

Wollongong Local Planning Panel Assessment Report | 13 March 2019

WLPP No.	Item No. 3
DA No.	DA-2018/1531
Proposal	Residential - demolition of existing structures, remediation works, tree removals and Subdivision boundary adjustment, construction of a dual occupancy on each new lot and subsequent Torrens title two (2) lots Subdivision of each dual occupancy
Property	178-180 Lawrence Hargrave Drive, THIRROUL Lot 2 DP 329046 and Lot A DP 392508
Applicant	Develop My Land
Responsible Team	Development Assessment and Certification – City Wide Planning Team (JS)

ASSESSMENT REPORT AND RECOMMENDATION

Executive Summary

Reason for consideration by Local Planning Panel - Determination

The proposal has been referred to the WLPP for **determination** pursuant to part 2 of Schedule 2 of the Local Planning Panels Direction, as the Development Application is considered contentious development, having received more than 10 unique submissions by way of objection.

Proposal

The proposal seeks consent for development in three phases comprising the demolition of the existing structures, remediation works, tree removals, a boundary adjustment, and then the construction of 2x dual occupancies (one on each resultant lot) and subsequent Torrens Title subdivision of each dual occupancy.

Permissibility

The proposed demolition and construction of dual occupancies is permissible in the R2 Low Density Residential zone. Subdivision, including boundary adjustments, is permissible on land to which the WLEP 2009 applies.

Consultation

The proposal was notified in accordance with Council's Notification Policy and received 12 submissions. The submissions received are discussed at section 2.8 of the assessment report

The proposal has been referred to Council's Stormwater, Traffic, Environment, Landscape and Community Safety Officers, with conditionally satisfactory referral advice provided in each instance.

Main Issues

The main issues arising from the development assessment process are:-

- Site width
- Landscaping and Deep Soil Zone compliance
- Privacy impacts

RECOMMENDATION

Development Application DA-2018/1531 be approved subject to the conditions contained in Attachment 4.

1 APPLICATION OVERVIEW

1.1 PLANNING CONTROLS

The following planning controls apply to the proposal:

State Environmental Planning Policies:

- SEPP No. 55 – Remediation of Land
- SEPP (Infrastructure) 2007
- SEPP (Vegetation in Non-Rural Areas) 2017
- SEPP (Coastal Protection) 2018
- SEPP (Building Sustainability Index: BASIX) 2004

Local Environmental Planning Policies:

- Wollongong Local Environmental Plan (WLEP) 2009

Development Control Plans:

- Wollongong Development Control Plan (WDCP) 2009

Other policies

- Wollongong City-Wide Development Contributions Plan 2018 (section 7.12 of EP&A Act 1979)

1.2 DETAILED DESCRIPTION OF PROPOSAL

The proposal comprises development across three phases, as per the below:

Phase 1	The demolition of the two dwelling houses and ancillary structures on both existing Lots 2 and A; Remediation works; and Boundary adjustment between existing Lots 2 and A to create a more uniform lot size
Phase 2	Construction of a dual occupancy on each resultant lot
Phase 3	Torrens Title subdivision of each dual occupancy

The development is proposed with a common driveway area and car parking to the rear of the site.

Each unit consists of two storeys with living and dining areas proposed on the upper floor level. Bedrooms are proposed across both the ground and first floor areas. Single garages are proposed for each dwelling, with second car parking spaces proposed as hardstand areas.

Most of the landscaping and deep soil zone areas are proposed to the rear of the site.

OSD is proposed within the driveway area, and a deep soil zone is proposed to the rear of the site.

1.3 BACKGROUND

The development history of the site is as follows:

Application No	Description	Date	Decision
<u>178 Lawrence Hargrave Drive</u>			
BA-1980/2428	Additions	29/8/1980	Approved
DA-2017/1316	Residential - demolition of existing dwelling houses	1/8/2018	Refused

	and construction of five (5) townhouses		
<u>180 Lawrence Hargrave Drive</u>			
DA-2015/763	Residential - retaining wall	11/9/2015	Approved
CC-2015/97	Residential - retaining wall	16/3/2016	Withdrawn
PC-2016/891	Residential - retaining wall	11/9/2015	Approved
DA-2017/1316	Residential - demolition of existing dwelling houses and construction of five (5) townhouses	1/8/2018	Refused

PL-2018/164 was held on 17 September 2018 to discuss the DA-2017/1316 refusal and amended proposal. It appears that the majority of matters identified within the prelodgement meeting notes have been addressed as part of the subject DA submission.

DA-2017/1316 sought consent for the demolition of the existing structures and the construction of a three storey multidwelling housing development at the site comprising 5 dwellings. The application was refused by the LPP on 1 August 2018 with reasons for refusal including ongoing contamination concerns, FSR exceedance, a range of WDCP 2009 non-compliances, being out of character with the surrounding locality and not being in the public interest. The subject development presents a lower scale development than that which was refused and has provided the required information to allow progression towards a positive recommendation for determination.

Customer service actions:

There are no outstanding customer service requests of relevance to the development, at the time of preparing this report.

1.4 SITE DESCRIPTION

The site is located at 178-180 Lawrence Hargrave Drive, Thirroul and the title references are Lot 2 DP 329046 and Lot A DP 392508. The site is comprised of two lots, each currently comprising a dwelling house and ancillary structures.

Both lots have direct frontage to Lawrence Hargrave Drive and slope from the north east to the south west. Together, the sites have a cross fall of approximately 6m from the north eastern corner of the site to the south western corner.

Combined, the sites are generally regular in shape with the exception of an angular frontage to Lawrence Hargrave Drive for Lot A. In total, the development site has an area of 1355m² by survey.

The sites are surrounded by a mix of residential properties including single dwelling houses, battle-axe allotments and other multidwelling housing developments. The local character of the area is characterised by a mix of residential properties, being an area undergoing change and renewal.

Property constraints

- Acid Sulfate Soils – Class 5
- Flood Risk Precinct
- Coastal zone
- Contaminated Land

There are no restrictions on the title of Lot 2.

Lot A is identified as being affected by covenants 551496 and 464365. These covenants restrict the use of the land for trade occupations and would have no effect on the proposed development.

The Lot A is benefited by an easement for drainage 1 wide which traverses the rear property boundary of 182 Lawrence Hargrave Drive, and discharges to the open drainage channel. The development has been designed such that the drainage from the area of Lot A (south western dual occupancy) is proposed to drain to the easement at the rear and drainage from the area of existing Lot 2 (north eastern dual occupancy) is to drain to Lawrence Hargrave Drive, with discharge restricted via an OSD system to ensure that they don't exceed the predeveloped state.



Figure 1: Aerial photograph

1.5 SUBMISSIONS

The application notified in accordance with WDCP 2009 Appendix 1: Public Notification and Advertising and received 12 submissions.

The issues identified are discussed below.

Table 1: Submissions

Concern	Comment
<p>1. Character of the area</p> <p>The development would be out of character with the surrounding area. The scale and size is not in keeping with the surrounding environment.</p> <p>The proposed finishes and box like design are also out of character with the area, and contribute to the dominating feel of the development.</p> <p>The proposal is an overdevelopment of the site and not suitable for the location.</p>	<p>The surrounding area is comprised of a mix of architectural styles and types of development in a locality undergoing change and renewal. The development typology, the proposed finishes and design are not considered to be inconsistent with the character of the area.</p> <p>See further discussion in response to Chapter D1 at section 2.3.1 below.</p>
<p>2. Drainage and Flooding</p> <p>The drainage from the site is proposed to be directed across the rear property boundary of the adjoining</p>	<p>The submitted information demonstrates that the proposed development is higher than the 1 in</p>

<p>property and into a culvert, which is known to already be affected by flood.</p> <p>The proposal indicates drainage is to Lawrence Hargrave Drive which is already affected by flash flooding.</p> <p>The additional runoff from the development will only add to the existing flooding issues in the area.</p> <p>There is no creek at the rear of the proposed development site.</p> <p>Flash flooding has occurred in this area and will only be exacerbated by the increased runoff from the development.</p> <p>Questions have been raised as to the legal right for drainage from existing Lot 2 to drain over Lot A and discharge into the adjoining property, where the easement over 182 Lawrence Hargrave Drive only benefits Lot A.</p>	<p>100 and PMF flood levels for the area. The submitted drainage plan is considered satisfactory, subject to conditions.</p> <p>The proposal has been designed such that only the drainage from the area of existing Lot A is to be directed to the easement. Drainage from the built form on the area of existing Lot 2 is to be directed to Lawrence Hargrave Drive.</p> <p>Councils Stormwater Officer has considered the proposal with regard to stormwater and flooding matters, and has provided a conditionally satisfactory response. These conditions are included as part of Attachment 4.</p>
<p>3. Traffic and Parking</p> <p>The car parking proposed on site is inadequate and maneuvering in and out of the spaces proposed would be difficult.</p> <p>No traffic impact assessment has been provided.</p> <p>Additional cars accessing Lawrence Hargrave Drive and turning in and out of the site will only exacerbate existing traffic issues, and could result in an increased risk of accidents.</p> <p>The road alignment at this point, limited visibility and the speed that people drive down the hill from the north would result in increased potential for accidents if additional traffic movements are permitted.</p>	<p>The proposed development provides for the required number of car parking spaces for residents and visitors, pursuant to Schedule 2 of Chapter E3 of WDCP 2009.</p> <p>The RMS have previously considered a proposal for the redevelopment of the site for a more intensive development and did not identify any objections.</p> <p>Councils Traffic Officer has also considered the proposal with regard to access to the site and traffic impacts, and have raised no objection.</p> <p>It is acknowledged that there are existing traffic congestion problems in the northern suburbs of Wollongong, and Thirroul generally. This is a broader issue which is considered a separate matter to the consideration of this development application, and actions to address these issues are being considered by Council and the RMS. Based on RTA guides, the subject development itself would be expected to contribute up to an additional 13 vehicle movements per day, (1.3 movements in the peak hours), which would not be considered to result in any significant impact on the operation of Lawrence Hargrave Drive or the movement of traffic through the northern suburbs generally.</p>

	<p>Diagrams have been provided which demonstrate compliant maneuvering in and out of the proposed car parking spaces allowing all vehicles to enter and leave the site in a forward direction.</p>
<p>4. Contamination</p> <p>The site is known to be contaminated, and this is confirmed by the reports exhibited. Concerns are raised with regard to what extent of works will be required to remediate the site. The development would result in the disturbance of the soils on site which has not been addressed.</p>	<p>See assessment against SEPP 55 below at section 2.1.1 below</p> <p>A Preliminary Site Investigation was provided as part of the application submission, and identified areas of concern at the site primarily relating to uncontrolled filling. A Detailed Site Investigation and RAP have been prepared which provide details of the required remediation works, disposal of soils and backfilling of the site. Conditions have been recommended by Councils Environment Officer in this regard which include the requirement for an SAS and SAR, as reflected at Attachment 4.</p>
<p>5. Overshadowing</p> <p>Due to the size of the development, it would result in significant overshadowing of surrounding properties. Solar Panels have been installed on the adjoining property which will be affected by the proposal.</p>	<p>The application submission included shadow diagrams that indicate that by 12pm, the development would not result in any overshadowing of the adjoining property. The adjoining property will retain in excess of 3 hours of solar access on June 21, as required by WDCP 2009 controls. The development would also not result in any overshadowing impacts on the living areas or POS areas of the adjoining property, due to the layout of the dwelling.</p>
<p>6. Privacy</p> <p>The development would result in privacy impacts to surrounding properties</p>	<p>Due to the change in levels, both across the subject site and between the proposed development and adjoining properties, the design of the development and the layout of surrounding properties, it is not expected that the proposal would result in any unreasonable impacts on privacy. The locations of windows and courtyards have been designed such that there is limited opportunity for direct sight lines into adjoining properties. Any potential for overlooking would be considered incidental and not direct. This is further</p>

	discussed at Attachment 3.
<p>7. Landscaping</p> <p>There is no room for tree planting along the north east boundary and no substantial garden or green area proposed as part of the development. Concerns are raised with regard to the proposed green wall long term maintenance.</p>	<p>The applicant has provided plans demonstrating compliant landscaping and deep soil zone areas. A range of conditions are recommended with regard to landscaping and the installation of the proposed green wall, as provided at Attachment 4 to this report.</p>
<p>8. Minimum Site Width WDCP 2009 Variation</p> <p>The requested variation to the minimum site width should not be granted as the proposal would not meet the objectives of the control.</p>	<p>Council's consideration of the technical variation is provided at Chapter A1 of WDCP 2009 at section 2.3.1 below. In this regard, the variation is considered capable of support.</p>
<p>9. Waste Storage</p> <p>The bins will likely be stored on the driveway area and impact on manovering and passing on the already narrow driveway.</p>	<p>Bin storage locations are shown on the landscape plan and are considered satisfactory. The driveway width, excluding the bin storage areas exceeds the minimum width requirements.</p>
<p>10. Retaining wall</p> <p>Concerns are raised with regard to the stability of the existing retaining wall located on the boundary of 180 and 182 Lawrence Hargrave Drive and the additional pressure that would result from the proposed development, and changes to the pressures on the wall resulting from the proposed remediation works.</p>	<p>Structural certification for the existing wall has been provided which requires the piercing of the development to levels below the zone of influence of the existing wall. The final Occupation Certificate for the wall has also been provided to Council. Conditions are recommended in this regard, as provided at Attachment 4, including the requirement for the submission of a dilapidation report considering adjoining properties to the PCA prior to works commencing.</p>
<p>11. Storage</p> <p>Insufficient storage is proposed within the development. The single garages will likely be used for storage, pushing more cars onto the street.</p>	<p>Each dwelling is provided with in excess of the minimum storage requirements, as further discussed at Chapter B1 of WDCP 2009 below.</p>
<p>12. DA lodgement</p> <p>It is unclear why only 1 DA has been lodged when the works are proposed on separate lots.</p>	<p>Development applications are able to be lodged for multiple properties.</p>

1.6 CONSULTATION

1.6.1 INTERNAL CONSULTATION

Council's Stormwater, Environment, Geotechnical, Subdivision and Traffic Officers have reviewed the application submission and provided satisfactory referral comments. Conditions of consent were recommended in each instance.

1.6.2 EXTERNAL CONSULTATION

None required.

2 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 – 4.15 EVALUATION

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

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

7 Contamination and remediation to be considered in determining development application

- (1) *A consent authority must not consent to the carrying out of any development on land unless:*
- (a) *it has considered whether the land is contaminated, and*
 - (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
 - (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

A desktop audit of previous land uses does not indicate any historic use that would contribute to the contamination of the site, with the property being used for residential purposes since the 1940's.

Submitters have however indicated that the development site has been filled in the past and advised that asbestos fill was uncovered throughout the construction of the retaining wall separating 180 and 182 Lawrence Hargrave Drive. There is also evidence of several sheds across the sites and the potential for asbestos contamination resulting from the demolition of these sheds would be required to be considered.

Earthworks are proposed as part of the development; however the proposal does not comprise a change of use.

Given the concerns raised, the applicant was advised to provide a Stage I and Stage II Environmental Site Assessment (Detailed Site Investigation [DSI]) which included sampling. These reports have been provided to Council and reviewed by Councils Environment Officer and indicate the presence of asbestos and lead associated with uncontrolled fill. The DSI recommends that the contaminated fill material must be removed prior to development occurring in accordance with a RAP prepared by a suitably qualified environmental consultant. This approach is considered appropriate and the recommendations of the DSI and Certified Review Letter have been conditioned for as reflected at Attachment 4.

Conditions are also recommended requiring the submission of interim advice prior to the commencement of the first Phase of work, and a Site Auditors Statement (SAS) and Site Auditors Report (SAR) be submitted to Council prior to the issue of the Subdivision Certificate associated with the first Phase of work.

As such, whilst the land is considered likely to be contaminated, Councils Environment Officer is satisfied that after remediation, the land will be suitable for the proposed use.

Conditions are also recommended requiring that any backfilling of the site be certified Virgin Excavated Natural Material (VENM) and these works undertaken under geotechnical guidance.

2.1.2 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

Clause 101 Development with frontage to classified road

This clause requires that Council give consideration to the operation and function of the road and traffic noise.

The subject development proposes a single driveway access to Lawrence Hargrave Drive. There is no opportunity to gain access via another road in this case. Additional traffic volumes on Lawrence Hargrave Drive as a result of the proposed development would be considered minimal.

Conditions are recommended as provided at Attachment 4 requiring a Road Occupancy Licence to be obtained from the RMS prior to the commencement of works.

Whilst it is acknowledged that there are existing traffic congestion problems in the northern suburbs of Wollongong, and Thirroul generally, this is a broader issue which is considered a separate matter to the consideration of this development application. Actions to address these issues are being considered by Council and the RMS. Based on RTA guides, the subject development itself would be expected to contribute up to an additional 13 vehicle movements per day, (1.3 movements in the peak hours), which would not be considered to result in any significant impact on the operation of Lawrence Hargrave Drive or the movement of traffic through the northern suburbs generally.

Clause 102 Impact of road noise or vibration on non-road development

This clause relates to residential development proposed on land adjacent to a road corridor with an annual average daily traffic volume of more than 20,000 vehicles. In this regard, the RMS website indicates the recording point for traffic volumes on Lawrence Hargrave Drive is at Clifton, with 2019 data indicating annual average daily traffic volumes of approximately 6,000 vehicles per day. Notwithstanding, a condition is recommended to addressing traffic noise to satisfy part 3 of this clause, requiring that certain LAeq levels are not exceeded.

2.1.3 STATE ENVIRONMENTAL PLANNING POLICY (VEGETATION IN NON-RURAL AREAS) 2017

Under Clause 7 of State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 a person must not clear any vegetation in any non-rural area of the State to which Part 3 applies without the authority conferred by a permit granted by the council under that Part.

Clause 9 of Part 3 indicates that this Part applies to vegetation in any non-rural area of the State that is declared by a development control plan to be vegetation to which this Part applies.

The subject site is zoned R2 Low Density Residential, a non-rural area. It is considered that the vegetation proposed to be removed is vegetation declared by a development control plan, WDCP 2009 Chapter E17, to which Part 9 would apply.

Council's Landscape Officer has reviewed the application submission. Conditionally satisfactory referral advice was received and conditions specify trees to be removed, trees to be retained, tree protection and management and compensatory plantings.

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

The proposal is BASIX affected development to which this policy applies. In accordance with Schedule 1, Part 1, 2A of the Environmental Planning and Assessment Regulation 2000, a BASIX Certificate has been submitted in support of the application demonstrating that the proposed scheme achieves the BASIX targets. Conditions are recommended in this regard, as provided at Attachment 4.

The BASIX certificate was issued no earlier than 3 months before the date on which the development application was lodged.

2.1.5 STATE ENVIRONMENTAL PLANNING POLICY (COASTAL MANAGEMENT) 2018

Maps published with the SEPP indicate the land is located in an overlapping Coastal Environment area and Coastal Use area, as demonstrated by Figure 2 below.

Division 3 clause 13 applies to coastal environment areas. Consent must not be granted unless the consent authority has considered matters set out in subclause 1 and 2. These matters include impacts on vegetation, marine life and water quality, vegetation, Aboriginal heritage and community

access. The development is designed, sited and will be managed to avoid an adverse impact referred to in subclause 1. All matters detailed in subclause 1 and 2 are considered satisfactory.

Division 4 clause 14 applies to coastal use areas. Consent must not be granted unless the consent authority has considered matters set out in subclause 1 and 2. These matters include impacts on safe public access, overshadowing, wind funnelling, loss of views, visual amenity, Aboriginal heritage and cultural and built environment heritage. The development is designed, sited and will be managed to avoid an adverse impact referred to in subclause 1. All matters detailed in clause 1 and 2 are considered satisfactory.

Division 5 includes general provisions for development in the coastal zone. Clause 16 applies to development in the coastal zone generally and states that development consent must not be granted to development on land within the coastal zone (other than land to which clause 13 applies) unless the consent authority is satisfied that the proposed development is not likely to cause increased risk of coastal hazards on that land or other land. Due to its location, the proposal is not expected to increase the risk of coastal hazards on the subject land or any other land.



Figure 2: Coastal Environment Area Mapping, Coastal Management SEPP Mapping 2018

A review of Council's associated Coastal Zone Management Plan (CZMP) coastal hazard mapping extents identifies that the subject site is not impacted by any coastal geotechnical risk or inundation constraint.

2.1.6 WOLLONGONG LOCAL ENVIRONMENTAL PLAN 2009

Part 1 Preliminary

Clause 1.4 Definitions

Dual occupancy means a dual occupancy (attached) or a dual occupancy (detached).

Dual occupancy (attached) means 2 dwellings on one lot of land that are attached to each other, but does not include a secondary dwelling.

For the purposes of this Act, **subdivision of land** means the division of land into two or more parts that, after the division, would be obviously adapted for separate occupation, use or disposition. The division may (but need not) be effected:

- (a) by conveyance, transfer or partition, or
- (b) by any agreement, dealing, plan or instrument rendering different parts of the land available for separate occupation, use or disposition.

(EP&A Act 1979 definition)

Part 2 Permitted or prohibited development

Clause 2.2 – zoning of land to which Plan applies

The zoning map identifies the land as being zoned R2 Low Density Residential, as demonstrated by Figure 3 below.

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 within a low density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*

The proposal would be considered satisfactory with regard to the above objectives as it would provide for additional housing opportunities in a low density environment.

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

*Attached dwellings; Bed and breakfast accommodation; Boarding houses; Boat launching ramps; Centre-based child care facilities; Community facilities; **Dual occupancies**; Dwelling houses; Environmental facilities; Exhibition homes; Exhibition villages; Group homes; Health consulting rooms; Home-based child care; Hospitals; Hostels; Information and education facilities; Jetties; Multi dwelling housing; Neighbourhood shops; Places of public worship; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Signage; Veterinary hospitals*

The proposal is categorised as **Dual occupancies** as defined above and is permissible in the R2 zone with development consent.

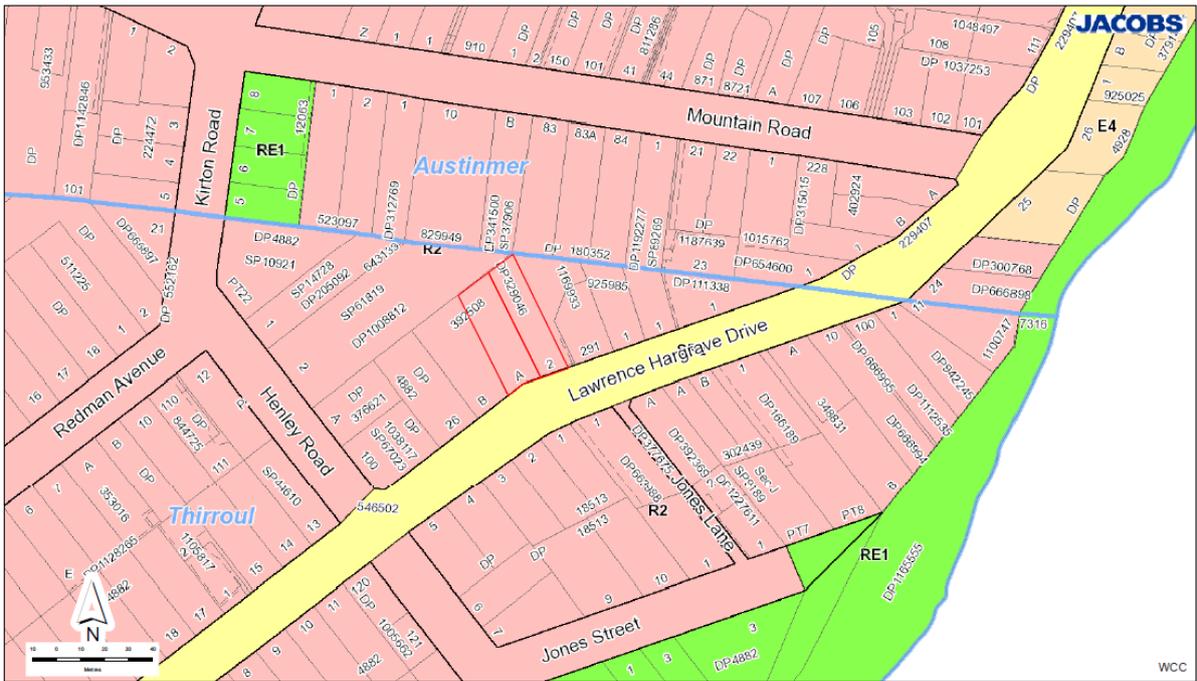


Figure 3: WLEP 2009 zoning map

Clause 2.6 Subdivision – consent requirements

Consent for torrens title boundary adjustment and subdivision of the dual occupancies is sought as part of the subject application and will be conditioned for.

The remediation works are ancillary to the proposed subdivision and dual occupancy development.

Clause 2.7 Demolition requires development consent

Consent for the demolition of the existing dwelling house and ancillary structures are sought as part of the subject application. Conditions are recommended in this regard to manage such works, including asbestos management.

Part 4 Principal development standards

Clause 4.3 Height of buildings

The proposed maximum building height of 8.235m does not exceed the maximum of 9m permitted for the site.

Clause 4.4 Floor space ratio

Maximum FSR permitted for the zone:		0.5:1	
Combined Site area:		1355 m ²	
Phase 1	Demolition and boundary adjustment – no Gross Floor Area		
Phase 2	Proposed Lot 10	Lot 10 area	704
		Ground Level	208.2
		Level 1	156.4
		Exclusions	4.7 (void) + 36 (garages)
		GFA FSR	323.9 323.9/704 0.46:1

	Proposed Lot 11	Lot 11 area	655
		Ground Level	206
		Level 1	154.8
		Exclusions	4.7 (void) + 36 (garages)
		GFA FSR	320.1 320.1/655 0.49:1
Phase 3	Proposed Lot 101 – Unit 1A	Ground Level	110.2
		Level 1	53.8
		Exclusions	18 (garage)
		GFA	146
		FSR	146/329 0.44:1
	Proposed Lot 102 – Unit 1B	Ground Level	91
		Level 1	98.2
		Exclusions	18 (garage) + 4.7 (void)
		GFA	166.5
		FSR	166.5/375 0.444:1
	Proposed Lot 103 – Unit 2A	Ground Level	91
		Level 1	98.6
		Exclusions	18 (garage) + 4.7 (void)
		GFA	166.9
		FSR	166.9/357 0.47:1
	Proposed Lot 104 – Unit 2B	Ground Level	108.3
		Level 1	53.8
		Exclusions	18 (garage)
		GFA	143.8
		FSR	143.8/298 0.48:1

As demonstrated above, the FSR of the proposal would remain below the 0.5:1 maximum as a result of each stage of development proposed.

Part 5 Miscellaneous provisions

None applicable

Part 6 Urban release areas

None applicable

Part 7 Local provisions – general

Clause 7.1 Public utility infrastructure

The existing site improvements are already serviced by electricity, water and sewage services.

Clause 7.3 Flood planning area

The proposed development has been considered by Council's Stormwater Engineer who has advised that the proposed development levels are above the 1 in 100 and PMF flood extents. Two OSD systems are proposed. The OSD system proposed for the south western area of the site has been designed to limit flow rates and discharge to the easement, and the OSD at the front of the development is proposed to limit flows to Lawrence Hargrave Drive to reflect the existing flows coming from part of the roof of the existing dwelling at 178 Lawrence Hargrave Drive. The proposal is therefore not expected to unreasonably impact on flood behaviour, or increase the flood risk of adjoining properties.

Clause 7.5 Acid Sulfate Soils

The proposal is identified as being affected by class 5 acid sulphate soils. Conditions are recommended in this regard.

Clause 7.6 Earthworks

The proposal would require excavation into the site to provide for the proposed setting of Units 1A and 1B, and to provide for the proposed car parking area to the rear of the development. The earthworks themselves are not expected to result in unreasonable impacts on environmental functions and processes, neighbouring properties or the features surrounding land. Conditions are recommended in this regard, including the requirement for the submission of a dilapidation report considering adjoining properties, as reflected at Attachment 4.

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

None relevant.

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

2.3.1 WOLLONGONG DEVELOPMENT CONTROL PLAN 2009

CHAPTER A1 – INTRODUCTION

The development has been assessed against the relevant chapters of WDCP2009 and found to be satisfactory. A full compliance table is provided at Attachment 3 to this report and variation requests are discussed below:

8 Variations to development controls in the DCP

Chapter B1: Residential Development

Part 4.5 Landscaped Area

Part 4.5 of Chapter B1 of WDCP 2009 provides controls for the minimum landscaped area required on a gradational basis depending on the lot size. For the first and second phases of the development, 151.2sqm and 136.5sqm of landscaped area is required to be provided for proposed Lots 10 and 11 respectively. In excess of the minimum is proposed.

The third phase of the development will result in four torrens titled lots, with the following site areas, landscaped areas proposed and landscaped areas required. Proposed Lots 102 and 103,

consisting of the central two Lots, would not achieve the minimum landscaping requirements post torrens title subdivision.

Proposed Lot	Proposed Area	Minimum Landscaped required	Landscaped area proposed
101	329m ²	65.8m ²	87.36m ²
102	375m ²	75m ²	74.05m²
103	357m ²	71.4m ²	70.27m²
104	298m ²	59.6m ²	67.55m ²

Control	Comment
1. The variation statement must address the following points:	
a) The control being varied; and	The variation request statement identifies the control being varied as clause 4.5 of Chapter B1 of WDCP 2009.
b) The extent of the proposed variation and the unique circumstances as to why the variation is requested; and	<p>The extent of the variation sought is demonstrated by the table above, equating to 0.95m² for proposed Lot 102 and 1.13m² for proposed Lot 103.</p> <p>The variation is requested on the basis of the minimal variation sought, as across the site, significantly more than the minimum landscaped area requirements being provided across the site as a whole and as in excess of the minimum deep soil zone areas are proposed.</p> <p>Proposed Lots 101 and 104 are provided with significantly greater landscaped areas, due to the design of the proposal with the central driveway area.</p>
c) Demonstrate how the objectives are met with the proposed variations; and	<p>The objectives of the control are as follows:</p> <ul style="list-style-type: none"> a) <i>To preserve and retain existing native trees and vegetation and encourage the planting of additional native vegetation.</i> b) <i>To encourage the linkage of habitat corridors along the rear of sites.</i> c) <i>To allow for increased water infiltration and minimise urban run-off.</i> d) <i>To facilitate pleasant views from within dwellings and backyard settings.</i> e) <i>To reduce privacy and amenity impacts at the rear of residential properties.</i> <p>The applicant has indicated that they consider the development consistent with the above objectives.</p> <p><u>Council comment:</u></p> <p>The development is not considered to be inconsistent with the above objectives as the proposal retains and proposes to complement the vegetation which exists along the rear property boundary. Predominantly native plantings are</p>

	proposed. The development is not considered to result in adverse impacts on views, and is not expected to result in privacy or amenity impacts at the rear of the development.
d) Demonstrate that the development will not have additional adverse impacts as a result of the variation.	<u>Council comment:</u> There development is not considered to result in adverse impacts as a result of the variation.
<p>Comment:</p> <p>The requested variation is considered capable of support.</p>	

Chapter B1: Residential Development

Part 4.21 Additional Controls for Dual Occupancies – Minimum Site Width

Part 4.21.2 of Chapter B1 of WDCP 2009 requires a minimum site width of 15m for dual occupancy development, measured for the full width of the site, perpendicular to side property boundaries. The subject development seeks consent for the development of Lots 10 and 11 for the purpose of dual occupancies, where the Lots would be provided with widths of 13.67m and 13.91m respectively following the boundary adjustment undertaken as part of the first phase of works at the site, when measured perpendicular to the side property boundaries as required by the control..

Control	Comment
2. The variation statement must address the following points:	
a) The control being varied; and	The variation request statement identifies the control being varied as 4.21 of Chapter B1 of WDCP 2009.
b) The extent of the proposed variation and the unique circumstances as to why the variation is requested; and	<p>The extent of the variation is 1.33m for proposed Lot 10 and 1.09m for proposed Lot 11.</p> <p>The variation is sought on the following basis:</p> <p>The control itself provides for a mechanism to vary, stating that:</p> <p><i>Variations may be granted for irregular shaped blocks or where development can demonstrate compliance with privacy, solar access, private open space, visual amenity, built form, car parking and landscaping requirements.</i></p> <p>In this regard, the development has demonstrated compliance with controls relating to privacy, solar access, POS, visual amenity, built form and car parking. Whilst a variation is also sought to the landscaping requirements, overall, in excess of the minimum areas are proposed. The sites are irregular in shape, with angled rear and an irregular front boundary. In this case, the applicant contends that the development would satisfy the variation considerations of the control.</p> <p>The applicant has also described that due to the design of the proposal with one common driveway, that</p>

	impacts on on-street car parking are minimised, where a more traditional dual occupancy development on each site would result in additional impacts.
c) Demonstrate how the objectives are met with the proposed variations; and	<p>The objectives of the control are as follows:</p> <p>a) <i>To permit dual occupancy developments upon sites which are of sufficient size to accommodate the required building envelope, car parking, private open space, landscaping and other requirements, whilst maintaining the amenity of surrounding residential development and the streetscape character of the locality.</i></p> <p>b) <i>To allow for development of sites only where the land is not significantly constrained by flood, geotechnical or other environmental hazards.</i></p> <p>The applicant has indicated that they consider the development consistent with the above objectives.</p> <p><u>Council comment:</u></p> <p>The development is not considered to be inconsistent with the above objectives. The proposal demonstrates that there is sufficient area on the site to accommodate the required building envelope and required car parking, POS, landscaping and other facilities including drainage and deep soil zone. The development is not considered to be out of character with the streetscape character of the surrounding area, as discussed at Attachment 3. The land is not significantly constrained by flood, geotechnical or other environmental hazards, as discussed throughout this report.</p>
d) Demonstrate that the development will not have additional adverse impacts as a result of the variation.	<p><u>Council comment:</u></p> <p>There development is not considered to result in adverse impacts as a result of the variation.</p>
<p>Comment:</p> <p>The requested variation is considered capable of support.</p>	

2.3.2 WOLLONGONG CITY-WIDE DEVELOPMENT CONTRIBUTIONS PLAN 2018

The estimated cost of works is >\$100,000 (\$1,199,990) and a levy of 1% is applicable under this plan as the threshold value is \$100,000. A condition is recommended in this regard, as provided at Attachment 4 to this report.

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?

Conditions of consent are recommended with regard to demolition.

93 Fire safety and other considerations

Conditions of consent are recommended requiring compliance with the BCA/National Construction Code with regard to fire safety.

94 Consent authority may require buildings to be upgraded

Not applicable.

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

Context and Setting:

In regard to the matter of context, the planning principle in Project Venture Developments v Pittwater Council [2005] NSWLEC 191 is relevant in that it provides guidance in the assessment of compatibility. The two major aspects of compatibility are physical impact and visual impact. In assessing each of these the following questions should be asked:

- Are the proposals physical impacts on surrounding development acceptable? The physical impacts include constraints on the development potential of surrounding sites.
- Is the proposals appearance in harmony with the buildings around it and the character of the street?

In response to the first question, matters such as overshadowing, privacy concerns, bulk scale and setbacks are relevant. The proposal is within the allowable Floor Space Ratio and Building Height for the site and proposes front, side and rear setbacks in excess of the minimum requirements. The development will not result in unreasonable overshadowing of any adjoining property. The development to the south west will receive in excess of the 3 hours of sunlight on June 21 as required by WDCP 2009 controls.

In regard to the visual impact, the development is not considered to be out of character with the surrounding area. The area is characterised by a mixture residential developments. It is likely that additional higher density development will occur in the vicinity of the site given the height and FSR maximums for the area, and age of some surrounding housing stock. Attachment 3 provides additional consideration of the proposals consistency with existing built form in the immediate vicinity of the site.

In summary, the proposal has been assessed with regard to the amenity impacts from the development, the zoning, permissible height and FSR for the land, and existing and future character of the area, and is not considered to be incompatible with the local area.

Access, Transport and Traffic:

The development provides for the required number of car parking spaces and manoeuvring. Councils Traffic Officer has considered the development with regard to impacts on the wider traffic network, and raised no objections to the proposal. The RMS have also previously considered the development of the site and have not raised any objections to the redevelopment of the site, subject to conditions.

Public Domain:

The development is considered to provide for a positive contribution to the public domain, presenting as individual dwellings with appropriate front landscaped areas. The footpath in front of the subject sites has recently been replaced. Conditions are recommended which requires that any damage to this paving be repaired to Councils satisfaction prior to the issue of the Occupation Certificate. Conditions requiring the planting of street trees are also recommended as provided at Attachment 4 to this report.

Utilities:

The proposal would not be envisaged to place an unreasonable demand on utilities supply. Conditions are recommended in this regard.

Heritage:

The site is not located in the visual catchment of any nearby heritage items

Other land resources:

The proposal would not be envisaged to impact upon any valuable land resources.

Water:

The site is presently serviced by Sydney Water, which could be readily extended to meet the requirements of the proposed development.

The proposal would not be envisaged to have unreasonable water consumption.

Soils:

Contamination, excavation and filling of the site have been addressed as discussed throughout the report. Conditions are recommended as provided at Attachment 4 to this report.

Air and Microclimate:

The proposal would not be expected to result in negative impacts on air or microclimate.

Flora and Fauna:

Conditions are recommended with regard to tree removal, retention and compensatory planting.

Waste:

A condition is recommended requiring that an appropriate receptacle be in place for any waste generated during the construction. On street collection is proposed to be relied upon for the occupation of the development and is considered appropriate.

Energy:

The proposal would not be envisaged to have unreasonable energy consumption. See BASIX considerations at section 2.1.4 above.

Noise and vibration:

Conditions are recommended requiring that nuisance be minimised during any construction, demolition, or works.

Natural hazards:

Council records list the site as uncategorised flood affected. The proposed development has been considered by Council's Stormwater Engineer who has advised that the proposed development levels are above the 1 in 100 and PMF flood extents. Two OSD systems are proposed. The OSD system proposed for the south western area of the site has been designed to limit flow rates and discharge to the easement, and the OSD at the front of the development is proposed to limit flows to Lawrence Hargrave Drive to reflect the existing flows coming from part of the roof of the existing dwelling at 178 Lawrence Hargrave Drive. The proposal is therefore not expected to unreasonably impact on flood behaviour, or increase the flood risk of adjoining properties.

Technological hazards:

Council records list the site as acid sulphate soil affected and the site is considered likely to contain areas of contamination. These hazards are discussed throughout the report, and conditions are recommended in this regard.

Safety, Security and Crime Prevention:

This application would not be expected to result in greater opportunities for criminal or antisocial behaviour.

Social Impact:

The proposal would not be envisaged to result in negative social impacts.

Economic Impact:

The proposal would not be envisaged to result in negative economic impacts.

Site Design and Internal Design:

The application does not result in any departures from WLEP 2009 development standards as discussed throughout the report. The proposal does seek departures to development controls relating to landscaped areas and minimum site width for dual occupancy developments as discussed at Chapter A1 of WDCP 2009 above. The requests have been considered and are considered capable of support in this instance, as discussed at section 2.3.1 above.

Private open space, residential amenity, vehicular manoeuvring and pedestrian access have been accounted for in the design and site layout.

Construction:

Draft conditions are recommended in relation to construction impacts for hours of work, erosion and sedimentation controls, works in the road reserve, excavation, demolition and use of any crane, hoist, plant or scaffolding.

A condition will be attached to any consent granted that all works are to be in compliance with the Building Code of Australia.

Cumulative Impacts:

The proposal is not expected to result in negative cumulative impacts

Ecologically Sustainable Development Considerations

The proposed development is not considered to be inconsistent with ESD principles as evidenced by the assessment commentary provided throughout the report.

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

Does the proposal fit in the locality?

The design of the proposal is considered an appropriate response to the site constraints and is not expected to result in increased adverse impacts on the character of the locality or amenity of adjoining developments.

Are the site attributes conducive to development?

There are no site constraints that would prevent the proposal.

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

See section 1.5 above.

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

The development is not expected to result in unreasonable impacts on the environment or the amenity of the locality. It is considered appropriate with consideration to the zoning and the expected future character of the locality and is therefore considered to be in the public interest.

3 CONCLUSION

This application has been assessed as satisfactory having regard to the Heads of Consideration under Section 4.15 of the Environmental Planning and Assessment Act 1979.

It is considered that the applicant has provided adequate justification for the variations sought to WDCP 2009 as relates to landscaped area and minimum site width for dual occupancy development. The variations are considered capable of support.

All relevant internal referrals are conditionally satisfactory. No external referrals were required.

Some of the issues raised in submissions though technically unresolved, are considered to be adequately addressed either through design or by way of conditions. Any remaining issues are not considered to be sufficient to refuse the application.

No adverse internal referral matters were raised, and there are no outstanding issues.

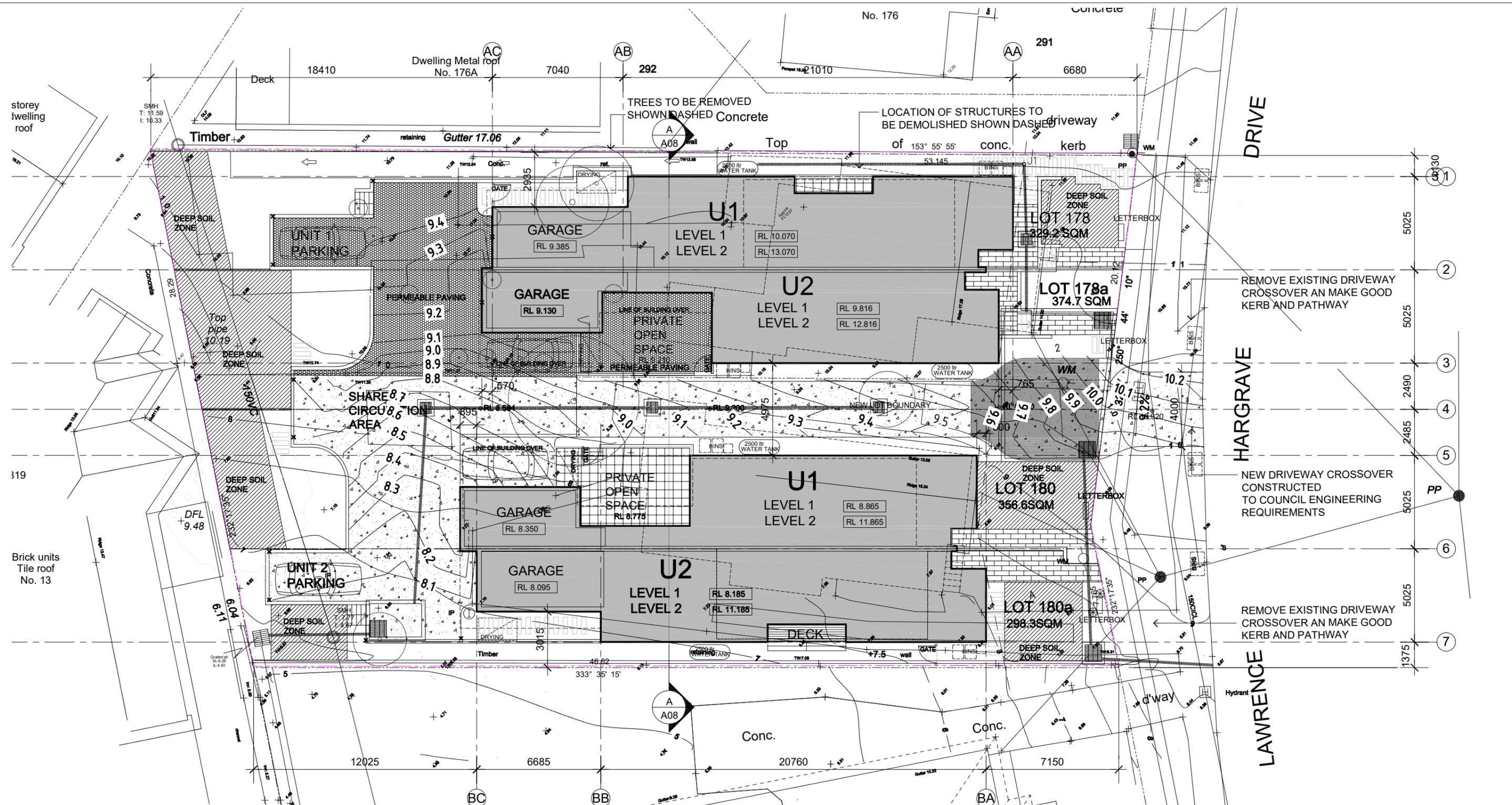
It is considered that the proposed development has been designed appropriately given the constraints and characteristics of the site, is not inconsistent with the existing and desired future character of the locality and is unlikely to result in significant adverse impacts on the amenity of the surrounding area

4 RECOMMENDATION

Development Application DA-2018/1531 be approved, subject to the conditions contained in Attachment 4.

5 ATTACHMENTS

- 1 Architectural Plans
- 2 WDCP 2009 Variation request statements
- 3 WDCP 2009 compliance table
- 4 Draft Conditions



DEVELOPMENT DATA - 178 LHD

PROPOSED SITE AREA	703.9 sqm
PROPOSED BUILDING AREA / FSR	321.4sqm (0.456:1)
PROPOSED LANDSCAPE AREA	160.8sqm
PROPOSED LOT 178 AREA	329.2sqm
PROPOSED LOT 178a AREA	374.7sqm
PROPOSED BUILDING AREA / FSR LOT 178 (EXC GARAGE 18sqm)	151.3sqm (0.459:1)
PROPOSED BUILDING AREA / FSR LOT 178a (EXC GARAGE 18sqm)	170.1sqm (0.453:1)
PROPOSED ON SITE CARPARKING	4 SPACES

DEVELOPMENT DATA - 180 LHD

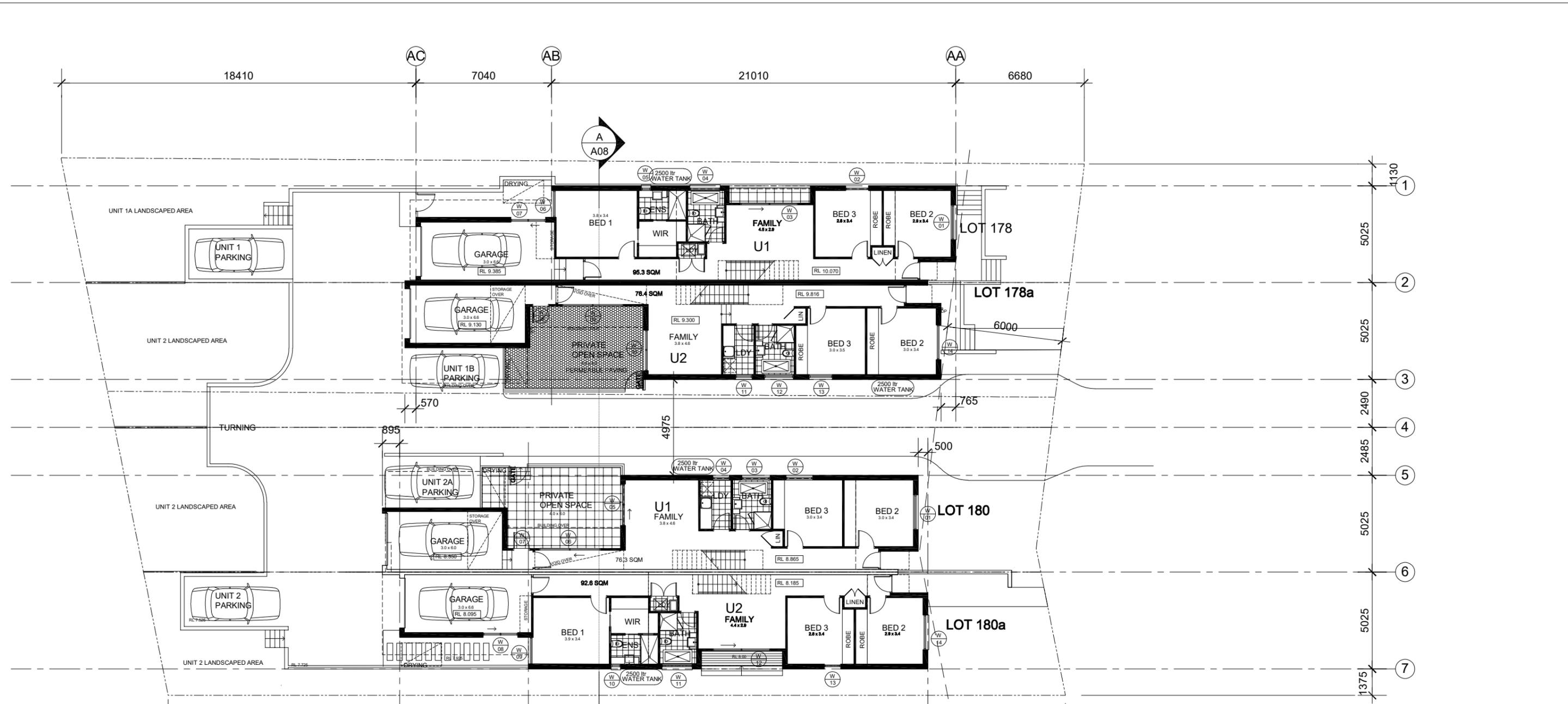
PROPOSED SITE AREA	655 sqm
PROPOSED BUILDING AREA / FSR	318.5sqm (0.486:1)
PROPOSED LANDSCAPE AREA	138.22sqm
PROPOSED LOT 180 AREA	356.6sqm
PROPOSED LOT 180a AREA	298.3sqm
PROPOSED BUILDING AREA / FSR LOT 180 (EXC GARAGE 18sqm)	171.3sqm (0.48:1)
PROPOSED BUILDING AREA / FSR LOT 180a (EXC GARAGE 18sqm)	147.2sqm (0.493:1)
PROPOSED ON SITE CARPARKING	4 SPACES

PRELIMINARY
NOT FOR CONSTRUCTION

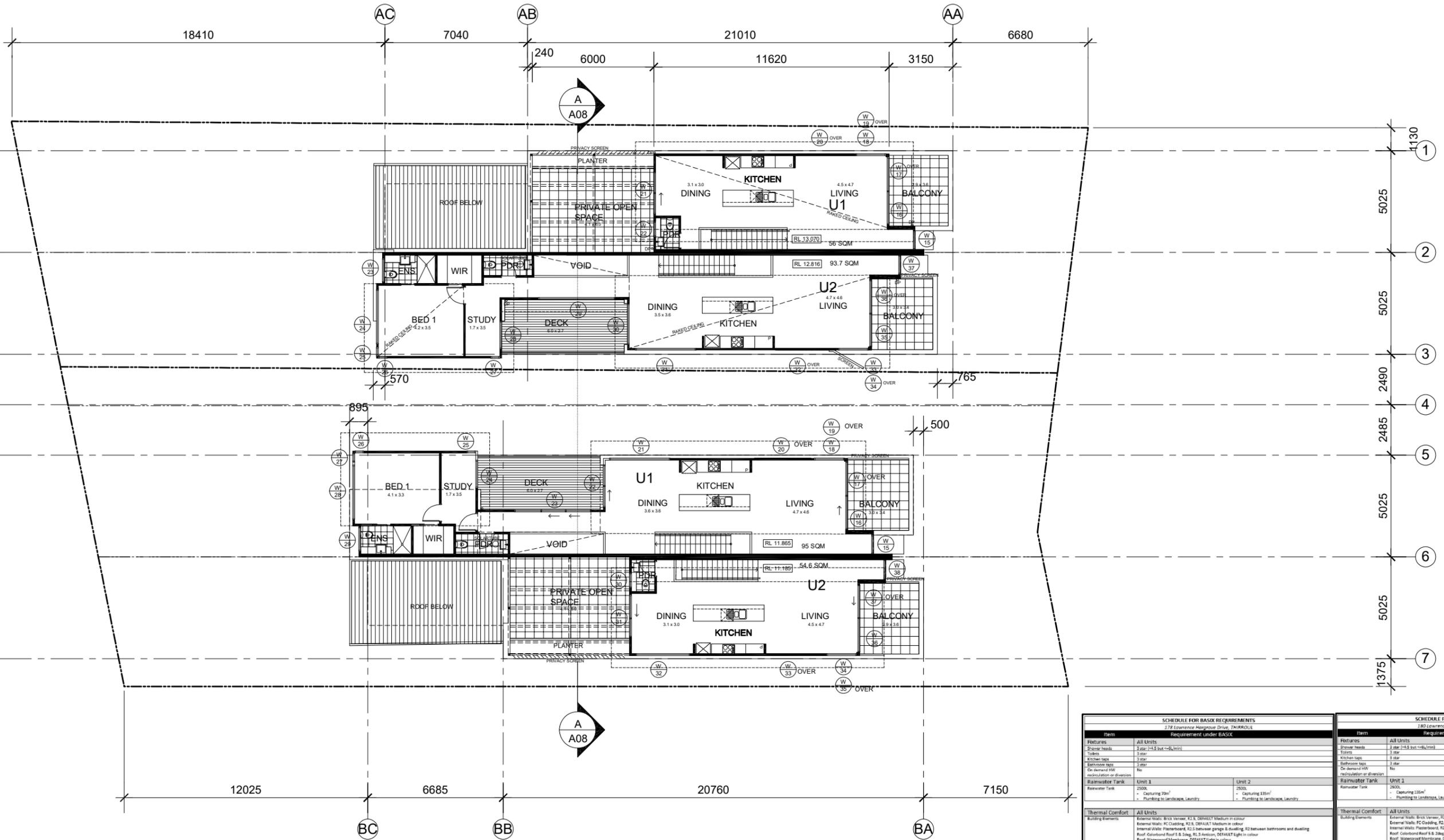
Date	Issue	Revision	Legend
30.11.18	A	Issued for Development Approval	
24.01.19	B	Amended DA Issue	

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PO Box 119, Thornhill, NSW, 2515. Tel: 0449 254888 e: steve@developmyland.com.au

PROJECT: Development Application - Dual Occupancy development 178 & 180 Lawrence Hargrave Drive THIRROUL			
Drawing Name:	SITE PLAN	Job No.	DML 17/010
FOR: ILLAWARRA PROPERTY HOLDINGS PTY LTD	Scale	1:200 (A3)	Date
			17.10.18
		Dwg.No	A-01
		Rev.	B



SCHEDULE FOR BASIS REQUIREMENTS 378 Lawrence Hargrave Drive, THIRROUL		SCHEDULE FOR BASIS REQUIREMENTS 180 Lawrence Hargrave Drive, THIRROUL	
Item	Requirement under BASIS	Item	Requirement under BASIS
Fixtures	All Units	Fixtures	All Units
Sinks/heads	3 star (2.5 star for 60mm)	Sinks/heads	3 star (2.5 star for 60mm)
Toilets	3 star	Toilets	3 star
Kitchen taps	3 star	Kitchen taps	3 star
Bathroom taps	3 star	Bathroom taps	3 star
On demand hot water recirculation or diversion	No	On demand hot water recirculation or diversion	No
Rainwater Tank	Unit 1 2500L - Capturing 150m ² - Plumbing to Landscaping, Laundry	Unit 2 2500L - Capturing 150m ² - Plumbing to Landscaping, Laundry	Unit 1 2500L - Capturing 150m ² - Plumbing to Landscaping, Laundry
Thermal Comfort	All Units	Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Internal Walls: RC Cladding, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bathrooms and dwelling Roof: Coloured Roof 5.8 Slope, R1.3 Insulation, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard (horizontal & raised), RA, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Roof: Coloured Roof 5.8 Slope, R1.3 Insulation, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard (horizontal & raised), RA, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 2, R2.5 to Unit 1 Floor Coverings: DEFAULT	
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Awning, Hinged - W01, W05, W06, W08, W11, W14, W16, W18, W20, W25 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Sliding, Fixed - W02, W04, W07, W09 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.53, Awning - W15, W17, W19, W21, W23, W26, W28 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.53, Sliding, Fixed - W10, W12, W13, W15, W18, W20, W22, W24, W27, W29, W31, W33, W35, W37 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.58, Sliding, Fixed - W03, W04, W07, W09, W11, W14, W16, W18, W20, W22, W24, W27, W29, W31, W33, W35, W37 DEFAULT: Steel, Double Glazed, Clear, Solarshade Unit 2 Internal MC	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Awning, Hinged - W02, W04, W07, W09, W11, W14, W16, W18, W20, W25 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Sliding, Fixed - W03, W05, W07 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.53, Awning - W15, W17, W19, W21, W23, W26, W28 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.53, Sliding, Fixed - W06, W12, W16, W17, W19, W21, W24, W26, W28, W30, W32, W34, W36 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.58, Sliding, Fixed - W05, W12, W16, W17, W19, W21, W24, W26, W28, W30, W32, W34, W36 DEFAULT: Steel, Double Glazed, Clear, Solarshade to Unit 3 Internal MC	
Energy Commitments	All Units	Energy Commitments	All Units
Gas Involvement	Gas Involvement - 6 Star	Gas Involvement	Gas Involvement - 6 Star
Cooling System	No active system	Cooling System	No active system
Heating System	No active system	Heating System	No active system
Bathroom Ventilation	U1: Natural ventilation only U2: Individual fan ducted to façade or roof, manual on/off switch (included in fixtures)	Bathroom Ventilation	U1: Natural ventilation only U2: Individual fan ducted to façade or roof, manual on/off switch (included in fixtures)
Kitchen Ventilation	U1: Individual fan ducted to façade or roof, manual on/off switch (included in fixtures) U2: Natural ventilation only	Kitchen Ventilation	U1: Individual fan ducted to façade or roof, manual on/off switch (included in fixtures) U2: Natural ventilation only
Laundry Ventilation	U1: Individual fan ducted to façade or roof, manual on/off switch (included in fixtures) U2: Natural ventilation only	Laundry Ventilation	U1: Individual fan ducted to façade or roof, manual on/off switch (included in fixtures) U2: Natural ventilation only
LED Lighting	All lighting (incandescent, fluorescent, halogen) included in fixtures	LED Lighting	All lighting (incandescent, fluorescent, halogen) included in fixtures
Energy Appliances	Gas cooking, Electric oven	Energy Appliances	Gas cooking, Electric oven
Outdoor Lighting	Outdoor Private	Outdoor Lighting	Outdoor Private
Alternative Energy	None	Alternative Energy	None



SCHEDULE FOR BASIS REQUIREMENTS 178 Lawrence Hargrave Drive, THIRROUL		SCHEDULE FOR BASIS REQUIREMENTS 180 Lawrence Hargrave Drive, THIRROUL	
Item	Requirement under BASIX	Item	Requirement under BASIX
Fixtures	All Units	Fixtures	All Units
Sinks/baths	3 star (2.5 Star for 2.5m ²)	Sinks/baths	3 star (2.5 Star for 2.5m ²)
Toilets	3 star	Toilets	3 star
Kitchen taps	3 star	Kitchen taps	3 star
Bathroom taps	3 star	Bathroom taps	3 star
On demand hot water recirculation or diversion	No	On demand hot water recirculation or diversion	No
Rainwater Tank	Unit 1 2500L - Capturing 70% - Plumbing to Landscape, Laundry	Unit 2 2500L - Capturing 100% - Plumbing to Landscape, Laundry	Unit 1 2500L - Capturing 70% - Plumbing to Landscape, Laundry
Thermal Comfort	All Units	Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Internal Walls: PC Gableing, R2.5, DEFAULT Medium in colour Internal Windows: Plasboarded, R2.5 between garage & dwelling, R2 between bedrooms and dwelling Roof: Coloured Roof 5.8 Slop, R1.3 Ambient, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasboard (horizontal & raised), RA, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT	Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Roof: Coloured Roof 5.8 Slop, R1.3 Ambient, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasboard (horizontal & raised), RA, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 2, R2.5 to Unit 1 Floor Coverings: DEFAULT
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Awning, Hinged - W01, W05, W06, W08, W11, W14, W16, W18, W19, W20, W22 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Sliding, Fixed - W02, W04, W07, W09 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.53, Awning - W15, W17, W20, W21, W23, W24, W25, W26, W27, W28, W29, W30, W31, W32, W33, W34, W35, W36, W37, W38, W39, W40, W41, W42, W43, W44, W45, W46, W47, W48, W49, W50, W51, W52, W53, W54, W55, W56, W57, W58, W59, W60, W61, W62, W63, W64, W65, W66, W67, W68, W69, W70, W71, W72, W73, W74, W75, W76, W77, W78, W79, W80, W81, W82, W83, W84, W85, W86, W87, W88, W89, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100 DEFAULT: Steel, Double Glazed, Clear, Solarshade Unit 2 Internal MC	Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Awning, Hinged - W02, W04, W07, W09, W11, W14, W16, W18, W19, W20, W22, W23, W24, W25, W26, W27, W28, W29, W30, W31, W32, W33, W34, W35, W36, W37, W38, W39, W40, W41, W42, W43, W44, W45, W46, W47, W48, W49, W50, W51, W52, W53, W54, W55, W56, W57, W58, W59, W60, W61, W62, W63, W64, W65, W66, W67, W68, W69, W70, W71, W72, W73, W74, W75, W76, W77, W78, W79, W80, W81, W82, W83, W84, W85, W86, W87, W88, W89, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100 DEFAULT: Steel, Double Glazed, Clear, Solarshade Unit 3 Internal MC
Energy Commitments	All Units	Energy Commitments	All Units
Gas	Gas instantaneous - 6 Star	Gas	Gas instantaneous - 6 Star
Heating System	No active system	Heating System	No active system
Cooling System	No active system	Cooling System	No active system
Bathroom Ventilation	U2: Natural ventilation only	Bathroom Ventilation	U2: Natural ventilation only
Kitchen Ventilation	U2: Individual fan ducted to facade or roof, manual on/off switch (Internal MC, only installed in Napier St)	Kitchen Ventilation	U2: Individual fan ducted to facade or roof, manual on/off switch (Internal MC, only installed in Napier St)
Laundry Ventilation	U2: Individual fan ducted to facade or roof, manual on/off switch (Internal MC, only installed in Napier St)	Laundry Ventilation	U2: Individual fan ducted to facade or roof, manual on/off switch (Internal MC, only installed in Napier St)
LED Lighting	All lighting (inc. recessed downlights) installed in Napier St	LED Lighting	All lighting (inc. recessed downlights) installed in Napier St
Energy Appliances	Gas cooking, Electric oven	Energy Appliances	Gas cooking, Electric oven
Outdoor Lighting	Outdoor Private	Outdoor Lighting	Outdoor Private
Alternative Energy	None	Alternative Energy	None

PRELIMINARY
NOT FOR CONSTRUCTION

Date	Issue	Revision
30.11.18	A	Issued for Development Approval

Legend

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PO Box 119, Thornhill, NSW, 2515. Tel: 0409 255488 e: shen@developmyland.com.au

PROJECT: Development Application - Dual Occupancy development
178 & 180 Lawrence Hargrave Drive THIRROUL

Drawing Name: LEVEL 1 FLOOR PLAN

FOR: ILLAWARRA PROPERTY HOLDINGS PTY LTD

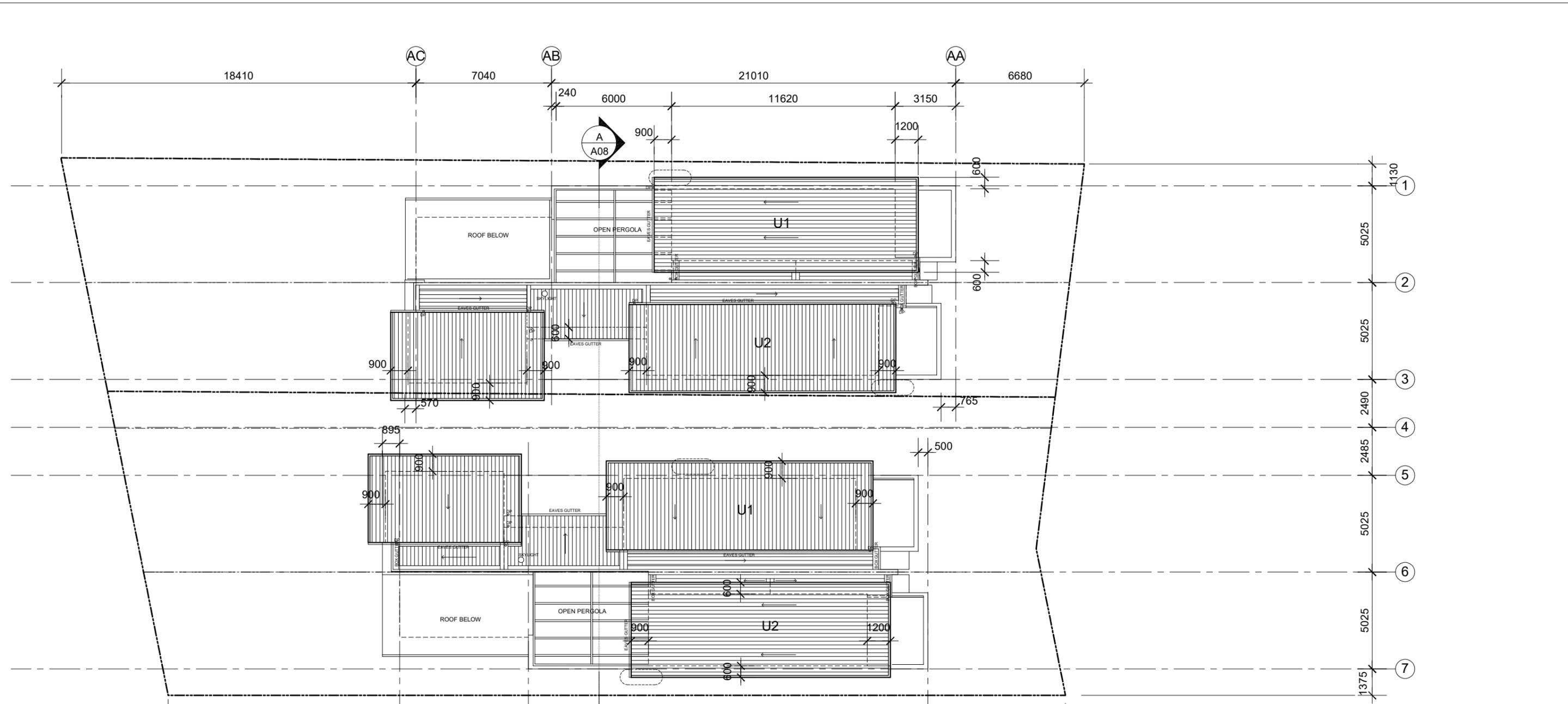
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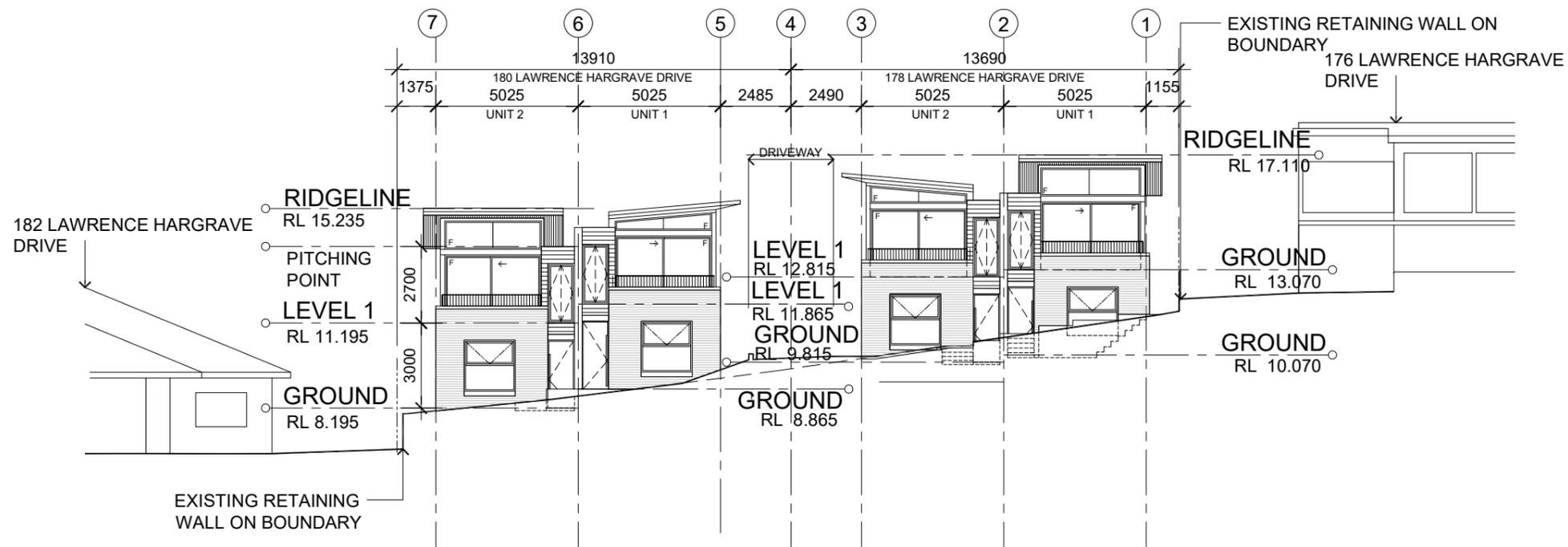
Date: 17.10.18

Dwg. No. A-03

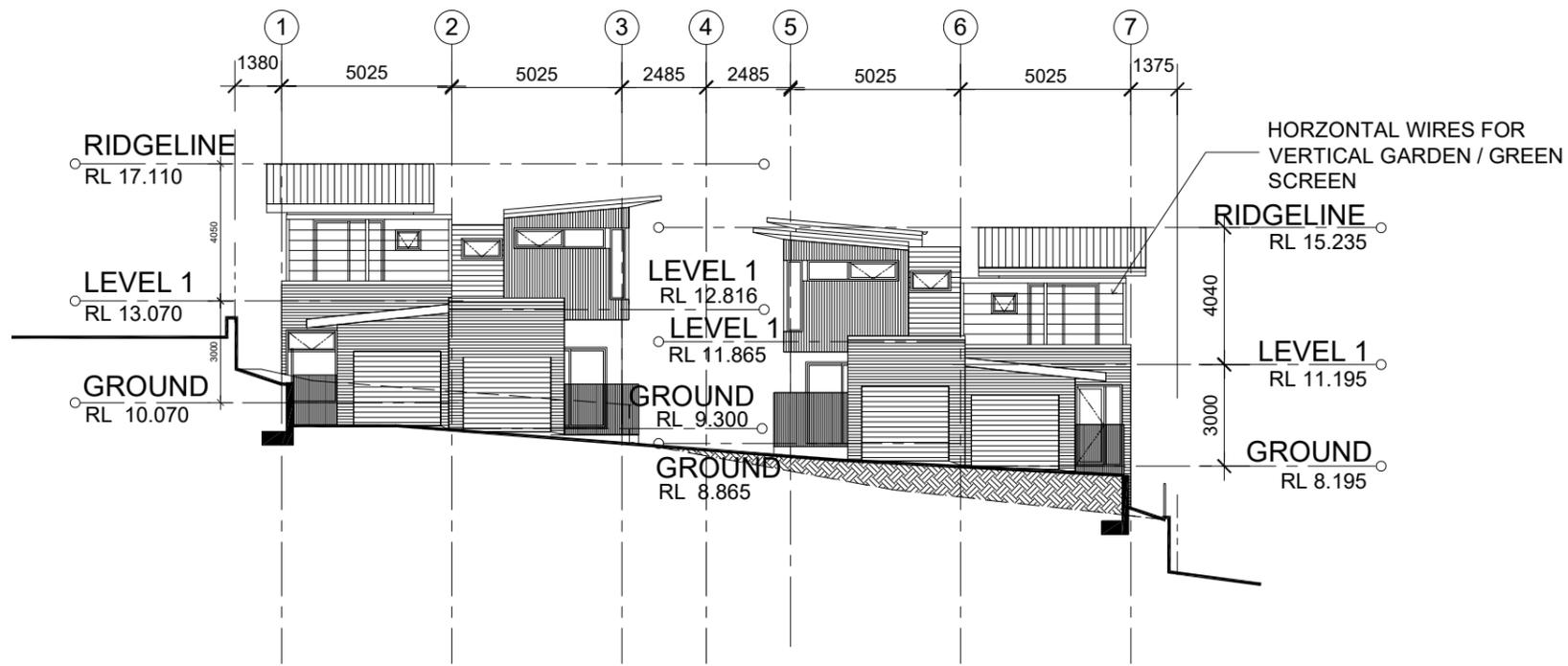
Rev. A



SCHEDULE FOR BASIS REQUIREMENTS 178 Lawrence Hargrave Drive, THIRROUL		SCHEDULE FOR BASIS REQUIREMENTS 180 Lawrence Hargrave Drive, THIRROUL	
Requirement under BASIX		Requirement under BASIX	
Fixtures	All Units	Fixtures	All Units
Sinks/baths	3 star (2.5 Star ≤ 6 units)	Sinks/baths	3 star (2.5 Star ≤ 6 units)
Toilets	3 star	Toilets	3 star
Kitchen taps	3 star	Kitchen taps	3 star
Bathroom taps	3 star	Bathroom taps	3 star
On demand hot water recirculation or diversion	No	On demand hot water recirculation or diversion	No
Rainwater Tank	Unit 1 2500L - Capturing 70% - Plumbing to Landscaping, Laundry	Unit 2 2500L - Capturing 100% - Plumbing to Landscaping, Laundry	Unit 1 2500L - Capturing 70% - Plumbing to Landscaping, Laundry
Thermal Comfort	All Units	Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Internal Walls: RC Cladding, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bathrooms and dwelling Roof: Coloured Roof 5.8 Slope, R1.3 Ambient, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard (horizontal & raised), RA, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Internal Walls: RC Cladding, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bathrooms and dwelling Roof: Coloured Roof 5.8 Slope, R1.3 Ambient, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard (horizontal & raised), RA, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT	
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Awning, Hinged - W01, W05, W06, W08, W11, W14, W16, W18, W20, W22, W24, W26, W28, W30, W32, W34, W36, W38, W40, W42, W44, W46, W48, W50, W52, W54, W56, W58, W60, W62, W64, W66, W68, W70, W72, W74, W76, W78, W80, W82, W84, W86, W88, W90, W92, W94, W96, W98, W100, W102, W104, W106, W108, W110, W112, W114, W116, W118, W120, W122, W124, W126, W128, W130, W132, W134, W136, W138, W140, W142, W144, W146, W148, W150, W152, W154, W156, W158, W160, W162, W164, W166, W168, W170, W172, W174, W176, W178, W180, W182, W184, W186, W188, W190, W192, W194, W196, W198, W200, W202, W204, W206, W208, W210, W212, W214, W216, W218, W220, W222, W224, W226, W228, W230, W232, W234, W236, W238, W240, W242, W244, W246, W248, W250, W252, W254, W256, W258, W260, W262, W264, W266, W268, W270, W272, W274, W276, W278, W280, W282, W284, W286, W288, W290, W292, W294, W296, W298, W300, W302, W304, W306, W308, W310, W312, W314, W316, W318, W320, W322, 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W3848, W3850, W3852, W3854, W3856, W3858, W3860, W3862, W3864, W3866, W3868, W		



SOUTH EAST ELEVATION
VIEW FROM LAWRENCE HARGRAVE DRIVE



NORTH WEST ELEVATION

SCHEDULE FOR BASIC REQUIREMENTS	
176 Lawrence Hargrave Drive, THIRROOL	
Item	Requirement Under BASiC
Fixtures	All Units
Shower heads	3 star (L5 but <=6mm)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand HW	No
recirculation or diversion	
Rainwater Tank	Unit 1
Rainwater Tank	Unit 2
250L	250L
- Capturing 20%	- Capturing 15%
- Plumbing to Landscaping, Laundry	- Plumbing to Landscaping, Laundry

SCHEDULE FOR BASIC REQUIREMENTS	
182 Lawrence Hargrave Drive, THIRROOL	
Item	Requirement Under BASiC
Fixtures	All Units
Shower heads	3 star (L5 but <=6mm)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand HW	No
recirculation or diversion	
Rainwater Tank	Unit 1
Rainwater Tank	Unit 2
250L	250L
- Capturing 20%	- Capturing 15%
- Plumbing to Landscaping, Laundry	- Plumbing to Landscaping, Laundry

SCHEDULE FOR BASIC REQUIREMENTS	
176 Lawrence Hargrave Drive, THIRROOL	
Item	Requirement Under BASiC
Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour External Walls: FC Cladding, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bedrooms and dwelling Roof: Coloured Roof & Slag, R1.5, American, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Fibreboard (Insulated & sealed), R1.5 garage ceiling below dwelling Floor: Concrete Slab on Ground (Internal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Awning, Hinged - W01, W05, W06, W08, W11, W13, W16, W19, W20, W26 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.7, Sliding, Fixed - W02, W04, W07, W25 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.51, Awning - W15, W18 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.58, Sliding, Fixed - W03, W09, W10, W12, W14, W17, W21, W22, W23, W24 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.47, Awning - W12, W13, W16, W19, W20, W26 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.58, Sliding, Fixed - W02, W04, W07, W25 DEFAULT: Steel, Double Glazed, Clear, Solarshade to Unit 2 Internal WC

SCHEDULE FOR BASIC REQUIREMENTS	
182 Lawrence Hargrave Drive, THIRROOL	
Item	Requirement Under BASiC
Fixtures	All Units
Shower heads	3 star (L5 but <=6mm)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand HW	No
recirculation or diversion	
Rainwater Tank	Unit 1
Rainwater Tank	Unit 2
250L	250L
- Capturing 15%	- Capturing 10%
- Plumbing to Landscaping, Laundry	- Plumbing to Landscaping, Laundry

SCHEDULE FOR BASIC REQUIREMENTS	
182 Lawrence Hargrave Drive, THIRROOL	
Item	Requirement Under BASiC
Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour External Walls: FC Cladding, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bedrooms and dwelling Roof: Coloured Roof & Slag, R1.5, American, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Fibreboard (Insulated & sealed), R1.5 garage ceiling below dwelling Floor: Concrete Slab on Ground (Internal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Awning, Hinged - W01, W04, W07, W09, W10, W13, W16, W19, W20, W26 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.7, Sliding, Fixed - W02, W07 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.51, Awning - W15, W18, W21, W25, W28, W30, W31 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.58, Sliding, Fixed - W05, W12, W16, W17, W20, W22, W24, W29, W30, W32 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.47, Sliding, Fixed - W06 DEFAULT: Steel, Double Glazed, Clear, Solarshade to Unit 1 Internal WC

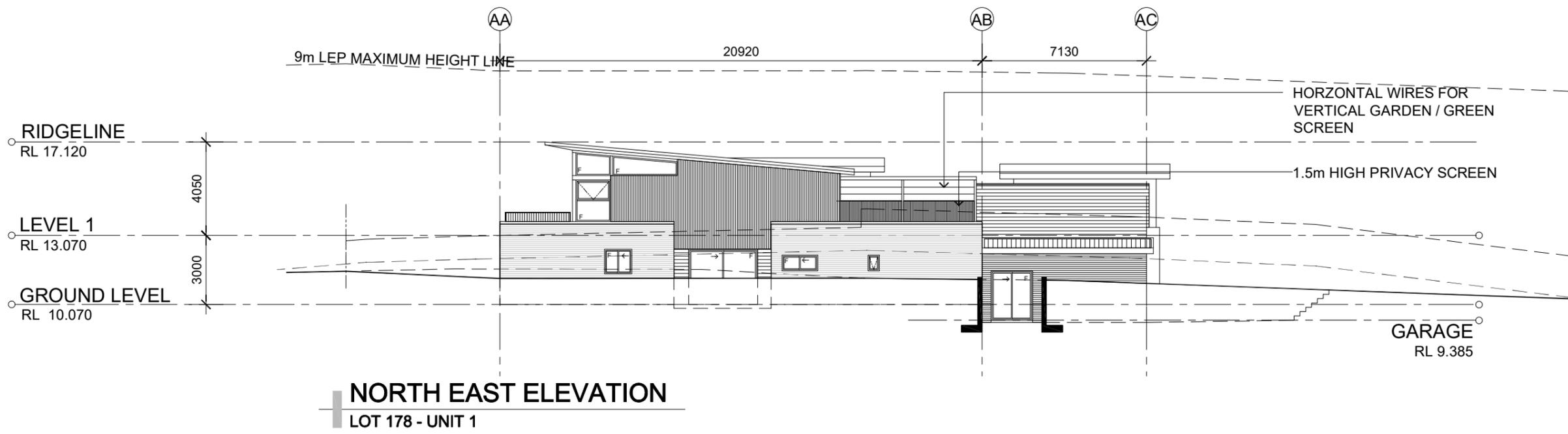
SCHEDULE FOR BASIC REQUIREMENTS	
182 Lawrence Hargrave Drive, THIRROOL	
Item	Requirement Under BASiC
Energy Commitments	All Units
Hot Water	Gas instantaneous - 6 Star
Cooling System	No active system
Heating System	No active system
Bathroom Ventilation	U1: Natural ventilation only U2: Individual fan ducted to facade or roof, manual on/off switch (Internal WC only installed in Bath/ES)
Kitchen Ventilation	Individual fan ducted to facade or roof, manual on/off switch (installed in Bath/ES)
Laundry Ventilation	U2: Individual fan ducted to facade or roof, manual on/off switch (installed in Bath/ES) U1: Natural ventilation only
LED Lighting	All lighting (no recessed downlights provided in Bath/ES)
Bridge Space	Wall ventilation
Kitchen Appliances	Gas cooktop, Electric oven
Circuit Break	Outdoor Private
Alternative Energy	None

PRELIMINARY
NOT FOR CONSTRUCTION

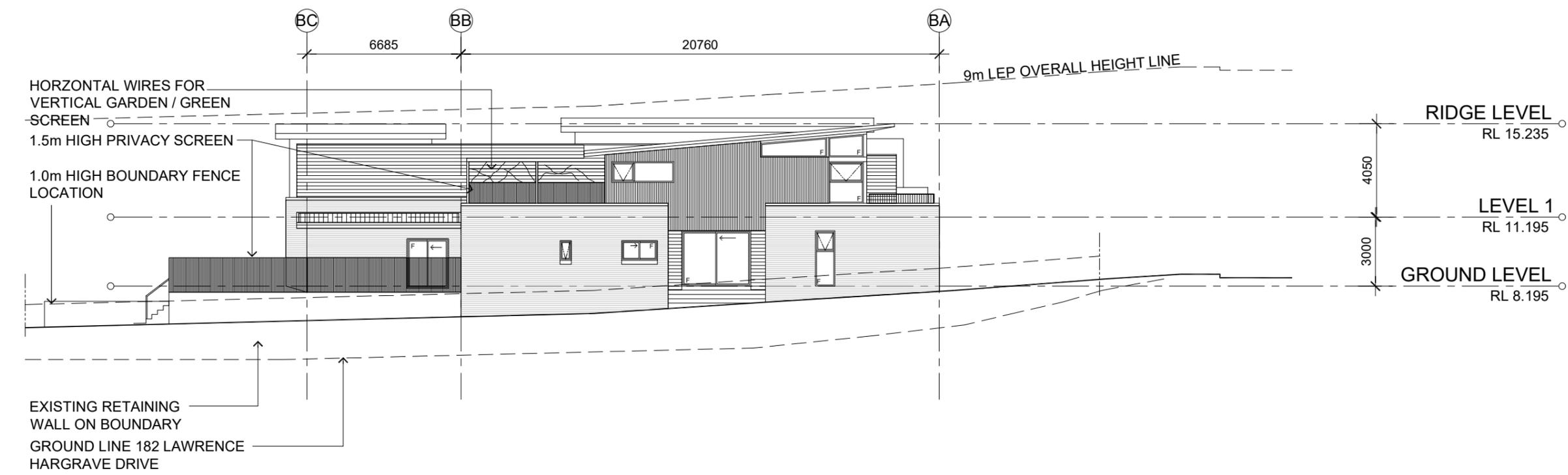
Date	Issue	Revision	Legend
30.11.18	A	Issued for Development Approval	
24.01.19	B	Amended DA Issue	



PROJECT: Development Application - Dual Occupancy development 178 & 180 Lawrence Hargrave Drive THIRROOL	Job No. DML 17/010	Dwg.No A-05
Drawing Name: SOUTH EAST AND NORTHWEST ELEVATIONS	Date 17.10.18	Rev. B
FOR: ILLAWARRA PROPERTY HOLDINGS PTY LTD	Scale 1:200 (A3)	



NORTH EAST ELEVATION
LOT 178 - UNIT 1



SOUTH WEST ELEVATION
LOT 180 - UNIT 2

SCHEDULE FOR BASIX REQUIREMENTS	
178 Lawrence Hargrave Drive, THIRROUL	
Item	Requirement Under BASIX
Fixtures	All Units
Shower heads	3 star (14.5 ltr @ 0.1min)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand hot water recirculation or diversion	No
Rainwater Tank	Unit 1 Unit 2
Rainwater Tank	2500L - Capturing 70m ² - Plumbing to Landscaping, Laundry
Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bathrooms and dwelling Roof: Coloured Roof & 2.0, R2.5 between, DEFAULT Light in colour Roof Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard horizontal @ 900mm, R6.0 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Averag. Hinged - W01, W02, W03, W11, W14, W22, W24, W26, W28 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.7, Sliding, Fixed - W02, W04, W07, W12 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.51, Averag. - W15, W18 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.59, Sliding, Fixed - W01, W05, W16, W17, W19, W20, W21 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.42, Averag. - W22, W31, W33, W37 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.55, Sliding, Fixed - W02, W29, W30, W32, W34, W35, W36 DEFAULT: Steel, Double Glazed, Clear, Solarbute to Unit 2 Internal WC
Energy	All Units
Commitments	Gas Interim - 6 Star
Hot Water	No active system
Cooling System	No active system
Heating System	U1: Natural ventilation only U2: Individual fan ducted to facade or roof, manual on/off switch (manual U1 only installed in NorthES)
Bathroom Ventilation	U1: Individual fan ducted to facade or roof, manual on/off switch (manual U1 only installed in NorthES)
Kitchen Ventilation	U1: Individual fan ducted to facade or roof, manual on/off switch (manual U1 only installed in NorthES)
Laundry Ventilation	U1: Natural ventilation only
LED Lighting	All lighting (no recessed downlights included in NorthES)
Prinse Spalte	Wall vented
Kitchen Appliances	Gas cooktop, Electric oven
Clothes Line	Outdoor Private
Alternative Energy	None

SCHEDULE FOR BASIX REQUIREMENTS	
180 Lawrence Hargrave Drive, THIRROUL	
Item	Requirement Under BASIX
Fixtures	All Units
Shower heads	3 star (14.5 ltr @ 0.1min)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand hot water recirculation or diversion	No
Rainwater Tank	Unit 1 Unit 2
Rainwater Tank	2500L - Capturing 135m ² - Plumbing to Landscaping, Laundry
Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bathrooms and dwelling Roof: Coloured Roof & 2.0, R2.5 between, DEFAULT Light in colour Roof Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard horizontal @ 900mm, R6.0 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 2, R2.5 to Unit 1 Floor Coverings: DEFAULT
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Averag. Hinged - W01, W04, W07, W12, W15, W18, W20, W21, W22, W24, W26, W28 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.7, Sliding, Fixed - W02, W03, W05, W09, W11, W14, W17, W19, W23, W25, W27, W31, W34, W36 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.51, Averag. - W15, W18, W21, W24, W26, W28 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.59, Sliding, Fixed - W01, W05, W16, W17, W19, W20, W21, W22, W23, W25, W27 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.42, Averag. - W22, W31, W33, W37 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.55, Sliding, Fixed - W02, W29, W30, W32, W34, W35, W36 DEFAULT: Steel, Double Glazed, Clear, Solarbute to Unit 1 Internal WC
Energy	All Units
Commitments	Gas Interim - 6 Star
Hot Water	No active system
Cooling System	No active system
Heating System	U1: Natural ventilation only U2: Individual fan ducted to facade or roof, manual on/off switch (manual U1 only installed in NorthES)
Bathroom Ventilation	U1: Natural ventilation only U2: Individual fan ducted to facade or roof, manual on/off switch (manual U1 only installed in NorthES)
Kitchen Ventilation	U1: Individual fan ducted to facade or roof, manual on/off switch (manual U1 only installed in NorthES)
Laundry Ventilation	U1: Natural ventilation only
LED Lighting	All lighting (no recessed downlights included in NorthES)
Prinse Spalte	Wall vented
Kitchen Appliances	Gas cooktop, Electric oven
Clothes Line	Outdoor Private
Alternative Energy	None

PRELIMINARY
NOT FOR CONSTRUCTION

Date	Issue	Revision	Legend
30.11.18	A	Issued for Development Approval	
24.01.19	B	Amended DA Issue	

Develop My Land
management • consultancy • landscape architecture • urban design
PO Box 119, Thornhill, NSW, 2015, Tel: 0440 284480 e: dmv@developmyland.com.au

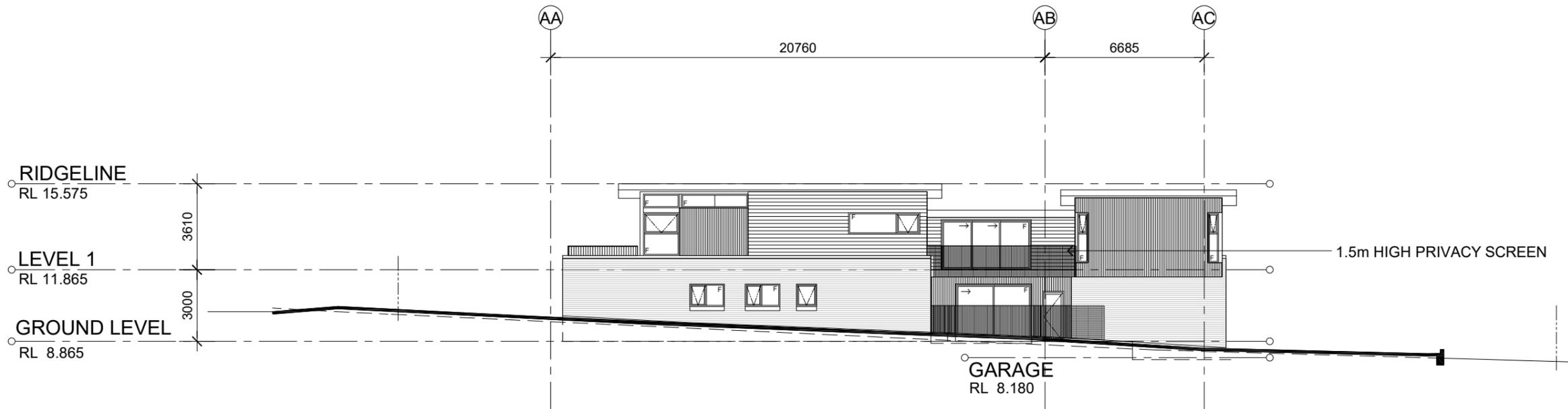
PROJECT: Development Application - Dual Occupancy development
178 & 180 Lawrence Hargrave Drive THIRROUL

Drawing Name: NORTH EAST AND SOUTH WEST ELEVATIONS
FOR: ILLAWARRA PROPERTY HOLDINGS PTY LTD

Scale: 1:200 (A3)

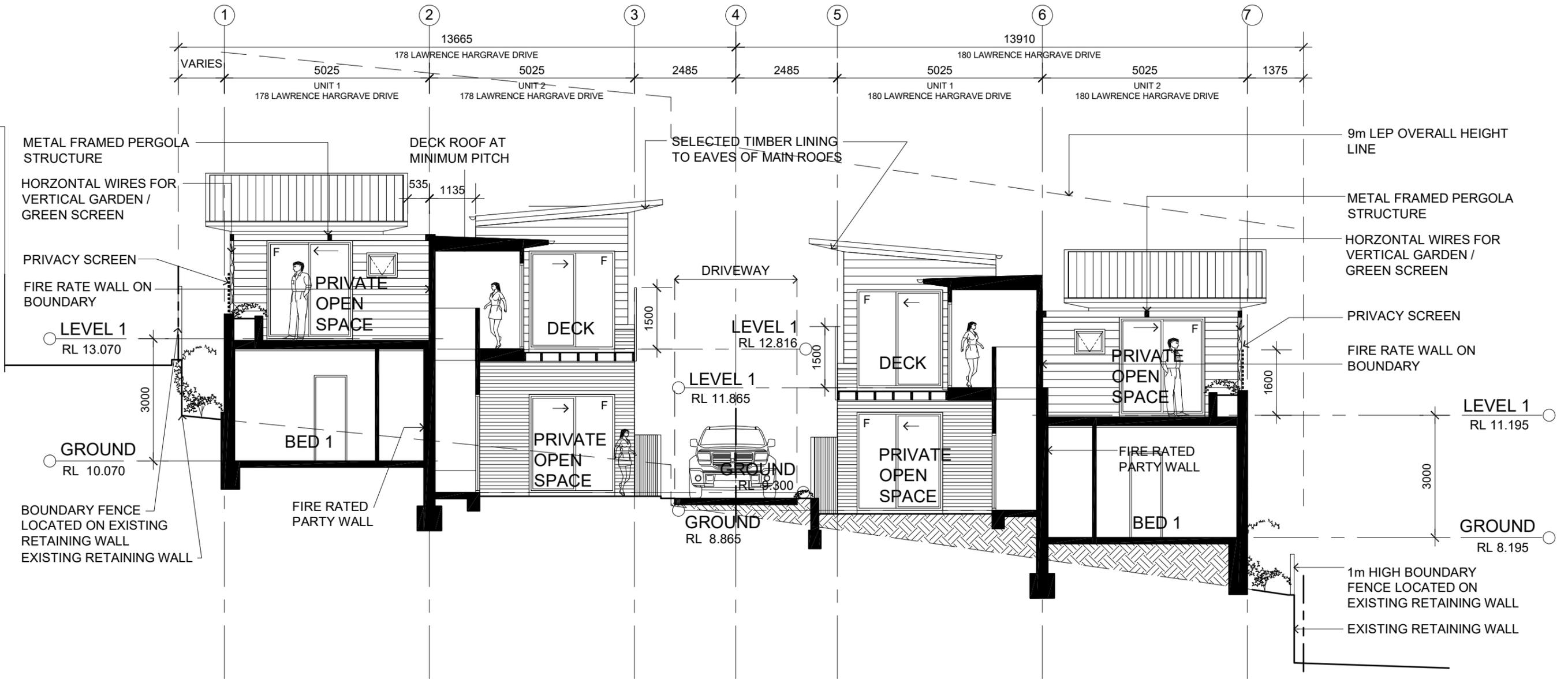
Date: 17.10.18

Job No: DML 17/010
Dwg No: A-06
Rev: B



NORTH EAST ELEVATION
LOT 180 - UNIT 1

SCHEDULE FOR BASIS REQUIREMENTS	
178 Lawrence Hargrave Drive, THIRROUL	
Requirement under BASIX	
Fixtures	All Units
Shower heads	3 star (4.5 lps @ 0.15/min)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand HW	No
Recirculation or diversion	No
Rainwater Tank	Unit 1
	Unit 2
Rainwater Tank	2500L
	2500L
	• Capturing 250L
	• Plumbing to Landscaping, Laundry
Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bathrooms and dwelling Roof: Colorbond Roof 8 & 24kg, R1.3 Arlonon, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard (horizontal & vertical), R4, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slabs) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT
Glazing	DEFAULT: Alum, Single Glazed, Clear, U-Value 6.7, SHGC 0.57, Awning, Hinged - W01, W05, W06, W08, W11, W12, W13, W14, W15, W16, W17, W18, W19, W20, W21, W22, W23, W24, W25, W26, W27, W28, W29, W30, W31, W32, W33, W34, W35, W36, W37, W38, W39, W40, W41, W42, W43, W44, W45, W46, W47, W48, W49, W50, W51, W52, W53, W54, W55, W56, W57, W58, W59, W60, W61, W62, W63, W64, W65, W66, W67, W68, W69, W70, W71, W72, W73, W74, W75, W76, W77, W78, W79, W80, W81, W82, W83, W84, W85, W86, W87, W88, W89, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100, W101, W102, W103, W104, W105, W106, W107, W108, W109, W110, W111, W112, W113, W114, W115, W116, W117, W118, W119, W120, W121, W122, W123, W124, W125, W126, W127, W128, W129, W130, W131, W132, W133, W134, W135, W136, W137, W138, W139, W140, W141, W142, W143, W144, W145, W146, W147, W148, W149, W150, W151, W152, W153, W154, W155, W156, W157, W158, W159, W160, W161, W162, W163, W164, W165, W166, W167, W168, W169, W170, W171, W172, W173, W174, 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SECTION A-A

SCHEDULE FOR BASIX REQUIREMENTS	
178 Lawrence Hargrave Drive THIRROUL	
Item	Requirement Under BASIX
Fixtures	All Units
Sinks/Traps	3 star (4.5 but <= 6.0mm)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand hot water recirculation or diversion	No
Rainwater Tank	Unit 1 2500L - Capturing 20m ³ - Plumbing to Landscape, Laundry
Rainwater Tank	Unit 2 2500L - Capturing 10m ³ - Plumbing to Landscape, Laundry
Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour External Walls: PC Cladding, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bedrooms and dwelling Roof: Coloured Roof 1.8 Slab, R1.3 Junction, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard (horizontal & vertical), R4, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slab) Floor: Suspended timber (open), R2 to Unit 1, R2.5 to Unit 2 Floor Coverings: DEFAULT
Glassing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Arming: Sliding - W01, W06, W08, W10, W12, W14, W16, W18, W20, W22 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.7, Sliding, Fixed - W02, W04, W07, W09, W11, W13, W15, W17, W19, W21, W23, W25, W27 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.53, Arming - W03, W05, W08, W11, W13, W16, W19, W22, W24, W26, W29, W32, W35, W37 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.47, Arming - W02, W03, W05, W07, W09, W12, W14, W17, W20, W23, W26, W28, W31, W34, W36, W39 DEFAULT: Steel, Double Glazed, Clear, Solarblock to Unit 2 Internal WIC
Energy Commitments	All Units
Hot Water	Gas instantaneous - 6 Star
Cooling System	No active system
Heating System	No active system
Bathroom Ventilation	(1): Natural ventilation only (2): Individual fan ducted to facade or roof, manual on/off switch (modelled in Name(E))
Kitchen Ventilation	(1): Individual fan ducted to facade or roof, manual on/off switch (modelled in Name(E)) (2): Natural ventilation only
Laundry Ventilation	(1): Individual fan ducted to facade or roof, manual on/off switch (modelled in Name(E)) (2): Natural ventilation only
LED Lighting	(1): Natural ventilation only (2): LED lighting (no recessed downlights modelled in Name(E))
Energy Appliances	Gas cooktop, Electric oven
Outdoor Private	Outdoor Private
Alternative Energy	None

SCHEDULE FOR BASIX REQUIREMENTS	
180 Lawrence Hargrave Drive THIRROUL	
Item	Requirement Under BASIX
Fixtures	All Units
Sinks/Traps	3 star (4.5 but <= 6.0mm)
Toilets	3 star
Kitchen taps	3 star
Bathroom taps	3 star
On demand hot water recirculation or diversion	No
Rainwater Tank	Unit 1 2500L - Capturing 10m ³ - Plumbing to Landscape, Laundry
Rainwater Tank	Unit 2 2500L - Capturing 10m ³ - Plumbing to Landscape, Laundry
Thermal Comfort	All Units
Building Elements	External Walls: Brick Veneer, R2.5, DEFAULT Medium in colour External Walls: PC Cladding, R2.5, DEFAULT Medium in colour Internal Walls: Plasterboard, R2.5 between garage & dwelling, R2 between bedrooms and dwelling Roof: Coloured Roof 1.8 Slab, R1.3 Junction, DEFAULT Light in colour Roof: Waterproof Membrane, DEFAULT Light in colour Ceiling: Plasterboard (horizontal & vertical), R4, R2 garage ceiling below dwelling Floor: Concrete Slab on Ground (thermal break to be installed between garage and dwelling slab) Floor: Suspended timber (open), R2 to Unit 2, R2.5 to Unit 1 Floor Coverings: DEFAULT
Glassing	DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.57, Arming: Sliding - W01, W06, W08, W10, W12, W14, W16, W18, W20, W22 DEFAULT: Alum, Single Glazed, Clear, U-Value: 6.7, SHGC: 0.7, Sliding, Fixed - W02, W04, W07, W09, W11, W13, W15, W17, W19, W21, W23, W25, W27 DEFAULT: Alum, Double Glazed, Clear, U-Value: 4.8, SHGC: 0.53, Arming - W03, W05, W08, W11, W13, W16, W19, W22, W24, W26, W29, W32, W35, W37 DEFAULT: Alum, Double Glazed, High Solar Gain Low E, U-Value: 4.3, SHGC: 0.47, Arming - W02, W03, W05, W07, W09, W12, W14, W17, W20, W23, W26, W28, W31, W34, W36, W39 DEFAULT: Steel, Double Glazed, Clear, Solarblock to Unit 1 Internal WIC
Energy Commitments	All Units
Hot Water	Gas instantaneous - 6 Star
Cooling System	No active system
Heating System	No active system
Bathroom Ventilation	(1): Individual fan ducted to facade or roof, manual on/off switch (modelled in Name(E)) (2): Natural ventilation only
Kitchen Ventilation	(1): Individual fan ducted to facade or roof, manual on/off switch (modelled in Name(E)) (2): Natural ventilation only
Laundry Ventilation	(1): Individual fan ducted to facade or roof, manual on/off switch (modelled in Name(E)) (2): Natural ventilation only
LED Lighting	(1): Natural ventilation only (2): LED lighting (no recessed downlights modelled in Name(E))
Energy Appliances	Gas cooktop, Electric oven
Outdoor Private	Outdoor Private
Alternative Energy	None

PRELIMINARY
NOT FOR CONSTRUCTION

Date	Issue	Revision
30.11.18	A	Issued for Development Approval

Date	Issue	Revision	Legend
30.11.18	A	Issued for Development Approval	

Develop My Land
management · consultancy · landscape architecture · urban design
PO Box 110, Telok, NSW, 2015, Tel: 0420 204900 e: dev@developmyland.com.au

PROJECT: Development Application - Dual Occupancy development
178 & 180 Lawrence Hargrave Drive THIRROUL

Drawing Name: SECTION A-A

FOR: ILLAWARRA PROPERTY HOLDINGS PTY LTD

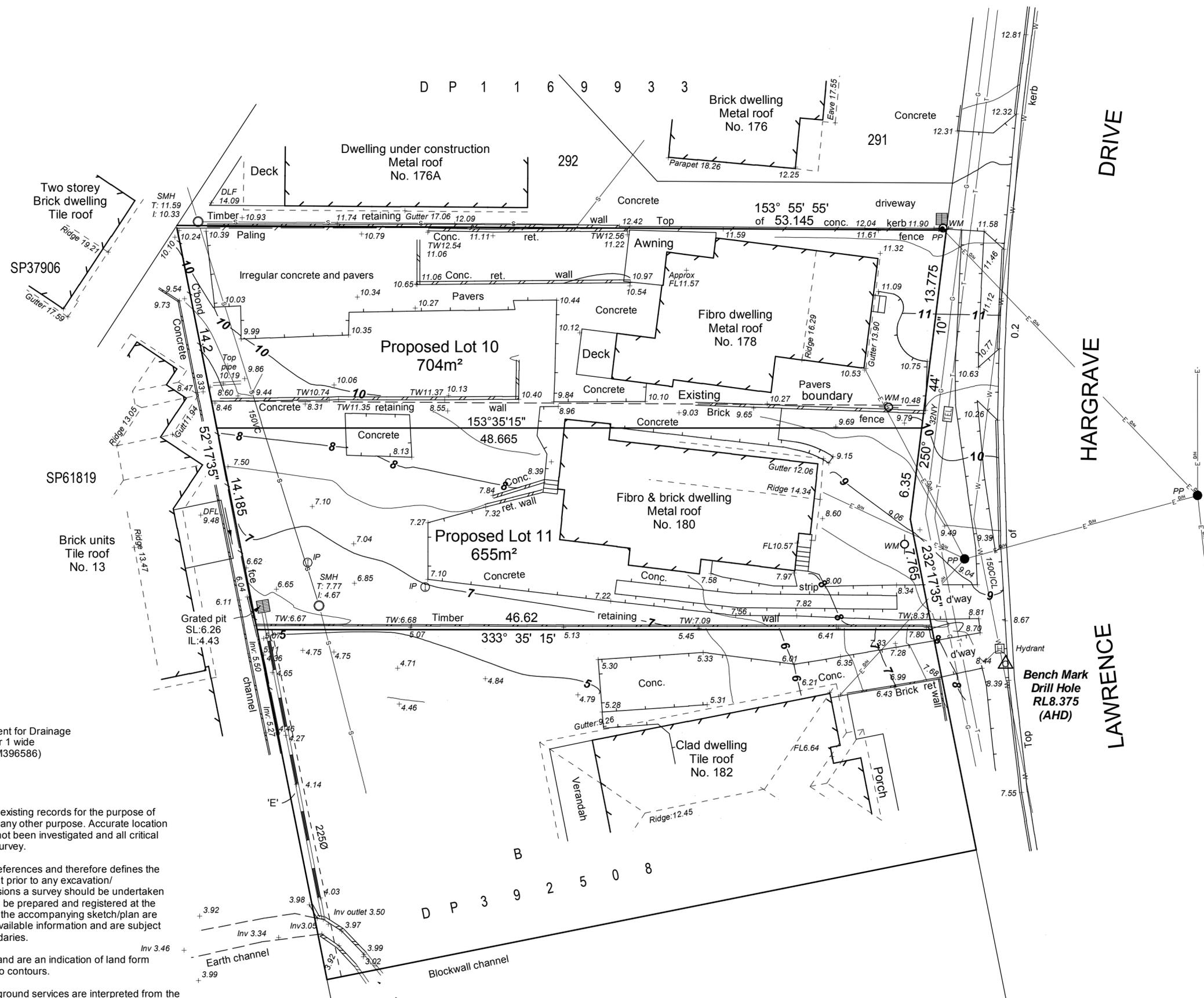
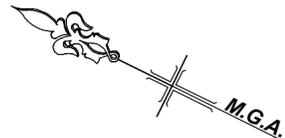
Scale: 1:200 (A3)

Date: 17.10.18

Job No: DML 17/010

Dwg No: A-08

Rev: A



'E' Easement for Drainage of Water 1 wide (vide AM396586)

Notes:

This plan has been prepared from field survey and existing records for the purpose of 1:200 general planning and should not be used for any other purpose. Accurate location of improvements in relation to the boundaries has not been investigated and all critical improvement dimensions should be confirmed by survey.

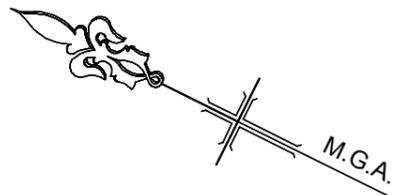
There is no plan of survey on public record which references and therefore defines the boundaries of the subject property. It is advised that prior to any excavation/construction or design of proposed buildings/extensions a survey should be undertaken and a plan defining and referencing the boundaries be prepared and registered at the Land Titles Office. Boundary dimensions shown on the accompanying sketch/plan are therefore an opinion and have been derived from available information and are subject to change after registration of a plan defining boundaries.

Contours shown are interpolated at 0.5m intervals and are an indication of land form only. Spot levels should be adopted in preference to contours.

Services have been located where possible, underground services are interpreted from the records of the relevant authority unless stated as 'located'. The relevant authority should be contacted and all services accurately located prior to any excavation/construction works or design of buildings/extensions. Please call 1100 or visit www.1100.com.au for 'Dial Before You Dig' service location plans.

Roof profile and tree details are approximate only.

<p>DENNIS SMITH SURVEYS</p>	<p>8 Railway Street Bulli NSW 2516 Ph: 02 4284 9402 Fax: 02 4285 7042 E-mail: info@dssurvey.com.au Web: www.dssurvey.com.au</p>	<p>PLAN: Proposed boundary adjustment ADDRESS: 178 & 180 Lawrence Hargrave Drive, Thirroul TITLE: Lot A DP392508 and Lot 2 DP329046 CLIENT: DevelopmyLand</p>	<p>ORIENTATION: Map Grid of Australia Origin: DP1169933 DATUM: A.H.D. Origin: SSM13156</p>	<p>P.R.: 10907-9A SCALE 1:200 DATE: 29 - 11 - 2018 SHEET 1 of 2 (A2) Drawn: M.J.B. Check: M.S.</p>
	<p>Roof profile and tree details are approximate only.</p>			



SP37906

SP61819

292

D P 1 1 6 9 9 3 3

153° 55' 55"

53.145

101
329 m²

(A)

333° 35' 15"

51.11

102
375 m²

(A) (B)

333° 35' 15"

48.665

(A) (B)

(A) (B)

103
357 m²

(A) (B)

333° 35' 15"

46.62

104
298 m²

(A) (B)

46.62

333° 35' 15"

B

D P 3 9 2 5 0 8

DRIVE

HARGRAVE

LAWRENCE

Notes:

This plan has been prepared from field survey and existing records for the purpose of 1:200 general planning and should not be used for any other purpose. Accurate location of improvements in relation to the boundaries has not been investigated and all critical improvement dimensions should be confirmed by survey.

Although the latest available information has been adopted from the Department of Lands, boundary investigation for the purpose of critical definition has not been made; therefore, any stated bearing, distance and/or area could be subject to change with further investigation. If boundary critical excavation/construction or design of buildings/extensions are to be undertaken further investigation is recommended.

- (A) Proposed right of carriageway variable width
- (B) Proposed easement for drainage variable width
- (E) Existing easement for drainage of water 1 wide (Vide AM396586)

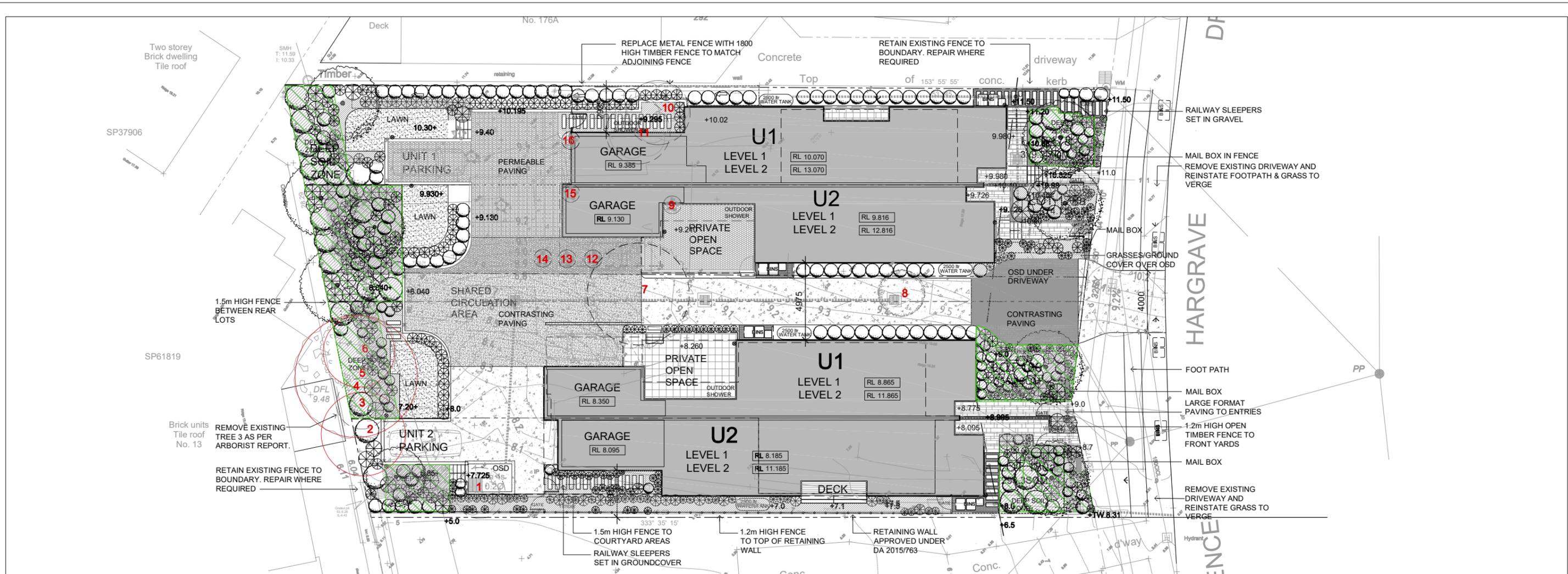


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Web: www.dssurvey.com.au

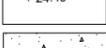
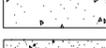
PLAN: Proposed subdivision
ADDRESS: 178 & 180 Lawrence Hargrave Drive, Thirroul
TITLE: Lot A DP392508 and Lot 2 DP392046
CLIENT: Develop My Land

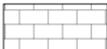
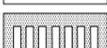
ORIENTATION:
Map Grid of Australia
Origin: DP1169933
DATUM: A.H.D.
Origin: SSM13156

P.R.: 10907-9B
SCALE 1:200
DATE: 29-11-2018
SHEET 2 of 2 (A3)
Drawn: A.P. Check:



LEGEND

-  PROPERTY BOUNDARY
-  EXISTING TREE TO BE RETAINED
-  EXISTING TREE TO BE REMOVED REFER TO ARBORIST REPORT
-  PROPOSED TREE
-  PROPOSED SHRUB AND GROUND COVER PLANTING
-  PROPOSED LAWN
-  DEEP SOIL ZONE - REFER TO PLANT LIST FOR PROPOSED SPECIES
-  EXISTING LEVELS AND CONTOURS
-  PROPOSED SPOT LEVELS
-  PROPOSED CONCRETE DRIVEWAY
-  CONTRASTING VEHICULAR PAVING AT ENTRY THRESHOLD

-  PERMEABLE PAVING TO DRIVEWAY AND COURTYARD
-  LARGE FORMAT PAVING TO ENTRANCES
-  PROPOSED RETAINING WALL
-  RECYCLED RAILWAY SLEEPER STEPS SET IN GRAVEL/GROUND COVER
-  PROPOSED 1800 HIGH FENCE
-  PROPOSED 1500 COURTYARD FENCE
-  PROPOSED 1200 HIGH OPEN TIMBER FENCE
-  PROPOSED 1200 HIGH FENCE TO TOP OF RETAINING WALL
-  PROPOSED HOSEBIB
-  PROPOSED DRAINAGE

NOTE: REFER ALSO TO STORMWATER CONCEPT PLAN BY OPTIMA ENGINEERING. LANDSCAPE PLAN HAS BEEN COORDINATED WITH STORMWATER CONCEPT PLAN

PROPOSED PLANT SCHEDULE

BOTANICAL	COMMON NAME
TREES AND LARGE SHRUBS	
<i>Acmena smithii</i>	Lily Pilly
<i>Banksia integrifolia</i>	Coast Banksia
<i>Banksia serrata</i>	Old Man Banksia
<i>Callistemon citrinus</i>	Bottlebrush
<i>Elaeocarpus reticulatus</i>	Blueberry Ash
<i>Grevillea 'Honey Gem'</i>	Grevillea
<i>Grevillea 'Moonlight'</i>	Grevillea
<i>Grevillea asplifolia</i>	Grevillea
SMALL SHRUBS AND ACCENT PLANTS	
<i>Correa alba</i>	White Correa
<i>Correa 'Coastal Pink'</i>	Pink Correa
<i>Doryanthus excelsa</i>	Gymea Lily
<i>Philotheca myoporoides</i>	Wax Flower
<i>Westringea 'Naringa'</i>	Coastal Rosemary
<i>Westringea 'Blue Gem'</i>	Coastal Rosemary
GROUND COVERS, NATIVE GRASSES AND SMALL ACCENTS	
<i>Carex appressa</i>	Carex
<i>Crinum pendunculatum</i>	Swamp Lily
<i>Grevillea 'Lady O'</i>	Grevillea
<i>Grevillea obtusifolia</i>	Grevillea
<i>Grevillea juniperea</i>	Grevillea
<i>Lomandra longifolia</i>	Mat Rush
<i>Lomandra 'Tanika'</i>	Dwarf Mat Rush
<i>Myoporum parvifolium</i>	Creeping Boobialla
<i>Poa 'Eskdale'</i>	Blue Grass
<i>Pennisetum 'Nafray'</i>	Fountain Gras

DEVELOPMENT DATA 178 LHD

PROPOSED SITE AREA 178 LHD	703.9sqm
PROPOSED LANDSCAPE AREA - TOTAL (151.18sqm REQ)	154sqm
PROPOSED LOT 178 AREA	329sqm
PROPOSED LOT 178a AREA	375sqm
PROPOSED LOT 178 LANDSCAPE AREA (65.8sqm REQ)	87.36sqm
PROPOSED LOT 178a LANDSCAPE AREA (75sqm REQ)	74.05sqm
PROPOSED DEEP SOIL - TOTAL (75.59sqm REQ)	76.6sqm
PROPOSED LOT 178 DEEP SOIL (32.9sqm REQ)	33.98sqm
PROPOSED LOT 178a DEEP SOIL (37.5sqm REQ)	41.6sqm

DEVELOPMENT DATA 180 LHD

PROPOSED SITE AREA 180 LHD	655sqm
PROPOSED LANDSCAPE AREA - TOTAL(136.5sqm REQ)	140.15sqm
PROPOSED LOT 180 AREA	357sqm
PROPOSED LOT 180a AREA	298sqm
PROPOSED LOT 180 LANDSCAPE AREA (71.4sqm REQ)	70.27sqm
PROPOSED LOT 180a LANDSCAPE AREA (59.6sqm REQ)	67.55sqm
PROPOSED DEEP SOIL - TOTAL (68.25sqm REQ)	77.31sqm
PROPOSED LOT 180 DEEP SOIL (35.7sqm REQ)	47.33sqm
PROPOSED LOT 180a DEEP SOIL (29.8sqm REQ)	29.98sqm



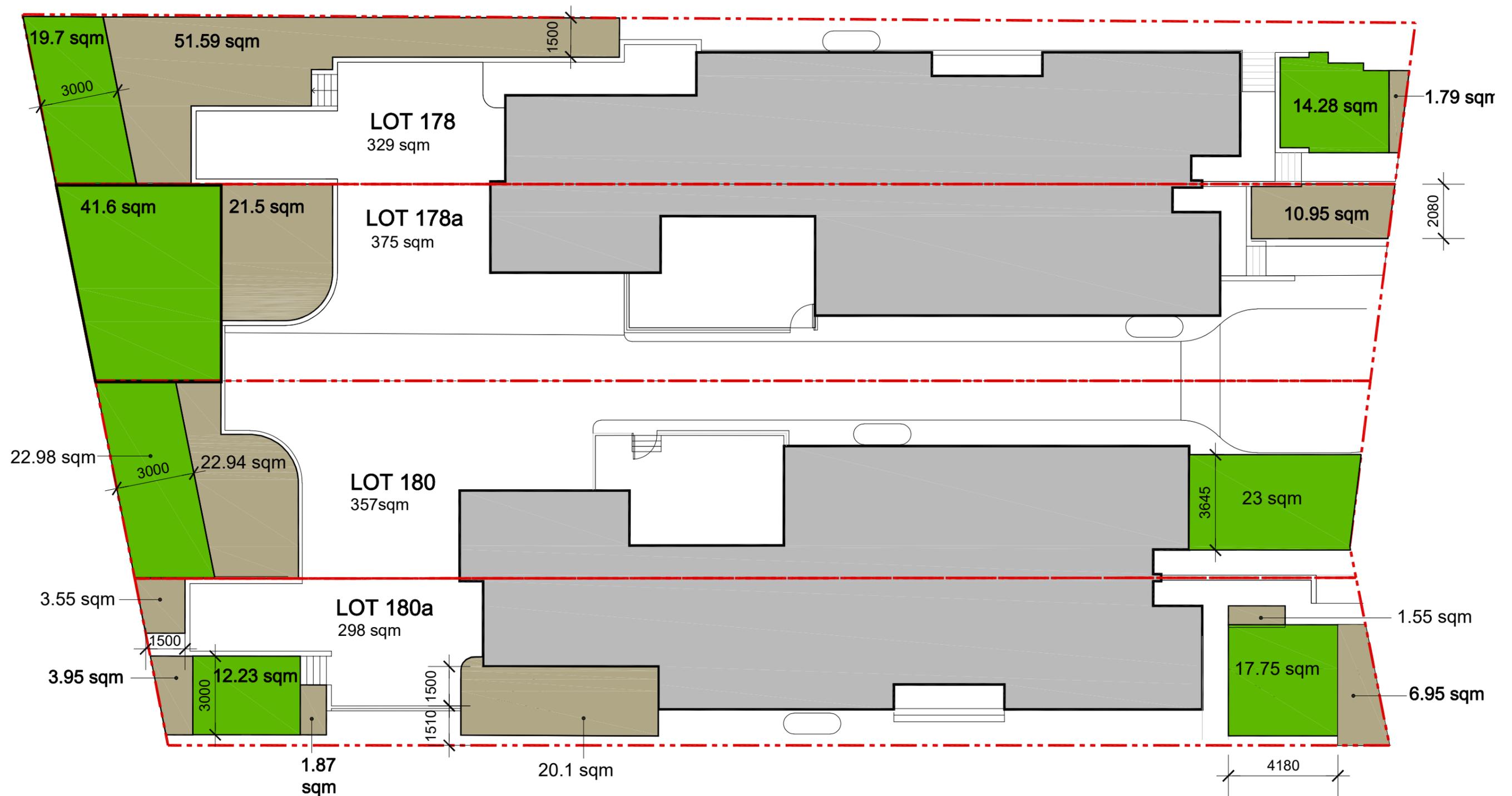
PRELIMINARY
NOT FOR CONSTRUCTION

Date	Issue	Revision	Legend
30.11.18	A	Issued for Development Approval	
17.01.19	B	Amended DA issue	

Develop My Land
management · consultancy · landscape architecture · urban design
PO Box 119, Thirroul, NSW, 2515, Tel. 0449 256488 e. steve@developmyland.com.au

PROJECT: Development Application - Dual Occupancy development
178 & 180 Lawrence Hargrave Drive THIRROUL

Drawing Name: LANDSCAPE PLAN	Job No. DML 17/010	Dwg.No. L-01
FOR: ILLAWARRA PROPERTY HOLDINGS PTY LTD	Scale 1:250 (A3)	Date 17.10.18
		Rev. B



LANDSCAPE AREAS - 178 LHD

PROPOSED SITE AREA	329 sqm
REQUIRED LANDSCAPE AREA	65.8 SQM
REQUIRED DEEP SOIL AREA	32.9 SQM
PROPOSED LANDSCAPE AREA	87.36 SQM
PROPOSED DEEP SOIL AREA	33.98 SQM

DEVELOPMENT DATA - 178A LHD

PROPOSED SITE AREA	375 sqm
REQUIRED LANDSCAPE AREA	75 SQM
REQUIRED DEEP SOIL AREA	37.5 SQM
PROPOSED LANDSCAPE AREA	74.05 SQM
PROPOSED DEEP SOIL AREA	41.6 SQM

LANDSCAPE AREAS - 180 LHD

PROPOSED SITE AREA	357 sqm
REQUIRED LANDSCAPE AREA	71.4 SQM
REQUIRED DEEP SOIL AREA	35.7 SQM
PROPOSED LANDSCAPE AREA	70.27 SQM
PROPOSED DEEP SOIL AREA	45.09 SQM

DEVELOPMENT DATA - 180A LHD

PROPOSED SITE AREA	298 sqm
REQUIRED LANDSCAPE AREA	59.6 SQM
REQUIRED DEEP SOIL AREA	29.8 SQM
PROPOSED LANDSCAPE AREA	67.55 SQM
PROPOSED DEEP SOIL AREA	29.98 SQM



PRELIMINARY
NOT FOR CONSTRUCTION

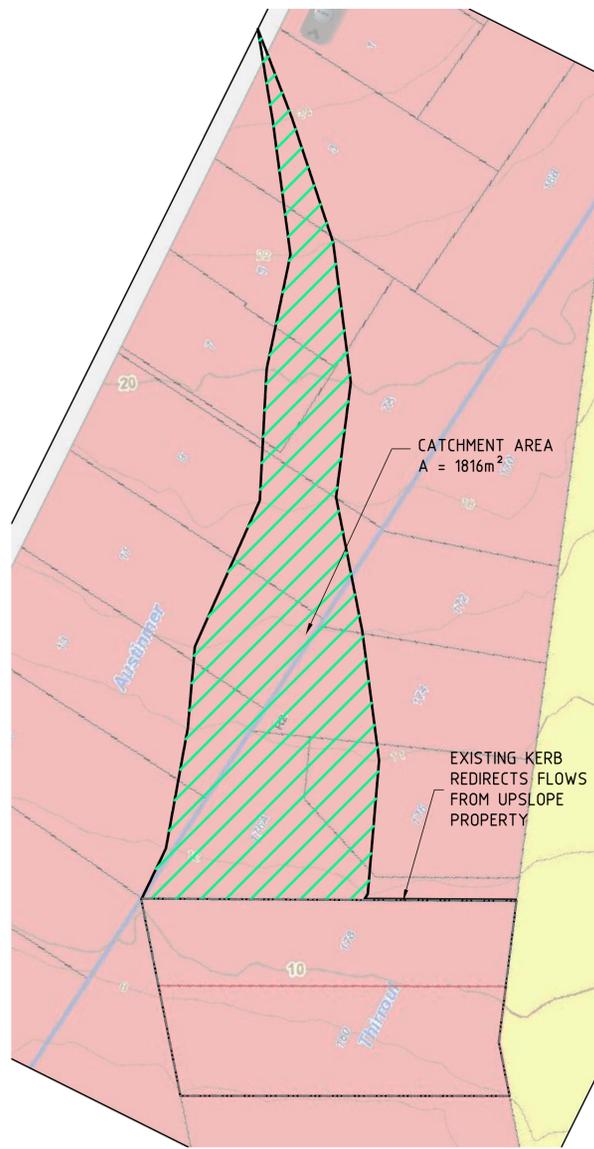
Date	Issue	Revision
23.01.19	A	Issued for Development Approval

Legend

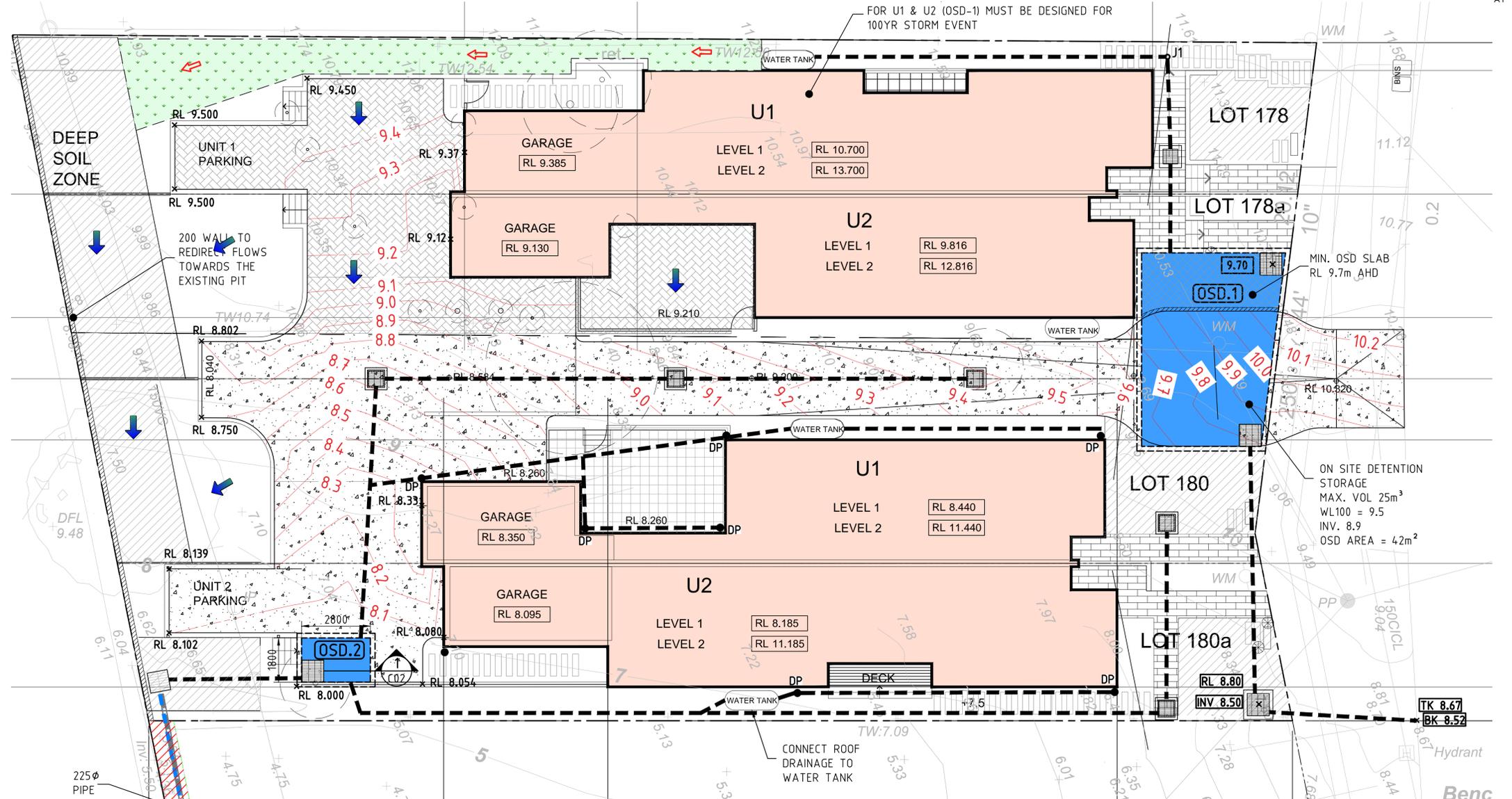


PROJECT: Development Application - Dual Occupancy development
178 & 180 Lawrence Hargrave Drive THIRROUL

Drawing Name: POST TORRENS TITLE LANDSCAPE AREAS	Job No. DML 17/010	Dwg.No LA-02
FOR: ILLAWARRA PROPERTY HOLDINGS PTY LTD	Scale 1:150 (A3)	Date 17.10.18
		Rev. A



CATCHMENT PLAN
Scale: 1:100 @ A1, 1:200 @ A3



CONCEPT DRAINAGE PLAN
Scale: 1:100 @ A1, 1:200 @ A3

OSD.1 CALCULATIONS - LOT 178

DRAINAGE AND OSD.1 WAS MODELED IN DRAINS TO ACHIEVE SAME FLOWS TO GUTTER IN OCEAN STREET FOR ALL STORM EVENTS.

EXISTING FLOWS FROM EXISTING ROOF (32m²)
Q5 - 2 L/s
Q100 - 3 L/s

OSD-1 WAS SIZED TO ACHIEVE SAME FLOWS TO THE STREET GUTTER.
REQUIRED OSD VOL = 25m³, ORIFICE 40mm DIA

ALL GUTTERS, DOWNPIPES, PITS AND DRAINAGE PIPES MUST BE DESIGNED FOR 100 YEAR STORM EVENT.

Q5 - 2 L/s
Q100 - 3 L/s

OSD.2 LOT 180 STEP 1

SITE INFORMATION		GRAPHS		OSD REQUIREMENTS	
SITE AREA	1359 m ²	F ₂	1.12	PSD ₅	25.1 L/s
TRIBUTARY AREA	739.1 m ²	F ₃	0.17	PSD ₁₀₀	42.5 L/s
POST. IMP. AREA	574.7 m ²	F ₄	0.52	SSR ₅	4.5 m ³
I _{50r}	99.5 mm/hr	F _{1s}	1.142	SSR ₁₀₀	7.6 m ³
		F ₁₀₀	1.105		

LOT 180 STEP 2

SITE INFORMATION		GRAPHS		OSD REQUIREMENTS	
SITE AREA	1359 m ²	F ₂	1.12	PSD ₅	22.0 L/s
TRIBUTARY AREA	739.1 m ²	F ₃	0.11	PSD ₁₀₀	38.4 L/s
PRE. IMP. AREA	310.88 m ²	F ₄	0.52	SSR ₅	2.6 m ³
I _{50r}	99.5 mm/hr	F _{1s}	1.00	SSR ₁₀₀	4.5 m ³
		F ₁₀₀	1.00		

LOT 180 FINAL OSD

SITE INFORMATION		GRAPHS		OSD REQUIREMENTS	
SITE AREA	1359 m ²	F ₂	1.12	PSD ₅	25.1 L/s
TRIBUTARY AREA	739.1 m ²	F ₃	0.17	PSD ₁₀₀	42.5 L/s
POST. IMP. AREA	574.7 m ²	F ₄	0.52	SSR ₅	1.90 m ³
PRE. IMP. AREA	310.88 m ²	F _{1s}	1.142	SSR ₁₀₀	3.08 m ³
I _{50r}	99.5 mm/hr	F ₁₀₀	1.105		

VOLUME
OSD TANK VOLUME :
OSD AREA = 5.04m²
OSD VOL = 5.04m² x 0.65m = 3.27m³
REQUIRED STORAGE = 3.08m³
TOTAL AVAILABLE STORAGE = 3.27m³

ORIFICE SIZING
Q_s = 25.1 L/s
TWL_s = 8.377
HEAD = 0.377m
ADOPT 149mmØ CIRCULAR ORIFICE

$$D = \left(\frac{0.0251}{1.62 \times 0.377^{0.63}} \right)^{\frac{1}{1.87}}$$

D = 149mm

GENERAL NOTES

- ALL GRATES LOCATED IN THE DRIVEWAY TO BE 'HEAVY DUTY' TYPE
- ALL GRATES TO BE WELDED CONSTRUCTION COMPLETE WITH H.D. BOLTS AND FRAMES. PROVIDE FLATTENED EXPENDED METAL TO ALL GRATES.
- ALL PIT COVERS & GRATES TO BE SECURELY BOLTED DOWN
- ALL CONNECTIONS FROM DOWN PIPES TO BE MIN. 100Ø UPVC PIPES LAID ON AT LEAST 1% GRADE

NEW Q100 FLOW
D_s = 149mmØ
TWL₁₀₀ = 8.611
HEAD = 0.611m
Q = 1.62 x 0.149^{1.87} x 0.611^{0.63}
Q = 33.7 L/s

LEGEND

- × [8.185] PROPOSED SURFACE LEVEL
- 9.0 — EXISTING CONTOUR LEVEL
- PROPERTY BOUNDARY
- - - - - DRAINAGE LINE (IN THE GROUND)
- ← DIRECTION OF SURFACE RUNOFF
- DP • DOWNPIPE - LOCATION TO BE COORDINATED WITH ARCHITECT
- 600 SQ GRATED SURFACE INLET PIT
- 200mm WIDE HEAVY DUTY GRATED DRAIN
- (A1) PIT NUMBER
- (G1) GRATED DRAIN NUMBER
- PERVIOUS PAVEMENT AREA

NOTE:
1. ALL SITE CONDITIONS INCLUDING LEVELS TO BE CONFIRMED, AND ANY DISCREPANCIES TO BE REFERRED TO ARCHITECT PRIOR TO COMMENCEMENT.
2. DO NOT SCALE THE DRAWING, USE FIGURED DIMENSIONS. FOR ALL DIMENSIONS AND LEVELS REFER TO ARCHITECTURAL DRAWINGS.
3. CHECK ALL DIMENSIONS ON SITE BEFORE FABRICATING ANY ITEM AND/OR PLACING CONCRETE.
4. USE ONLY LATEST REVISION OF THE DRAWINGS ISSUED FOR CONSTRUCTION.
5. THESE DRAWINGS ARE SUBJECT TO COPYRIGHT.

No	DATE	AMENDMENT
A	08-08-2017	ISSUED FOR DA
B	13-09-2017	ISSUED FOR DA
C	07-05-2018	ISSUED FOR DA
D	28-11-2018	ISSUED FOR DA
E	24-01-2019	ISSUED FOR DA

OPTIMA CONSULTING ENGINEERS
Consulting Structural & Civil Engineers • Project Management
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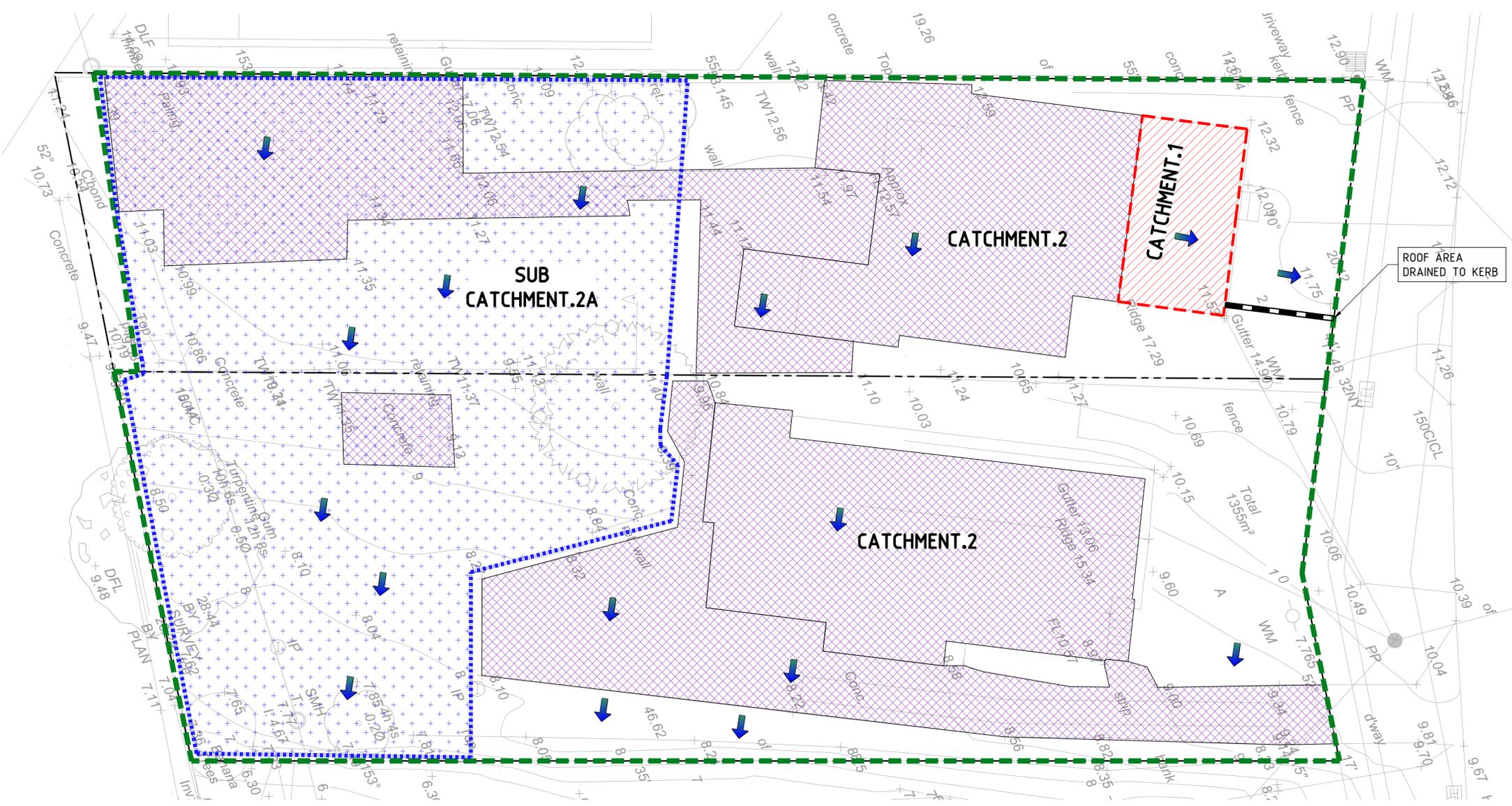
CLIENT: HUGHES RESIDENTIAL DEVELOPMENT.

PROJECT: PROPOSED RESIDENTIAL APARTMENT BUILDING
SITE: 178-180 LAWRENCE HARGRAVE DRIVE THIRROUL

DRAWING: C.01 - CONCEPT DRAINAGE PLAN
DWG. No: OCE12779/C01/DA/E

SCALE: AS SHOWN
DATE: AUG 2017
DRAWN: R.J.
CHECKED: I.O.

SHEET 01
No 1 IN SET 12



PRE DEVELOPMENT CATCHMENT PLAN

Scale: 1:100 @ A1, 1:200 @ A3



CATCHMENT.1 FLOW RATE CALCULATION:
 CATCHMENT.1 AREA = 33m²
 Q₅ = 2 L/S
 Q₁₀₀ = 3 L/S

CATCHMENT.2 FLOW RATE CALCULATION:
 IMPERVIOUS AREA = 563.5m²
 PERVIOUS AREA = 780m²
 TOTAL AREA = 1343.5
 Q₅ = 65 L/S
 Q₁₀₀ = 114 L/S

SUB CATCHMENT.2A FLOW RATE CALCULATION:
 DRAINING TO NORTHWESTERN CORNER
 IMPERVIOUS AREA = 122.6m²
 PERVIOUS AREA = 399.1m²
 TOTAL AREA = 521.7m²
 Q₅ = 25 L/S
 Q₁₀₀ = 44 L/S

LEGEND

- CATCHMENT.1
- CATCHMENT.2
- SUB CATCHMENT 2A
- DIRECTION OF FLOW

NOTE:
 1. ALL SITE CONDITIONS INCLUDING LEVELS TO BE CONFIRMED, AND ANY DISCREPANCIES TO BE REFERRED TO ARCHITECT PRIOR TO COMMENCEMENT.
 2. DO NOT SCALE THE DRAWING, USE FIGURED DIMENSIONS. FOR ALL DIMENSIONS AND LEVELS REFER TO ARCHITECTURAL DRAWINGS.
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 5. THESE DRAWINGS ARE SUBJECT TO COPYRIGHT.

No	DATE	AMENDMENT
A	24-01-2019	ISSUED FOR DA

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 ABN: 35 114 405 926

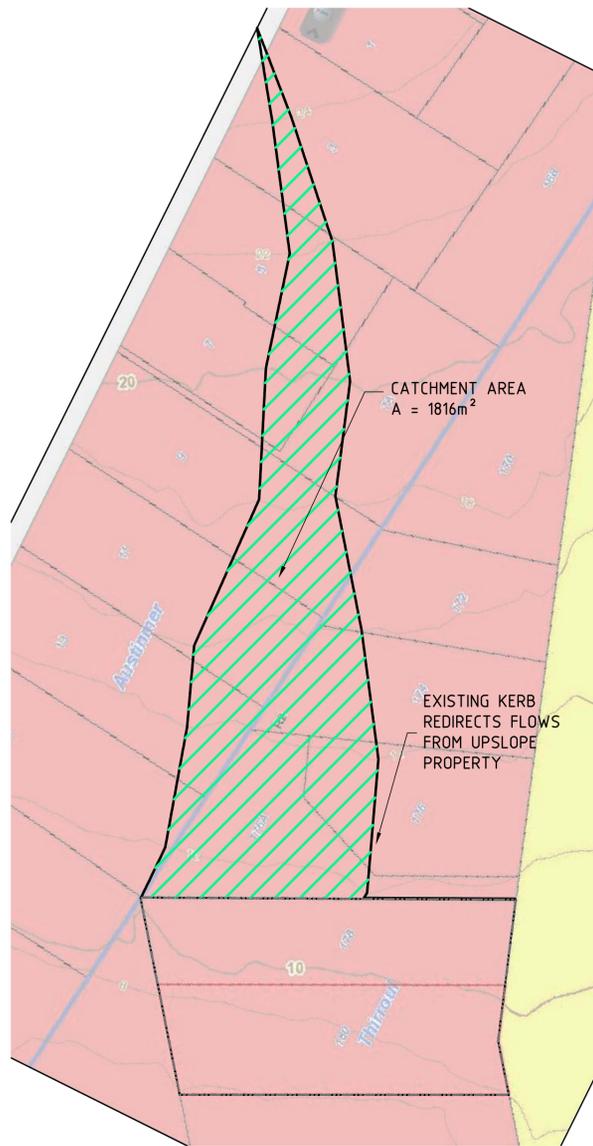
CLIENT:
HUGHES RESIDENTIAL DEVELOPMENT.

PROJECT: **PROPOSED RESIDENTIAL APARTMENT BUILDING**
 SITE: **178-180 LAWRENCE HARGRAVE DRIVE THIRROUL**

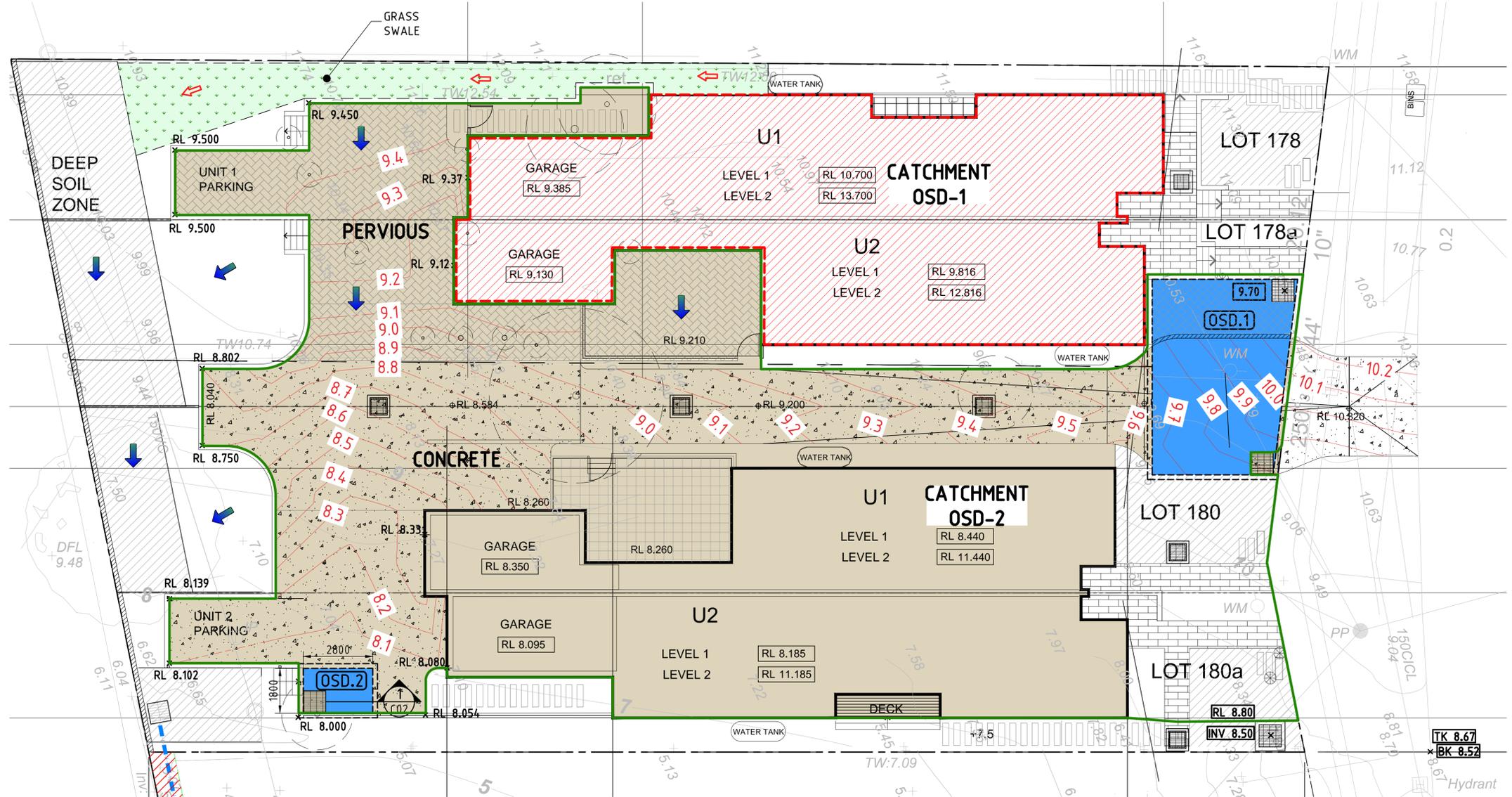
DRAWING: **C11 - PRE DEVELOPMENT CATCHMENT**
 DWG. No: **OCE12779/C11/DA/A**

SCALE: AS SHOWN
 DATE: AUG 2017
 DRAWN: R.J.
 CHECKED: I.O.

SHEET 11
 No 11 IN SET 12



UPSLOPE BYPASS CATCHMENT PLAN
Scale: 1:100 @ A1, 1:200 @ A3



POST DEVELOPMENT CATCHMENT PLAN
Scale: 1:100 @ A1, 1:200 @ A3



LEGEND

- × [8.185] PROPOSED SURFACE LEVEL
- 9.0 — EXISTING CONTOUR LEVEL
- PROPERTY BOUNDARY
- - - - - DRAINAGE LINE (IN THE GROUND)
- ← DIRECTION OF SURFACE RUNOFF
- DP • DOWNPIPE - LOCATION TO BE COORDINATED WITH ARCHITECT
- ▣ 600 SQ GRATED SURFACE INLET PIT
- ▤ 200mm WIDE HEAVY DUTY GRATED DRAIN
- (A1) PIT NUMBER
- (G1) GRATED DRAIN NUMBER
- ▨ PERVIOUS PAVEMENT AREA

NOTE:
 1. ALL SITE CONDITIONS INCLUDING LEVELS TO BE CONFIRMED, AND ANY DISCREPANCIES TO BE REFERRED TO ARCHITECT PRIOR TO COMMENCEMENT.
 2. DO NOT SCALE THE DRAWING, USE FIGURED DIMENSIONS. FOR ALL DIMENSIONS AND LEVELS REFER TO ARCHITECTURAL DRAWINGS.
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No	DATE	AMENDMENT
A	24-01-2019	ISSUED FOR DA

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 Web: www.optimaengineers.com.au
 ABN: 35 114 405 926

CLIENT:
HUGHES RESIDENTIAL DEVELOPMENT.

PROJECT: PROPOSED RESIDENTIAL APARTMENT BUILDING
 SITE: 178-180 LAWRENCE HARGRAVE DRIVE THIRROUL

DRAWING: C12 - POST DEVELOPMENT CATCHMENT
 DWG. No: OCE12779/C12/DA/A

SCALE: AS SHOWN
 DATE: AUG 2017
 DRAWN: R.J.
 CHECKED: I.O.

SHEET 12
 No 12 IN SET 12

APPENDIX 2

DEVELOPMENT APPLICATION FOR DUAL OCCUPANCY RESIDENTIAL DEVELOPMENTS 178 & 180 LAWRENCE HARGRAVE THIRROUL

VARIATION TO DEVELOPMENT CONTROLS WOLLONGONG DEVELOPMENT CONTROL PLAN 2009

CHAPTER B1 – RESIDENTIAL DEVELOPMENT DEVELOPMENT CONTROLS TO BE VARIED

4.5 LANDSCAPED AREA

Objectives of the planning control:

- *To preserve and retain existing native trees and vegetation and encourage the planting of additional native vegetation.*
- *To encourage the linkage of habitat corridors along the rear of sites.*
- *To allow for increased water infiltration and minimise urban run-off.*
- *To facilitate pleasant views from within dwellings and backyard settings.*
- *To reduce privacy and amenity impacts at the rear of residential properties.*

Planning control 4.5.2.2:

The minimum landscaped area required is based on lot size as outlined below. 'Landscaped area' is a permeable area capable of growing trees, shrubs, groundcovers and / or lawn and does not include any building, structure or hard paved area.

- *lot area less than 600m² - 20% landscaped area*
- *lot area from 600m² to 900m² – 120m² + 30% of the site area > 600m² landscaped area*

Response:

The site sizes after the proposed boundary adjustment are:

- 178 Lawrence Hargrave Drive – 703.96sqm
- 180 Lawrence Hargrave Drive – 655 sqm

The DCP requires the following landscaped area for each subject site:

- 151.18sqm for 178 Lawrence Hargrave drive and the proposal provides 160.8sqm
- 136.5sqm for 180 Lawrence Hargrave Drive and the proposal provides 138.22 sqm

As part of this proposal each of the subject sites will be subdivided into two (2) lots being:

- 178 Lawrence Hargrave Drive – 329sqm
- 178a Lawrence Hargrave Drive – 375 sqm
- 180 Lawrence Hargrave Drive – 357 sqm
- 180a Lawrence Hargrave Drive – 298 sqm

The DCP requires for each subject site:

- **65.8sqm** for 178 Lawrence Hargrave drive and the proposal provides **87.36sqm**
- **75 sqm** for 178a Lawrence Hargrave Drive and the proposal provides **74.05 sqm**
- **71.4sqm** for 180 Lawrence Hargrave Drive and the proposal provides **70.27sqm**
- **59.6sqm** for 180a Lawrence Hargrave Drive and the proposal provides **67.55sqm**

Overall the proposal meets the landscape requirements of the DCP prior to the post construction subdivision. The variation sought for the proposed sites 180a and 178 Lawrence Hargrave Drive is 0.95 and 1.13 sqm respectively. As indicated the remaining two lots (are significantly over the required landscape area.

Council should be comfortable supporting the variation as overall the development over both sites can provide adequate landscaped area and the variation is a result of how the landscaped area is distributed over the site post subdivision.

All sites comply with the Deep soil zone requirement of the WDCP 2009, chapter B1, planning control 4.23.2.1.

4.21 ADDITIONAL CONTROLS FOR DUAL OCCUPANCY DEVELOPMENT – MINIMUM SITE WIDTH

Objectives of the planning control:

- *To permit dual occupancy developments upon sites which are of sufficient size to accommodate the required building envelope, car parking, private open space, landscaping and other requirements, whilst maintaining the amenity of surrounding residential development and the streetscape character of the locality.*
- *To allow for development of sites only where the land is not significantly constrained by flood, geotechnical or other environmental hazards*

Planning control 4.21.2.1:

A minimum site width of 15 metres is required for a dual occupancy development. Site width shall be measured for the full width of the site, perpendicular to the side property boundaries. Variations may be granted for irregular shaped blocks or where development can demonstrate compliance with privacy, solar access, private open space, visual amenity, built form, car parking and landscaping requirements.

Response:

An exception is sought pursuant to Chapter A1 Control 8 of the Wollongong Development Control plan (WDCP) 2009.

An exception is sought to the strict application of the minimum site width controls for dual occupancy development which applies to the subject site. Specifically, the development control requiring a minimum site width of 15m for dual occupancy development.

The proposal is to adjust the inter-allotment boundary between No 178 & No 180 so that the lots widths are 13.67m for lot 178 LHD and 13.91m for lot 180 LHD.

The development proposes a shared driveway access to service the four proposed dwellings. Carparking will be provided to the rear of each dwelling.

The proposal to share a driveway limits access points onto Lawrence Hargrave Drive and maximises street parking in front of the proposal and requires 2.5m less width per lot than would be required should each lot require an independent driveway.

No adjoining residences will be impacted by the proposed driveway arrangement and resultant reduced lot width.

Attachment 3: 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.

Generally speaking, the proposal could be considered to be consistent with the principles of Ecologically Sustainable Development.

CHAPTER B1 – RESIDENTIAL DEVELOPMENT

This Chapter applies to all residentially zoned land in the LGA. Section 4 provides general residential controls which apply to all dwelling houses, dual occupancies, secondary dwellings, ancillary structures and semi-detached dwellings.

4. General Residential controls

<i>Controls/objectives</i>	<i>Comment</i>	<i>Compliance</i>
<u>4.1 Maximum Number of Storeys</u>		
Where development occurs within the 8m rear setback, the development is limited to single storey	The two storey component of the development is setback a minimum of 12m from the rear property boundary.	Yes
<u>4.2 Front Setbacks</u>		
6m from the front property boundary	The proposal is setback a minimum of 6m from the front property boundary.	Yes
<u>4.3 Side and Rear Setbacks</u>		
Walls 900mm and eaves 450mm from any side or rear property boundary	The proposal is setback 1.13m from the north eastern side boundary and 1.375m from the south western side boundary. Works are proposed to be setback a minimum of 12m from the rear property boundary. The proposed eaves are setback a minimum of 600m from the side property boundaries.	Yes
<u>4.4 Site coverage</u>		
Maximum site coverage for dual occupancy on site with area of less than 450sqm = 55%	A site coverage of approximately 29% for proposed Lot 10 and 31% for proposed Lot 11 is proposed.	Yes
on site with area of at least 450sqm but less than 900sqm = 50%	Site coverage resulting from the subdivision of the dual occupancies would remain well below the 55% permitted for lots less than 450sqm, as per the below: Lot 101 – 33% Lot 102 – 24% Lot 103 – 25% Lot 104 – 36%	
<u>4.5 Landscaped Area</u>		
Minimum landscaping area	A variation to the landscaped area controls for	

<p>based on lot size – 120sqm + 30% of the site area > 600sqm. 20% site area < 600sqm</p>	<p>proposed Lots 102 and 103 is sought, as discussed at Chapter A1 above. The variation is considered capable of support in this case.</p>	<p>variation to WDCP 2009 requested and supported</p>
<p><u>4.6 Private Open Space</u> 24sqm, minimum width of 4m</p>	<p>Each dwelling is proposed with a POS area which meets the minimum requirements of this clause. POS areas proposed to Units 1A and 2B are elevated at the first floor level, however are proposed with 1.5m privacy screening and green walls to minimise impacts to adjoining properties.</p> <p>Due to the proposed cutting into the site of Unit 1A and the change in levels of surrounding properties, despite being on the upper floor, the proposed finished level of the POS area is only approximately 1m higher than the outdoor area of 176 Lawrence Hargrave Drive. This area has existing vegetated screening, and coupled with the establishment of a green wall on the north eastern elevation and the separation by a driveway area, there would be expected to be minimal impact.</p> <p>The POS area for Unit 2B is proposed at RL 11.195. The rear deck POS area of adjoining property 182 Lawrence Hargrave Drive is proposed at approximately RL 7.65 and appears to be predominately orientated to the west. The POS areas would also be separated by approximately 10m and combined with the proposed screening on the subject development, minimal impacts are expected.</p> <p>All proposed POS areas are accessible directly from living areas. Smaller balcony areas are proposed along the south eastern elevation to take advantage of the views to the coast.</p>	<p>Yes</p>
<p><u>4.7 Solar Access Requirements</u></p>	<p>The applicant has provided shadow diagrams demonstrating that the proposal would not result in the unreasonable overshadowing of the POS areas, living areas or solar panels on adjoining properties. The proposal would not result in overshadowing of the property to the south west from midday onwards on June 21, and therefore complying with the minimum 3 hrs required.</p>	<p>Yes</p>
<p><u>4.8 Building Character and Form</u></p>	<p>The proposed dwelling is considered to be reasonably sympathetic to the existing character of the immediate</p>	<p>Yes</p>

<u>4.9 Fences</u>	<p>locality and reflects the varying architectural styles that exist in the area. The Units have been designed to be cut into the site where possible, and split level designs are proposed. Garages have been proposed to be rear of the site to minimise impacts on the streetscape. Conditions are recommended with regard to finishes and material selection.</p>	
<u>4.10 Car parking and Access</u>	<p>The applicant has provided details of the proposed fencing, indicating the retention and repair where required to the north eastern and rear boundaries and erection of a 1.2m high fence on top of the existing retaining wall separating 180 and 182 Lawrence Hargrave Drive. A 1.2m high open timber fence is proposed within the front setback area. Conditions are recommended in this regard as provided at Attachment 4.</p>	Yes
<u>4.11 Storage Facilities</u>	<p>Each dwelling is proposed to be provided with two car parking spaces, one in a garage and one hardstand space. The car parking areas are proposed to the rear of the site, accessed via a common driveway. All driveway areas are appropriately setback from the side property boundaries and no garage doors are proposed on the front elevation.</p> <p>Appropriate rights of carriageway are proposed to be created to provide access to each car parking area from the common driveway area.</p> <p>Councils Development Engineer has considered the proposal in this regard and provided a conditionally satisfactory response. The recommended conditions are provided for at Attachment 4.</p>	Yes
<u>4.12 Site Facilities</u>	<p>Additional area is proposed within each garage for storage, along with linen cupboards and wardrobe areas. Each dwelling is proposed with in excess of the required 10m³ of storage required via this clause.</p>	Yes
<u>4.13 Fire Brigade Servicing</u>	<p>There would be adequate room on the site to provide for site facilities such as air-conditioning units, satellite and other ancillary facilities to not result in adverse impacts on neighbours.</p>	Yes
<u>4.13 Fire Brigade Servicing</u>	<p>Fire brigade servicing of the site would remain as per the existing, via the hydrant in Lawrence Hargrave</p>	Yes

<u>4.14 Services</u>	<p>Drive.</p> <p>The existing dwellings have access to services which are expected to be capable of augmentation to meet the needs of the proposed dwelling. Conditions are recommended in this regard</p>	Yes
<u>4.15 Development near the coastline</u>	<p>A geotechnical report was provided as part of the application submission which has been considered by Councils Geotechnical Engineer as discussed at section 1.6.1 above. Conditions are recommended requiring compliance with the Geotechnical Engineers recommendations.</p> <p>The development does not have direct frontage to the ocean. The setbacks proposed are considered satisfactory.</p> <p>The proposal is not considered to be inconsistent with the design features outlined within this clause, proposing a mix of materials including timber and fibre cement cladding, brickwork and glass. Conditions are recommended in this regard.</p>	Yes
<u>4.16 View sharing</u>	<p>The development is located in a prominent location, with a number of surrounding properties obtaining views to the south east over the property.</p> <p>Due to the proposed design of the development, being cut into the site, a maximum of 2 storeys and compliant with all required setbacks, the development is not expected to result in any unreasonable impacts on view corridors in the area.</p> <p>The view sharing impact of the development has been considered with regard to the principles laid out in Tenacity Consulting v Warringah Council (2004) NSWLEC 140 and the Planning Principles provided in Davies v Penrith City Council [2013] NSWLEC 1141. The proposal is not expected to result in any significant impact on view sharing when considered against the relevant case law.</p> <p>It is noted that the impact of the development is significantly less than the previous proposal which was refused in August 2018. Importantly, the subject proposal is considered to account for the existing slope of the land, and providing rear setbacks in excess of 12m.</p>	Yes

<p><u>4.17. Retaining walls</u></p>	<p>A series of retaining walls are proposed throughout the site and details have been provided on the submitted landscape plan. Conditions will be recommended with regard to engineering design for those walls and certification.</p>	<p>Yes</p>
<p><u>4.18 Swimming Pools and Spas</u></p>	<p>No swimming pools or spas are proposed as part of the subject application.</p>	<p>N/A</p>
<p><u>4.19 Development near railway corridors and major roads</u></p>	<p>The site has frontage to Lawrence Hargrave Drive. See discussion at SEPP (Infrastructure) 2007 at section 2.1.2 of the main report.</p>	<p>See above.</p>
<p><u>4.21 Additional controls for Dual Occupancies minimum site width</u></p>	<p>The proposal seeks consent for a variation to the minimum site width requirements.</p> <p>A variation request statement has been submitted in this regard, and contends that the site is suitable for the development as it is not significantly constrained by hazards, and the development would not adversely impact the amenity of surrounding properties. The variation is considered capable of support in this case.</p>	<p>No - Variation to WDCP 2009 requested and supported</p>
<p><u>4.22 Additional controls for Dual Occupancies – building character and form</u></p>	<p>The site is not a corner allotment. The development does not comprise any alterations or additions to the existing dwelling, or the conversion of a garage to a dwelling.</p>	<p>Yes</p>
<p><u>4.23 Additional Controls for Dual Occupancy's – Deep Soil Zones</u></p>	<p>Half of the required landscaped area equates to 103.74sqm and 126sqm of deep soil zone area is proposed. The deep soil areas are proposed with minimum widths of 3m, and are predominately located across the rear of the site. The landscape plan provided indicates dense plantings throughout the deep soil areas. This area is proposed to be divided between the units post subdivision.</p>	<p>Yes</p>

CHAPTER D1: CHARACTER STATEMENTS

Thirroul:

Existing Character:

Thirroul residential area is characterised by a mix of single storey to two storey dwelling-houses including a number of circa 1920's and 1930's weatherboard and corrugated iron roofed bungalows. The coastal strip of Thirroul including along Lawrence Hargrave Drive contains a mix of single storey weatherboard and fibro dwellings and new contemporary dwellings and some medium density townhouses and walk up residential flat buildings. New hinterland subdivisions on the foothill slopes of the escarpment contain new contemporary split – level and two storey dwelling styles with weatherboard or rendered brick wall construction and pitched, sloping flat or curved roofline forms.

Comment:

The subject sites are currently comprised of a single and two storey weatherboard and fibro bungalows as described above. The area surrounding the subject property is comprised of a mix of property types and architectural styles. Several contemporary developments exist in the immediate vicinity of the site, as reflected by Figures 4-9 below.

Desired Future Character:

Residential development will remain primarily low density in nature. Some restricted medium density within close vicinity to the Thirroul village centre and the railway station is envisaged. Any new housing must be sympathetic with the existing Thirroul village built form and streetscape, particularly in older areas with weatherboard housed, pitched roofs and wide eaves. Environmental zones will be retained close to the escarpment to further maintain the strong village character of Thirroul. Any dwellings should be designed to minimise the scale and bulk of the development through well articulated building forms. The siting, height and design of new dwellings is critical to maximise view sharing opportunities for neighbouring properties. The roof forms for dwellings especially within the eastern part of Thirroul should be designed to maximise view sharing opportunities for rear neighbouring dwellings and hence, should be either sloping flat or gently pitched only. There should also be generous eaves to decrease the need for air conditioning. The impact of upper storeys of a dwelling should also be minimised through a combination of additional front and side setbacks from the ground floor of the dwelling and the selective use of balconies and verandahs. New dwellings should provide small to medium trees, wherever possible, taking into account view sharing opportunities. Individually designed dwellings with weatherboard, rendered or colourbond facades with lightly coloured finishes and sloping flat, curved or gently pitched rooflines are preferred for properties along the coastal strip.

New dwellings on sloping sites should be stepped down the slope with suspended floors and decks, to minimise the disturbance of the natural contours of the site and any such new dwelling should be designed to fit below the tree canopy line. Where front or rear facades of new dwellings are likely to be higher than neighbouring dwellings, the screening of balconies and additional setbacks may be necessary, to minimise any potential privacy or amenity impacts. Balconies should be lightly framed in steel and / or timber finishes, rather than of brick or masonry construction.

Comment:

The proposed development is considered to be generally consistent with the desired future character, as per the below:

- The development remains low density in nature, remaining below the FSR and building height controls for the land.
- The development has been designed to step down the site addressing the slope of the land.

- The subject sites are not located within the defined Thirroul Village Centre area.
- The development is located in the far north eastern corner of the Thirroul suburb. The proposal has been designed to not respect the land form of the site and is not envisaged to result in any significant impact on view sharing. The roof form is proposed to comprise a mix of sloping flat roofs.
- The built form is proposed to be articulated through the use of first floor balcony and POS areas, and proposing a mix of materials with lightweight weatherboard cladding proposed for the upper floors.
- The impact of the upper storeys of the development have been minimised through varying setbacks and the inclusion of balcony areas and elevated courtyards.
- The submitted landscape plan indicates that an additional seven medium size trees including Coastal Banksias, Lily Pillies and Blueberry Ashes are proposed to be strategically planted around the site, in addition to the retention of 4 established trees at the rear of the site, consisting of a Sydney Blue Gums, She-oaks and a turpentine.
- The development would be considered to be located on the coastal strip and proposes four individually designed dwellings.
- The submitted materials schedule indicates generally light coloured cladding and roof colours. Conditions are also recommended as provided at Attachment 4 with regard to the final materials and finishes selection.
- The area surrounding the subject site is undergoing change and renewal.

Figures 4 – 9 below provide examples of other similar developments within a 150m radius of the subject site.



Figure 4: 199 Lawrence Hargrave Drive (across the road from the subject property)



Figure 5: 4 Henley Road



Figure 6: 195 Lawrence Hargrave Drive



Figure 7: 2A Mountain Road



Figure 8: 2 Jones Lane



Figure 9: 162 Lawrence Hargrave Drive

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

Multi dwelling housing

	<i>Rate</i>	<i>Calculation</i>	<i>Required</i>	<i>Provided</i>	<i>Compliance</i>
<i>Car parking</i>	1 space per dwelling <125sqm	0			Yes
	2 spaces per dwelling >125sqm	2 x 4	8	8	

Councils Traffic Officer has assessed the proposal and provided conditionally satisfactory referral advice.

CHAPTER E6: LANDSCAPING

Councils Landscape Officer has considered the proposed development and provided conditionally satisfactory referral advice. The proposal satisfies the minimum submission requirements provided within this Chapter. Conditions are recommended with regard to landscaping generally and the proposed green walls.

CHAPTER E7: WASTE MANAGEMENT

Council’s Traffic Officer has assessed the proposal against the requirements of this Chapter. A Site Waste Minimisation and Management Plan was submitted with the application and waste servicing arrangements are considered to be satisfactory. On street collection is proposed and considered appropriate.

Any soil removed from the site will be required to be given a waste classification and disposed of appropriately. Conditions are recommended in this regard and also with regard to the management of Acid Sulfate Soils on the site.

CHAPTER E13: FLOODPLAIN MANAGEMENT

The subject site is identified as uncategorised flood hazard affected.

A review of the concept drainage plan reveals that the proposed site is not within the 100 year ARI or Probable Maximum Flood (PMF) extents. The site levels are above the adjacent flood levels and therefore it is unlikely that this site will be flood affected. The proposal has also been designed to not result in any additional flood affectation on properties downstream.

CHAPTER E14: STORMWATER MANAGEMENT

Council's Stormwater Officer, has assessed the proposal against the requirements of this Chapter. A stormwater concept plan and land survey information were submitted with the application and are considered to be satisfactory.

The roof area of proposed Units 1A and 1B are proposed to drain to an OSD located beneath the front section of the driveway and to Lawrence Hargrave Drive. The applicant provided 'DRAINS' models and stormwater diagrams demonstrating that the post development flows to the street do not exceed the pre developed situation. A range of permeable paving and landscaped areas are proposed to the rear of the development, allowing water to be absorbed by the land and any additional runoff to be captured by a pit in the central driveway area and directed to the easement. This arrangement has been designed to be consistent with the existing sheet flows across the site.

The drainage from the area of proposed Units 2A and 2B is proposed to be directed to an OSD tank beneath the south western corner of the driveway area. This OSD has been designed to limit the flows from the site to the predeveloped state. The OSD is then proposed to drain to a 1 metre easement for drainage of water through adjoining Lot B before discharging to a concrete channel known as Kellys Creek.

Conditions are recommended in this regard as provided at Attachment 4 to this report.

CHAPTER E19: EARTHWORKS (LAND RESHAPING WORKS)

The proposal would require excavation into the site to provide for the proposed development. The earthworks are not expected to result in unreasonable impacts on environmental functions and processes, neighbouring properties or the features surrounding land. These works have been considered by Councils Stormwater and Geotechnical Engineers and conditions recommended as provided at Attachment 4.

CHAPTER E20: CONTAMINATED LAND MANAGEMENT

The submitted demolition plan indicates the removal of the all existing site structures and surfaces. Concern has been identified with regard to the potential contamination of the site. The applicant has provided a Preliminary Site Investigation and Detailed Site Investigation, as discussed at section 2.1.1 of the report. The DSI recommends that the contaminated fill material must be removed prior to development occurring in accordance with a RAP prepared by a suitably qualified environmental consultant. The submitted reports have been considered by Councils Environment Officer and are considered to appropriately address the potential for contamination of the site. The recommendations of the DSI and Certified Review Letter have been conditioned for as reflected at Attachment 4.

CHAPTER E21: DEMOLITION AND ASBESTOS MANAGEMENT

The submitted demolition plan indicates the removal of the all structures on the site. Conditions are recommended in this regard.

CHAPTER E22: SOIL EROSION AND SEDIMENT CONTROL

Conditions are recommended in this regard.

Attachment 4: Conditions

Approved Plans and Specifications

- 1 The development shall be implemented substantially in accordance with the details and specifications set out on Job No DML 17 Drawing A-01-B, A-02-B and A-05-B to A-07-B dated 24 January 2019, A-03-A, A-04-A and A-08-A dated 30 November 2018 prepared by Develop My Land and Drawing P.R.: 10907-9A and 10907-9B dated 29 November 2018 prepared by Dennis Smith Surveys and any details on the application form, and with any supporting information received, except as amended by the conditions specified and imposed hereunder.

General Matters

2 Development Phasing

The development is to be undertaken in three (3) phases comprising the following:

Phase 1 The demolition of the two dwelling houses and ancillary structures on both existing Lot 2 and Lot A, remediation works and boundary adjustment between existing Lot 2 and Lot A.

Phase 2 Construction of a dual occupancy on each resultant lot.

Phase 3 Torrens Title subdivision of each dual occupancy.

A separate Construction Certificate may be applied for each phase with conditions as relevant to each phase to be met.

3 Geotechnical (Phase 2)

- 3.1 All work is to be in accordance with the geotechnical recommendations contained in the report dated 3 May 2018 by Network Geotechnics and any subsequent geotechnical report required to address unanticipated conditions encountered during construction.
- 3.2 Site preparation earthworks including drainage, retaining wall and footing construction is to be subject to Level 1 geotechnical supervision as defined in Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Developments.
- 3.3 An earthworks plan is to be developed by the geotechnical consultant prior to start of earthworks.
- 3.4 There is to be no unsupported excavations with all cuts to be immediately supported by retaining wall construction.
- 3.5 No disturbance of ground is to occur beyond site boundaries. A minimum buffer between site boundaries and the construction of retaining structures is to be recommended by the geotechnical consultant to ensure adjoining property is not adversely impacted upon by this development.
- 3.6 Retaining wall design is not to include anchors extending on to adjoining property without the written consent of the adjoining property owner.
- 3.7 Foundation systems are to be designed for Class P soils with all footings to be founded at least 0.5m within the underlying very stiff residual clay as recommended by the geotechnical consultant, except where otherwise required by this consent.
- 3.8 All excavations for foundations are to be inspected by the geotechnical consultant and certified that the ground has been suitably prepared for the placement of footings.

4 Interim Advice

Prior to the commencement of the Phase 1 remediation work, the applicant shall submit an *Interim Advice* letter from a NSW EPA accredited Site Auditor to Council, along with the RAP review report.

Further upon completion of remediation and validation, the Site Auditor is to issue a "Site Auditor's Statement (SAS) and Site Auditor's Report (SAR) prepared under CLM Act 1997 stating that site is suitable for proposed development.

5 Building Work - Compliance with the Building Code of Australia

All building work must be carried out in compliance with the provisions of the Building Code of Australia.

- 6 **Construction Certificate**
A Construction Certificate must be obtained from Council or an Accredited Certifier prior to work commencing.
- A Construction Certificate certifies that the provisions of Clauses 139-148 of the Environmental Planning and Assessment Amendment Regulations, 2000 have been satisfied, including compliance with all relevant conditions of Development Consent and the Building Code of Australia.
- Note:** The submission to Council of two (2) copies of all stamped Construction Certificate plans and supporting documentation is required within **two (2)** days from the date of issue of the Construction Certificate, in the event that the Construction Certificate is not issued by Council.
- 7 **Mailboxes**
The developer must install mailboxes along street frontage of the property boundary in accordance with Australia Post Guidelines. Prominent house numbers are to be displayed, with a minimum number size of 150 mm in height for each number and letter in the alphabet.
- 8 **Maintenance of Access to Adjoining Properties**
Access to all properties not the subject of this approval must be maintained at all times and any alteration to access to such properties, temporary or permanent, must not be commenced until such time as written evidence is submitted to Council or the Principal Certifying Authority indicating agreement by the affected property owners.
- 9 **Occupation Certificate**
An Occupation Certificate must be issued by the Principal Certifying Authority prior to occupation or use of the development. In issuing an Occupation Certificate, the Principal Certifying Authority must be satisfied that the requirements of section 6.9 of the Environmental Planning and Assessment Act 1979, have been complied with as well as all of the conditions of the Development Consent.
- 10 **Tree Retention/Removal**
The developer shall retain the existing tree(s) indicated within the Arboricultural Impact Assessment Report dated November 2018 prepared by Allied Tree Consultancy, consisting of trees numbered 3, 4, 5 and 6.
- 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 Protection of Trees on development Sites.
- All recommendations provided within the submitted Arborist's Report prepared by Allied Tree Consultancy dated November 2018 are to be implemented including and not restricted to: remedial tree pruning, deadwooding, fencing and signage, sediment buffer, stem protection, establishing tree protection zones and watering and root hormone application if required.
- This consent permits the removal of trees numbered 1, 2 and 7-16 (inclusive) as indicated within the Arboricultural Impact Assessment Report dated November 2018 prepared by Allied Tree Consultancy. No other trees shall be removed without prior written approval of Council.

Prior to the Issue of the Construction Certificate

- 11 The Subdivision Certificate for the boundary adjustment included as part of the Phase 1 works is to be issued prior to the issue of any Construction Certificate.
- 12 **Flows from Adjoining Properties**
Flows from adjoining properties shall be accepted and catered for within the site. Finished ground and top of retaining wall levels on the boundary shall be no higher than the existing upslope adjacent ground levels. The above requirements must be clearly shown on Construction Certificate plans prior to the release of the Construction Certificate.
- 13 The proposed development including the driveway is required to be designed to not result in any increased loads on the timber retaining wall located on the boundary with adjoining Lot B

DP 392508. The proposed buildings and driveway is required to be designed to be piered below the zone of influence of the retaining wall. Construction works including the movement of machinery and soil are also to be managed to not result in any additional loads on the wall. Details demonstrating the above are to be provided as part of the Construction Certificate plans to the satisfaction of the Principal Certifying Authority.

14 **Present Plans to Sydney Water**

Approved plans must be submitted online using Sydney Water Tap, available through www.sydneywater.com.au to determine whether the development will affect Sydney Water's sewer and water mains, stormwater drains and/or easements, and if further requirements need to be met.

The Certifying Authority must ensure that Sydney Water has issued an approval receipt prior to the issue of a Construction Certificate.

Visit www.sydneywater.com.au or telephone 13 20 92 for further information.

15 **Endeavour Energy Requirements**

The submission of documentary evidence from Endeavour Energy to the Principal Certifying Authority is required confirming that satisfactory arrangements have been made with Endeavour Energy for the provision of electricity supplies to the development, prior to the release of the Construction Certificate.

Note: Applications should be made to Customer Connections – South Coast, Endeavour Energy PO Box 811 Seven Hills NSW 1730.

16 **Telecommunications**

The submission of documentary evidence from an approved telecommunications carrier to the Principal Certifying Authority confirming that underground telecommunication services are available for this development is required prior to the issue of the Construction Certificate.

17 **Schedule of External Building Materials/Finishes**

The final details of the proposed external treatment/appearance of the development, including a schedule of building materials and external finishes (including the type and colour of the finishes) together with a sample board and an A4 or A3 sized photograph of the sample board shall be submitted for the separate approval of the Principal Certifying Authority, prior to the release of the Construction Certificate.

18 **Planter Boxes**

The proposed vertical gardens/green screens are to be provided with associated planter boxes.

The following information is to be reflected on the Construction Certificate plans and final landscape plan:

18.1 The planter boxes are to be a minimum of 750mm deep and planting selected in consultation with a suitably qualified Landscape Architect.

18.2 Details illustrating water-proofing, soil containment, filter fabric, drainage outlets, subsoil drainage methods, irrigation, and external finishes to the retaining wall / planter box.

18.3 The green wall and planter boxes are to be designed by a Structural Engineer.

18.4 Adequate filtration should be provided with at least two layers of filter fabric to ensure silt does not discharge into the storm water system.

18.5 The planter box drainage must be connected to the stormwater drainage system.

19 **External Clothes Drying Facilities**

In the event that external clothes drying facilities are proposed, full details of the screening and the location of these facilities shall be reflected on the Construction Certificate plans and the final landscape plan.

20 **Fencing**

The development is to be provided with fencing at full cost to the applicant/developer as follows:

20.1 Rear and side property boundaries (behind the building line) and private rear courtyards are to be provided with minimum 1.8 metre high brick, timber lapped and capped or colorbond fences.

This requirement is to be reflected on the Construction Certificate plans.

21 **Car Parking and Access**

The development shall make provision for a total of 8 car parking spaces. This requirement shall be reflected on the Construction Certificate plans. Any change in above parking numbers shown on the approved DA plans shall be dealt with via a section 4.55 modification to the development. The approved car parking spaces shall be maintained to the satisfaction of Council, at all times.

22 The parking dimensions, internal circulation, aisle widths, kerb splay corners, head clearance heights, ramp widths and grades of the car parking areas are to be in conformity with the current relevant Australian Standard AS2890.1, except where amended by other conditions of this consent. Details of such compliance are to be reflected on the Construction Certificate plans.

23 The car parking areas and internal access roads shall be separated from the landscaped bays by means of a kerb or concrete dwarf wall. All kerbs required to act as wheel stops shall have a maximum height of 100 mm above ground. These details shall be reflected on the Construction Certificate plans.

24 The car parking areas shall incorporate 'low impact' floodlighting to ameliorate any light spillage and/or glare impacts upon surrounding properties. The final design details of the proposed lighting system shall be reflected on the Construction Certificate plans. The erection of the lighting system shall be in accordance with the approved final design.

25 All driveways shall be constructed with a maximum vertical alignment as shown in Council's standard drawings. This requirement shall be reflected on the Construction Certificate plans and any supporting documentation.

26 Gradients of ramps and access driveways within the site must be provided in accordance with the current relevant Australian Standard AS2890.1 - Off Street Car Parking. Details of the method of treatment of any fill/retaining wall which may be required in conjunction with the proposed driveway. This requirement must be reflected on the Construction Certificate plans.

27 A change in driveway paving is required at the entrance threshold within the property boundary to clearly show motorists they are crossing a pedestrian area. Between the property boundary and the kerb, the developer must construct the driveway pavement in accordance with the conditions, technical specifications and levels to be obtained from Council's Manager Works. This requirement shall be reflected on the Construction Certificate plans and any supporting documentation.

28 **Structures Adjacent to Driveway**

Any proposed structures adjacent to the driveway shall comply with the requirements of the current relevant Australian Standard AS2890.1 (figure 3.2 and 3.3) to provide for adequate pedestrian and vehicle sight distance. This includes, but is not limited to, structures such as signs, letterboxes, retaining walls, dense planting etc. This requirement shall be reflected on the Construction Certificate plans.

29 **Traffic Noise**

The Principle Certifying Authority must be satisfied that appropriate measures will be taken to ensure the following LAeq levels are not exceeded:

29.1 In any bedroom in the building: 35dB(A) at any time 10.00pm-07.00am; and

29.2 Anywhere else in the building (other than a garage, kitchen, bathroom or hallway): 40dB(A) at any time.

30 The edge of the driveway must be provided with a hob or dish drain to prevent surface water flows from entering the adjoining property. This requirement shall be reflected on the Construction Certificate plans, prior to the release of the Construction Certificate.

31 **Water/Wastewater Entering Road Reserve**

Provision shall be made for a minimum 200mm wide grated box drain along the boundary of the property at the vehicular crossing/s to prevent surface water entering the road reserve. This requirement shall be reflected on the Construction Certificate plans.

32 The depth and location of all services (ie gas, water, sewer, electricity, telephone, traffic lights, etc) must be ascertained and reflected on the Construction Certificate plans and supporting documentation.

33 **Landscaping**

The submission of a final Landscape Plan to the Principal Certifying Authority, prior to the release of the Construction Certificate. The final Landscape Plan shall address the following requirements:

- 33.1 Planting of indigenous plant species typical of the Illawarra Region such as: *Syzygium smithii* (formerly *Acmena smithii*) Lilly pilly, *Archontophoenix cunninghamiana* Bangalow palm, *Backhousia myrtifolia* Grey myrtle, *Elaeocarpus reticulatus* Blueberry ash, *Glochidion ferdinandii* Cheese tree, *Livistona australis* Cabbage palm tree, *Brachychiton acerifolius* Illawarra Flame Tree. A further list of suitable suggested species may be found in Wollongong Development Control Plan 2009 – Chapter E6: Landscaping;
- 33.2 A schedule of proposed planting, including botanic name, common name, expected mature height and staking requirements as well as number of plants and pot sizes;
- 33.3 The location of all proposed and existing overhead and underground service lines. The location of such service lines shall be clear of the dripline of existing and proposed trees;
- 33.4 Any proposed hard surface under the canopy of an existing trees shall be permeable and must be laid such that the finished surface levels match the existing level. Permeable paving is to be installed in accordance with the manufacturer's recommendations;
- 33.5 The developer shall ensure that proposed planting is child friendly and must **not** include any of the types of plants listed below: **i)** plants known to produce toxins; **ii)** plant with high allergen properties; **vi)** any weed or potential weed species; and;
- 33.6 To mitigate impact to adjoining dwelling a continuous hedge is to be established along northeastern and south western boundaries for the length of property boundary. Recommended species: *Callistemon viminalis* 'Slim', *Photinia glabra* *Rubens*, *Viburnum tinus*, *Syzygium australe* *Aussie Southern*, *Syzygium*, 'Resilience', *Viburnum odoratissimum* *Dense Fence* or *Waterhousea floribunda* *Sweeper*. Minimum spacing 1000mm. Minimum pot size 5 lt. A further list of suitable suggested species may be found in Wollongong Development Control Plan 2009 – Chapter E6: Landscaping.

The completion of the landscaping works as per the final approved Landscape Plan is required, prior to the issue of Occupation Certificate or commencement of the development.

34 The submission of certification from a suitably qualified and experienced landscape designer and drainage consultant to the Principal Certifying Authority prior to the release of the Construction Certificate, confirming that the landscape plan and the drainage plan are compatible.

35 The implementation of a landscape maintenance program in accordance with the approved Landscape Plan for a minimum period of 12 months to ensure that all landscape work becomes well established by regular maintenance. Details of the program must be submitted with the Landscape Plan to the Principal Certifying Authority prior to release of the Construction Certificate.

36 **Compensatory Planting**

The developer must make compensatory provision for the trees required to be removed as a result of the development. In this regard, seven (7 No.) 75 litre container advanced mature plant stock shall be placed within the property boundary of the site in appropriate locations. The suggested species are to be selected from the following list: *Elaeocarpus reticulatus* Blueberry ash, *Livistona australis* Cabbage palm tree, or *Brachychiton acerifolius* Illawarra Flame Tree. A further list of suitable suggested species may be found in Wollongong Development Control Plan 2009 – Chapter E6: Landscaping.

37 **Tree Protection Measures**

The existing trees that are to be retained upon the subject property and any trees on adjoining properties shall not be impacted upon during the excavation or construction phases of the development. This will require the installation and maintenance of appropriate tree protection measures, including (but not necessarily limited to) the following:

- 37.1 Installation of Tree Protection Fencing - Protective fencing shall be 1.8 metre cyclone

chainmesh fence, with posts and portable concrete footings. Details and location of protective fencing must be indicated on the architectural and engineering plans to be submitted to the Principal Certifying Authority prior to release of the Construction Certificate.

- 37.2 Mulch Tree Protection Zone: Areas within a Tree Protection Zone are to be mulched with minimum 75 mm thick 100% recycled hardwood chip/leaf litter mulch.
- 37.3 Irrigate: Areas within the Tree Protection Zone are to be regularly watered in accordance with the arborist's recommendations.

The submission of a final Site Plan to the Principal Certifying Authority indicating required tree protection fencing is required, prior to the release of the Construction Certificate.

38 **Engineering Plans and Specifications - Retaining Wall Structures**

Engineering plans and supporting documentation for all proposed retaining walls is required to be provided to the Principal Certifying Authority for approval prior to the issue of the Construction Certificate. The retaining walls shall be designed by a suitably qualified and experienced civil and/or structural engineer. The required engineering plans and supporting documentation shall include the following:

- 38.1 A plan of the wall showing location and proximity to property boundaries;
- 38.2 An elevation of the wall showing ground levels, maximum height of the wall, materials to be used and details of the footing design and longitudinal steps that may be required along the length of the wall;
- 38.3 Details of fencing or handrails to be erected on top of the wall;
- 38.4 Sections of the wall showing wall and footing design, property boundaries and backfill material. Sections shall be provided at sufficient intervals to determine the impact of the wall on existing ground levels. The developer shall note that the retaining wall and footing structure must be contained wholly within the subject property;
- 38.5 The proposed method of subsurface and surface drainage, including water disposal;
- 38.6 Reinforcing and joining details of any bend in the wall at the passing bay of the accessway;
- 38.7 The assumed loading used by the engineer for the wall design.
- 38.8 Flows from adjoining properties shall be accepted and catered for within the site. Finished ground and top of retaining wall levels on the boundary shall be no higher than the existing upslope adjacent ground levels.

39 **Roof Water Connection to Kerb**

Connection across footways shall be by means of one or two (maximum), sewer grade UPVC pipe(s), 100mm diameter pipes with a continuous downslope gradient to the kerb. Connection to the kerb shall be made with a rectangular, hot dipped galvanised mild steel weephole(s) shaped to suit the kerb profile, with each weephole having the capacity equal to a 100mm diameter pipe. Alternatively, a maximum of two 150mm x 100mm hot dipped galvanised steel pipes may be used across footways, with the 150mm dimension being parallel to the road surface to suit the kerb profile.

40 **Property Addressing Policy Compliance**

Prior to the issue of any construction certificate, the developer must ensure that any site addressing complies with Council's **Property Addressing Policy** (as amended). Where appropriate, the developer must also lodge a written request to Council's **Infrastructure Systems & Support – Property Addressing** (propertyaddressing@wollongong.nsw.gov.au), for the site addressing prior to the issue of the construction certificate. Please allow up to 3-5 business days for a reply. Enquiries regarding property addressing may be made by calling 4227 8660.

41 **Street Trees**

The developer must address the street frontage by installing street tree planting. The number and species for this development are two (2 No.) *Banksia integrifolia* Coastal Banksia 200 litre container size, in accordance with AS 2303:2015 Tree stock for landscape use. Street trees are to be installed in accordance with Wollongong Development Control Plan 2009 – Chapter E6: Landscaping. 'Dial Before You Dig' must be consulted prior to any excavation on site. Pot holing must be carried out to determine service location. Tree pits must be adequately mulched,

plants installed and staking installed to the satisfaction of WCC Manager of Works. Staking is to consist of min. 3 x 2400 x 50 x 50mm hardwood stakes driven min 600mm into firm ground. Hessian webbing is to be utilised to secure plant stock to industry standard.

These requirements shall be reflected on the Construction Certificate plans and any supporting documentation.

42 **Sizing of Drainage**

All roof gutters, downpipes, pits, and pipelines draining roof areas and other impervious surfaces with no deliberate overflow path to the on-site stormwater detention (OSD) facility, shall be designed to cater for a 1 in 100 year ARI storm event in accordance with AS 3500.3 – Plumbing and Drainage (Stormwater Drainage). Details of gutter/downpipe/pipeline sizes and locations shall be reflected on the Construction Certificate plans.

43 **Stormwater Drainage Design**

A detailed drainage design for the development must be submitted to and approved by the Principal Certifying Authority prior to the release of the Construction Certificate. The detailed drainage design must satisfy the following requirements:

- 43.1 Be prepared by a suitably qualified civil engineer in accordance with Chapter E14 of Wollongong City Council's Development Control Plan 2009, Subdivision Policy, conditions listed under this consent, and generally in accordance with the concept plan/s lodged for development approval, prepared by OPTIMA, Dwg No OCE12779/C01/DA/E revision E, dated 24 January 2019.
- 43.2 Include details of the method of stormwater disposal. Stormwater from the development must be piped to Council's existing stormwater drainage system as well as the natural watercourse.
- 43.3 Engineering plans and supporting calculations for the stormwater drainage system are to be prepared by a suitably qualified engineer and be designed to ensure that stormwater runoff from upstream properties is conveyed through the site without adverse impact on the development or adjoining properties. The plan must indicate the method of disposal of all stormwater and must include rainwater tanks, existing ground levels, finished surface levels on all paved areas, estimated flow rates, invert levels and sizes of all pipelines.
- 43.4 Overflow paths shall be provided to allow for flows of water in excess of the capacity of the pipe/drainage system draining the land, as well as from any detention storage on the land. Blocked pipe situations with 1 in 100 year ARI events shall be incorporated in the design. Overflow paths shall also be provided in low points and depressions. Each overflow path shall be designed to ensure no entry of surface water flows into any building and no concentration of surface water flows onto any adjoining property. Details of each overflow path shall be shown on the detailed drainage design.

44 **On-Site Stormwater Detention (OSD) Design**

The developer must provide on-site stormwater detention (OSD) storage for stormwater runoff from the development. The design and details of the OSD system must be provided in conjunction with the detailed drainage design and approved by the Principal Certifying Authority prior to the release of the Construction Certificate. The OSD design and details must satisfy the following requirements:

- 44.1 Must be prepared by a suitable qualified engineer in accordance with Chapter E14 of the Wollongong DCP 2009.
- 44.2 Must include details of the Site Storage Requirement (SSR) and Permissible Site Discharge (PSD) values for the site in accordance with Section 12.2.4 of Chapter E14 of the Wollongong DCP2009.
- 44.3 The OSD facility must be designed to withstand the maximum loadings occurring from any combination of traffic (with consideration to residential and heavy vehicles), hydrostatic, earth, and buoyancy forces. Details must be provided demonstrating these requirements have been achieved.
- 44.4 The OSD facility shall incorporate a minimum 600mm x 600mm square lockable grate for access and maintenance purposes, provision for safety, debris control screen, and a suitably graded invert to the outlet to prevent ponding.

- 44.5 Must include discharge control calculations (i.e. orifice/weir calculations) generally in accordance with Section 12.2.6 and 12.5.4 of Chapter E14 of the Wollongong DCP2009.
- 44.6 Details of the orifice plate including diameter of orifice and method of fixing shall be provided.
- 44.7 Must include details of a corrosion resistant identification plaque for location on or close to the OSD facility. The plaque shall include the following information and shall be installed prior to the issue of the occupation certificate:
- The structure is an OSD facility, being part of the stormwater drainage network, and is not to be tampered with.
 - Identification number DA-2018/1531.
 - Any specialist maintenance requirements.
- 44.8 Must include a maintenance schedule for the OSD system, generally in accordance with Chapter E14 of the Wollongong DCP2009.

45 **Council Footpath Reserve Works**

All redundant vehicular crossings and laybacks rendered unnecessary by this development must be reconstructed to normal kerb and gutter or existing edge of carriageway treatment to match the existing. The verge from the back of kerb to the boundary must be removed and the area appropriately graded, topsoiled and turfed in a manner that conforms with adjoining road reserve. The area forward of the front boundary must be kept smooth, even and free from any trip hazards. All alterations of public infrastructure where necessary are at the developer's expense.

All new driveway laybacks and driveway crossings must be designed in accordance with Wollongong City Council Standards. Details and locations are to be shown on the Construction Certificate Plans.

46 **Development Contributions**

Pursuant to Section 4.17 of the Environmental Planning and Assessment Act 1979 and the Wollongong City-Wide Development Contributions Plan (2018), a monetary contribution of \$12,000.00 (subject to indexation) must be paid to Council towards the provision of public amenities and services, prior to the release of any associated Construction Certificate.

This amount has been calculated based on the estimated cost of development and the applicable percentage rate.

The contribution amount will be subject to indexation until the date of payment. The formula for indexing the contribution is:

$$\text{Contribution at time of payment} = \$C \times (\text{CP2}/\text{CP1})$$

Where:

\$C is the original contribution as set out in the Consent

CP1 is the Consumer Price Index; All Groups CPI; Sydney at the time the consent was issued

CP2 is the Consumer Price Index; All Groups CPI; Sydney at the time of payment

Details of CP1 and CP2 can be found in the Australian Bureau of Statistics website – Catalogue No. 6401.0 - Consumer Price Index, Australia.

The following payment methods are available:

METHOD	HOW	PAYMENT TYPE
Online	http://www.wollongong.nsw.gov.au/applicationpayments Your Payment Reference: 1060507	<ul style="list-style-type: none"> • Credit Card
In Person	Wollongong City Council Administration Building - Customer Service Centre Ground Floor 41 Burelli Street, WOLLONGONG	<ul style="list-style-type: none"> • Cash • Credit Card • Bank Cheque
PLEASE MAKE BANK CHEQUE PAYABLE TO: Wollongong City Council (Personal or company cheques are not accepted)		

A copy of the Wollongong City-Wide Development Contributions Plan (2018) and accompanying Fact Sheet may be inspected or obtained from the Wollongong City Council Administration Building, 41 Burelli Street, Wollongong during business hours or on Council's web site at www.wollongong.nsw.gov.au

Prior to the Commencement of Works

47 Appointment of Principal Certifying Authority

Prior to commencement of work, the person having the benefit of the Development Consent and a Construction Certificate must:

- 47.1 Appoint a Principal Certifying Authority (PCA) and notify Council in writing of the appointment irrespective of whether Council or an accredited private certifier is appointed; and
- 47.2 Notify Council in writing of their intention to commence work (at least two days notice is required).

The Principal Certifying Authority must determine when inspections and compliance certificates are required.

48 Residential Building Work – Compliance with the Requirements of the Home Building Act 1989

Building work involving residential building work within the meaning of the Home Building Act 1989 must not be carried out unless the Principal Certifying Authority for the development to which the work relates

- 48.1 In the case of work to be done by a licensee under that Act:
 - i has been informed in writing of the licensee's name, contractor license number and contact address details (in the case of building work undertaken by a contractor under the Home Building Act 1989); and
 - ii is satisfied that the licensee has complied with the requirements of Part 6 of the Home Building Act 1989; or
- 48.2 In the case of work to be done by any other person:
 - i has been informed in writing of the persons name, contact address details and owner-builder permit number; and
 - ii has been given a declaration signed by the property owner(s) of the land that states that the reasonable market cost of the labour and materials involved in the work is less than the amount prescribed for the purposes of the definition of owner-builder work in Section 29 of the Home Building Act 1989 and is given appropriate information and declarations under paragraphs (a) and (b) whenever arrangements for the doing of the work are changed in such a manner as to render out of date any information or declaration previously given under either of those paragraphs.

Note: A certificate issued by an approved insurer under Part 6 of the Home Building Act 1989 that states that the specific person or licensed contractor is the holder of an insurance policy issued for the purposes of that Part of the Act is, for the purposes of this condition, sufficient evidence that the person has complied with the requirements of that Part of the Act.

49 Sign – Supervisor Contact Details

Before commencement of any work, a sign must be erected in a prominent, visible position:

- 49.1 Stating that unauthorised entry to the work site is not permitted;
- 49.2 Showing the name, address and telephone number of the Principal Certifying Authority for the work; and
- 49.3 Showing the name and address of the principal contractor in charge of the work site and a telephone number at which that person can be contacted at any time for business purposes.

This sign shall be maintained while the work is being carried out and removed upon the completion of the construction works.

50 **Temporary Toilet/Closet Facilities**

Toilet facilities are to be provided at or in the vicinity of the work site on which work involved in the erection or demolition of a building is being carried out at the rate of one toilet for every 20 persons or part of 20 persons employed at the site.

Each toilet provided must be:

- 50.1 A standard flushing toilet; and
- 50.2 Connected to either:
 - i the Sydney Water Corporation Ltd sewerage system or
 - ii an accredited sewage management facility or
 - iii an approved chemical closet.

The toilet facilities shall be provided on-site, prior to the commencement of any works.

51 **Structural Engineer's Details**

Structural engineer's details for all structurally designed building works such as reinforced concrete footings, reinforced concrete slabs and structural steelwork must be submitted to the Principal Certifying Authority, prior to the commencement of any works on the site.

52 **Enclosure of the Site**

The site must be enclosed with a suitable security fence to prohibit unauthorised access, to be approved by the Principal Certifying Authority. No building work is to commence until the fence is erected.

53 **Demolition Works**

The demolition of the existing structures shall be carried out in accordance with Australian Standard AS2601 (2001): The Demolition of Structures or any other subsequent relevant Australian Standard and the requirements of the SafeWork NSW.

No demolition materials shall be burnt or buried on-site. The person responsible for the demolition works shall ensure that all vehicles leaving the site carrying demolition materials have their loads covered and do not track soil or waste materials onto the road. Any unforeseen hazardous and/or intractable wastes shall be disposed of to the satisfaction of the Principal Certifying Authority. In the event that the demolition works may involve the obstruction of any road reserve/footpath or other Council owned land, a separate application shall be made to Council to enclose the public place with a hoarding or fence over the footpath or other Council owned land.

54 **Demolition Notification to Surrounding Residents**

Demolition must not commence unless at least two (2) days written notice has been given to adjoining residents of the date on which demolition works will commence.

55 **Hazardous Material Survey**

At least one week prior to demolition, the applicant must prepare a hazardous materials survey of the site and submit to Council a report of the results of the survey. **Hazardous materials** includes, but are not limited to, asbestos materials, synthetic mineral fibre, roof dust, PCB materials and lead based paint. The report must include at least the following information:

- 55.1 The location of hazardous materials throughout the site;
- 55.2 A description of the hazardous material;
- 55.3 The form in which the hazardous material is found, eg AC sheeting, transformers, contaminated soil, roof dust;
- 55.4 An estimation (where possible) of the quantity of each particular hazardous material by volume, number, surface area or weight;
- 55.6 A brief description of the method for removal, handling, on-site storage and transportation of the hazardous materials, and where appropriate, reference to relevant legislation, standards and guidelines;
- 55.7 Identification of the disposal sites to which the hazardous materials will be taken.

56 **Asbestos Hazard Management Strategy**

An appropriate hazard management strategy shall be prepared by a suitably qualified and experienced licensed asbestos assessor pertaining to the removal of contaminated soil,

encapsulation or enclosure of any asbestos material. This strategy shall ensure any such proposed demolition works involving asbestos are carried out in accordance with SafeWork NSW requirements (<<http://www.safework.nsw.gov.au>>). The strategy shall be submitted to the Principal Certifying Authority and Council (in the event that Council is not the Principal Certifying Authority), prior to the commencement of any works.

The approved strategy shall be implemented and a clearance report for the site shall be prepared by a licensed asbestos assessor and submitted to the Principal Certifying Authority and Council (in the event that Council is not the Principal Certifying Authority), prior to the issue of an Occupation Certificate or commencement of the development. The report shall confirm that the asbestos material has been removed or is appropriately encapsulated based on visual inspection plus sampling if required and/or air monitoring results and that the site is rendered suitable for the development.

57 **Consultation with SafeWork NSW – Prior to Asbestos Removal**

A licensed asbestos removalist must give written notice to SafeWork NSW at least five (5) days before licensed asbestos removal work is commenced.

58 **Contaminated Roof Dust**

Any existing accumulations of dust in ceiling voids and wall cavities must be removed prior to any demolition work commencing. Removal must take place by the use of an industrial vacuum fitted with a high efficiency particulate air (HEPA) filter.

59 **Waste Management**

The developer must provide an adequate receptacle to store all waste generated by the development pending disposal. The receptacle must be regularly emptied and waste must not be allowed to lie or accumulate on the property other than in the receptacle. Consideration should be given to the source separation of recyclable and reusable materials.

60 **Support for Neighbouring Buildings**

This consent requires the preservation and protection of neighbouring buildings from any damage and if necessary, requires the underpinning and support of any neighbouring building in an approved manner. The applicant or the contractor carrying out the work must at least seven days in advance of any excavation works below the level of the base of the footings of a building on an adjoining allotment, including a public road or place, give written notice of intention to carry out such works to the property owner of the affected adjoining building and furnish specific written details and supporting plans or other documentation of the proposed work.

The adjoining property owner of land is not liable for any part of the cost of work carried out for the purposes of this condition, whether carried out on the allotment of land being excavated or on the adjoining allotment of land.

61 **Temporary Sediment Fences**

Temporary sediment fences (eg haybales or geotextile fabric) must be installed on the site, prior to the commencement of any excavation, demolition or construction works in accordance with Council's guidelines. Upon completion of the development, sediment fencing is to remain until the site is grassed or alternatively, a two (2) metre strip of turf is provided along the perimeter of the site, particularly lower boundary areas.

62 **All-weather Access**

An all-weather stabilised access point must be provided to the site to prevent sediment leaving the site as a result of vehicular movement. Vehicular movement should be limited to this single accessway.

63 **Tree Protection Installation**

The existing trees are to be retained upon the subject property and any trees on adjoining properties shall not be impacted upon during the excavation or construction phases of the development. This will require the installation and maintenance of appropriate tree protection measures, including (but not necessarily limited to) the following:

- 63.1 Installation of Tree Protection Fencing - Protective fencing shall be 1.8 m cyclone chainmesh fence, with posts and portable concrete footings;

- 63.2 Mulch Tree Protection Zone: Areas within a Tree Protection Zone are to be mulched with minimum 75 mm thick 100% recycled hardwood chip/leaf litter mulch;
- 63.3 Irrigate: Areas within the Tree Protection Zone are to be regularly watered in accordance with the arborist's recommendations.

The tree protection fencing shall be installed prior to the commencement of any demolition, excavation or construction works and shall be maintained throughout the entire construction phases of the development.

64 **Supervising Arborist – Tree Inspection and Installation of Tree Protection Measures**

Prior to the commencement of any demolition, excavation or construction works, the supervising arborist must certify in writing that tree protection measures have been inspected and installed in accordance with the arborist's recommendations and relevant conditions of this consent.

65 **Notification to Council of any Damage to Council's Infrastructure**

Council must be notified in the event of any existing damage to any of Council's infrastructure including, but not limited to the road, kerb and gutter, road shoulder, footpath, drainage structures and street trees fronting the development prior to the commencement of work. Adequate protection must be provided to Council infrastructure prior to work commencing and during the construction period. Any damage to Council's assets shall be restored in a satisfactory manner prior to the issue of the Occupation Certificate.

66 **Road Occupancy Licence from the Roads and Maritime Services**

Prior to any works commencing, the applicant shall obtain a road occupancy licence from the NSW Roads and Maritime Services in conjunction with Council's permit under Section 138 of the Roads Act 1993.

The developer shall apply for a Road Occupancy Licence (ROL) from the RMS Traffic Operations Unit (TOU) prior to commencing work within the classified road reserve or within 100m of traffic signals. The application will require a Traffic Management Plan (TMP) to be prepared by a person who is certified to prepare Traffic Control Plans. Should the TMP require a reduction of the speed limit, a Direction to Restrict will also be required from the TOU. Please allow two (2) weeks prior to commencement of work to process the Road Occupancy Licence.

Note: An approved ROL does not constitute an approval to commence works until an authorisation letter for the works has been issued by the RMS Project Manager.

67 **Works in Road Reserve - Minor Works**

Approval, under Section 138 of the Roads Act must be obtained from Wollongong City Council's Development Engineering Team prior to any works commencing or any proposed interruption to pedestrian and/or vehicular traffic within the road reserve caused by the construction of this development.

The application form for Works within the Road Reserve – Section 138 Roads Act can be found on Council's website. The form outlines the requirements to be submitted with the application, to give approval to commence works under the roads act. It is advised that all applications are submitted and fees paid, five (5) days prior to the works within the road reserve are intended to commence. The Applicant is responsible for the restoration of all Council assets within the road reserve which are impacted by the works/occupation. Restoration must be in accordance with the following requirements:

- 67.1 All restorations are at the cost of the Applicant and must be undertaken in accordance with Council's standard document, "Specification for work within Council's Road reserve".
- 67.2 Any existing damage within the immediate work area or caused as a result of the work/occupation, must also be restored with the final works.

68 The arrangements and costs associated with any adjustment to a public utility service shall be borne by the applicant/developer. Any adjustment, deletion and/or creation of public utility easements associated with the approved works are the responsibility of the applicant/developer. The submission of documentary evidence to the Principal Certifying Authority which confirms

that satisfactory arrangements have been put in place regarding any adjustment to such services is required prior to any works commencing on site.

69 **Dilapidation Report**

The developer shall submit a Dilapidation Report recording the condition of the adjoining properties including the road reserve prior to work commencing and include a detailed description of elements and photographic record.

70 **Geotechnical Requirements During Construction**

All works must be carried out in accordance with reports submitted in support of the Development Application and Construction Certificate Application.

71 **Protection of Public Infrastructure**

Council must be notified in the event of any existing damage to any of its infrastructure such as the road, kerb and gutter, road shoulder, footpath, drainage structures and street trees fronting the development site, prior to commencement of any work.

Adequate protection must be provided for Council infrastructure prior to work commencing and during building operations.

Any damage to Council's assets shall be made good, prior to the issue of any Occupation Certificate or commencement of the operation.

During Demolition, Excavation or Construction

72 **Excavated Material - Disposal**

Excess excavated material shall be classified according to NSW Environment Protection Authority's Waste Classification Guidelines - Part 1: Classifying Waste (2014) prior to being transported from the site and shall be disposed of only at a location that may lawfully receive that waste.

73 **Imported Fill**

Any imported fill must be free from any soil contamination and accompanied by an appropriate waste classification prepared in accordance with the requirements of the NSW EPA Waste Classification Guidelines (2014) and with consideration of the Protection of the Environment Operations (Waste) Regulations (2014). All imported material must be classified as virgin excavated natural material (VENM). Demolition or putrescibles waste cannot be buried on site and is not permitted to remain on site in any circumstance. Evidence of the origin of any fill materials imported to the site is to be provided to the Principal Certifying Authority.

74 **Supervision of Engineering Works**

All engineering works associated with the development are to be carried out under the supervision of a practicing engineer and/or registered surveyor.

75 **Piping of Stormwater to Existing Stormwater Drainage System**

Stormwater for the land must be piped to natural watercourse as well as to Council's existing drainage system.

76 **No Adverse Run-off Impacts on Adjoining Properties**

The design of the development shall ensure there are no adverse effects to adjoining properties as a result of flood or stormwater run-off. Attention must be paid to ensure adequate protection for buildings against the ingress of surface run-off.

Allowance must be made for surface run-off from adjoining properties. Any redirection or treatment of that run-off must not adversely affect any other property.

77 **Copy of Consent to be in Possession of Person carrying out Tree Removal**

The applicant must ensure that any person carrying out tree removal is in possession of this development consent and the approved landscape plan, in respect to the vegetation which has been given approval to be removed in accordance with this consent.

78 **Restricted Hours of Construction Work**

The developer must not carry out any work, other than emergency procedures, to control dust or sediment laden runoff outside the normal working hours, namely, 7.00 am to 5.00 pm, Monday

to Saturday, without the prior written consent of the Principal Certifying Authority and Council. No work is permitted on public holidays or Sundays.

Any request to vary these hours shall be submitted to the **Council** in writing detailing:

- 78.1 The variation in hours required (length of duration);
- 78.2 The reason for that variation (scope of works);
- 78.3 The type of work and machinery to be used;
- 78.4 Method of neighbour notification;
- 78.5 Supervisor contact number;
- 78.6 Any proposed measures required to mitigate the impacts of the works.

Note: The developer is advised that other legislation may control the activities for which Council has granted consent, including but not limited to, the Protection of the Environment Operations Act 1997.

79 Drains, gutters, access ways and roadways must be maintained free of sediment and any other material. Gutters and roadways must be swept/scraped regularly to maintain them in a clean state.

80 Building operations such as brick cutting, the washing of tools or paint brushes, or other equipment and the mixing of mortar must not be carried out on the roadway or public footpath or any other locations which could lead to the discharge of materials into the stormwater drainage system or natural watercourse.

81 **Dust Suppression Measures**

Activities occurring during the construction phase of the development must be carried out in a manner that will minimise the generation of dust.

82 Trucks which are entering and leaving the premises and carrying loads must be sealed or covered at all times, except during loading and unloading.

83 **Excavation/Filling/Retaining Wall Structures**

Any proposed filling on the site must not:

- 83.1 Encroach onto the adjoining properties, and
- 83.2 Adversely affect the adjoining properties with surface run-off.

84 All proposed cut and filling works must be adequately retained with all battered slopes being no steeper than 2H: 1V and comply with Council's "Policy for Development on Sloping Sites".

85 **Asbestos – Removal, Handling and Disposal Measures/Requirements Asbestos Removal by a Licensed Asbestos Removalist (Phase 1 demolition)**

The removal of any asbestos material must be carried out by a licensed asbestos removalist if over 10 square metres in area of non-friable asbestos, or if any type of friable asbestos in strict accordance with SafeWork NSW requirements (< <http://www.safework.nsw.gov.au> >).

86 **Asbestos Waste Collection, Transportation and Disposal (Phase 1 demolition)**

Asbestos waste must be prepared, contained, transported and disposed of in accordance with SafeWork NSW and NSW Environment Protection Authority requirements. Asbestos waste must only be disposed of at a landfill site that can lawfully receive this type of waste. A receipt must be retained and submitted to the Principal Certifying Authority, and a copy submitted to Council (in the event that Council is not the Principal Certifying Authority), prior to commencement of the construction works.

87 **Acid Sulfate Soils**

The Wollongong Local Environmental Plan 2009 Acid Sulfate Soils Map has identified that this property may be affected by classes 3, 4 or 5 Acid Sulfate Soils. Acid Sulfate Soils contain iron sulfides which, when exposed to air due to drainage or disturbance, may produce sulfuric acid and release toxic quantities of iron, aluminium and heavy metals. The Acid Sulfate Soils Map is an indication only and you are advised that you may encounter acid sulfate soils during the excavation for the proposed development.

Any spoil material extracted or excavated from the foundations must be neutralised with commercial lime (calcium bicarbonate) by the addition of 10 kilograms of lime per 1 cubic metre

of spoil material before it is disposed of or re-used on-site. Lime is to be added by evenly distributing over all exposed surface areas, drilled piers and footing trenches on the site, prior to pouring concrete.

Council suggests the applicant refer to the Acid Sulfate Soils Assessment Guidelines contained in the Acid Sulfate Soils Manual, prepared by NSW Acid Sulfate Management Advisory Committee, August 1998 for further information.

88 **Provision of Waste Receptacle**

The developer must provide an adequate receptacle to store all waste generated by the development, pending disposal. The receptacle must be regularly emptied and waste must not be allowed to lie or accumulate on the property other than in the receptacle. Consideration should be given to the source separation of recyclable and re-usable materials.

89 **BASIX**

All the commitments listed in each relevant BASIX Certificate for the development must be fulfilled in accordance with Clause 97A(2) of the Environmental Planning & Assessment Regulation 2000.

A relevant BASIX Certificate means:

- 89.1 A BASIX Certificate that was applicable to the development when this development consent was granted (or, if the development consent is modified under section 4.55 of the Environmental Planning & Assessment Act 1979, a BASIX Certificate that is applicable to the development when this development consent is modified); or
- 89.2 If a replacement BASIX Certificate accompanies any subsequent application for a construction certificate, the replacement BASIX Certificate; and
- 89.3 BASIX Certificate has the meaning given to that term in the Environmental Planning & Assessment Regulation 2000.”

90 **Provision of Taps/Irrigation System**

The provision of common taps and/or an irrigation system is required to guarantee that all landscape works are adequately watered. The location of common taps and/or irrigation system must be implemented in accordance with the approved Landscape Plan.

Prior to the Issue of the Occupation Certificate

- 91 A Section 73 Certificate must be submitted to the Principal Certifying Authority prior to the issue of the Occupation Certificate for the development.

92 **Drainage**

The developer must obtain a certificate of Hydraulic Compliance (using Council’s M19 form) from a suitably qualified civil engineer, to confirm that all stormwater drainage and on-site detention works have been constructed in accordance with the approved plans. In addition, full works-as-executed plans, prepared and signed by a Registered Surveyor must be submitted. These plans and certification must satisfy all the stormwater requirements stated in Chapter E14 of the Wollongong DCP2009. This information must be submitted to the Principal Certifying Authority prior to the issue of the final Occupation Certificate.

93 **Restriction on Use – On-site Detention System**

The applicant must create a restriction on use under the Conveyancing Act 1919 over the on-site detention system. The following terms must be included in an appropriate instrument created under the Conveyancing Act 1919 for approval of Council:

“The registered proprietor of the lot burdened must not make or permit or suffer the making of any alterations to any on-site stormwater detention system on the lot(s) burdened without the prior consent in writing of the authority benefited. The expression ‘on-site stormwater detention system’ shall include all ancillary gutters, pipes, drains, walls, kerbs, pits, grates, tanks, chambers, basins and surfaces designed to temporarily detain stormwater as well as all surfaces graded to direct stormwater to those structures.

Name of the authority having the power to release, vary or modify the restriction referred to is Wollongong City Council.”

The instrument, showing the restriction, must be submitted to the Principal Certifying Authority for endorsement prior to the issue of the final Occupation Certificate and the use of the development.

94 **Retaining Wall Certification**

The submission of a certificate from a suitably qualified and experienced structural engineer or civil engineer to the Principal Certifying Authority is required, prior to the issue of the Occupation Certificate or commencement of the use. This certification is required to verify the structural adequacy of the retaining walls and that the retaining walls have been constructed in accordance with plans approved by the Principal Certifying Authority.

95 **BASIX**

A final occupation certificate must not be issued unless accompanied by the BASIX Certificate applicable to the development. The Principal Certifying Authority must not issue the final occupation certificate unless satisfied that selected commitments have been complied with as specified in the relevant BASIX Certificate. NOTE: Clause 154B of the Environmental Planning and Assessment Regulation 2000 provides for independent verification of compliance in relation to certain BASIX commitments.

96 **Positive Covenant – On-Site Detention Maintenance Schedule**

A positive covenant shall be created under the Conveyancing Act 1919, requiring the property owner(s) to undertake maintenance in accordance with the Construction Certificate approved On-Site Stormwater Detention System and Maintenance Schedule (application number to be referenced).

The instrument, showing the positive covenant must be submitted to the Principal Certifying Authority for endorsement prior to the issue of the final Occupation Certificate and the use of the development.

97 **On-Site Detention – Structural Certification**

The submission of a certificate from a suitably qualified practising civil and/or structural engineer to the Principal Certifying Authority is required prior to the issue of the final Occupation Certificate. This certification is required to verify the structural adequacy of the on-site detention facility and that the facility has been constructed in accordance with the approved Construction Certificate plans.

98 **Completion of Landscape Works**

The completion of the landscaping works as per the final approved Landscape Plan is required prior to the issue of Occupation Certificate.

Prior to the Issue of the Subdivision Certificate for Phase 1 (boundary adjustment)

99 **Site Auditor’s Report and Site Auditor’s Statement**

Prior to the issue of the Subdivision Certificate for the boundary adjustment included as part of the Phase 1 work, a Site Auditors Statement (SAS) and Site Auditors Report (SAR) are required to be prepared by a NSW EPA accredited site auditor pursuant to the provisions of Part 4 of the Contaminated Land Management Act 1997 confirming that the site is suitable for the proposed development.

The SAR shall verify that:

99.1 The site is not affected by soil and/or groundwater contamination, above the NSW EPA threshold limit criteria; and

99.2 The site is suitable for the proposed development.

These two documents (SAS and SAR) are to be issued by the Auditor direct to Council. No third party submissions will be accepted.

100 **Existing Easements**

All existing easements must be acknowledged on the final subdivision plan.

101 **Existing Restriction as to Use**

All existing restriction on the use of land must be acknowledged on the final subdivision plan.

- 102 **Encroaching Pipes**
A minimum one (1) metre wide easement to drain water shall be created over any encroaching drainage pipes.

For all drainage easements proposed over the subject lots, a works as executed/survey plan of all stormwater drainage within the site is to be submitted with the Subdivision Certificate Application to confirm this.
- 103 **Encroaching Services**
A minimum one (1) metre wide easement for services must be created over any encroaching utility service.
- 104 **88B Instrument Easements/Restrictions**
Any easements or restrictions required by this consent must nominate Wollongong City Council as the authority to vary, modify or release/extinguish the easements or restrictions. The form of the easement(s) or restriction(s) created as a result of this consent must be in accordance with the standard format for easements and restrictions as accepted by the Land and Property Information Office.
- 105 **Final Documentation Required Prior to Issue of Subdivision Certificate**
The submission of the following information/documentation to the Principal Certifying Authority, prior to the issue of a Subdivision Certificate associated with the first Phase of the development:
- 105.1 Completed Subdivision Certificate application form and fees in accordance with Council's fees and charges;
 - 105.2 Final plan of Subdivision prepared by a registered surveyor plus four (4) equivalent size paper copies of the plan;
 - 105.3 Section 88B Instrument (where applicable) covering all necessary easements and restrictions on the use of any lot within the subdivision;
 - 105.4 Original Subdivider/Developer Compliance Certificate pursuant to Section 73 of the Water Board (Corporatisation) Act 1994 from Sydney Water.

Prior to the Issue of the Subdivision Certificate for Phase 3

- 106 **Occupation Certificate Prior to Subdivision Certificate**
An Occupation Certificate for the dual occupancy development (Phase 2) must be issued prior to the release of the Subdivision Certificate for the four Lot Torrens Title subdivision – Phase 3. A copy of the Occupation Certificate for the Phase 2 works shall be lodged to Council with the Subdivision Certificate application.¹⁰⁷ **Existing Easements**
All existing easements must be acknowledged on the final subdivision plan.
- 108 **Existing Restriction as to Use**
All existing restriction on the use of land must be acknowledged on the final subdivision plan.
- 109 **Encroaching Pipes**
A minimum one (1) metre wide easement to drain water shall be created over any encroaching drainage pipes.

For all drainage easements proposed over the subject lots, a works as executed/survey plan of all stormwater drainage within the site is to be submitted with the Subdivision Certificate Application to confirm this.
- 110 **Encroaching Services**
A minimum one (1) metre wide easement for services must be created over any encroaching utility service.
- 111 **88B Instrument Easements/Restrictions**
Any easements or restrictions required by this consent must nominate Wollongong City Council as the authority to vary, modify or release/extinguish the easements or restrictions. The form of the easement(s) or restriction(s) created as a result of this consent must be in accordance with the standard format for easements and restrictions as accepted by the Land and Property Information Office.

- 112 **Party Wall**
The extent of the party wall shall be reflected on the final plan of subdivision, under Section 181B of the Conveyancing Act.
- 113 **Final Documentation Required Prior to Issue of Subdivision Certificate**
The submission of the following information/documentation to the Principal Certifying Authority, prior to the issue of a Subdivision Certificate for the third Phase of development:
- 113.1 Completed Subdivision Certificate application form and fees in accordance with Council's fees and charges;
 - 113.2 Original Construction Certificates and approved drawings (where issued by an accredited Private Certifying Authority);
 - 113.3 Certificate of Practical completion from Wollongong City Council or an accredited Private Certifying Authority (if applicable);
 - 113.4 Administration sheet prepared by a registered surveyor;
 - 113.5 Section 88B Instrument covering all necessary easements and restrictions on the use of any lot within the subdivision;
 - 113.6 Final plan of Subdivision prepared by a registered surveyor plus four (4) equivalent size paper copies of the plan;
 - 113.7 Original Subdivider/Developer Compliance Certificate pursuant to Section 73 of the Water Board (Corporatisation) Act 1994 from Sydney Water;
 - 113.8 Original Notification of Arrangement from an Endeavour Energy regarding the supply of underground electricity to the proposed allotments;
 - 113.9 Original Compliance Certificate from Telstra or another Telecommunications Service Provider which confirms that the developer has consulted with the Provider with regard to the provision of telecommunication services for the development.
 - 113.10 Payment of section 94 fees (Pro rata) (if applicable).

Operational Phases of the Development/Use of the Site

- 114 **Fire Safety Measures**
All new and existing fire safety measures shall be maintained in working condition, at all times.
- 115 **Clothes Drying on Balconies/Terrace Areas Prohibited**
The use of the balconies/terrace areas for the external drying of clothes is strictly prohibited.
- 116 **Loading/Unloading Operations/Activities**
All loading/unloading operations are to take place at all times wholly within the confines of the site or within the road reserve under an approved traffic control plan.