOCK PILE NUMBER	MATERIAL TYPE
1	CONCRETE
2	LANDFILL
3	PLASTERBOARD
4	PAPER PACKING
5	METALS
6	TIMBER
7	INSULATION/PLASTICS

2 Site Waste Minimisation Plan  
 Scale: 1 : 250



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1	SR	23.09.19
#	##	###.###
#	##	###.###
#	##	###.###
#	##	###.###
#	##	###.###

ISSUED FOR DA

DESCRIPTION  
 Site Waste Minimisation Plan  
 PAGE SCALE  
 1 : 250  
 PAGE SIZE  
 A3  
**G-300**

TREE No.	SPECIES	SULE	T.P.Z (m)	S.R.Z (m)	COMMENTS
3	Hoop Pine	4A	5.0	-	Proposed to be removed
4	Eucalyptus	4A	4.3	-	Proposed to be removed
5	Spotted Gum	4A	3.8	-	RETAINED
6	Spotted Gum	1A	3.3	2.5	RETAINED
2	Paperbark	2A	7.2	3.1	RETAINED
5A	Paperbark	2A	7.2	2.7	RETAINED
7	Barked Apple	2D	5.8	2.7	RETAINED
8	Spotted Gum	3A	8.5	3.0	RETAINED
9	Eucalyptus	4A	7.0	2.7	RETAINED
10	Eucalyptus	2A	7.4	2.9	RETAINED
11	Spotted Gum	2A	6.1	2.6	RETAINED

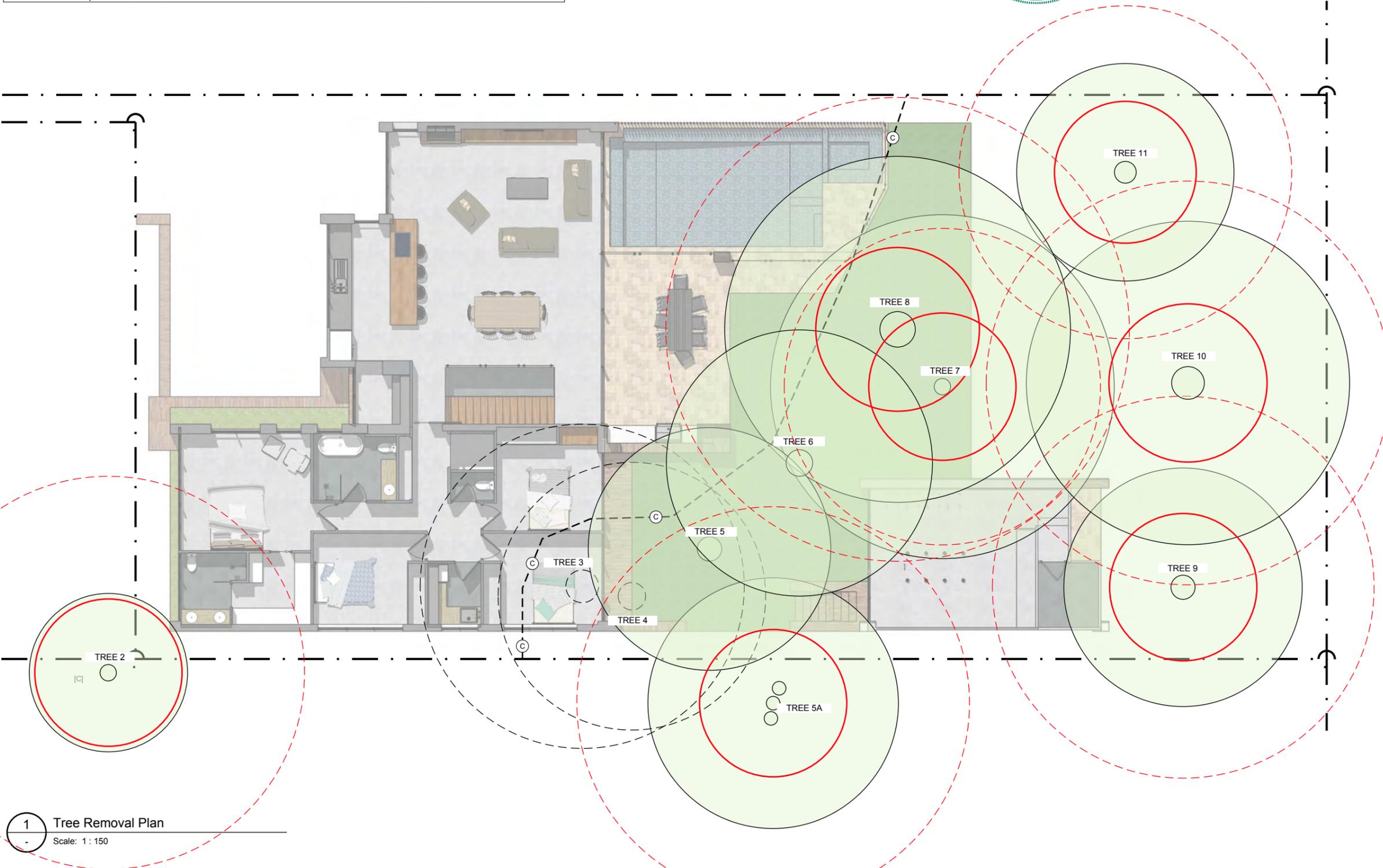


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- TREE REMOVAL NOTES:
- ANY BRANCH PRUNING, WHICH HAS BEEN GIVEN APPROVAL, MUST BE CARRIED OUT BY A QUALIFIED ARBORIST IN ACCORDANCE WITH AUSTRALIAN STANDARD AS4373.2007.
  - ALL TREE PROTECTION MEASURES ARE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS4790.2009.
  - RECOMMENDATIONS IN ARBORIST REPORT TO BE IMPLEMENTED INCLUDING AND NOT RESTRICTED TO: REMEDIAL TREE PRUNING, DEADWOODING, FENCING AND SIGNAGE, SEDIMENT BUFFER, STEM PROTECTION, ESTABLISHING TREE PROTECTION ZONES.

- TREE PROTECTION AND MANAGEMENT NOTES:
- INSTALLATION OF TREE PROTECTION FENCING. PROTECTION FENCING SHALL BE 1.8m CYCLONE CHAINMESH FENCE, WITH POSTS AND PORTABLE CONCRETE FOOTINGS.
  - MULCH TREE PROTECTION ZONE: AREAS WITHIN A TPZ ARE TO BE MULCHED WITH MIN. 75mm THICK 100% RECYCLED HARDWOOD CHIP/LEAF LITTER MULCH.



LEGEND	
	TREE TO BE REMOVED
	TREE TO BE RETAINED
	TREE PROTECTION ZONE (TPZ)
	STRUCTURAL ROOT ZONES (SRZ)

1 Tree Removal Plan  
 Scale: 1 : 150



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 trading as 'Progenia'  
 Wollongong, NSW 2500  
 E: [contactus@progenia.com.au](mailto:contactus@progenia.com.au)  
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CLIENT Scott Redwood  
 PROJECT Redwood Residence  
 LOCATION 33C Woodlawn Avenue, Mangerton NSW 2500  
 PROJECT NUMBER #001.17

REVISION	DRAWN BY	DATE
1	SR	23.09.19
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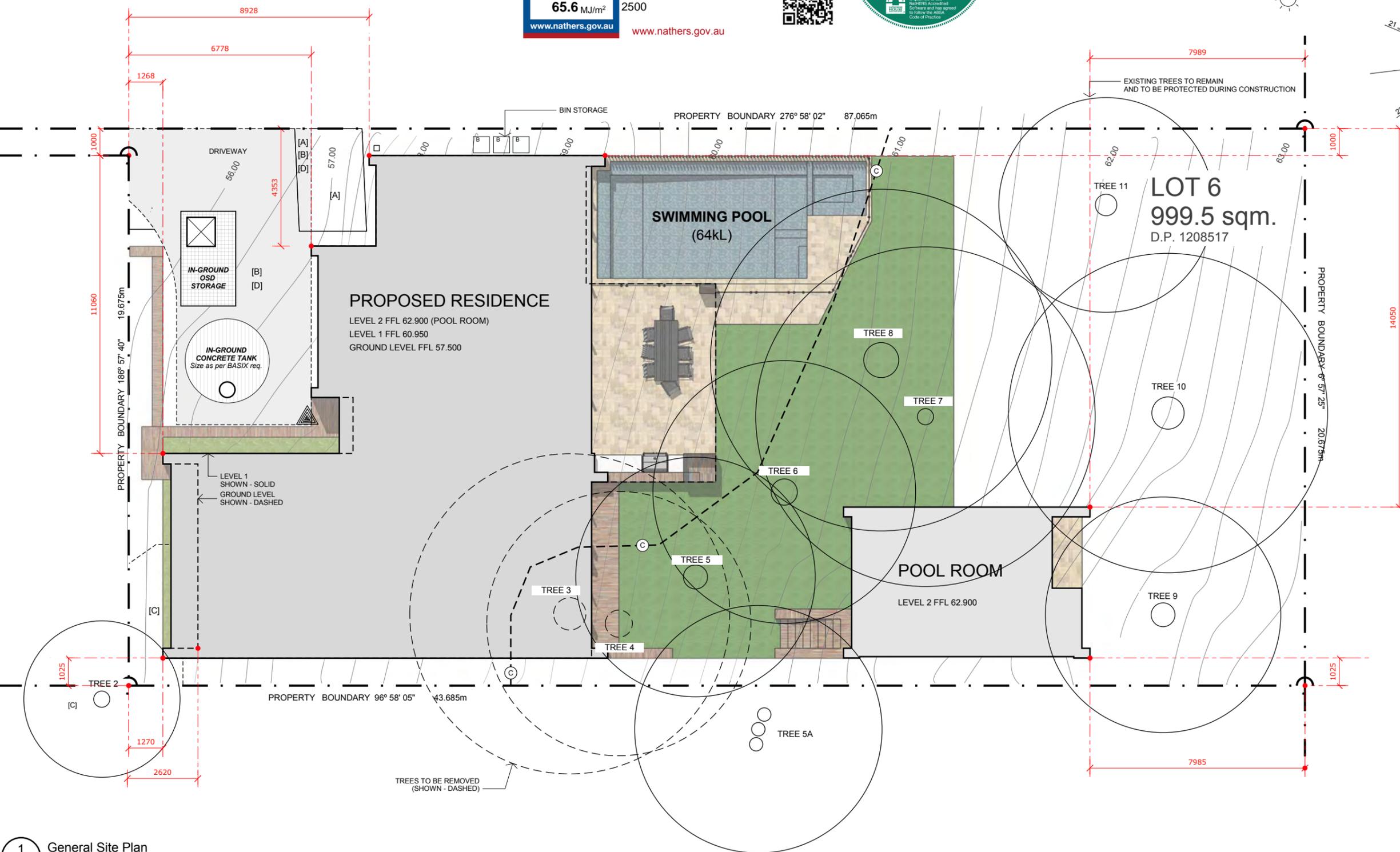
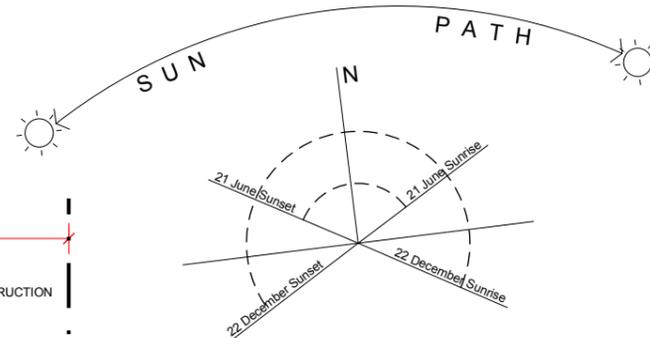
DESCRIPTION Tree Removal Plan  
 PAGE SCALE 1 : 150  
 PAGE SIZE A3  
**L-099**

CONSTRUCTION NOTES:

- ALL CONSTRUCTION WORK TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE OF AUSTRALIA (BCA), RELEVANT AUSTRALIAN STANDARDS, LOCAL GOVERNMENT CODES AND AUTHORITY REGULATIONS AND REQUIREMENTS.
  - ALL LEVELS AND DIMENSIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION. SURVEY CHECK MAY BE REQUIRED.
  - JOINERY DESIGN, FLOORS, TILES AND INTERIORS TO BE SELECTED BY OWNER.
- [A] EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE  
 [B] RIGHT OF ACCESS VARIABLE WIDTH  
 [C] RESTRICTION ON THE USE OF LAND  
 [D] EASEMENT FOR SERVICES VARIABLE WIDTH



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SITE PLAN DETAILS

FLOOR SPACE RATIO (FSR)

<b>PROPOSED DWELLING</b>	
GROUND LEVEL	227 sqm.
LEVEL 1	207 sqm.
STAIR VOID	-4.3 sqm.
<b>POOL ROOM</b>	
POOL ROOM	38.6 sqm.
SUB-TOTAL AREA	468.3 sqm.
GARAGE ALLOWANCE	-36 sqm.
<b>PROP. DWELLING TOTAL</b>	<b>432.3 sqm.</b>
<b>TOTAL FLOOR SPACE AREA</b>	<b>432.3 sqm.</b>
<b>LAND AREA</b>	<b>999.5 sqm.</b>
<b>CALCULATED FSR</b>	<b>0.43</b>

SITE COVERAGE

<b>PROPOSED DWELLING</b>	
SITE COVERAGE	277 sqm.
<b>MAX. SITE AREA ALLOWED (40%)</b>	<b>399.8 sqm.</b>
<b>LAND AREA</b>	<b>999.5 sqm.</b>
<b>SITE COVERAGE</b>	<b>27.7%</b>

LANDSCAPE AREA

LANDSCAPE AREA	191.0 sqm.
DEEP SOIL AREA	189.0 sqm.
<b>LANDSCAPE AREA REQ. (210 + 40%)</b>	<b>249.8 sqm.</b>
<b>LAND AREA</b>	<b>999.5 sqm.</b>
<b>TOTAL LANDSCAPE AREA</b>	<b>380.0 sqm.</b>

1 General Site Plan  
 Scale: 1 : 150



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**CLIENT**  
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**PROJECT**  
 Redwood Residence  
**LOCATION**  
 33C Woodlawn Avenue, Mangerton NSW 2500  
**PROJECT NUMBER**  
 #001.17

REVISION	DRAWN BY	DATE
1	SR	23.09.19
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**DESCRIPTION**  
 Site Analysis Plan

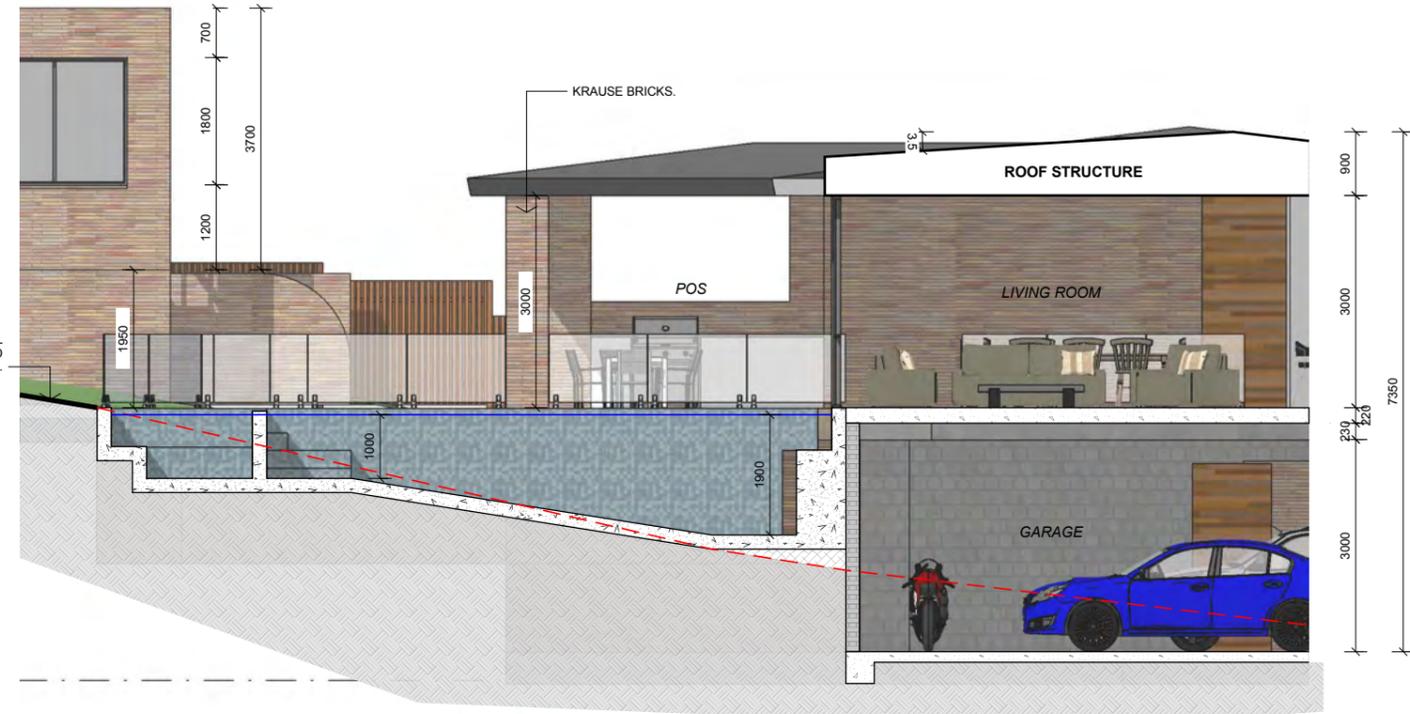
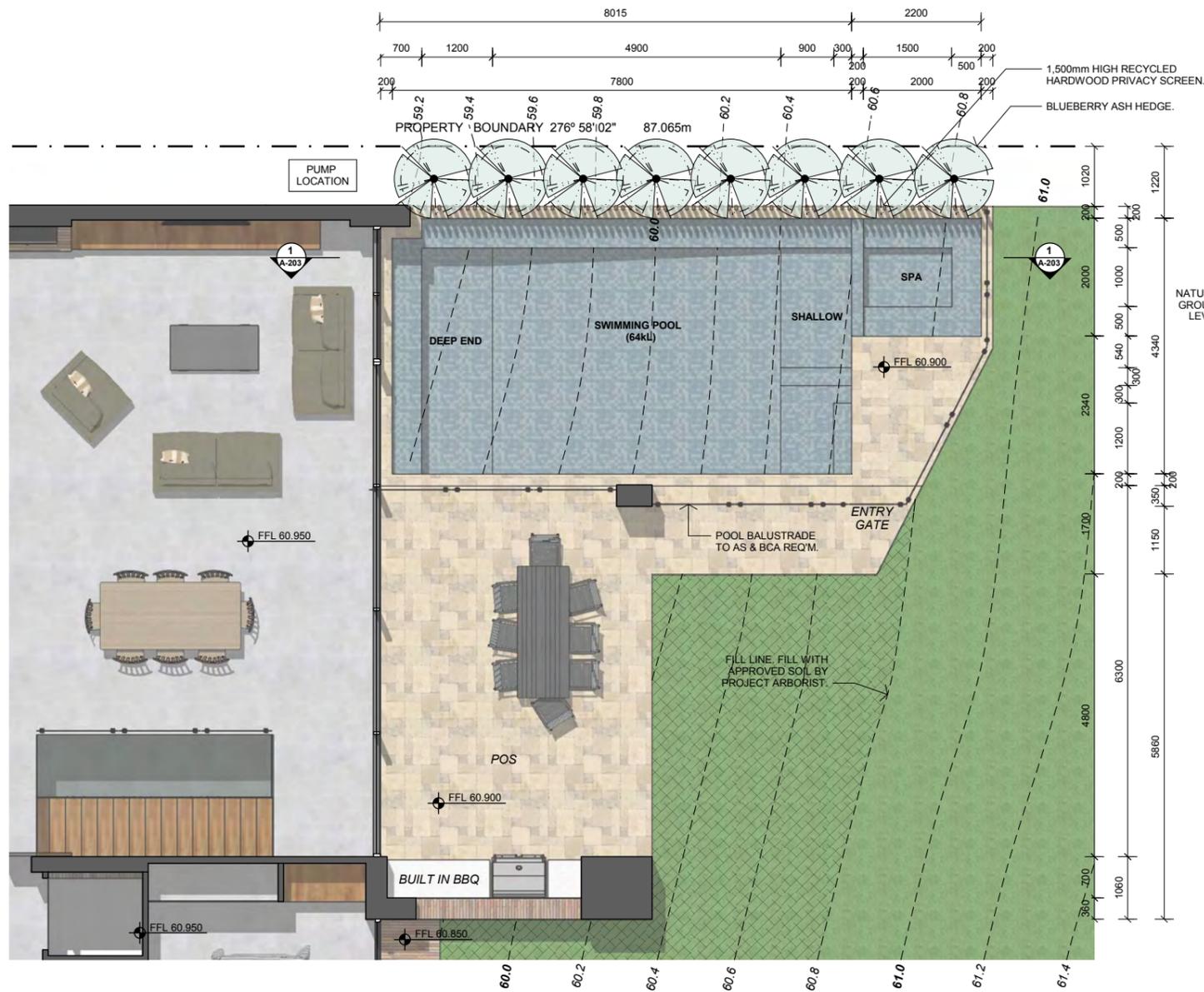
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**PAGE SIZE**  
 A3

**A-100**







1 Section 1 - Pool Section  
A-203 Scale: 1 : 100

1 Swimming Pool Plan  
Scale: 1 : 100



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PROJECT: Redwood Residence  
LOCATION: 33C Woodlawn Avenue, Mangerton NSW 2500  
PROJECT NUMBER: #001.17

REVISION	DRAWN BY	DATE	DESCRIPTION
1	SR	23.09.19	Swimming Pool Plan
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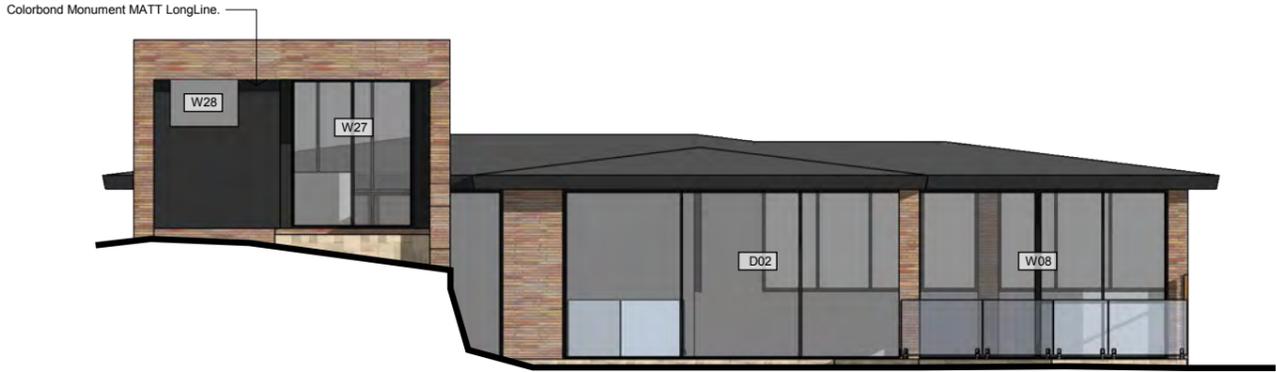
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**A-203**



1 North Elevation  
Scale: 1 : 125



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2 East Elevation  
Scale: 1 : 125



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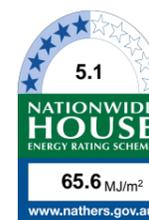
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**LOCATION**  
 33C Woodlawn Avenue, Mangerton NSW 2500  
**PROJECT NUMBER**  
 #001.17

REVISION	DRAWN BY	DATE
1	SR	23.09.19
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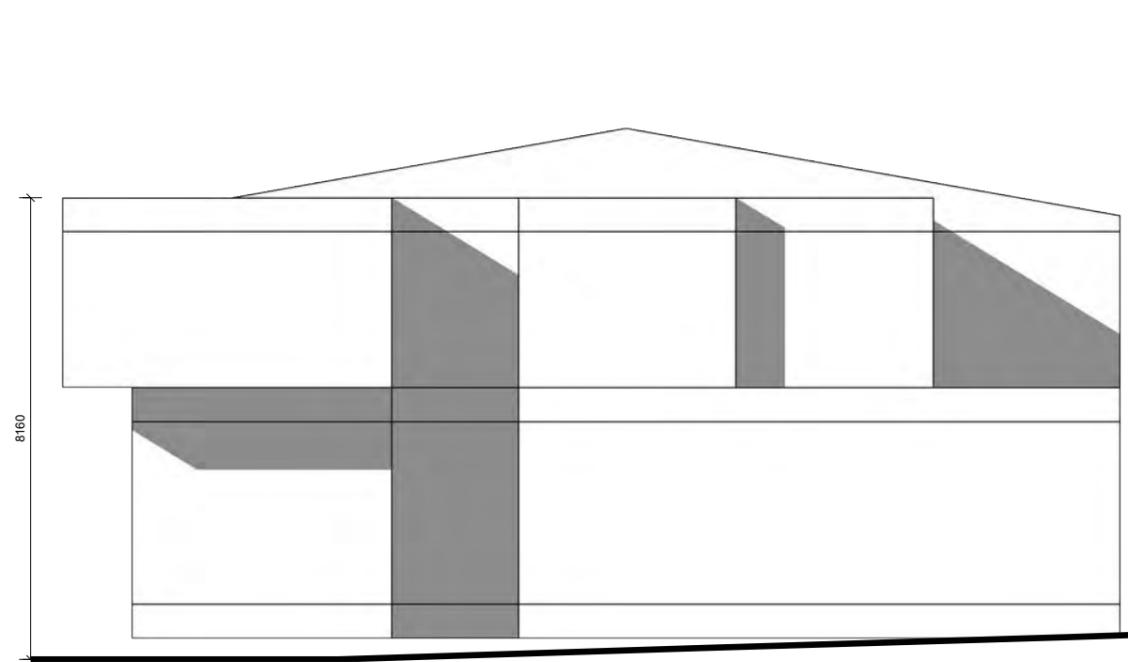
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 North & East Elevation  
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**PAGE SIZE**  
 A3  
**A-250**



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3 South Elevation  
 Scale: 1 : 125



4 West Elevation  
 Scale: 1 : 125



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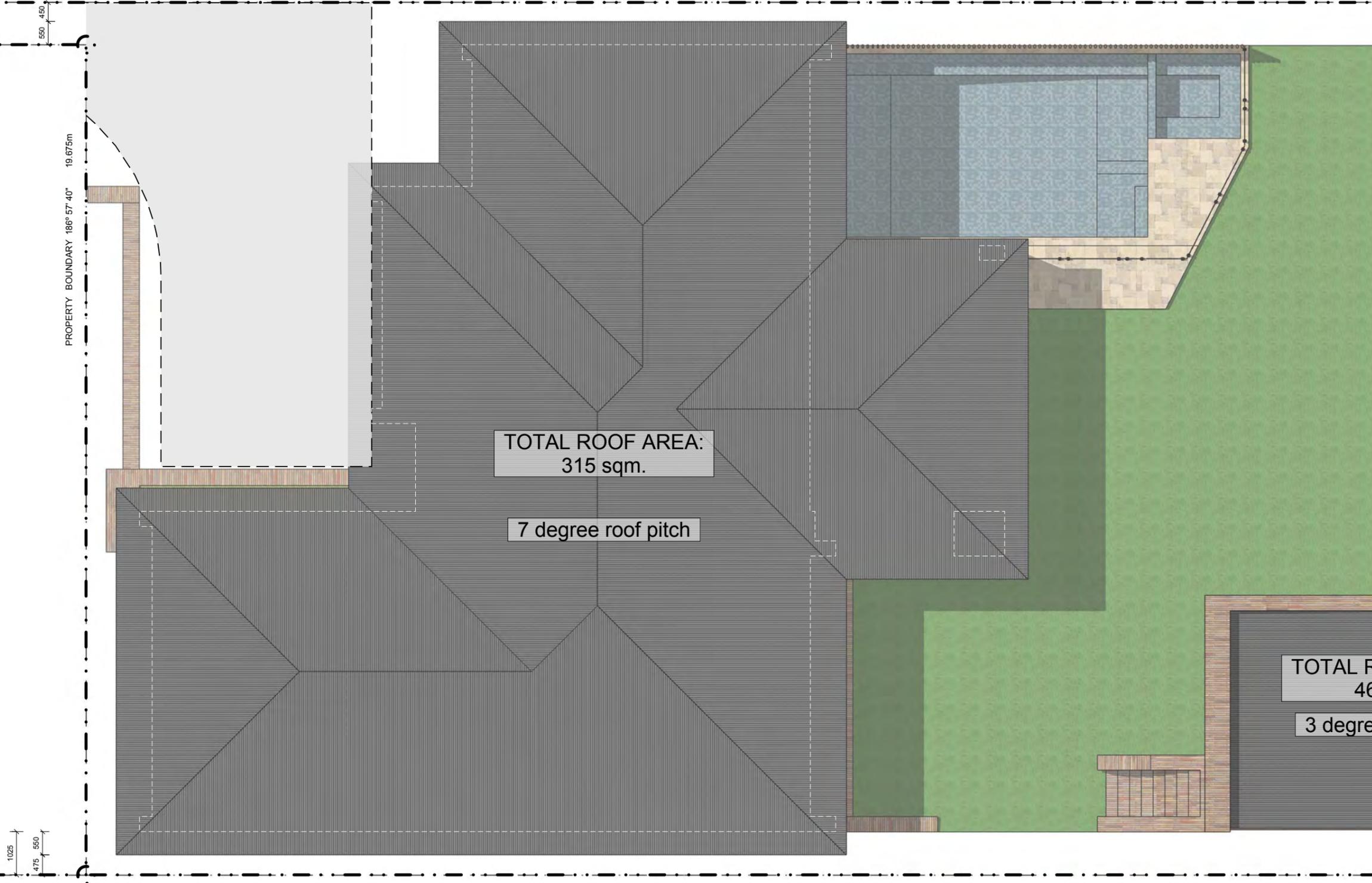
**CLIENT**  
 Scott Redwood  
**PROJECT**  
 Redwood Residence  
**LOCATION**  
 33C Woodlawn Avenue, Mangerton NSW 2500  
**PROJECT NUMBER**  
 #001.17

REVISION	DRAWN BY	DATE
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**DESCRIPTION**  
 South & West Elevation  
**PAGE SCALE**  
 1 : 125  
**PAGE SIZE**  
 A3  
**A-251**

PROPERTY BOUNDARY 276° 58' 02" 87.065m



ROOF PLAN NOTES:

1. ALL DIMENSIONS ARE AS PROJECTED (PLAN VIEW - HORIZONTAL), ACTUAL LENGTHS OF ROOF SHEETING MUST BE ALLOWED FOR WITH RESPECT TO THE ROOF PITCH.
2. ALL DOWN-PIPES FEED INTO THE WATERTANK, WATERTANK DISCHARGES TO STORMWATER.
3. TRUSS MANUFACTURER TO ENSURE TRUSSES ARE DESIGNED SUCH THAT FASCIAS ARE ALIGNED PER EXTERIOR ELEVATIONS.
4. LOCATION OF DOWNPIPES TO STORMWATER PROVIDED BY ENGINEER'S DETAIL.
5. ALL REQUIRED BEAMS TO ENGINEER'S DETAIL.



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1 Roof Plan  
 Scale: 1 : 100



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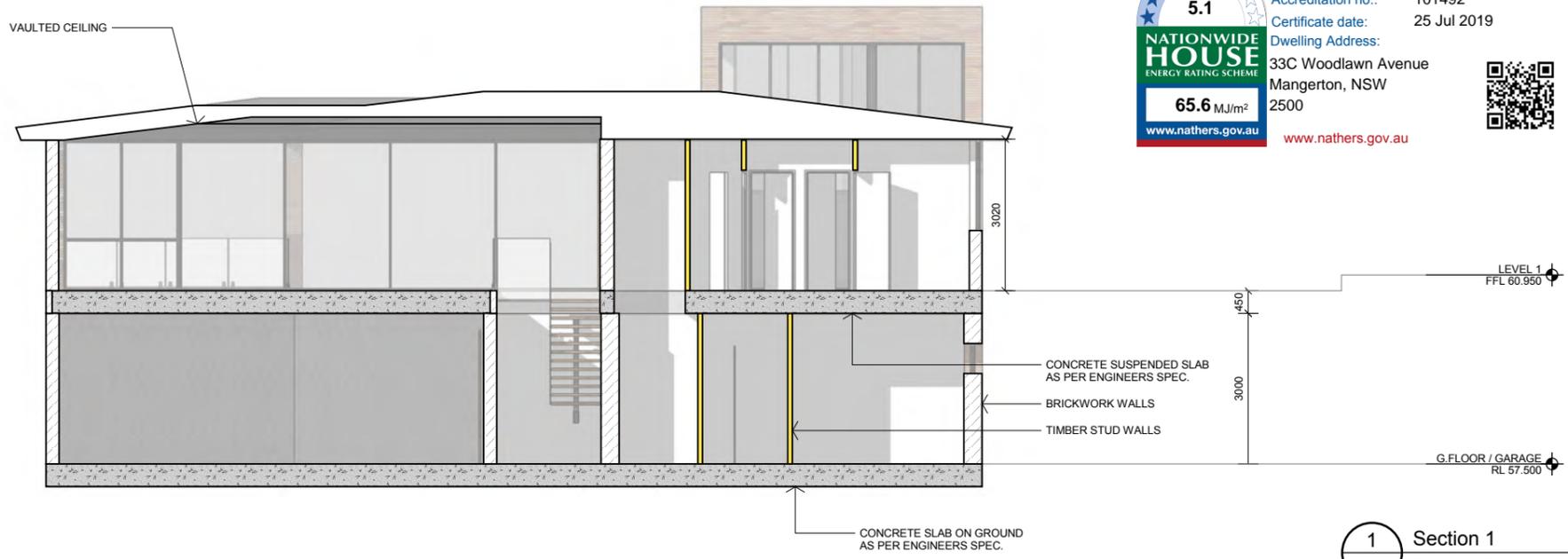
CLIENT  
 Scott Redwood  
 PROJECT  
 Redwood Residence  
 LOCATION  
 33C Woodlawn Avenue, Mangerton  
 NSW 2500  
 PROJECT NUMBER  
 #001.17

REVISION	DRAWN BY	DATE
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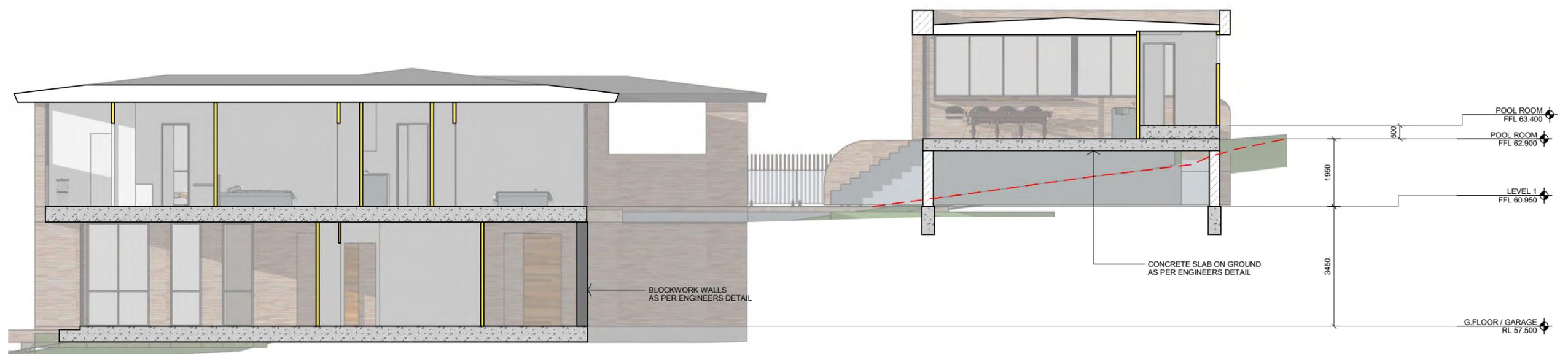
ISSUED FOR DA

DESCRIPTION  
 Roof Plan  
 PAGE SCALE  
 1 : 100  
 PAGE SIZE  
 A3  
**A-300**

VAULTED CEILING



1 Section 1  
A-200 Scale: 1 : 125



2 Section 2  
A-200 Scale: 1 : 125



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 2500  
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GENERAL NOTES:

1. ALL INFORMATION TO VERIFIED AND CONFIRMED ON SITE PRIOR TO ORDERING AND CONSTRUCTION
2. APPLICANT MUST INSTALL WINDOWS, GLAZED DOORS AND SHADING DEVICES DESCRIBED, IN ACCORDANCE WITH THE BASIX CERTIFICATE..
3. EXCEPT WHERE GLASS IS 'SINGLE CLEAR' OR 'SINGLE TONED' , EACH WINDOW MUST HAVE A U-VALUE NO GREATER THAN LISTED AND SHGC + OR -10% OF THAT LISTED, CALCULATED IN ACCORDANCE WITH NFRC CONDITIONS.
4. WHERE POSSIBLE, MANUFACTURERS STANDARD SIZES SHOULD BE USED AND APPROVED BY BUILDER/OWNER PRIOR TO SIGNING. POWDERCOATED COLOUR TO BE SELECTED BY OWNER.
5. THE BUILDER/CONTRACTOR MUST REPORT ALL DISCREPANCIES TO THE DESIGNER TO AMEND PRIOR TO SIGNING AND CONSTRUCTION COMMENCING, WHERE NEED, THE BUILDER/CONTRACTOR SHALL OBTAIN DETAILS PRIOR TO SIGNING OF THE CONTRACT . FAILURE TO ADHERE TO THESE CONDITIONS, THE BUILDER/CONTRACTOR NULLIFIES ANY RIGHT TO CLAIM FOR VARIATION, DUE TO INTERPRETATION OF DOCUMENTAION, BUILDER/OWNER TO APPROVE PRIOR TO CONSTRUCTION.

## WINDOW SCHEDULE - MAIN DWELLING

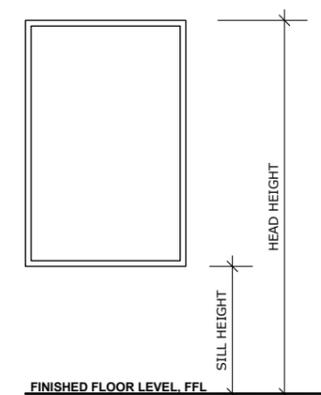
NO.	SIZE(W) X (H)	HEAD HEIGHT	LOCATION	TYPE
W01	900 X 3000	3000	GARAGE	DOUBLE HUNG
W02	900 X 3000	3000	GARAGE	DOUBLE HUNG
W03	3200 X 600	2400	GUEST BEDROOM	SLIDING
W04	1800 X 3000	3000	THEATRE ROOM	DOUBLE HUNG
W05	900 X 3000	3000	THEATRE ROOM	DOUBLE HUNG
W06	900 X 3000	3000	THEATRE ROOM	DOUBLE HUNG
W07	960 X 3000	3000	ENTRY	FIXED
W08	2300 X 3000	3000	LIVING ROOM	SLIDING
W09	510 X 3000	3000	BED 2	AWNING
W10	520 X 3000	3000	BED 3	AWNING
W11	2690 X 1200	3000	BED 3	FIXED
W12	1350 X 1800	3000	LAUNDRY	SLIDING
W13	3120 X 2000	3000	BED 1	SLIDING
W14	2510 X 1800	3000	BATHROOM	SLIDING (OBSCURE)
W15	4270 X 1800	3000	MASTER BED	SLIDING
W16	1800 X 3000	3000	MASTER BED	DOUBLE HUNG
W17	900 X 3000	3000	MASTER BED	DOUBLE HUNG
W18	900 X 3000	3000	MASTER BED	DOUBLE HUNG
W19	2080 X 1800	3000	PANTRY	SLIDING
W20	3810 X 1800	3000	KITCHEN	SLIDING
W21	900 X 3000	3000	KITCHEN	DOUBLE HUNG
W22	3000 X 1800	3000	LIVING ROOM	SLIDING
W23	900 X 3000	3000	LIVING ROOM	DOUBLE HUNG
D01	6870 X 3000	3000	THEATRE ROOM	SLIDING
D02	8400 X 3000	3000	DINING ROOM	SLIDING
D03	2240 X 3000	3000	BED 2	SLIDING
D04	2240 X 3000	3000	BED 3	SLIDING

## WINDOW SCHEDULE - POOL ROOM

NO.	SIZE(W) X (H)	HEAD HEIGHT	LOCATION	TYPE
W24	2990 X 3000	3000	POOL ROOM	SLIDING
W25	4010 X 1800	3000	POOL ROOM	SLIDING
W26	2950 X 1800	3000	POOL ROOM	SLIDING
W27	1200 X 840	3000	BATHROOM	SLIDING
D05	1800 X 3000	3000	POOL ROOM	SLIDING

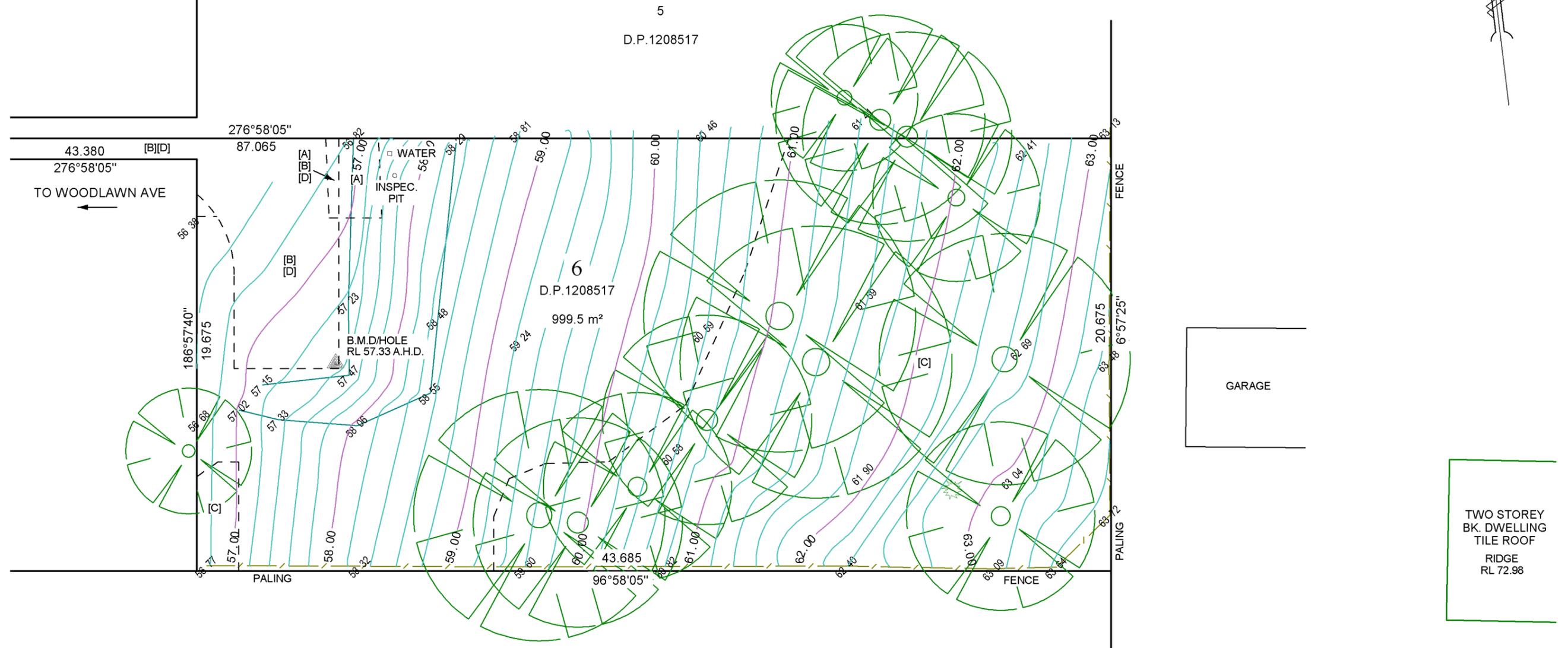
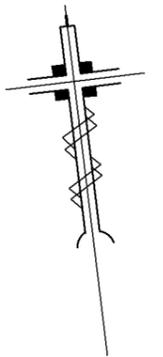


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1 Typical Window  
 Scale: NTS

[A] EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE  
 [B] RIGHT OF ACCESS VARIBALE WIDTH  
 [C] RESTRICTION ON THE USE OF LAND  
 [D] EASEMENT FOR SERVICES VARIABLE WIDTH



- Note:
1. Contour Interval 0.2m Minor And 1m Major
  2. Only Visible Services Have Been Surveyed  
Refer To Dial Before You Dig
  3. Boundary Positions Are Approximate Only  
And Should Be Verified By A Cadastral Survey
  4. A Title Search Has Not Been Done To Determine  
Any Affecting Easements Or Restrictions
  5. Datum Level P.M.9633 SCIMS A.H.D.



SURVEYOR	LC	16/12/2016	REV	COMMENT
DRAWN	JA	19/12/2016	A	
CHECKED	M SMITH			
SURVEY FILE:	D216553			
FILE NAME:	D216553			

# **ARBORICULTURAL IMPACT ASSESSMENT**

**33C WOODLAWN AVENUE  
MANGERTON NSW 2500**

Prepared for Progenia



**CONSULTANT ARBORIST  
MARK SPENCE B.Env.Sc. Dip. Hort. Cert. V Hort. (Arb.)**

**REVISED JULY 2019**

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## 1.0 INTRODUCTION

This revised Arboricultural Impact Assessment has been requested by Progenia for 33C Woodlawn Avenue, Mangerton.

This arboreal assessment examines existing trees located upon, and adjacent to, the proposed development site.

This report will address in the case of each tree:

- species identification, location, dimensions and health;
- amenity value and Safe Useful Life Expectancy (SULE) rating;
- the Sustainable Retention Index Value (SRIV);
- the potential impact of future site development on the existing tree;
- recommendations for removal, retention and / or pruning; and
- tree protection zones.

The subject site is in Mangerton; therefore, Wollongong City Council is the consenting authority for any tree works (where the tree fulfils the criteria of the local tree management policy) recommended within this report.

Three previous arborist reports have been commissioned for this site. The initial tree report dated 27/01/17 was completed by Lenice Tuckett-Carr (*Landscapes By Lenice*). This tree reports focused on the general health and condition of the trees.

A second expert report dated 25/09/18 by Ross Jackson AQF Level 8 arborist (*Jacksons Nature Works*) was completed. This arborist report focussed on root mapping of the existing trees at this location and assessing the likely impacts of the proposed development.

The third arborist report (Arboricultural Impact Assessment) was completed by Mark Spence in May 2019. This report focused on the findings of the two previous arborist reports and the development proposal.

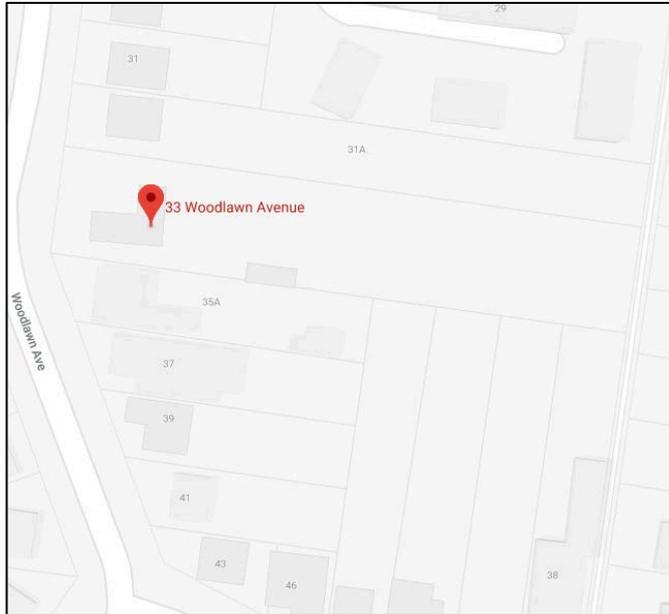
This revised Arboricultural Impact Assessment reviews that latest development proposal by Progenia. The revised development proposal has reduced the number of trees that are proposed for removal as a consequence of the development proposal. Additional root mapping conducted by Mark Spence adds to the information previously supplied by Ross Jackson.

Tree identification numbers used in this arboricultural impact assessment are consistent with the tree identification numbering used in the three previously completed arborist reports.

## 2.0 LOCATION OF TREES

### PLAN 1 – LOCATION MAP OF SITE

33C Woodlawn Avenue, Mangerton NSW 2500

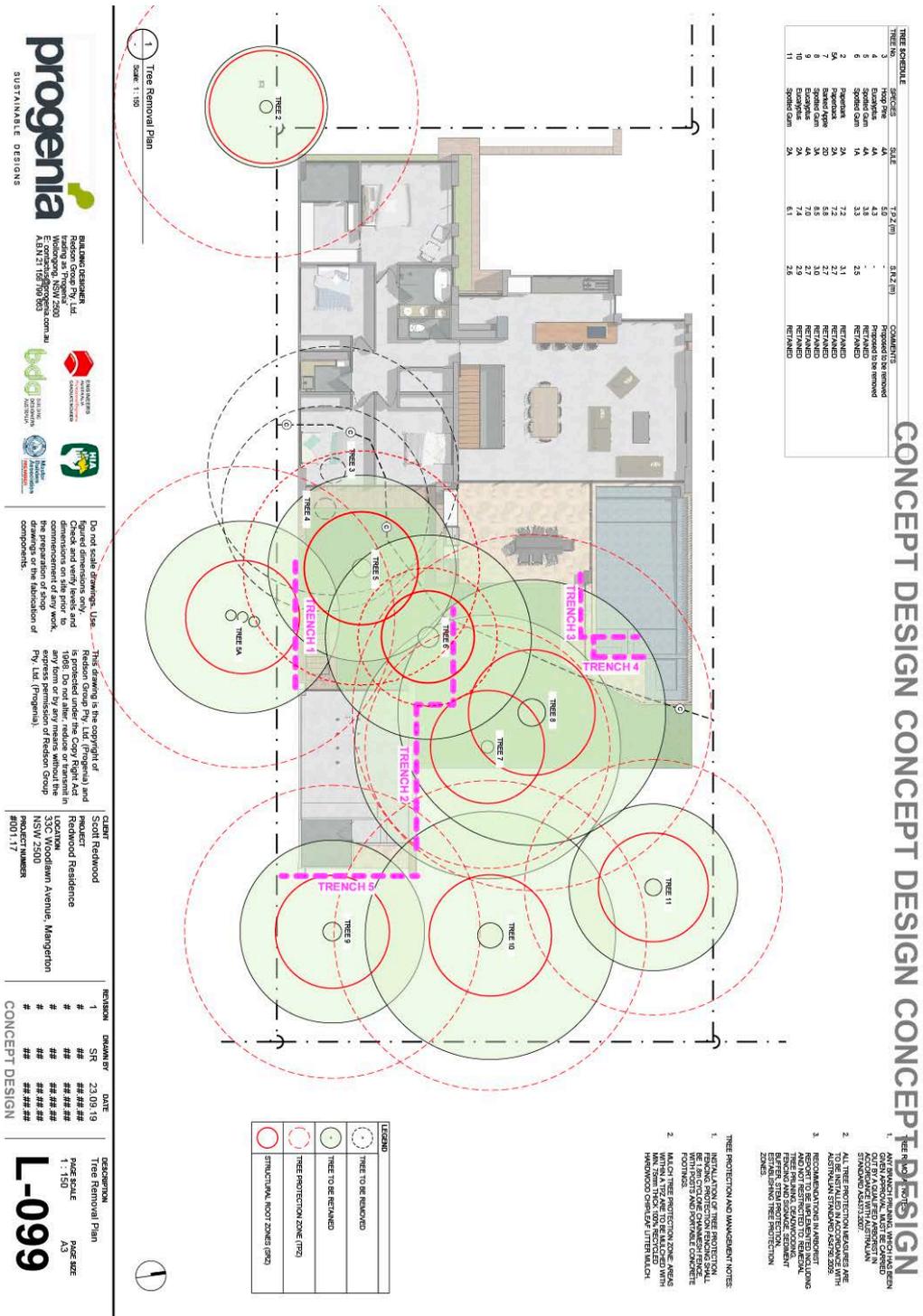


### PLAN 2 – AERIAL PHOTOGRAPH OF SITE



Maps obtained from Google Maps 2019.  
Do not scale from this plan.

**PLAN 3 – SITE MAP SHOWING TREE LOCATIONS  
& DEVELOPMENT PROPOSAL**  
33C Woodlawn Avenue, Mangerton NSW 2500



TREE NO	HEIGHT	DBH	SPREAD	STATUS
1	4.2	4.2	4.2	Proposed to be removed
2	4.4	4.4	4.4	Proposed to be removed
3	4.4	4.4	4.4	Proposed to be removed
4	4.2	4.2	4.2	Proposed to be removed
5	4.4	4.4	4.4	Proposed to be removed
6	4.4	4.4	4.4	Proposed to be removed
7	4.4	4.4	4.4	Proposed to be removed
8	4.4	4.4	4.4	Proposed to be removed
9	4.4	4.4	4.4	Proposed to be removed
10	4.4	4.4	4.4	Proposed to be removed
11	4.4	4.4	4.4	Proposed to be removed

**CONCEPT DESIGN CONCEPT DESIGN CONCEPT DESIGN**

- TREE PROTECTION AND MANAGEMENT NOTES:**
- INSTALLATION OF TREE PROTECTION FENCING TO BE IN ACCORDANCE WITH AS/NZS 4300 AND AS/NZS 4301.
  - ALL TREE PROTECTION FENCING ARE TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 4300 AND AS/NZS 4301.
  - RECOMMENDATION TO MAINTAIN ALL EXISTING TREES TO REMAIN AND NOT BE REMOVED UNLESS NECESSARY FOR THE PROPOSED DEVELOPMENT AND SOILWORK. SOILWORK TO BE COMPLETED WITHIN THE TREE PROTECTION ZONES.

**LEGEND**

(Red dashed circle)	TREE TO BE REMOVED
(Black dashed circle)	TREE TO BE REMOVED
(Red solid circle)	TREE PROTECTION ZONE (TPZ)
(Red dashed circle)	STRUCTURAL ROOT ZONES (SRZ)

**progenia**  
SUSTAINABLE DESIGNS

**BUILDING DESIGNER**  
Progenia Pty Ltd  
Level 1/100 Woodlawn Avenue  
Mangerton NSW 2500  
ABN 21 162 790 983

**CLIENT**  
Scott Redwood  
Redwood Residence  
33C Woodlawn Avenue, Mangerton  
NSW 2500  
PROJECT NUMBER #00117

**REVISION**

NO	DATE	DESCRIPTION
1	23.09.19	Tree Removal Plan

**CONCEPT DESIGN**

**L-099**

Map of revised development proposal was obtained from Progenia. Red dashed lines show the position of nominated tree protection zones (TPZ). Trees nominated for removal are show as black dashed lines. Do not scale from this plan.

### **3.0 DISCLOSURE STATEMENT**

Trees are living organisms which possess natural variability. An arborist cannot guarantee that a tree will be safe under all circumstances, nor predict if or when a tree will fail. To live or work near a tree involves an element of risk, therefore, this tree evaluation does not preclude all of the possibilities of tree failure.

### **4.0 SCOPE OF WORK**

Carry out visual ground-based examination of the nominated trees located within the residential site boundaries.

Inspect the nominated trees and their natural growing environment.

Provide an objective appraisal of the subject trees in relation to species, estimated age, health, structural condition and viability within the landscape.

Conduct additional root trenching to add to information previously provided by Ross Jackson AQF Level 8 arborist (*Jacksons Nature Works*).

Based on the findings of this inspection and previous arborist reports, provide independent recommendations on the retention or removal of the trees.

Identify and reduce potential conflicts between tree protection and future site development by providing accurate information on the area required for tree protection and the restricted activities within the area for the tree prior to construction.

### **5.0 METHODOLOGY**

The following tree assessment was conducted using criteria suggested by the International Society of Arboriculture.

- A Visual Tree Assessment (VTA) was carried out from ground level.
- Data collected from the Visual Tree Assessment including tree dimensions was compiled using a tape measure and binoculars. Tree height and width were estimated. No aerial or internal tree investigations were undertaken.
- Tree locations have been marked onto a plan that was obtained from Progenia. The tree locations are shown on Plan 3 of this report.
- Hand excavate addition trenches for tree root inspection at select locations.

- Tree data has been compiled in Table 2 of this report. This table comprises tree species, dimensions, condition and a brief assessment of the trees as referenced in Plan 3.
- The Safe Useful Life Expectancy (SULE) rating for each tree was determined using the Barrell 2001 format.
- The vitality of tree health was estimated using the Sustainable Retention Index Value (SRIV) Version 4 that has been developed by the Institute of Australian Consulting Arborists 2010.
- Note that SULE and SRIV ratings can not predict the impact of extreme weather events on the subject trees; or detect internal defects within the tree trunk or root system.
- The Tree Protection Zone (TPZ) was calculated using the method specified in the Australian Standard AS4970-2009: Protection of trees on development sites. TPZ was calculated by multiplying the tree's Diameter at Breast Height (DBH) by twelve. TPZ radius = DBH x 12.
- Structural Root Zones (SRZ) were calculated using the calculation formula and graph supplied in the Australian Standard – AS4970-2009 '*Protection of Trees on Development Sites*'.

## 6.0 TREE SURVEY EXPLANATORY NOTES

**Diameter at Breast Height (DBH):** this is the trunk diameter in centimetres at 'breast height'. Breast height is recorded at 1.5m above ground level.

**Deadwood:** is expected to be present on mature trees. As the percentage of deadwood increases in the overall tree canopy the SULE rating will be downgraded. In some cases, deadwood may indicate a progressive limb dieback pattern or limb death caused by termites.

**Height:** Is a measure of vertical distance from ground level to the top of the tree crown. For palms, it is the measure to the apical growth point. Measurements are reported in metres.

**Crown Spread:** A two-dimension measurement in metres of the tree canopy. The first measurement is on the north-south orientation; the second measurement is for the east-west orientation.

**Age:** Is the estimate of the tree's age based on the expected life span of the tree. Age is reported as Young (Y), Mature (M) or Over-mature (O).

Young (Y)	Trees less than 20% of their life expectancy.
Mature (M)	Trees aged between 20% to 80% of their life expectancy.

Over-mature (O) Trees over 80% of their life expectancy. Probably displaying signs of senescence.

**Crown Aspect:** this refers to the aspect the majority of the crown resides in. This will be either termed Symmetrical (Sym.) where the centre of the crown resides over the root crown, or the cardinal direction the centre of the crown is biased towards, being either North (N), South (S), East (E) or West (W).

**Crown Ratio:** Refers to the density of the crown in comparison to an example of the same species and age with good health and vigour. The crown ratio is expressed in the following proportions of foliage when compared to a specimen of good vigor (being 100%).

F – Full	85% - 100%
P - Partial	40% - 85%
S - Sparse	less than 40%

**Crown Class:** is the differing crown habits as influenced by the external variables within the surrounding environment. They are:

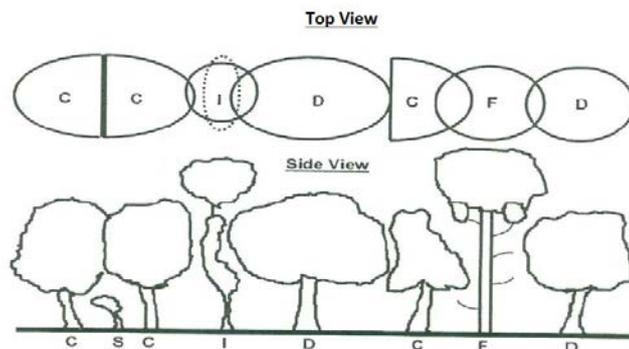
D – Dominant Crown is receiving uninterrupted light from above and sides, also known as emergent.

C – Codominant Crown is receiving light from above and one side of the crown.

I – Intermediate Crown is receiving light from above but not the sides of the crown.

S – Suppressed Crown has been shadowed by the surrounding elements and receives no light from above or sides.

F – Forest Characterised by an erect, straight stem with little stem taper and virtually no branching over the majority of the stem except for the top of the tree which has a small concentrated branch structure making up the crown.



**Figure 1 - Crown Class** (Matheny, N. & Clark, J. R. 1998).

**Safe Useful Life Expectancy (SULE) rating:** this tree rating system was developed by Barrell 2001. See detailed SULE rating explanatory notes in the Appendix section of this report.

**Sustainable retention Index value (SRIV):** a visual method of objectively rating the viability of urban trees for development sites and management, based on general tree and landscape assessment criteria. Developed by the Institute of Consulting Arborists Australian 2010.

**Tree Protection Zone (TPZ):** is defined as a specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown. It is the area required to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by construction and development activities.

**SRZ: The Structural Root Zone (SRZ)** is the area required for tree stability. 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). The SRZ may also be influenced by natural and built structures, such as rocks and footings.

## 7.0 STANDARDS

All tree related work outlined in this report is to be carried out in accordance with Wollongong City Council's Tree Management Policy or equivalent order.

All tree related work outlined in this report is to be conducted in accordance with:

- Australian Standard – AS4373-2007 '*Pruning of Amenity Trees*'.
- Australian Standard – AS4970-2009 '*Protection of Trees on Development Sites*'.
- SAFE WORK AUSTRALIA Code of Practice for Safe Access for Tree Trimming and Arboriculture. 2011.
- SAFE WORK AUSTRALIA Guide to managing risks tree trimming and removal work. 2016.
- NSW WORKCOVER Code of Practice for the Amenity Tree Industry. August 1998; Catalogue No. 034.

All tree works must be carried out by a qualified arborist (minimum AQF Certificate II) who has had a minimum of 5 years' work experience as an arborist.

For any works undertaken near electrical lines, the arborist must be suitably accredited and follow the guidelines specified in the **WorkCover NSW Code of Practice – Work Near Overhead Power Lines (2006)**.

All trees recommended for retention within this report must have as a minimum requirement: the removal of all dead, diseased, and crossing limbs; removal of branch stubs; and be pruned to the branch collar.

## **8.0 COMMENT ON TREE INSPECTIONS**

### **Site Observations**

The site at 33C Woodlawn Avenue, Mangerton is currently a vacant lot of residential land. Land slopes continually upward from the roadside end of the lot through to the eastern boundary in a more or less gradual slope. Nine mature trees are located on the residential lot. Two of these trees are located within the proposed (revised) residential building footprint. Two trees are located close by on the south-side neighbouring property.

All of the existing trees (excepting newly planted trees) are mature. Some of these trees are showing signs of aging and appear to be in physical decline. Eight new trees have recently been planted. All of the new trees appear to be healthy and growing well.

This site has previously been inspected by three consulting arborists. Root trenching and tree root inspection has recently occurred in five different locations on the lot. The existing mature trees appear to be favouring the setting of roots in a downward manner. Very little horizontal root growth was observed within the open trenches. This is consistent with the known local behavior of eucalypt trees and their allies that are growing in the local podzolic soils.

### **Individual Tree Observations**

#### **Tree 2 – *Melaleuca styphelloides* (Prickly-Leaf Paperbark)**

Height: 12m. Width: 10m. DBH: 64cm.

This mature tree is located on the south-side neighbouring property very close to the property boundary. This tree has fair health, vigour, shape and structure. The tree has a history of previous branch failure. There are branch stubs and some dead wood within the tree crown that should be removed.

The tree has been given a SULE rating of 2a and SRIV rating of MGVF-9. These moderate retention values suggest that this tree has amenity value in the existing landscape and is worthy of retention.

If the development proceeds as currently planned, the new residential home will encroach into the nominated TPZ by 10.4%. The Australian Standard AS 4970-2009 'Protection of Trees on Development Sites' states that encroachments up to 10% are considered to be insignificant.

Given the tree's position on neighbouring land and the slope of the existing ground, it is unlikely that this tree will be affected by the revised development proposal.

As a safeguard for tree protection, site excavations and construction activities conducted within the nominated tree protection zone (TPZ) should be supervised by the project arborist. This would ensure the best tree protection outcome for this tree.

### **Tree 3 – *Araucaria cunninghamiana* (Hoop Pine)**

Height: 10m. Width: 8m. DBH: 54cm.

This mature tree displays poor health, vigour shape and structure. The top 1/3 of the tree has been snapped off by strong winds. This has resulted in a very poorly shaped tree. The damage to this tree is irreparable. Therefore, this tree is suggested for removal.

This tree is located within the proposed building footprint. If the development proceeds as currently planned, it will be necessary to remove this tree.

The tree has been given a SULE rating of 2d and SRIV rating of MLVF-4. These low retention values support the suggested removal of this tree.

### **Tree 4 – *Eucalyptus saligna x botryoides* (Wollongong Woollybutt)**

Height: 12m. Width: 8m. DBH: 41cm.

This mature tree is aging and showing signs of decline. The tree has poor health, vigour, shape and structure. It has sparse foliage (20% crown ratio) with abundant epicormic regrowth visible. The south side of the tree has died. Branch development and growth is restricted to the north side of the tree.

This tree is located within the proposed building footprint. If the development proceeds as currently planned, it will be necessary to remove this tree.

The tree has been given a SULE rating of 4a and SRIV rating of MGVP-6. These low retention values support the suggested removal of this tree.

### **Trees 5 – *Corymbia maculata* (Spotted Gum)**

Height: 11m. Width: 4m. DBH: 31cm.

This mature tree displays good health and vigour, but the tree's shape and structure are poor. The top of the tree has previously been damaged. This has resulted in an abnormally shaped trunk (i.e. a single, self-correcting trunk at heights of 7m and 9m above ground level). This tree displays poor form that cannot be corrected by remedial pruning. This tree should be considered for removal.

If the development proceeds as currently planned, the new residential home will encroach into the nominated TPZ by 9.0%. This building encroachment is considered to be insignificant as it is less than 10%.

The outdoor paved area and external pathways will encroach into the TPZ by a further 14%. These areas are proposed to be constructed using permeable segmented paving. This choice of building material will allow water and associated nutrients to reach the tree's roots with minimal restriction. This greatly reduces the impact of the proposed development on this tree.

It is my opinion that proposed works within the nominated TPZ can be satisfactorily managed by the project arborist. Site excavations and construction activities conducted within the nominated TPZ should be supervised by the project arborist. This would ensure the best tree protection outcome for this tree.

This tree has been given a SULE rating of 4c and SRIV rating of MGVP-6. These low tree retention ratings reflect the current condition of this tree.

### **Tree 5a – *Melaleuca styphelloides* (Prickly-Leaf Paperbark)**

Height: 7m. Width: 7m. DBH: 47cm.

This mature tree is growing on the south-side neighbouring property. The tree has a bifurcated trunk (triple trunked tree) at height of 1.4m above ground level. The tree crown is asymmetrical with a south bias. This tree should be retained. The tree has a minor amount of dead wood and some branch stubs. Remedial pruning is recommended for this tree.

The proposed development will encroach into the nominated TPZ by approximately 22.0%. AS 4970-2009 '*Protection of Trees on Development Sites*' considers this to be a significant encroachment.

Root mapping was conducted for this tree. Plan 3 on Page 5 of this report shows the location of root inspection trenches. No tree roots belonging to this tree were found within Trench # 1. Therefore, this tree can be safely retained in the landscape if the development proceeds as currently planned.

This tree has been given a SULE rating of 1b and SRIV rating of MGVF-9. These high retention values reflect the size and maturity of this tree.

**Tree 6 – *Corymbia maculata* (Spotted Gum)**

Height: 12m. Width: 5m. DBH: 33cm.

This mature tree has good health and vigour. It has fair shape and structure. The tree has a single, clear trunk to height of 5m above ground level. This tree lacks scaffold branches. Previous branch failure noted. Minor amount of dead wood is present in the tree crown. The lower trunk has some growth splits.

The proposed development will encroach into the nominated TPZ by approximately 5.6%. AS 4970-2009 '*Protection of Trees on Development Sites*' considers this to be an insignificant encroachment.

The current development proposal will not affect the health of this tree.

This tree has been given a SULE rating of 1a and SRIV rating of MGVF-9. These high ratings reflect the current health and condition of this tree.

**Tree 7 – *Angophora costata* (Smooth Bark Apple – Sydney Red Gum)**

Height: 18m. Width: 4m. DBH: 48cm.

This mature tree displays good health and vigour, but only has fair shape and structure. The tree trunk is bifurcated (split to twin-trunk) at a height of 5m above existing ground level. The tree has a small impact wound on the south-side tree base. There is a moderate amount of dead wood within the crown. Shallow growth splits are visible on the north side of trunk. Tree appeared to be stable at the time of inspection.

The proposed development will encroach into the nominated TPZ by approximately 16.0%. AS 4970-2009 '*Protection of Trees on Development Sites*' considers this to be a significant encroachment.

Root mapping was conducted for this tree. Plan 3 on Page 5 of this report shows the location of root inspection trenches. No tree roots belonging to this tree were found within Trench # 2. Therefore, this tree can be safely retained in the landscape if the development proceeds as currently planned.

This tree has been given a SULE rating of 2a and SRIV rating of MGVF-9. These moderate tree retention ratings support the proposed retention of this tree.

### **Tree 8 – *Corymbia maculata* (Spotted Gum)**

Height: 25-30m. Width: 10-15m. DBH: 69cm.

This mature tree has good health and vigour with fair shape and structure. There is an old wound at base of tree that extends up to a height of 1.5m on the east side of trunk. Tree appeared to be stable at the time of inspection.

The proposed development will encroach into the nominated TPZ by approximately 22.5%. AS 4970-2009 'Protection of Trees on Development Sites' considers this to be a significant encroachment.

Root mapping was conducted for this tree. Plan 3 on Page 5 of this report shows the location of root inspection trenches. No tree roots belonging to this tree were found within Trench # 2 or Trench # 4. However, three tree roots were found within Trench # 3. Only one of these tree roots is classified as a thickened woody root i.e. 40mm dia. minimum. In my opinion, the loss of these three tree roots will not affect the health of this tree. Therefore, this tree can be safely retained in the landscape if the development proceeds as planned.

This tree has been given a SULE rating of 2a and SRIV rating of MGVF-9. These retention values reflect the current health and condition of this tree.

### **Tree 9 – *Eucalyptus saligna x botryoides* (Wollongong Woollybutt)**

Height: 92m. Width: 8m. DBH: cm.

This mature tree is aging and showing signs of decline. The tree has fair health and vigour with poor shape and structure. There is a minor amount of dead wood within the tree crown. The eastern branch is visibly dying. There is a dead branch at a height of 3m above existing ground level. Epicormic growth visible on the upper branches. Previous branch failures and branch stubs are noted.

The proposed development will encroach into the nominated TPZ by approximately 13.2%. AS 4970-2009 'Protection of Trees on Development Sites' considers this to be a significant encroachment.

Root mapping was conducted for this tree. Plan 3 on Page 5 of this report shows the location of root inspection trenches. No tree roots belonging to this tree were found within Trench # 5. One tree root of 75mm dia. was located within Trench # 5. This tree root belonged to a previously removed *Pinus radiata* tree (exempt species).

This tree can be safely retained in the landscape if the development proceeds as planned.

The tree has been given a SULE rating of 4a and SRIV rating of MLVP-2. These low retention values reflect the current condition and health of this tree.

### **Tree 10 – Eucalyptus saligna x botryoides (Wollongong Woollybutt)**

Height: 24m. Width: 10m. DBH: 57cm.

This mature tree is aging and starting to show signs of decline. The tree appears to be in fair to good general health. It has fair to poor shape and structure. The tree has a single trunk that extends up to a fork at a height of approximately 7m above ground level. The northern branch at a height of 8m above ground level has an injury. The south branch appears to be stable. There is lots of epicormic growth visible on the tree branches.

The proposed development will encroach into the nominated TPZ by approximately 3.7%. AS 4970-2009 '*Protection of Trees on Development Sites*' considers this to be an insignificant encroachment.

The proposed development should not have any adverse effect on this existing tree. This tree can be retained in the landscape.

The tree has been given a SULE rating of 2a and SRIV rating of MGVF-9. These moderate retention values reflect the current condition and health of this tree.

### **Tree 11 – Corymbia maculata (Spotted Gum)**

Height: 20m. Width: 10m. DBH: 49cm.

This mature tree displays good health and vigour but has fair to poor shape and structure. The tree has a single trunk that extends up to fork at a height of approximately 10m above ground level. Minor amount of dead wood and branch stubs are visible within the tree crown. Epicormic growth is visible on most branches.

This tree will not be affected by the development proposal. This tree can be retained in the landscape.

The tree has been given a SULE rating of 2a and SRIV rating of MGVF-9. These moderate retention values reflect the current condition and health of this tree.

### **The development proposal**

It is proposed to construct an environmentally friendly residential dwelling with swimming pool and entertainment area on this site. The proposed dwelling if approved, will achieve a 9.1-star rating (Nathers Star Energy Rating).

The property owner has expressed a desire to retain as many mature native trees on the site as possible. The positioning of the proposed dwelling has been sited so that the impact on existing trees will be minimal.

If the development proceeds as currently planned, then it will be necessary to remove Trees 3 & 4. Both of these trees are located within the proposed building footprint.

Trees 5a, 7, 8 & 9 are all located close to the proposed residential dwelling. The proposed dwelling will significantly encroach into the nominated tree protection zones (TPZ) of these trees. Ross Jackson AQF Level 8 arborist (Jacksons Nature Works) and Mark Spence AQF Level 5 arborist conducted root mapping excavations in the area that separates these trees from the proposed development.

The following table summarises the findings of Ross Jackson's root trenching that was conducted on site on 25 September 2018 and Mark Spence's root trenching that was conducted on 30 July 2019.

**Table 1 – Root Mapping of Selected Trees**

Tree Number	TPZ Encroachment	Root Mapping Findings
5a	22.0%	<p><b>Trench 1</b> – Depth 350 mm. Three tree roots located. These roots belong to a previously removed Camphor Laurel. No roots from the <i>Melaleuca styphelloides</i> (Tree 5a) were located.</p> <p>The stability and viability of this tree will be maintained when site excavations for the new dwelling are undertaken. Retention of this tree is assured.</p>
7	16.0%	<p><b>Trench 2</b> – Depth 350-700mm. No roots were located within this trench.</p> <p>The stability and viability of this tree will be maintained when site excavations for the new dwelling are undertaken. Retention of this tree is assured.</p>
8	22.5%	<p><b>Trench 3</b> – Depth 450mm. Three gum tree roots were located within this trench. Root diameters are 40mm, 25mm &amp; 60mm. Only one of these tree roots is considered to be a thickened woody root i.e. &gt; 40mm dia.</p> <p>It is my opinion that these tree roots can be removed without consequence to the existing</p>

		<p>tree. As a safeguard to ensure tree stability and vitality, the project arborist should supervise all excavation works within the nominated TPZ.</p> <p><b>Trench 4</b> – Depth 450mm. No roots were located within this trench.</p> <p>The stability and viability of this tree will be maintained when site excavations for the new dwelling are undertaken. Retention of this tree is assured.</p>
9	13.2%	<p><b>Trench 5</b> – Depth 350-450mm. One tree root of 75mm dia. was located. This tree root belonged to a previously removed <i>Pinus radiata</i> tree (exempt species).</p> <p>The stability and viability of this tree will be maintained when site excavations for the new dwelling are undertaken. Retention of this tree is assured.</p>

The existing mature trees appear to be favouring the setting of roots in a downward manner. Very little horizontal root growth was observed within the open trenches. This is consistent with the known local behavior of eucalypt trees and their allies that are growing in the local Wollongong podzolic soils.

### **Trees to be retained**

If the development proceeds as currently planned, then **Trees 2, 5a, 5, 6, 7, 8, 9, 10 & 11** are nominated for retention.

A project arborist should be engaged to supervise all excavation works within the nominated tree protection zones of these trees.

### **Trees to be removed**

Trees numbered **3 & 4** are suggested for removal.

Both of these trees are located within the proposed building footprint.

### **Compensatory planting**

Compensatory planting will not be required to offset the proposed tree loss.

The property owner has already planted eight new trees to compensate for the planned loss of four trees. Planted tree species include: *Brachychiton rupestris*, *Eucalyptus leucoxyton*, *Callicoma serratifolia*, *Elaeocarpus reticulatus*, *Brachychiton acerifolius*, *Toona ciliate*, *Banksia integrifolia* & *Cupaniopsis anacardioides*.

## 9.0 TREE ASSESSMENT DATA

Tree #	Botanic Name			Common Name			Age Class
2	Melaleuca styphelloides			Prickly-Leaf Paperbark			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
12	10	64 80 at base	D	SYM	P 70%	2a	MGVF-9
This tree is located on the south-side neighbouring property very close to the property boundary. This tree has fair health, vigour, shape and structure. The proposed development will encroach into the nominated TPZ by 10.4%.						TPZ	SRZ
						7.7	3.0
Tree #	Botanic Name			Common Name			Age Class
3	Araucaria cunninghamiana			Hoop Pine			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
10	8	54 64 at base	C	SYM	P 50 %	4c	MLVP-2
Poor health, vigour shape and structure. Top 1/3 of the tree has been snapped off by string winds resulting in a very poorly shaped tree. The damage to the tree is irreparable. This tree is suggested for removal. This tree is located within the proposed building footprint.						TPZ	SRZ
						5.0	2.6
Tree #	Botanic Name			Common Name			Age Class
4	Eucalyptus saligna x botryoides			Wollongong Woollybutt			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
12	8	41 50 at base	C	NORTH	S 20%	4a	MLVP-2
Mature tree showing signs of decline. Tree has poor health, vigour, shape and structure. Sparse foliage (20% crown ratio) with abundant epicormic growth. South side of the tree has died. Branch development and growth is restricted to the north side of the tree. Structural strength of this tree is suspect. This tree is located within the proposed building footprint. It is suggested for removal.						TPZ	SRZ
						4.3	2.3
Tree #	Botanic Name			Common Name			Age Class
5	Corymbia maculata			Spotted Gum			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
11	4	31 37 at base	C	WEST	P	4c	MGVP-6
Mature tree displaying good health and vigour. Shape and structure of the tree is poor. Top of the tree has previously been damaged resulting in an abnormally shaped trunk. Single, self-correcting trunk at height of 7m and 9m above ground level. This tree displays poor form that cannot be corrected by remedial pruning. The proposed development will encroach into the nominated TPZ by 23.0% (9.0% building footprint + 14% paved areas).						TPZ	SRZ
						3.7	2.2

Tree #	Botanic Name			Common Name			Age Class
5a	Melaleuca styphelloides			Prickly-Leaf Paperbark			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
7	7	47 62 at base	D	SOUTH	P	2a	
Tree growing on south-side neighbouring property. Bifurcated trunk (triple trunked tree) at height of 1.4m above ground level. Asymmetrical crown with south bias. This tree should be retained. The proposed development will encroach into the nominated TPZ by approximately 22.0%. This is considered to be a significant encroachment.						TPZ 5.6	SRZ 2.7
Tree #	Botanic Name			Common Name			Age Class
6	Corymbia maculata			Spotted Gum			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
12	5	33 38 at base	C	SYM	P	1a	MGVF-9
Tree has good health and vigour. Fair shape and structure. Single trunk with clear trunk to height of 5m above ground level. Tree lacks scaffold branches. Previous branch failure noted. Minor amount of dead wood. Lower trunk growth splits. This tree is located within the proposed building footprint. It is suggested for removal.						TPZ 4.0	SRZ 2.2
Tree #	Botanic Name			Common Name			Age Class
7	Angophora costata			Smoothed Bark Apple Sydney Red Gum			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
18	4	48 59 at base	C	SYM	P	2a	MGVF-9
Good health and vigour. Fair shape and structure. Bifurcated (twin) trunk at height of 5m above ground level. Small impact wound at south-side tree base. Moderate amount of dead wood. Shallow growth splits on north side of trunk. Tree appeared to be stable at the time of inspection. The proposed development will encroach into the nominated TPZ by approximately 5.7%.						TPZ 5.8	SRZ 2.7
Tree #	Botanic Name			Common Name			Age Class
8	Corymbia maculata			Spotted Gum			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
26	5	70 83 at base	D	SYM	P	2a	MGVF-9
Good health and vigour. Fair shape and structure. Old wound at base of tree up to a height of 1.5m on east side of trunk. Tree appeared to be stable at the time of inspection. The proposed development will encroach into the nominated TPZ by approximately 22.5%. This is considered to be a significant encroachment.						TPZ 8.4	SRZ 3.1

Tree #	Botanic Name			Common Name			Age Class
9	Eucalyptus saligna x botryoides			Wollongong Woollybutt			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
19	8	56 65 at base	D	SYM	S	4a	MLVP-2
This aging tree is in decline. Fair health and vigour. Poor shape and structure. Minor amount of dead wood in crown. Eastern branch is dying. Dead branch at 3m above ground level. Epicormic growth visible on upper branches. Previous branch failures. Branch stubs. The proposed development will encroach into the nominated TPZ by approximately 13.2%. This is considered to be a significant encroachment. This tree should be considered for removal.						TPZ	SRZ
						6.7	2.8
Tree #	Botanic Name			Common Name			Age Class
10	Eucalyptus saligna x botryoides			Wollongong Woollybutt			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
24	10	57 71 at base	C	SYM	P	2a	MGVF-9
Good health and vigour. Fair to poor shape and structure. Single trunk to fork at a height of approximately 7m above ground level. Northern branch at 8m has an injury. The south branch is stable. Lots of epicormic growth visible on branches. The proposed development will encroach into the nominated TPZ by approximately 3.7%. This is considered to be an insignificant encroachment.						TPZ	SRZ
						6.8	2.8
Tree #	Botanic Name			Common Name			Age Class
11	Corymbia maculata			Spotted Gum			M
Height (m)	Spread (m)	DBH (cm)	Crown Class	Crown Aspect	Crown Ratio	SULE Rating	SRIV Rating
20	10	49 59 at base	D	SOUTH	P	2a	MGVF-9
Good health and vigour. Fair to poor shape and structure. Single trunk to fork at a height of approximately 10m above ground level. Minor amount of dead wood. Branch stubs. Epicormic growth visible on branches. This tree will not be affected by the development proposal.						TPZ	SRZ

## 10.0 PHOTOGRAPHS

Photo 1 – Tree 1 – *Melaleuca styphelloides* (Prickly-Leaf Paperbark)



Note: This tree is located on the south-side neighbouring property.

**Photo 2 – Trees 3, 4 & 5**



**Note:** Trees 3, 4 & 5 are located within the proposed building footprint. All of these trees have significant structural defects. The yellow green arrow indicates the snapped top of Tree 3. The light green arrow shows the deformed trunk growth of Tree 4. The orange green arrow shows the deformed trunk growth of Tree 5.

**Photo 3 – Trees 3 & 4**



**Note:** Closer view of Tree 3 & 4 structural defects. The yellow green arrow indicates the snapped top of Tree 3. The light green arrow shows the deformed trunk growth of Tree 4. Both of these trees are suggested for removal.

**Photo 4 – Tree 5 – *Corymbia maculata* (Spotted Gum)**



**Note:** Closer view of Tree 5 structural defects. The orange arrow shows the deformed trunk growth of Tree 5. This tree is suggested for removal.

**Photo 5 – Tree 5a – *Melaleuca styphelloides* (Prickly-Leaf Paperbark)**



Note: This tree is located on the south-side neighbouring property.

**Photo 6 – Tree 6 – *Corymbia maculata* (Spotted Gum)**



Photo 7 – Trees 7 & 8



**Photo 8 – Tree 9 – *Eucalyptus saligna x botryoides***



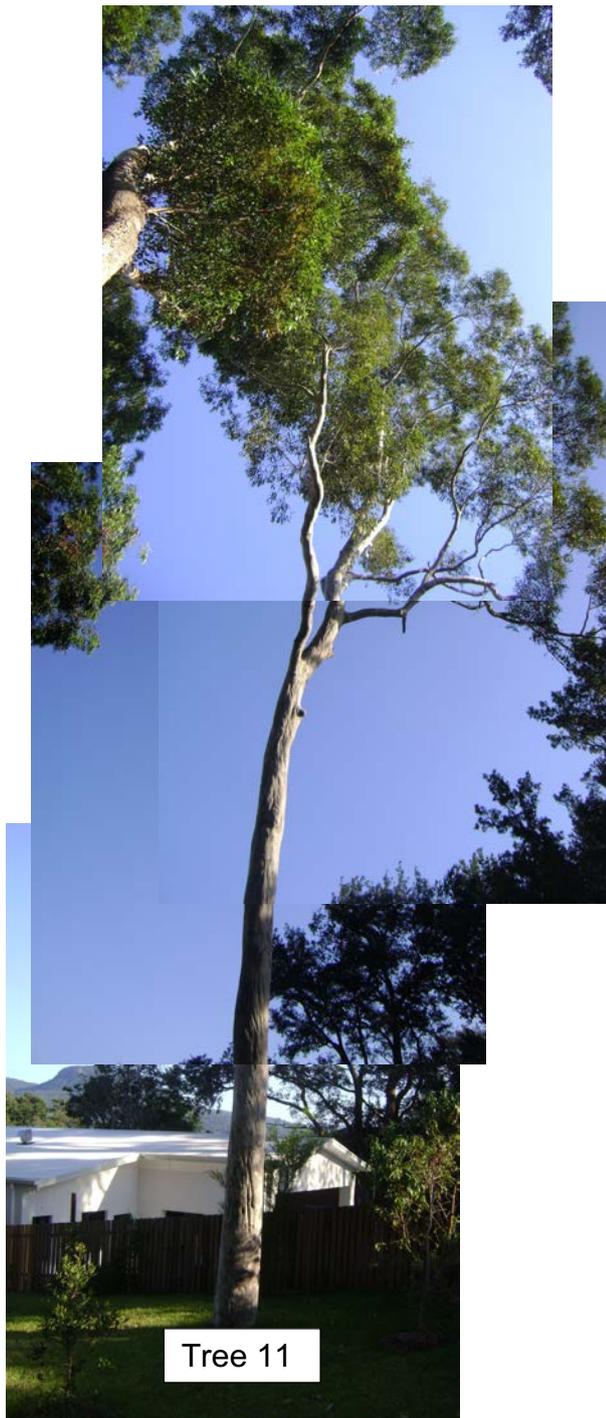
Note: The red arrow indicates the large dead / dying branch on the eastern side of the tree. This tree is in poor health and decline. Foliage is made up of epicormic growth. This tree should be considered for removal.

**Photo 9 – Tree 10 – *Eucalyptus saligna* x *botryoides***



Tree 10

**Photo 10 – Tree 11 – *Corymbia maculata* (Spotted Gum)**



Tree 11

**Photo 11 – Root Trench # 4 (near Tree 8)**



**Photo 12 – Root Trench # 5 (near Tree 9)**



## 11.0 APPENDIX

### 11.1 SAFE USEFUL LIFE EXPECTANCY – SULE (Barrell 2001)

	1. LONG	2. MEDIUM	3. SHORT	4. REMOVAL	5. MOVED OR REPLACED
	Trees that appeared to be retainable at the time of assessment for more than 40 years with and acceptable level of risk.	Trees that appeared to be retainable at the time of assessment for 15 - 40 years with and acceptable level of risk.	Trees that appeared to be retainable at the time of assessment for 15 - 40 years with and acceptable level of risk.	Trees that should be removed within the next 5 years.	Small, young or regularly pruned trees that can be reliably moved or replaced.
<b>A</b>	Structurally sound trees located in positions that can accommodate future growth.	Trees that may only live between 15 and 40 years.	Trees that may only live between 5 and 15 years.	Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.	Small trees less than 5m in height.
<b>B</b>	Trees that could be made suitable for retention in the long term by remedial tree care.	Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.	Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.	Dangerous trees because of instability or recent loss of adjacent trees.	Young trees less than 5 years old but over 5m in height.
<b>C</b>	Trees of special significance for historical, commercial or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.	Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.	Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.	Dangerous trees because of structural defects including cavities, decay, included bark, wounds, poor form.	Formal hedges and trees intended for regular pruning to artificially control growth.
<b>D</b>		Trees that could be made suitable for retention in the medium term by remedial tree care.	Trees that require substantial remedial care and are only suitable for retention in the short term.	Dangerous trees that are clearly not safe to retain.	
<b>E</b>				Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.	
<b>F</b>				Trees that are damaging or may cause damage to existing structures within 5 years.	
<b>G</b>				Trees that will become dangerous after the removal of other trees for the reasons given in a) to f).	
<b>H</b>				Trees in categories a) to g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.	

## 11.2 SUSTAINABLE RETENTION INDEX VALUE (SRIV) (IACA. 2010)



Sustainable Retention Index Value (SRIV)© 2010

Version 4

### Matrix - Sustainable Retention Index Value (SRIV)©

#### Use of this document and referencing

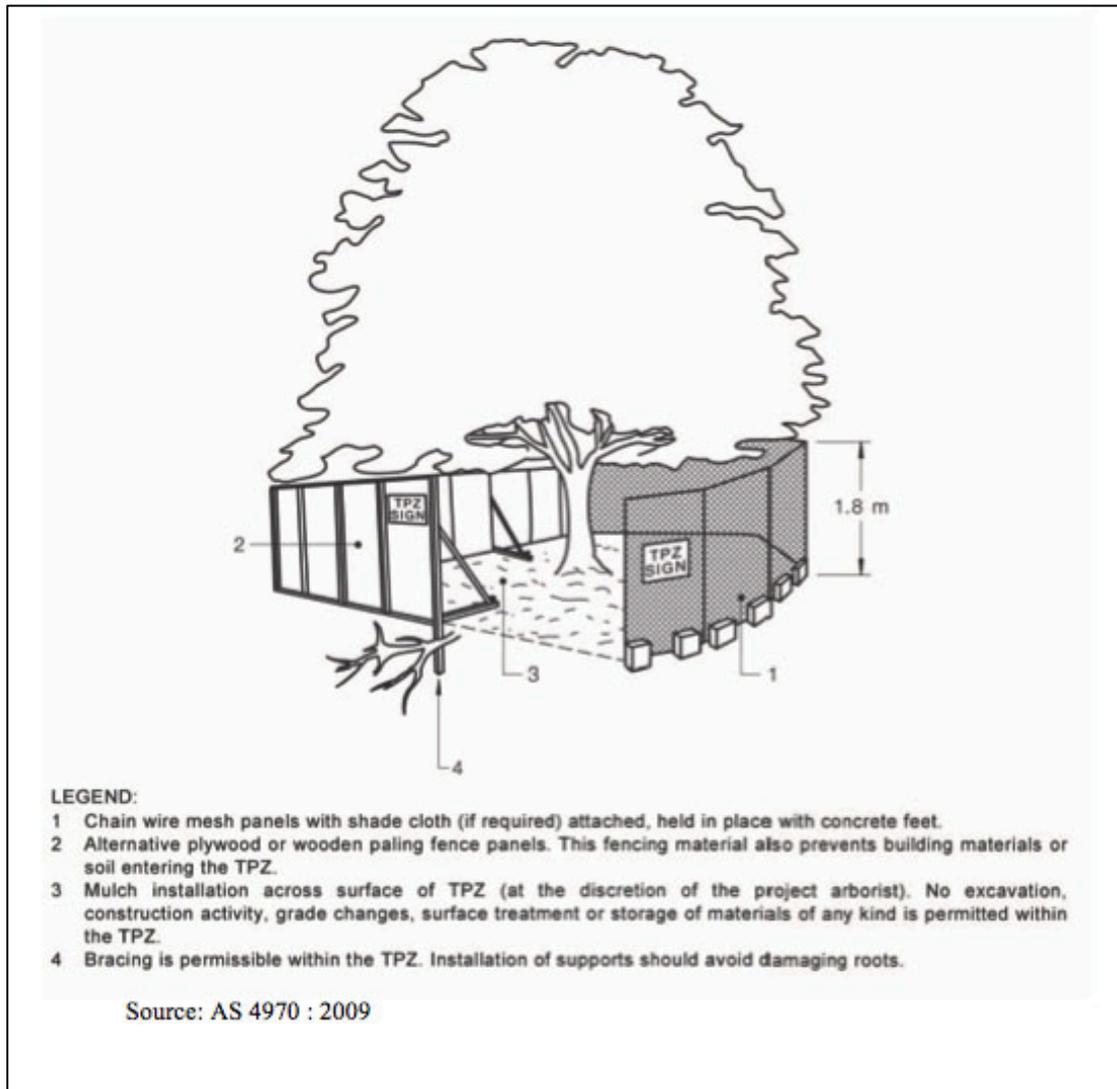
The Sustainable Retention Index Value (SRIV)© is free to use, but only in its entirety and must be cited as follows:

IACA, 2010, *Sustainable Retention Index Value (SRIV)*, Version 4, A visual method of objectively rating the viability of urban trees for development sites and management, based on general tree and landscape assessment criteria, Institute of Australian Consulting Arboriculturists, Australia, [www.iaca.org.au](http://www.iaca.org.au).

The matrix is to be used with the value classes defined in the Glossary for Age / Vigour / Condition.  
An index value is given to each category where ten (10) is the highest value.

Age Class	Vigour Class and Condition Class					
	Good Vigour & Good Condition (GVG)	Good Vigour & Fair Condition (GVF)	Good Vigour & Poor Condition (GVP)	Low Vigour & Good Condition (LVG)	Low Vigour & Fair Condition (LVF)	Low Vigour & Poor Condition (LVP)
	Able to be retained if sufficient space available above and below ground for future growth. No remedial work or improvement to growing environment required. May be subject to high vigour. Retention potential - Medium - Long Term.	Able to be retained if sufficient space available above and below ground for future growth. Remedial work may be required or improvement to growing environment may assist. Retention potential - Medium Term. Potential for longer with remediation or favourable environmental conditions.	Able to be retained if sufficient space available above and below ground for future growth. Remedial work unlikely to assist condition, improvement to growing environment may assist. Retention potential - Short Term. Potential for longer with remediation or favourable environmental conditions.	May be able to be retained if sufficient space available above and below ground for future growth. No remedial work required, but improvement to growing environment may assist vigour. Retention potential - Short Term. Potential for longer with remediation or favourable environmental conditions.	May be able to be retained if sufficient space available above and below ground for future growth. Remedial work or improvement to growing environment may assist condition and vigour. Retention potential - Short Term. Potential for longer with remediation or favourable environmental conditions.	Unlikely to be able to be retained if sufficient space available above and below ground for future growth. Remedial work or improvement to growing environment unlikely to assist condition or vigour. Retention potential - Short Term. Likely to be removed immediately or retained for Short Term. Potential for longer with remediation or favourable environmental conditions.
Young (Y)	<b>YGVG - 9</b> Index Value 9 Retention potential - Long Term. Likely to provide minimal contribution to local amenity if height <5 m. High potential for future growth and adaptability. Retain, move or replace.	<b>YGVF - 8</b> Index Value 8 Retention potential - Short - Medium Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height <5 m. Medium-high potential for future growth and adaptability. Retain, move or replace.	<b>YGVP - 5</b> Index Value 5 Retention potential - Short Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height <5 m. Low-medium potential for future growth and adaptability. Retain, move or replace.	<b>YLVG - 4</b> Index Value 4 Retention potential - Short Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height <5 m. Medium potential for future growth and adaptability. Retain, move or replace.	<b>YLVF - 3</b> Index Value 3 Retention potential - Short Term. Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height <5m. Low-medium potential for future growth and adaptability. Retain, move or replace.	<b>YLVP - 1</b> Index Value 1 Retention potential - Likely to be removed immediately or retained for Short Term. Likely to provide minimal contribution to local amenity if height <5 m. Low potential for future growth and adaptability.
Mature (M)	<b>MGVG - 10</b> Index Value 10 Retention potential - Medium - Long Term.	<b>MGVF - 9</b> Index Value 9 Retention potential - Medium Term. Potential for longer with improved growing conditions.	<b>MGVP - 6</b> Index Value 6 Retention potential - Short Term. Potential for longer with improved growing conditions.	<b>MLVG - 5</b> Index Value 5 Retention potential - Short Term. Potential for longer with improved growing conditions.	<b>MLVF - 4</b> Index Value 4 Retention potential - Short Term. Potential for longer with improved growing conditions.	<b>MLVP - 2</b> Index Value 2 Retention potential - Likely to be removed immediately or retained for Short Term.
Over-mature (O)	<b>OGVG - 6</b> Index Value 6 Retention potential - Medium - Long Term.	<b>OGVF - 5</b> Index Value 5 Retention potential - Medium Term.	<b>OGVP - 4</b> Index Value 4 Retention potential - Short Term.	<b>OLVG - 3</b> Index Value 3 Retention potential - Short Term. Potential for longer with improved growing conditions.	<b>OLVF - 2</b> Index Value 2 Retention potential - Short Term.	<b>OLVP - 0</b> Index Value 0 Retention potential - Likely to be removed immediately or retained for Short Term.

### 11.3 TREE PRESERVATION ZONE (TPZ) FENCING GUIDELINES

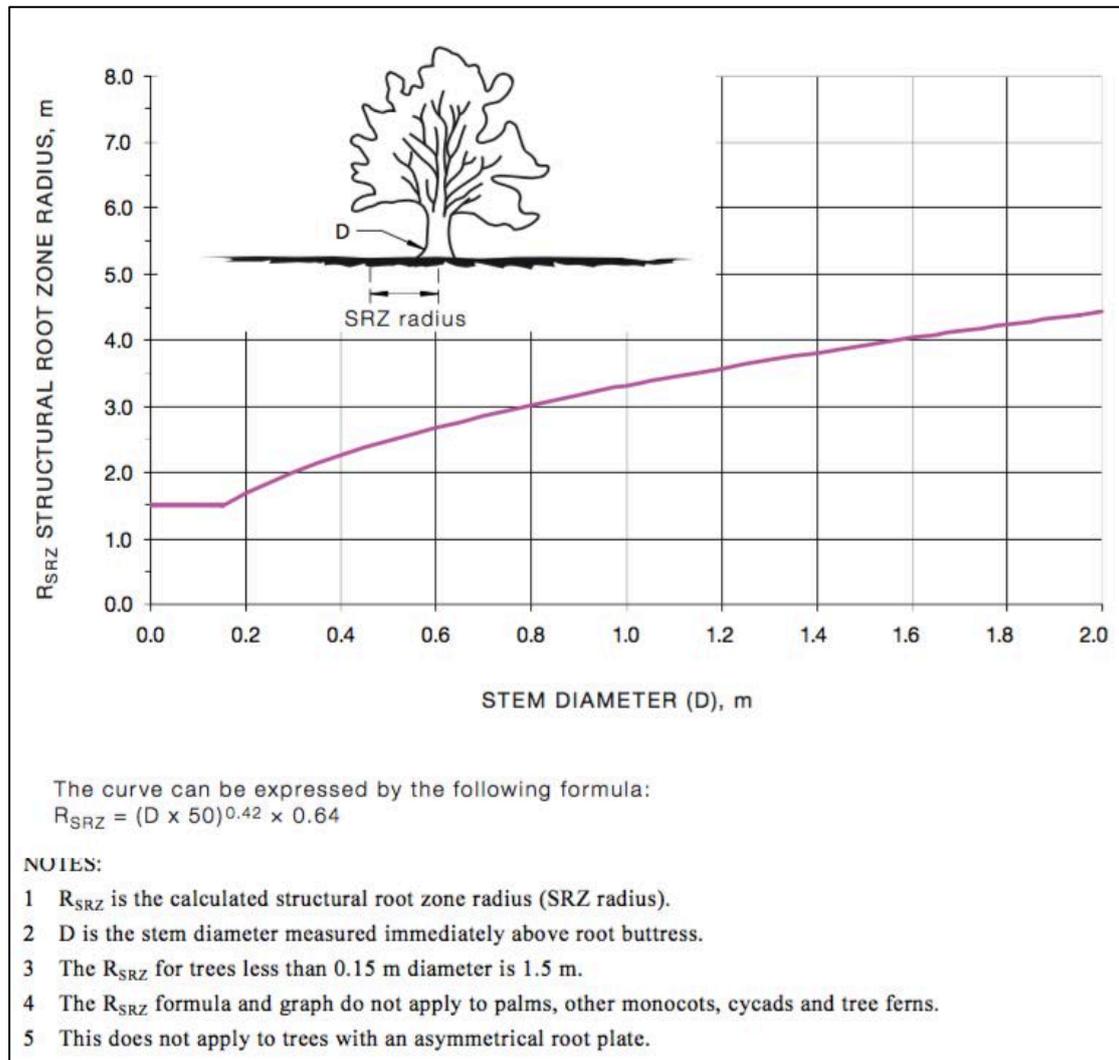


#### 11.4 TREE PRESERVATION ZONE (TPZ) SIGN GUIDELINES



TPZ Signs should be placed on TPZ fence so they are clearly visible from all areas of the work zone.

## 11.5 STRUCTURAL ROOT ZONE(SRZ) CALCULATION



Source: Australian Standard – AS4970-2009 ‘Protection of Trees on Development Sites’.

## 12.0 BIBLIOGRAPHY

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Australian Standard – AS4970-2009 '*Protection of Trees on Development Sites*'.

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Fairley. A. & Moore. P. 2010. Native Plants of the Sydney Region. Kangaroo Press. Sydney.

Fuller. L. 2011. Wollongong's Native Trees. 3<sup>rd</sup> Edition. Tana Press Co. Ltd. Thailand.

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Matheny, N. & Clark, J. R. 1998. Trees Development. International Society of Arboriculture.

SAFE WORK AUSTRALIA Code of Practice for Safe Aceso for Tree Trimming and Arboriculture. 2011.

SAFE WORK AUSTRALIA Guide to managing risks tree trimming and removal work. 2016.

NSW WORKCOVER Code of Practice for the Amenity Tree Industry. August 1998; Catalogue No. 034.

DO NOT SCALE



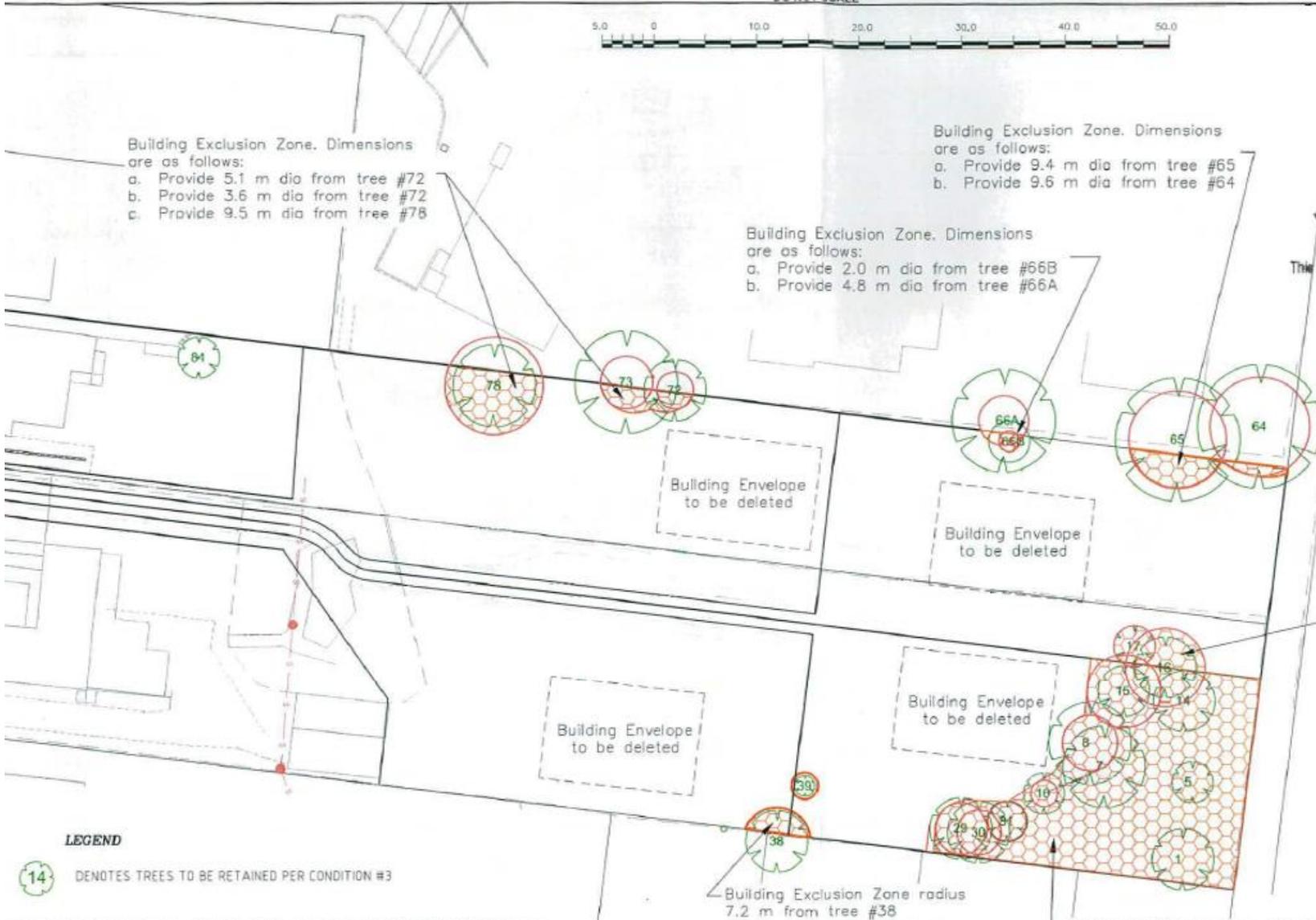
Building Exclusion Zone. Dimensions are as follows:  
 a. Provide 5.1 m dia from tree #72  
 b. Provide 3.6 m dia from tree #72  
 c. Provide 9.5 m dia from tree #78

Building Exclusion Zone. Dimensions are as follows:  
 a. Provide 9.4 m dia from tree #65  
 b. Provide 9.6 m dia from tree #64

Building Exclusion Zone. Dimensions are as follows:  
 a. Provide 2.0 m dia from tree #66B  
 b. Provide 4.8 m dia from tree #66A

WOLLONGONG CITY COUNCIL  
 DEVELOPMENT CONSENT

This is the plan/document referred to in Consent D.14/10  
 Dated 9/9/15



Building Exclusion Zone. Dimension are as follows:  
 a. Provide 7.7 m dia from tree #14  
 b. Provide 4.0 m dia from tree #15

Building Exclusion Zone radius 7.2 m from tree #38

Note:  
 Building Exclusion Zone radius 2.2 m from tree #38

Building Exclusion Zone. Dimensions are as follows:  
 a. Provide 5.0 m dia from tree #29  
 b. Provide 2.6 m dia from tree #10  
 c. Provide 5.4 m dia from tree #8  
 d. Provide 7.2 m dia from tree #15  
 e. Provide 4.3 m dia from tree #30  
 f. Provide 3.8 m dia from tree #31

LEGEND

- DENOTES TREES TO BE RETAINED PER CONDITION #3
- DENOTES 10mx15m BUILDING ENVELOPES TO BE DELETED FROM CONDITION #2
- DENOTES BUILDING EXCLUSION ZONE TO BE INSERTED INTO MODIFIED CONDITION #2
- TPZ DIAMETER

Amendment or reason for issue	Issue date	Drawn by	Authorised
	14 JUL 2015	WW	WW



K.F. Williams & Associates Pty Ltd  
 78 Auburn Street  
 Wollongong NSW 2509  
 A.C.N 098 564 417  
 Project Management, Surveying,  
 Civil, Structural, Water & Sewer

p (02) 4228 2044  
 f (02) 4225 2954  
 e mail@kfwilliams.com.au  
 www.kfwilliams.com.au

Surveyor	HPW	Date	14 JULY 2015
Date of Survey	Drawn	WW	
Height Datum	Designed	WW	
Origin	Checked	C.J.	
	Registered Surveyor		
Print. Datum	Approved	C.J.	
M.S.A.	Registered Surveyor		

Drawing Title	PROPOSED SUBDIVISION LOT 41 D.P.12252 & LOT 2 D.P.369917 31A-33 WOODLAWN AVENUE, MANGERTON MODIFICATION OF BUILDING ENVELOPES
Scale	1:100 @ A1 1:200 @ A0
Drawing Status	ISSUED FOR SECTION 96

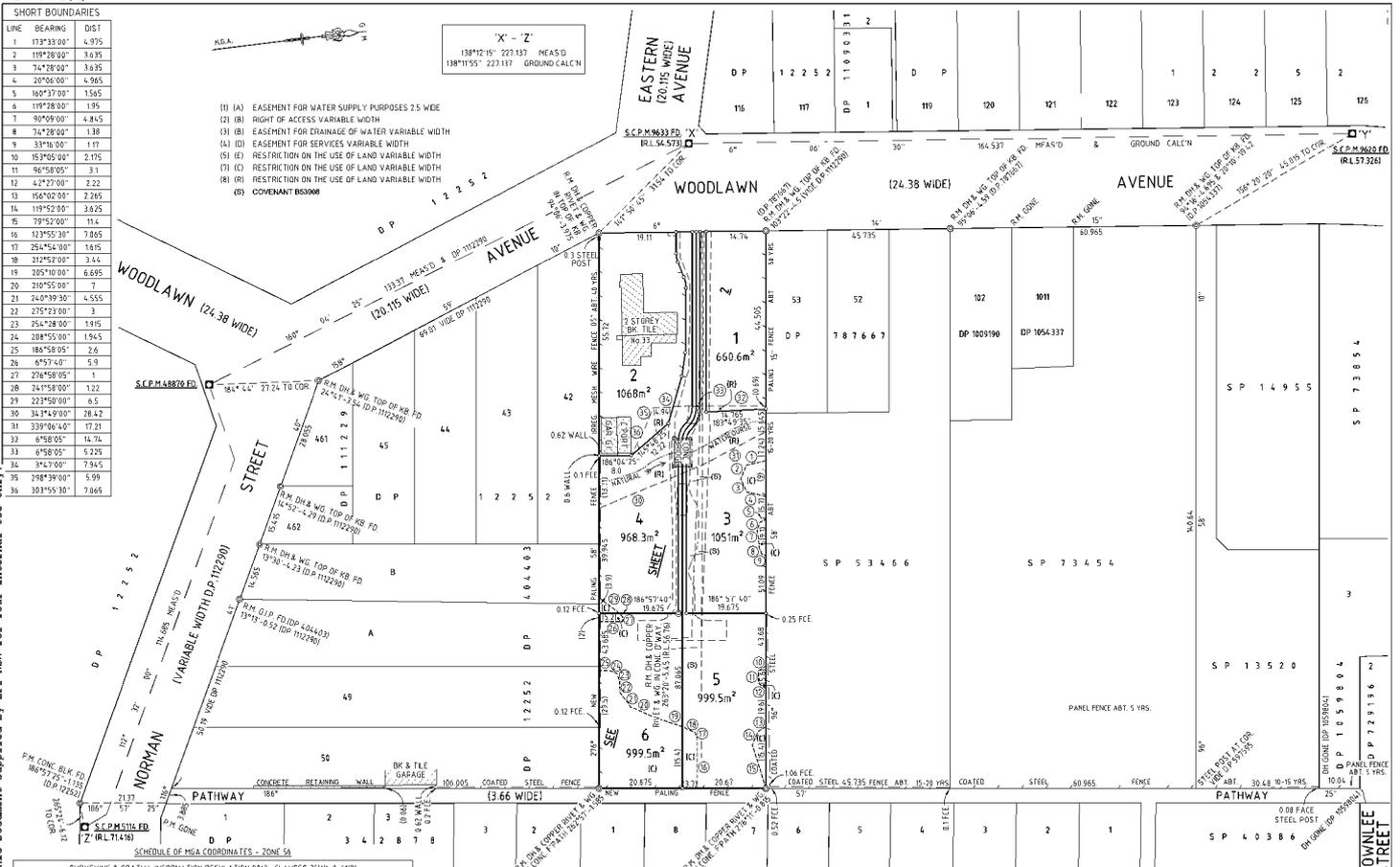
Project No.	KF11
Drawing No.	C1
Sheet	1 OF 2

SHORT BOUNDARIES

LINE	BEARING	DIST
1	112°33'00"	4.975
2	119°28'00"	3.635
3	74°28'00"	3.635
4	20°06'00"	4.965
5	160°37'00"	1.565
6	119°28'00"	1.95
7	90°09'00"	4.845
8	74°28'00"	1.38
9	33°16'00"	1.17
10	15°05'00"	2.175
11	96°58'05"	3.1
12	4°27'00"	2.22
13	150°05'00"	2.265
14	119°28'00"	2.825
15	79°52'00"	11.4
16	123°55'30"	7.065
17	254°54'30"	3.44
18	312°52'00"	3.44
19	285°10'00"	6.695
20	210°52'00"	7
21	240°39'30"	4.555
22	275°23'00"	3
23	254°28'00"	1.915
24	208°55'00"	1.945
25	180°58'05"	2.6
26	6°52'40"	5.9
27	274°58'05"	1.2
28	241°58'00"	1.22
29	222°50'00"	6.5
30	343°47'00"	28.42
31	339°06'40"	17.21
32	6°58'05"	16.74
33	6°58'05"	5.225
34	3°47'00"	7.945
35	298°39'00"	5.99
36	301°53'30"	7.865

- (1) (A) EASEMENT FOR WATER SUPPLY PURPOSES 2.5 WIDE
- (2) (B) RIGHT OF ACCESS VARIABLE WIDTH
- (3) (B) EASEMENT FOR DRAINAGE OF WATER VARIABLE WIDTH
- (4) (D) EASEMENT FOR SERVICES VARIABLE WIDTH
- (5) (E) RESTRICTION ON THE USE OF LAND VARIABLE WIDTH
- (7) (C) RESTRICTION ON THE USE OF LAND VARIABLE WIDTH
- (8) (B) RESTRICTION ON THE USE OF LAND VARIABLE WIDTH
- (9) (B) COVENANT B53508

'X' - 'Z'  
 138°12'15" 221.137 MEAS'D  
 138°11'55" 221.137 GROUND CALC'N



SURVEYING & SPATIAL INFORMATION REGULATION 2012, CLAUSES 35(1)(b) & 6(1)(c)

MARK	EASTING	NORTHING	CLASS	ORDER	METHOD	ORIGIN
PM 9633	304 544.754	698 952.474	C	3	SEIMS	
PM 9620	304 562.265	698 316.037	C	3	SEIMS	
PM 5114	304 636.160	698 983.932	B	2	SEIMS	
PM 48870	304 530.210	698 027.830	D	1	CAD TRAV	

MGA COORDINATES ADOPTED FROM SCMS COMBINED SCALE FACTOR ADOPTED 1.000099 27th January 2016

Surveyor: NEIL CRAIG JOHNSON  
 Date of Survey: 30th JANUARY 2016  
 Surveyor's Ref: KF111596\_016

PLAN OF SUBDIVISION OF LOT 41 DP12252 & LOT 2 DP369917

LGA: WOLLONGONG  
 Locality: MANGERTON  
 Subdivision No: SC-2016/23  
 Lengths are in metres. Reduction Ratio = 1:600

Registered:  
 20.05.2016

DP1208517

30 10 20 30 40 50 60 70 80 90 100 110 120 130 140

Box-e-Dex / DocID: 1208517 P / Rev: 23-May-2016 / Sta: SC OK / Pnt: 24-May-2016 00:30 / Fgs: ALL / Seq: 1 of 6  
 WARNING: Electronic Document Supplied by LFP NSW for Your Internal Use Only.

## Attachment 5: Wollongong Development Control Plan 2009 compliance table

### CHAPTER A2 – ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Development controls to improve the sustainability of development throughout Wollongong are integrated into the relevant chapters of this DCP.

With regard to some of the design aspects of the proposal, the principles of Ecologically Sustainable Development are incorporated as follows:

- The BASIX energy target has been met, however the water target requires further clarification as the plans identify the pool volume being greater than the maximum volume stated on the BASIX Certificate.
- With regard to sustainability, the design does not seek to enhance existing protected trees as part of the development and may compromise their ongoing health.
- The main living areas do not take advantage on the northern orientation.
- It is noted that some ecologically sustainable aspects of the original dwelling design have not been included in the amended design (eg green roof, solar panels).
- The brick and concrete construction will provide reasonable thermal comfort.

### CHAPTER B1 – RESIDENTIAL DEVELOPMENT

#### 4.0 General Residential controls

<i>Controls/objectives</i>	<i>Comment</i>	<i>Compliance</i>
<u>4.1 Maximum Number of Storeys</u>		
<ul style="list-style-type: none"> <li>• R2 max height of 9m or two storey</li> <li>• Battle axe allotments - 1 storey</li> <li>• Ancillary structures – 1 storey</li> </ul>	R2 zoned land - complies.	Yes
<ul style="list-style-type: none"> <li>• In R2 Low Density Residential zones, where development occurs within the 8m rear setback the development is limited to single storey</li> </ul>	Proposed pool room is single storey with 7.985m rear setback - complies	Yes
<u>4.2 Front Setbacks</u>		
<ul style="list-style-type: none"> <li>• Infill 6m min but less dependent on street character</li> <li>• Garages and carports 5.5m min</li> <li>• Greenfield sites 4m min</li> </ul>	Battle-axe lot so no direct frontage to the street. Garage has 6.8m setback from western boundary and 2.6m setback from theatre room façade to western boundary.	NA
<u>4.3 Side and Rear Setbacks</u>		
<ul style="list-style-type: none"> <li>• Wall Setback: 0.9m min</li> </ul>	Walls have a 1025mm minimum side setback to	Yes

<ul style="list-style-type: none"> <li>Eave Setback: 0.45m</li> <li>Rear Setback 0.9m</li> <li>Walls exceeding 7m require minimum 3m side setback</li> <li>Detached single storey outbuildings require min. 500mm side/rear setback</li> <li>Balconies and windows of habitable rooms (excl bedrooms) designed to minimise direct overlooking</li> </ul>	<p>southern boundary - complies</p> <p>Eaves/gutters have a minimum 475mm setback - complies</p> <p>No walls exceed 7m in height</p> <p>Detached pool room has 1025mm side setback to southern boundary - complies</p> <p>Habitable room windows facing western boundary lead to overlooking opportunities (&amp; potential for perceived privacy loss) – does not comply</p>	<p>Yes</p> <p>NA</p> <p>yes</p>
<p><u>4.4 Site coverage</u></p>		
<p>Max. 40% site coverage where the lot area is &gt;900m<sup>2</sup>.</p>	<p>Lot size is 999.5m<sup>2</sup></p> <p>277m<sup>2</sup> site coverage=28%</p>	<p>Yes</p>
<p><u>4.5 Landscaped Area</u></p>		
<ul style="list-style-type: none"> <li>Significant trees are to be maintained on site</li> </ul>	<p>2 trees within tree preservation zone are proposed for removal</p>	<p>No</p>
<ul style="list-style-type: none"> <li>Minimum Required 20% permeable area capable of growing trees, shrubs, groundcover and/or lawn.</li> </ul>	<p>Lot size is 999.5sqm</p> <p>372m<sup>2</sup> landscaped area proposed – complies</p>	<p>Yes</p>
<ul style="list-style-type: none"> <li>50% behind the building line to the primary road</li> </ul>	<p>Capable of complying</p>	
<ul style="list-style-type: none"> <li>Integrated with drainage design</li> </ul>		
<p><u>4.6 Private Open Space</u></p>		
<ul style="list-style-type: none"> <li>24m<sup>2</sup> of private open space must be directly accessible from the living areas; min width of 4m and no steeper than 1:50.</li> </ul>	<p>Principal dwelling – large POS area located at rear of dwelling, with principal area off living/dining areas achieving minimum width and area.</p>	<p>Yes</p>
<ul style="list-style-type: none"> <li>Not to be located on side boundaries or front yards without variation.</li> </ul>		
<p><u>4.7 Solar Access Requirements</u></p>		
<ul style="list-style-type: none"> <li>Windows to living rooms of adjoining dwellings must receive at least 3hrs continuous sunlight between 9.00am - 3.00pm on 21 June.</li> </ul>	<p>The adjoining southern lot is deep and currently heavily vegetated in the rear portion that will be most affected by the development. No overshadowing of the windows to the existing dwelling will result from the development and a minimum of 50% of the</p>	<p>Yes</p>
<ul style="list-style-type: none"> <li>At least 50% of the private open areas of adjoining residential properties must receive at least 3hrs continuous sunlight between 9.00am - 3.00pm on June 21.</li> </ul>		

- Shadow diagrams will be required by Council for 9am, 12pm, 3pm for the 21 June for two storey dwellings.
- POS will receive minimum 3 hours.

4.8 Building Character and Form

- Design, height and siting of a new dwelling-house or secondary dwelling must respond to its site context
  - New dwelling-houses within established residential areas should be sympathetic with the existing character of the immediate locality.
  - All residential buildings must be designed with building frontages and entries clearly addressing the street frontage.
  - Where garages are proposed on the front elevation they must be articulated from the front façade.
- No – encroaches into restricted building area and proposes tree removal
- Bulk and height of dwelling and minimal setbacks to western boundary will be visually imposing on adjoining western lot, particularly given subject site is upslope to western neighbour.
- No – refer discussion under Chapter A1

4.9 Fences

- Fences must be constructed to allow natural flow of stormwater or runoff.
- Battle-axe lot – no fencing proposed aside from pool fencing. Capable of complying with boundary fencing requirements
- NA

4.10 Car parking and Access

- 1 space per dwelling with a GFA of less than 125m<sup>2</sup>
  - Garage door facing roads–not greater than 50% of the width of the dwelling.
  - Garages must be setback min of 5.5 from front boundary.
  - Driveways shall be separated from side boundaries by a minimum of 1m.
  - Driveways shall have a max cross-over width of 3m.
- 2 car spaces provided within (oversized) double garage - complies
- <50% garage door width – complies
- Garage is setback 6.77m from western boundary – complies with 5.5m requirement
- NA – existing driveway access constructed as part of approved subdivision.
- Yes
- Yes
- Yes
- NA

4.11 Storage Facilities

- 3 bedroom- 10m<sup>3</sup> storage volume to 5m<sup>2</sup> storage area
- Ample storage available within footprint of proposed dwelling (2.5 car garage, workshop, wine room).
- Yes

#### 4.12 Site Facilities

- letterboxes in an accessible location
- air-con, satellite dishes and other ancillary structures to be located away from street frontage, not in a place where they are a skyline feature and adequately setback

Capable of being conditioned to comply if approved.

Yes, subject to conditions

#### 4.13 Fire Brigade Servicing

- All dwellings located within 60m of a fire hydrant

Provided as part of the subdivision. Hydrant within lot

Yes

#### 4.14 Services

- Encourage early consideration of servicing requirements

Site is serviced as required by subdivision approval DA-2014/1093. Capable of being conditioned to comply if approved.

Yes, subject to conditions

#### 4.15 Development near the coastline

NA

NA

#### 4.16 View sharing

- To protect and enhance view sharing, significant view corridors
- A range of view sharing measures to be considered for building design

Upper slope properties (fronting Elizabeth Street) are 3-4 metres above the site. Existing vegetation would limit existing views towards the escarpment. Given the topography of the site, no significant view impacts are likely. No significant impacts are anticipated.

Yes

#### 4.17. Retaining walls

- *To ensure well designed retaining walls that are structurally sound*

1. A retaining wall or embankment should be restricted to a maximum height above or depth below natural ground level of no more than:  
(a) 600mm at any distance up to 900mm setback from any side or rear boundary; or  
(b) 1 metre, if the toe of the retaining wall or embankment is setback greater than 900mm from any side or rear boundary.

The site is steeply sloping.  
Retaining walls are incorporated within the house foundations and proposed pool room. No retaining walls are shown within the 900mm setback from side or rear boundaries.

NA

2. Any retaining wall over a meter in height must be designed by an Engineer.

Standard conditions would be imposed where approval is recommended.

4.18 Swimming pools and spas

1. Ancillary development comprising a swimming pool and / or spa for private use must be located on land:

- a) That contains an existing dwelling or a dwelling is constructed on the land at the same time the swimming pool and / or spa is constructed.
- b) Behind the building line of a primary road setback.

Pool located in conjunction with single dwelling & behind building line (battle-axe lot)

Yes

5. A swimming pool or spa must not be located:

- a) Over an easement or restricted building zone.
- b) Within a zone of influence of a public sewer main.
- c) Within a zone of influence of a public drainage pipe.
- d) Within a riparian buffer zone:
- e) Without appropriate approval by the relevant authority or person benefiting from the easement of covenant.

A small portion of the spa is located within the building exclusion zone identified as Restriction 'C' – does not comply

No

6. The swimming pool water line or spa water line must have a setback of at least 900mm from any side or rear boundary.

Pool located 1.0m from northern side boundary - complies.

Yes

7. Any decking around a swimming pool or spa must not be more than 600mm above ground level (existing).

No decking proposed

NA

8. Coping around a swimming pool must not be more than:

- a) 1.4m above ground level (existing), and
- b) 300mm wide if the coping is more than 600mm above ground level (existing).

Capable of complying

Yes

9. Any in-ground swimming pool or spa should be constructed so that the top edge of the swimming pool /spa is as close as possible to the existing ground level. On sloping sites, this may require excavation on the high side of the site, in order to ensure minimal out of ground exposure of the swimming pool at the low side.

The site is sloping and the top edge of the pool is 1.5m above existing ground level – does not comply however limiting excavation is desirable due to nearby trees.

No

<p>10. Water from paved areas must not be discharged to any watercourse.</p>	<p>This could be conditioned if consent was granted.</p>
<p>11. Overflow paths must be provided to allow for surface flows of water in paving areas around the pool and shall not be directed or connected at any point onto the adjoining property.</p>	<p>This could be conditioned if consent was granted.</p>
<p>12. Discharge and/or overflow pipe(s) from the swimming pool and filtration unit are:</p> <p>a) To be discharged in accordance with an approval under the Local Government Act 1993 if the lot is not connected to a sewer main.</p> <p>b) In the case of land within Rural / non-urban or Environmental Protection zones having an area greater than 1000m<sup>2</sup>, to incorporate disposal pits located a minimum of 3m from any property boundary except where on-site disposal is not recommended in a geotechnical report prepared for the land or for the development.</p> <p>c) Not to discharge water to any watercourse.</p>	<p>This could be conditioned if consent was granted.</p>
<p>13. Pool excavations are not to conflict with the position of any stormwater drainage trench or line (including any inter-allotment drainage line), the position of which must be ascertained and shown on the site plan before pool excavation commences.</p>	<p>Pool is not located over any stormwater infrastructure.</p>
<p>14. A swimming pool must be surrounded by a child resistant barrier complying with the requirements of the <i>Swimming Pools Act 1992</i> (and Regulations) and the appropriate Australian Standard as referenced by the <i>Building Code of Australia</i>.</p>	<p>This could be conditioned if consent was granted.</p>
<p>15. The wall of a residential building may form part of the child restraint barrier so long as the wall contains no openable door, window or other opening through which access may at any time be gained to the swimming pool.</p>	<p>This could be conditioned if consent was granted.</p>
<p>16. A minimum of 50% of the perimeter of a pool must be accessible for rescue purposes.</p>	<p>The proposed layout of the pool does not appear to meet the 50% requirement given the</p>

narrow width on the western and southern surrounds of the pool. This could be conditioned if consent was granted.

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#### **CHAPTER E2: CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN**

The provisions of this chapter have been considered. The proposal provides good casual surveillance within the site and to common access areas.

#### **CHAPTER E3: CAR PARKING, ACCESS, SERVICING/LOADING FACILITIES AND TRAFFIC MANAGEMENT**

The provisions of this chapter have been considered. Vehicle access is in accordance with the approved subdivision by way of an internal access driveway. Car parking for the dwelling is in the form of an oversized double garage, which satisfies the requirement for two (2) car spaces to be provided.

#### **CHAPTER E6: LANDSCAPING**

The provisions of this chapter have been considered. Although no landscape plan is required to be provided for single dwellings, the proposed design has been considered by Council's Landscape Division with regard to the arborist report. Council's Landscape Division has provided an unsatisfactory referral as discussed in the body of the report.

#### **CHAPTER E7: WASTE MANAGEMENT**

A Site Waste Minimisation and Management Plan has been provided however it is noted that the storage of waste materials is proposed within the building exclusion zone. Given the site constraints, storage and handling of waste materials during construction works would require advice from consulting arborist and specific conditions regarding tree protection during works to ensure impacts to the trees are minimized.

#### **CHAPTER E14 STORMWATER MANAGEMENT**

The provisions of this chapter have been considered. Any development is required to provide on-site detention. Council's Development Engineer has provided a satisfactory referral and raised no objection to the development.

#### **CHAPTER E22 SOIL EROSION AND SEDIMENT CONTROL**

Conditions of consent would be imposed to ensure appropriate sediment and erosion control measures to be in place during works in the event that consent was granted.

## Attachment 6: Reasons for Refusal

- 1 Pursuant to the provisions of Section 79C (1)(b) of the Environmental Planning and Assessment Act 1979, the proposed development fails to demonstrate that the design has responded to the known constraint identified as Restriction 'C' on the subject site (Lot 6, DP 1208517) relating to a building exclusion zone imposed to retain and protect existing significant trees on the site.
- 2 Pursuant to the provisions of Section 79C (1)(b) of the Environmental Planning and Assessment Act 1979, it is considered that the proposed development's footprint is not responsive to the site constraints and would adversely impact upon the amenity of the locality.
- 3 Pursuant to the provisions of Section 79C (1)(c) of the Environmental Planning and Assessment Act 1979, it is considered that the proposed development is not suitable for the site as the building encroaches into the building exclusion zone identified as Restriction 'C' in DP 1208517.
- 4 Pursuant to the provisions of Section 4.15 (1)(a)(i) of the Environmental Planning and Assessment Act 1979, it is considered that the proposed development is inconsistent with Wollongong Local Environmental Plan 2009 with respect to Clause 7.6 Earthworks. The proposed development fails to demonstrate that the proposed earthworks will not have a detrimental impact on environmental functions and processes having regard to the amount of excavation and fill in the vicinity of the protected trees.
- 5 Pursuant to the provisions of Section 79C (1)(a)(iii) of the Environmental Planning and Assessment Act 1979, it is considered that the proposed development is inconsistent with the provisions of Wollongong City Council's Development Control Plan 2009 with respect to the following matters:
  - a Contrary to Part 4.1 Number of Storeys of Chapter B1 Residential Development as a two storey dwelling is proposed on a battle-axe allotment which does not achieve the objectives (a), (b), (c), (d), (e) and (f) in Clause 4.1.1.
  - b Contrary to objectives (a), (b), (c) and (e) of Part 4.3 Side and Rear Setbacks of Chapter B1 Residential Development. The development is located close to the western boundary and with habitable room windows that create overlooking opportunities and adverse amenity impacts on the adjoining property.
  - c Contrary to objectives (a) and (b) and provisions of Part 4.8 Building Character and Form of Chapter B1 Residential Development. Specifically, the development does not adequately respond to control 4.8.2.1 which requires that:

*The design, height and siting of a new development must respond to its site context taking into account both natural and built form features of that locality. The design of the development must have particular regard to the topography of the site to minimise the extent of cut and fill associated with dwelling construction.*
  - d Contrary to the provisions of Part 4.18 Swimming Pools and Spas of Chapter B1 Residential Development as the pool/spa is partially located within the building exclusion zone identified as Restriction 'C' within Lot 6 DP 1208517.
  - e Contrary to the key objectives (a), (b), (c), (d) and (f) of Chapter B1 Residential Development.
  - f Contrary to the desired future character of Mangerton as identified in Chapter D1 Character Statements.

- g Contrary to objectives (b), (c), (e) and (g) of Chapter E17 Preservation and Management of Trees and Vegetation.
- 6 Pursuant to the provisions of Section 79C (1)(a)(iv) of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000, the application fails to demonstrate that the development meets the BASIX commitments with regard to water targets. Specifically, the volume of the pool exceeds the maximum volume permitted in the BASIX Certificate.
- 7 Pursuant to the provisions of Section 79C (1)(e) of the Environmental Planning and Assessment Act 1979 it is considered that in the circumstances of the case, approval of the development would set an undesirable precedent for similar inappropriate development and is therefore not in the public interest.