WLPP No.	Item 4
DA No.	DA-2017/1064
Proposal	Mixed use residential development - Phase 1: demolition of existing dwelling, tree removals and construction of a two storey residential flat building containing 12 apartments plus basement parking, a two storey dwelling, riparian area works, driveway and bridge access Phase 2: construction of a two storey residential flat building containing 16 apartments plus basement parking
Property	39 Angel Street Corrimal, Lot 56 DP 27796
Applicant	ADM Architects
Responsible Team	Development Assessment and Certification - City Wide Team (KR)

ADDENDUM REPORT

This report should be read in conjunction with the Council Assessing Officer's report as presented to Wollongong Local Planning Panel on the 15 August 2018 at Attachment 8.

Executive summary

Reason for consideration by Local Planning Panel - Determination

The proposal has been referred to the Wollongong Local Planning Panel (WLPP) **for determination** pursuant to Section 2(b) of Schedule 2 of the Local Planning Panels Direction of 1 March 2018, as the application is the subject of 10 or more unique submissions by way of objection.

Background

This matter was reported to the WLPP meeting on 15 August. A copy of the Panel's recommendation is included at Attachment 1. The Panel determined to defer the development application to allow the applicant an opportunity to address a number of concerns raised by Panel as follows:

- *The size of the building footprints for Blocks A & B should be reduced to facilitate retention of the existing mature Blackbutt tree in the vicinity of Block A, to avoid the need for encroachment into the foreshore building line and to provide improved amenity for future occupants;*
- *Implementation of the applicant's ecological report (Biosis, April 2018) recommendation in Table 4 to avoid clearing of Illawarra Wet Gully Forest by "incorporating remnant vegetation into the design as native garden";*
- *A traffic safety audit under the Austroad Guidelines has not been carried out to establish the best location and geometry for the access to the development;*
- *Actual traffic counts have not been provided for Angel Street to properly establish and quantify the traffic impacts of the development; The Panel determined to defer the*

development application as described in Schedule 1 to allow the applicant an opportunity to address the concerns raised by the Panel.

The applicant has amended the proposal and provided additional information in response to the concerns raised by the WLPP as outlined in Section 1 of this Addendum Report. A revised Statement of Environmental Effects dated 6 November 2018 prepared by TCG is provided at Attachment 6 which details the applicant's response to WLPP concerns and compliance against the relevant planning instruments.

Proposal

The proposal is for Mixed use residential development –

Phase 1. Demolition of existing dwelling, tree removals and construction of a two storey residential flat building containing 12 apartments (Block A) plus basement parking, a two storey dwelling, riparian area works, driveway and bridge access.

Phase 2. Construction of a two storey residential flat building containing 16 apartments (Block B) plus basement parking.

Permissibility

The site is zoned R2 Low Density Residential pursuant to the Wollongong Local Environmental Plan 2009. The proposal is categorised as a dwelling-house and residential flat building and is permissible in the zone with development consent. Demolition and tree removal are also permitted with consent.

Consultation

Notification of the amended plans provided in response to WLPP's concerns was considered unnecessary as the changes are considered minor. The amended plans and supporting documents would also be made available to the public on Council's website, for one week, prior to the matter being referred back to the WLPP meeting on 12 December to which all Submitters have been invited.

Council's Traffic and Environment Officers have reviewed the amended proposal and provided conditionally satisfactory referrals. Council's Landscape Officer has reviewed the amended proposal and is satisfied that the applicant's two Arborist Reports indicate that the existing Blackbutt Tree in the vicinity of Block A, can be retained, however has remaining concerns associated with the proximity of the tree and the overhanging canopy. Council's Assessing Officer notes the remaining concerns raised by Council's Landscape Officer however is of the view that the applicant has addressed the Panel's concerns.

Consultation of the proposal as presented to Wollongong Local Planning Panel on the 15 August 2018 is outlined in the Council Assessing Officer's Report.

Conclusion

Council's Assessing Officer is of the view that the amended proposal has addressed the concerns previously raised by the Panel.

Recommendation

DA-2017/1064 be approved subject to the conditions contained in Attachment 7 of this report.

1 APPLICANT'S RESPONSE TO THE WLPP RECOMMENDATIONS & COMMENTARY

The applicant has provided amended plans and additional information responding to the concerns raised by the WLPP. This includes:

- Arborist Report dated October 2018 prepared by Allied Tree Consultancy;
- Independent Arborist Report dated 30 October 2018 prepared by Moore Trees;
- Amended plans reducing the size of Block A to facilitate the retention of Tree 18;
- Amended plans reducing the size of Block B to remove encroachment into the foreshore building line;
- Amended Landscape Plan incorporating remnant vegetation into the design as native garden to avoid clearing of Illawarra Wet Gully Forest;
- WLPP Response Cover Letter dated 4 October 2018 prepared by Bitzios Consulting (including Road Safety Audit and Traffic Survey Data).
- Revised Statement of Environmental Effects dated 6 November 2018 prepared by TCG Planning

The amended plans and additional information are provided at Attachment 2.

A copy of the Panel's recommendation from its meeting on 15 August 2018 is provided at Attachment 1. The Panel raised four (4) items of concern which are outlined below, including the applicant's response and commentary by Council's Assessing Officer.

Item 1

The size of the building footprints for Blocks A & B should be reduced to facilitate retention of the existing mature Blackbutt tree in the vicinity of Block A, to avoid the need for encroachment into the foreshore building line and to provide improved amenity for future occupants.

Applicant's Response:

The applicant has amended the design of Block A & B and submitted additional information as follows:

Block A:

The applicant has amended Block A by amending the basement level to reduce the encroachment into the nominated tree protection zones of the existing mature Blackbutt Tree to facilitate its retention. This has resulted in reduction of parking provided in Block A by 1 residential parking space.

An Arborist Addendum Report, dated October 2018, prepared by Allied Tree Consultancy (Attachment 3) was submitted which concludes that the amended design has allowed for the retention of the existing mature Blackbutt Tree. The report assessed the basement encroachment to be 13% and did not consider this to pose any significant impact to the tree. The ground floor is assessed to encroach 9% however it is designed so that the root system is retained. The report recommended pruning of a southern limb to reduce the overhanging canopy and recommended measures to manage tree debris fallout from encroachment of the remaining dripline for example gutter guard.

An Arborist Report, dated 30 October 2018, prepared by Moore Trees (Attachment 4) was also submitted to provide a second independent opinion. The report assessed the basement encroachment to be 11% which the author states is just on the threshold of the maximum 10%

required in the Australian Standard (AS4970). The report states provided the ground level can be maintained and the portion of the footings over the TPZ can be bridged via the use of pier and beam construction this would allow the ground level structure to comply with the AS4970. The report also recommended reduction pruning of the southern side of the canopy to allow for the structure.

Council's Assessing Officer Comment:

Council's Landscape Officer has reviewed the amended proposal and is satisfied that the applicant's two Arborist Reports indicate that the existing Blackbutt Tree in the vicinity of Block A, can be retained, however has remaining concerns as follows:

- *Built form is only 4m from the centre of the trunk of the tree. The tree trunk is 1.4m diameter, thus from the trunk outside edge to the building alignment would be 3.3m. This is considered very close, and under the WCC Tree Management Permit, a tree will be approved for removal if it is within 3m of a building.*
- *The building will be under a large proportion of canopy which will result in maintenance problems, perceived nuisance by the residents and potentially safety issues.*

In relation to the first point raised by Council's Landscape Officer proposed Condition 7 Restricted Vegetation Removal, at attachment 7, permits removal of any tree within 3m of the building, however the plans indicate that the trunk is more than 3m measured from the outside edge of the tree to the building thus the existing Blackbutt Tree would not be permitted to be removed under Condition 7. Condition 11 Tree Retention/Removal is proposed to be amended to specify that Tree 18 is to be retained, Condition 45 specifies Tree Protection and Management requirements, Condition 70 requires the Supervising Arborist to certify tree protection measures are in place prior to any demolition, excavation or construction works and Condition 71 requires a qualifies Arborist to be engaged for the supervision of all on-site excavation or land clearing works.

In relation to the second dot point raised by Council's Landscape Officer both Arborists have recommended reduction pruning of the southern limb of the Tree to allow for the height of the structure. The Arborist Report by Allied Trees also included measures to manage issues such as tree debris fallout associated with the overhanging dripline.

Council's Assessing Officer notes the remaining issues raised by Council's Landscape Officer however is of the view that the applicant has addressed the Panel's concerns.

The amended proposal has resulted in loss of 1 parking space and 1 bicycle parking space however the proposal complies with the requirements of the Wollongong DCP 2009 as provided in the assessment against the relevant provisions of the WDCP 2009 below.

WDCP 2009 Chapter E3 Car Parking, Access, Servicing/Loading Facilities and Traffic Management

In amending the design of the basement level of Block A the applicant has reduced the number of parking spaces from 18 to 17 although the design of the units has remained the same. It is noted that the proposal as presented to WLPP on 15 August exceeded the required parking spaces for Block A by 1 space as only 17 spaces were required however 18 spaces were provided. Block A has 12 units of which 2 are less than 70sqm and 10 are between 70-110sqm in floor area. The amended proposal complies with the parking requirements of Chapter E3 Schedule 1 as follows:

Parking requirements for residential flat buildings	Required	Proposed
1 space - Units <70msqm	2 x 1 = 2	2 x 1 = 2
1.5 spaces - Units 70-110sqm	10 x 1.5 = 15	10 x 1.5 = 15
Total:	**17**	**17**

Council's Traffic Officer has assessed the amended proposal and is satisfied that it complies with minimum parking requirements.

Block B:

In response to the Panel's concerns the applicant has amended Block B to remove the encroachment into the foreshore building line. This has involved:

- Reducing the size of the basement level to remove the encroachment into the foreshore building line.
- Reduction of parking provided in Block B by 1 space from 24 to 23, and reduction of residential bicycle parking facilities by 1 space from 8 to 7.
- Changes to Ground Floor and First Floor Plan with some units reduced/redesigned.

Council's Assessing Officer Comment:

Council's Assessing Officer is of the view that the applicant has addressed the Panel's concerns in relation to encroachment into the foreshore building line and is now consistent with Clause 7.7 of WLEP 2009 Foreshore Building Line.

The amended proposal has resulted in loss of 1 parking space and 1 bicycle parking space however the amended proposal complies with the requirements of the Wollongong DCP 2009 Chapter E3 as provided below.

Chapter E3 Car Parking, Access, Servicing/Loading Facilities and Traffic Management

The applicant has revised the basement level which has resulted in the loss of one parking space (reduction from 24 spaces to 23 spaces). The Ground Floor and Level 1 Plans for Block B were also revised with amendment to the layout of some of the units including reducing the size of Units B01 and B09 to less than 70sqm to reduce the required parking. Block B has 16 units of which 2 are less than 70sqm and 14 are between 70-110sqm in floor area. The amended proposal complies with the parking requirements of Chapter E3 Schedule 1 as follows:

Parking requirements for residential flat buildings	Required	Proposed
1 space - Units <70msqm	2 x 1 = 2	2 x 1 = 2
1.5 spaces - Units 70-110sqm	14 x 1.5 = 21	14 x 1.5 = 21
Total:	**23**	**23**

Council's Traffic Officer has assessed the amended proposal and is satisfied that it complies with minimum parking requirements.

Chapter B1 Residential Development Clause 6.17 Apartment Size and Layout Mix for Larger Residential Flat Building Developments

As a result of the changes the bedroom mix has amended slightly resulting in 1 less 3 bedroom unit and 1 more 2 bedroom unit. The bedroom mix was originally 2 x 1 bedroom units, 7 x 2 bedroom units 18 x 3 bedroom units which has been amended to 3x 1 bedroom, 8 x 2 bedroom, 17 x 3 bedroom. The bedroom mix complies with Clause 6.17 of Chapter B1 WDCP 2009 for minimum 10% 1 bedroom units.

Item 2

Implementation of the applicant's ecological report (Biosis, April 2018) recommendation in Table 4 to avoid clearing of Illawarra Wet Gully Forest by "incorporating remnant vegetation into the design as native garden".

Applicant's Response:

In response to the Panel's concerns the applicant has submitted a revised Landscape Plan which incorporates additional remnant vegetation into the landscape design.

Council's Assessing Officer Comment:

Council's Environment Officer has assessed the proposal and is satisfied.

Item 3

A traffic safety audit under the Austroad Guidelines has not been carried out to establish the best location and geometry for the access to the development.

Applicant's Response

The Applicant has submitted WLPP Response Cover Letter dated 4 October 2018 prepared by Bitzios Consulting (Attachment 5). This included a detailed road safety audit (RSA) undertaken for the proposed driveway. The RSA reviewed sight distance and grades, signs and pavement markings, roadside objects and hazards and drivers sight distance to pedestrian, cyclists and vehicles from subject driveway. The audit was carried out to identify any features of the project which could be altered or removed to improve safety. The RSA concluded that no safety issues were raised in the report, hence no response from the design team was required.

Council Assessing Officer's Comment:

Council's Traffic Officer has assessed the report by Bitzios Consulting and is satisfied that the road safety audit did not find any issues with the proposed access location.

It is the Council Assessing Officer's view that the applicant has addressed the Panel's concerns in relation to the location and geometry of the proposed access to the development and that no design changes are warranted.

Item 4

Actual traffic counts have not been provided for Angel Street to properly establish and quantify the traffic impacts of the development.

Applicant's Response

The applicant submitted WLPP Response Cover Letter dated 4 October 2018 prepared by Bitzios Consulting. This included traffic data that investigated traffic volumes, traffic speed and road capacity. Traffic surveys were carried at two locations in Angel Street over 7 days from Friday 24 August to Thursday 30 August 2018, one at the northern end of Angel Street (west of St Andrews Place) and one at the southern end of Angel (east of Caroline Street). The report concluded that both road sections are expected to accommodate the estimated increase in daily traffic volumes as a result of the inclusion of the development. It is noted that the assessment included the proposed multi-unit dwelling development on the adjacent site No. 41 Angel Street that is yet to be constructed. Angel Street is a sign-posted 50km/h road and the survey data also revealed that the average and 85th percentile vehicles do not exceed the speed limit.

Council Assessing Officer's Comment:

Council's Traffic Officer has assessed the report by Bitzios Consulting and is satisfied.

It is the Council's Assessing Officer's view that the applicant has addressed the Panel's concerns as actual traffic counts have now been provided for Angel Street which properly establishes and quantifies the traffic impacts of the development.

Changes to Conditions

The following conditions (from the report to WLPP of 15 August) will need to be revised as a result of the amended proposal:

- Condition 1 Approved Plans and Documents.
- Condition 11 Tree retention/removal to require Tree 18 to be retained.
- Condition 31 Car Parking for Block A to require 17 residential car parking spaces and Block B to require 23 residential car parking spaces.

CONCLUSION

At the WLPP meeting of 15 August 2018, the Panel determined to defer the development application to allow the applicant an opportunity to address a number of concerns relating to removing an encroachment into the foreshore building line, retention of an existing mature Blackbutt Tree, landscape and traffic matters.

Responding to the recommendations of the WLPP the applicant has provided amended plans and supporting documentation to address WLPP concerns. Council's Assessing Officer is of the view that the amended proposal and supporting documentation has addressed the concerns previously raised by the Panel. The amended proposal is also not inconsistent with the WLEP 2009 and WDCP 2009.

It is therefore considered that the proposed development is appropriate given the nature and characteristics of the site and is unlikely to result in significant adverse impacts on the character and amenity of the surrounding area, providing for the orderly development of land in the locality.

RECOMMENDATION

DA-2017/1064 be approved subject to the conditions contained in Attachment 7 of this report.

ATTACHMENTS

1. WLPP recommendations from 15 August 2018 meeting
2. Amended Plans and revised Landscape Plan
3. Arborist Report dated October 2018 prepared by Allied Tree Consultancy
4. Arborist Report dated 30 October 2018 prepared by Moore Trees
5. WLPP Response Cover Letter dated 4 October 2018 prepared by Bitzios Consulting (including Road Safety Audit and Traffic Survey Data).
6. Revised Statement of Environmental Effects dated 6 November 2018 prepared by TCG
7. Revised Conditions
8. Original Council Assessing Officer's WLLP Report and Draft Conditions as presented to WLLP meeting on 15 August 2018.

Click on the red line above to link to the previous WLPP Report

Attachment 1 - Panel Commentary and Decision

DETERMINATION AND STATEMENT OF REASONS

WOLLONGONG CITY COUNCIL – WOLLONGONG LOCAL PLANNING PANEL (WLPP)

DATE OF DETERMINATION	15 August 2018
PANEL MEMBERS	Robert Montgomery (Chair), Helena Miller, Steve Fermio, Bernard Hibbard (Community Representative)
DECLARATIONS OF INTEREST	Nil

Public meeting held at Wollongong City council function room, 41 Burelli Street, Wollongong on 15 August 2018 opened at 5:00pm and closed at 9:12pm.

MATTER DETERMINED

DA-2017/1064 – 39 Angel Street Corrimal (as described in detail in schedule 1).

PUBLIC SUBMISSIONS

The Panel was addressed by seven submitters, who raised concerns regarding:

Scale, incompatibility of land use, riparian corridor, flooding, privacy loss to adjoining dwellings, traffic and road safety, impact on flora and fauna, garbage bin placement, whether medium density is permissible in low density zone, FSR definition, need landscaping to screen from adjoining dwellings, headlight glare impact to 28 Angel Street.

The Panel heard from the applicant, owner and town planner.

PANEL CONSIDERATION AND DECISION

The Panel considered the matters listed at item 7, the material presented at the meeting and the matters observed at the site inspection listed at item 8 in Schedule 1.

The Panel is concerned that the following aspects of the proposed development have not been adequately resolved:

- The size of the building footprints for Blocks A & B should be reduced to facilitate retention of the existing mature Blackbutt tree in the vicinity of Block A, to avoid the need for encroachment into the foreshore building line and to provide improved amenity for future occupants;
- Implementation of the applicant's ecological report (Biosis, April 2018) recommendation in Table 4 to avoid clearing of Illawarra Wet Gully Forest by "incorporating remnant vegetation into the design as native garden";
- A traffic safety audit under the Austroad Guidelines has not been carried out to establish the best location and geometry for the access to the development;
- Actual traffic counts have not been provided for Angel Street to properly establish and quantify the traffic impacts of the development;

The Panel determined to defer the development application as described in Schedule 1 to allow the applicant an opportunity to address the concerns raised by the Panel.

The decision was unanimous.

REASONS FOR THE DECISION

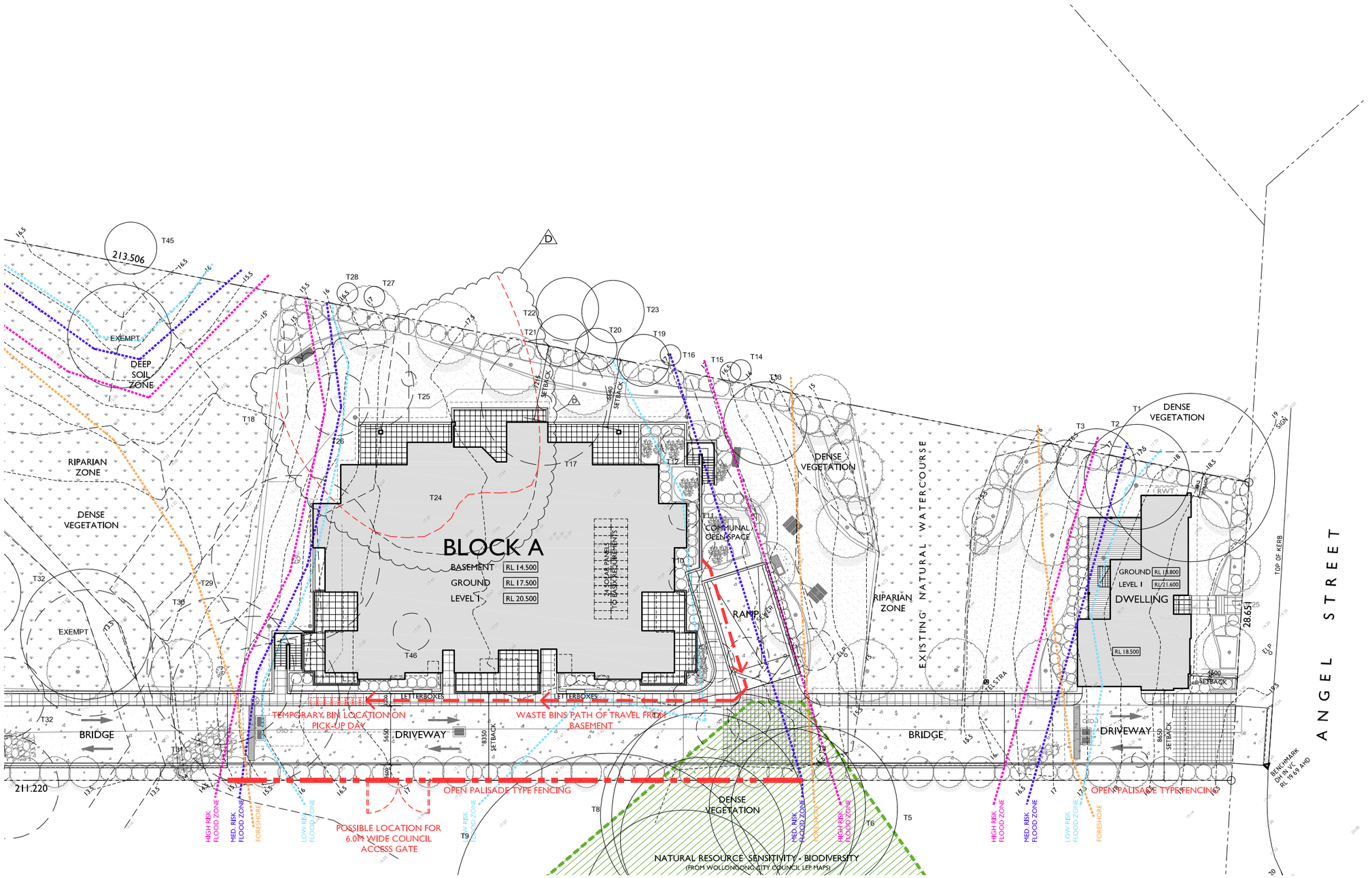
The reasons for the decision of the Panel were:

- The development application contains insufficient information in relation to traffic and ecological matters.

- The size of the proposed building footprints of buildings A & B is not acceptable due to the adverse impacts described above.

PANEL MEMBERS	
 Robert Montgomery (Chair)	 Helena Miller
 Steve Fermio	 Bernard Hibbard (Community Representative)

SCHEDULE 1		
1	DA NO.	DA-2017/1064
2	PROPOSED DEVELOPMENT	Mixed use residential development - Phase 1. Demolition of existing dwelling, tree removals and construction of a two storey residential flat building containing 12 apartments plus basement parking, a two storey dwelling, riparian area works, driveway and bridge access. Phase 2. Construction of a two storey residential flat building containing 16 apartments plus basement parking
3	STREET ADDRESS	39 Angel Street Corrimal
4	APPLICANT/OWNER	AMD Architects
5	REASON FOR REFERRAL	Section 2(b) of Schedule 2 of the Local Planning Panels Direction of 1 March 2018 as the Development Application is the subject of 10 or more unique submissions.
6	RELEVANT MANDATORY CONSIDERATIONS	· Environmental planning instruments: o State Environmental Planning Policy No 55 – Remediation of Land o State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development o State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 · Wollongong City Wide Development Contributions Plan 2018 · Development control plans: o Wollongong Development Control Plan 2009 · Provisions of the *Environmental Planning and Assessment Regulation 2000*: o Clause 92 What additional matters must a consent authority take into consideration in determining a development application? Compliance with Australian Standard AS 2601—1991: The Demolition of Structures. · The likely impacts of the development, including environmental impacts on the natural and built environment and social and economic impacts in the locality · The suitability of the site for the development · Any submissions made in accordance with the *Environmental Planning and Assessment Act 1979* or regulations · The public interest, including the principles of ecologically sustainable development
7	MATERIAL CONSIDERED BY THE PANEL	· Council assessment report dated 15 August 2018 · Written submissions during public exhibition: [36 submissions during first round of notification and 10 submissions during second round of notification] · Verbal submissions at the public meeting: 7
8	SITE INSPECTIONS BY THE PANEL	Site inspection 15 August 2018. Attendees: o Panel members: Robert Montgomery (Chair), Helena Miller, Steve Fermio, Bernard Hibbard (Community Representative) o Council assessment staff: John Wood, Kristy Robinson
9	COUNCIL RECOMMENDATION	Approve
10	DRAFT CONDITIONS	Attached to the council assessment report



DETAILED SITE PLAN A

REFER TO CIVIL ENGINEER'S DOCUMENTATION FOR STORMWATER COLLECTION & ALL EXTERNAL SURFACE LEVELS.

REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION FOR ALL PAVING & PLANTING DETAILS.

ISSUE	DATE	DESCRIPTION	initials	chkd
E	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
D	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

These drawings are not to be scaled. Figured dimensions shall be used in all cases.

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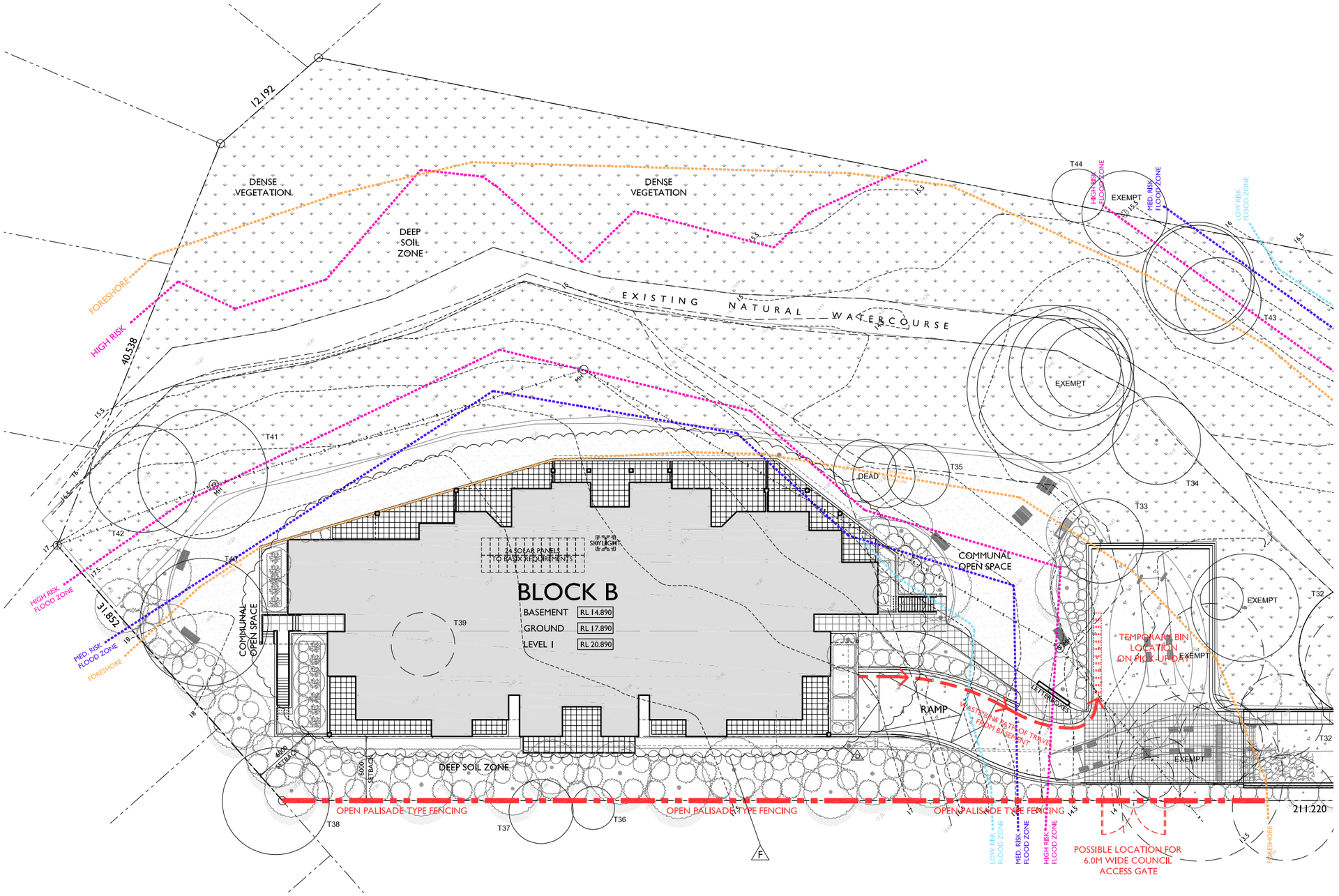
Nest
Apartments on Ange

SHOALHAVEN LIFESTYLE LIVING PTY LTD

Project
PROPOSED MULTI UNIT DEVELOPMENT CONSTRUCTED IN TWO STAGES COMPRISING OF A DETACHED DWELLING AND TWO BUILDINGS ABOVE BASEMENT PARKING
at
LOT 56 DP 27796
39 ANGEL STREET
CORRIMAL

scale	1:200 @ A1 1:400 @ A3
date	OCTOBER 2018
drawn	RC MC chkd ADM
drawing	DEVELOPMENT APPLICATION DETAILED SITE PLAN A
Project No.	2017-06
Drawing No.	A03
Issue	E



DETAILED SITE PLAN B

REFER TO CIVIL ENGINEER'S DOCUMENTATION FOR STORMWATER COLLECTION & ALL EXTERNAL SURFACE LEVELS.

REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION FOR ALL PAVING & PLANTING DETAILS.

ISSUE	DATE	DESCRIPTION	initials	chkd
F	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
E	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
D	02.08.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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39 ANGEL STREET
CORRIMAL

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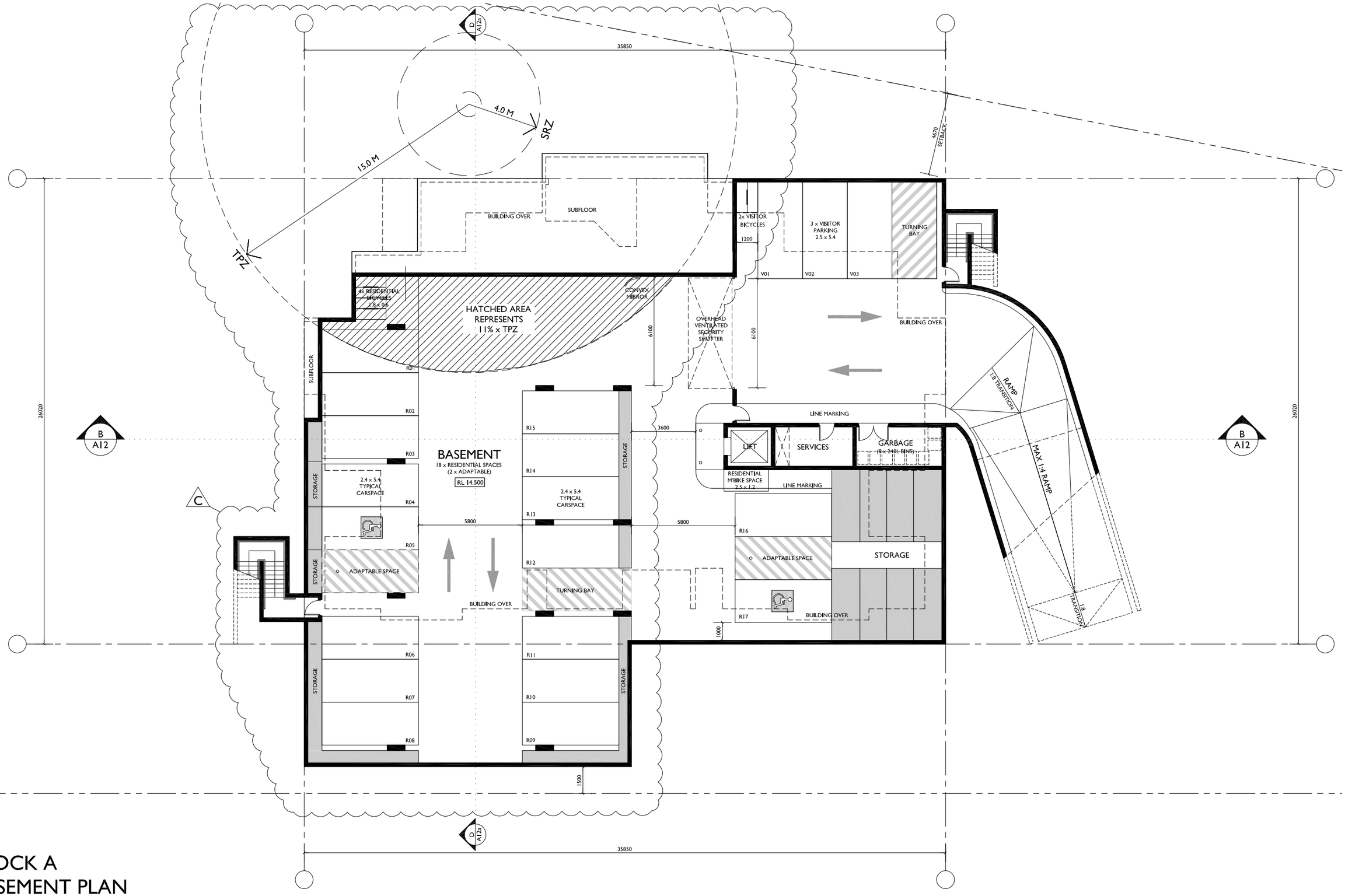
Project No.	Drawing No.	Issue	
2017-06	A04	F	



BLOCK A
BASEMENT PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

o These drawings are not to be scaled. Figured dimensions shall be used in all cases.

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Project
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at
LOT 56 DP 27796
39 ANGEL STREET
CORRIMAL

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date	OCTOBER 2018		
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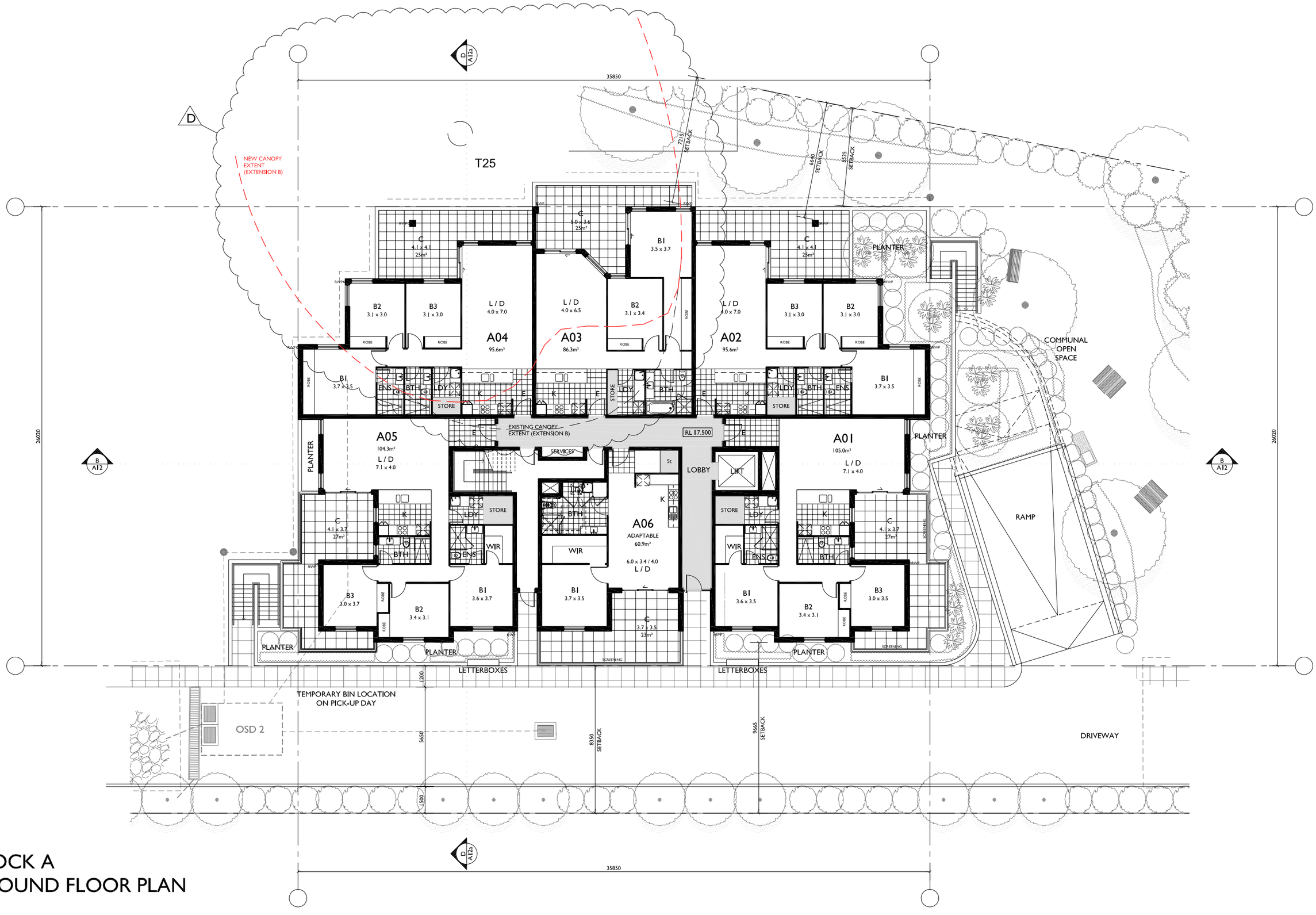
2017-06	A07	C	



BLOCK A
GROUND FLOOR PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
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C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

These drawings are not to be scaled. Figured dimensions shall be used in all cases.

FIGURED DIMENSIONS - These drawings are not to be scaled. Figured dimensions shall be used in all cases.
DISCREPANCIES IN DIMENSIONS/POSITIONS/LOCATIONS/FINISHES The Contractor is to verify any dimensional, location or finish discrepancy with ADM Architects prior to any physical construction or setting out so that ADM Architects is given the opportunity to resolve potential discrepancies or conflicts in sufficient time without causing abortive work. The Contractor shall be responsible for notifying ADM Architects of any such discrepancy or conflict that may arise on site.
CO-ORDINATION OF WORKS - These drawings are to be read in conjunction with the full set of consultant's drawings, specifications, reports and DA conditions.
NOMINATED ARCHITECT - The nominated Architect for ADM Projects (Australia) Pty Ltd T/AS ADM Architects is Angelo Di Martino ARB No.7608

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PROPOSED MULTI UNIT DEVELOPMENT CONSTRUCTED IN TWO STAGES COMPRISING OF A DETACHED DWELLING AND TWO BUILDINGS ABOVE BASEMENT PARKING
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39 ANGEL STREET
CORRIMAL

scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
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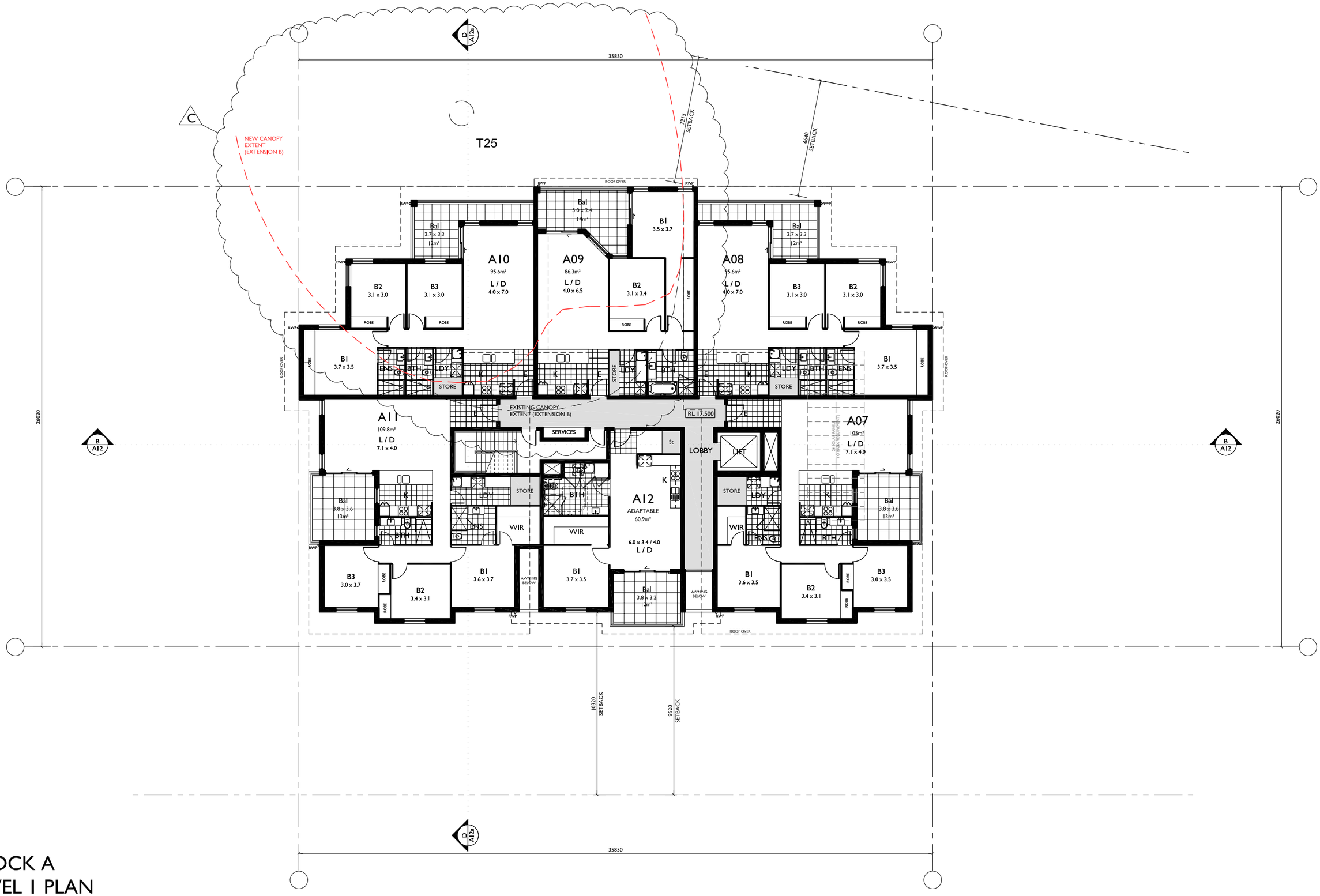
drawing	DEVELOPMENT APPLICATION BLOCK A - GROUND FLOOR PLAN		
Project No.	Drawing No.		Issue
2017-06	A08		D



BLOCK A
LEVEL 1 PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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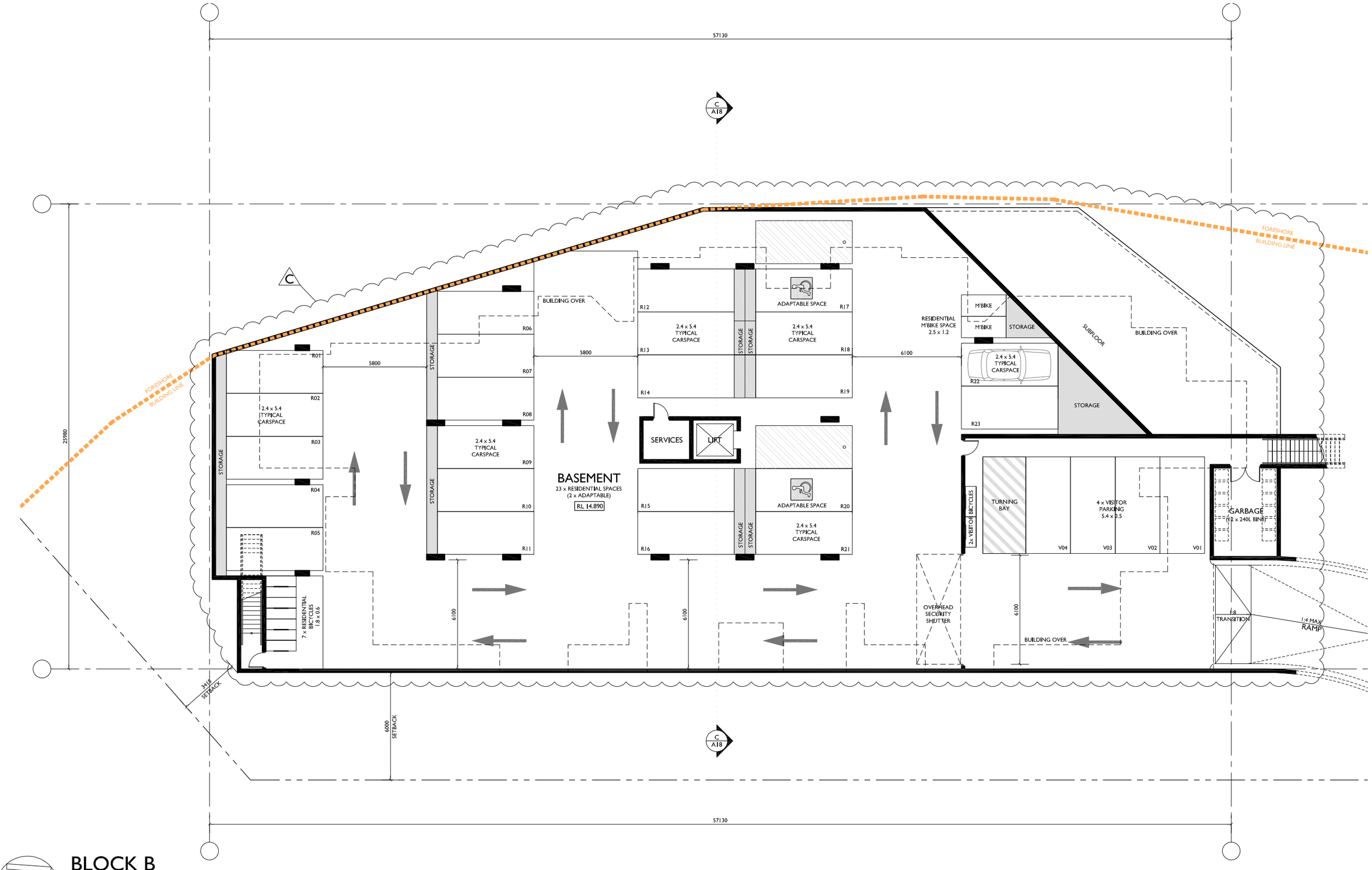
Apartments on Ange

SHOALHAVEN LIFESTYLE LIVING PTY LTD

Project
PROPOSED MULTI UNIT DEVELOPMENT CONSTRUCTED IN TWO STAGES COMPRISING OF A DETACHED DWELLING AND TWO BUILDINGS ABOVE BASEMENT PARKING
at
LOT 56 DP 27796
39 ANGEL STREET
CORRIMAL

scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd	ADM
drawing	DEVELOPMENT APPLICATION		
	BLOCK A - LEVEL 1 PLAN		
Project No.	Drawing No.		Issue
2017-06	A09		C



BLOCK B
BASEMENT PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

These drawings are not to be scaled. Figured dimensions shall be used in all cases.

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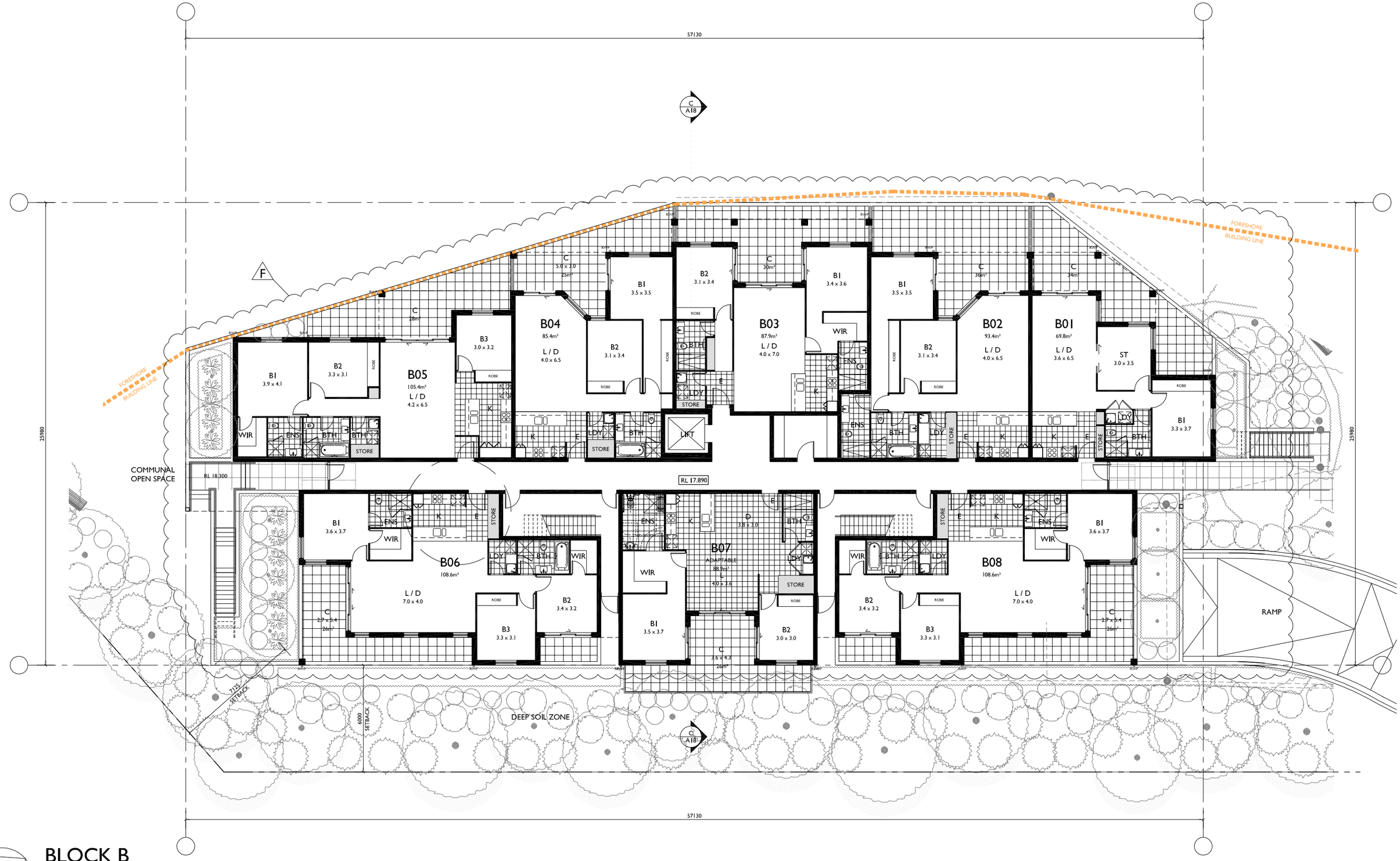
39 ANGEL STREET
CORRIMAL

scale	1:100 @ A1 1:200 @ A3
date	OCTOBER 2018
drawn	RC MC chkd ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - BASEMENT PLAN
Project No.	2017-06
Drawing No.	A13
Issue	C



BLOCK B
GROUND FLOOR PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
F	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
E	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
D	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	11.10.18	REISSUED FOR DEVELOPMENT APPLICATION	MC	ADM
B	02.08.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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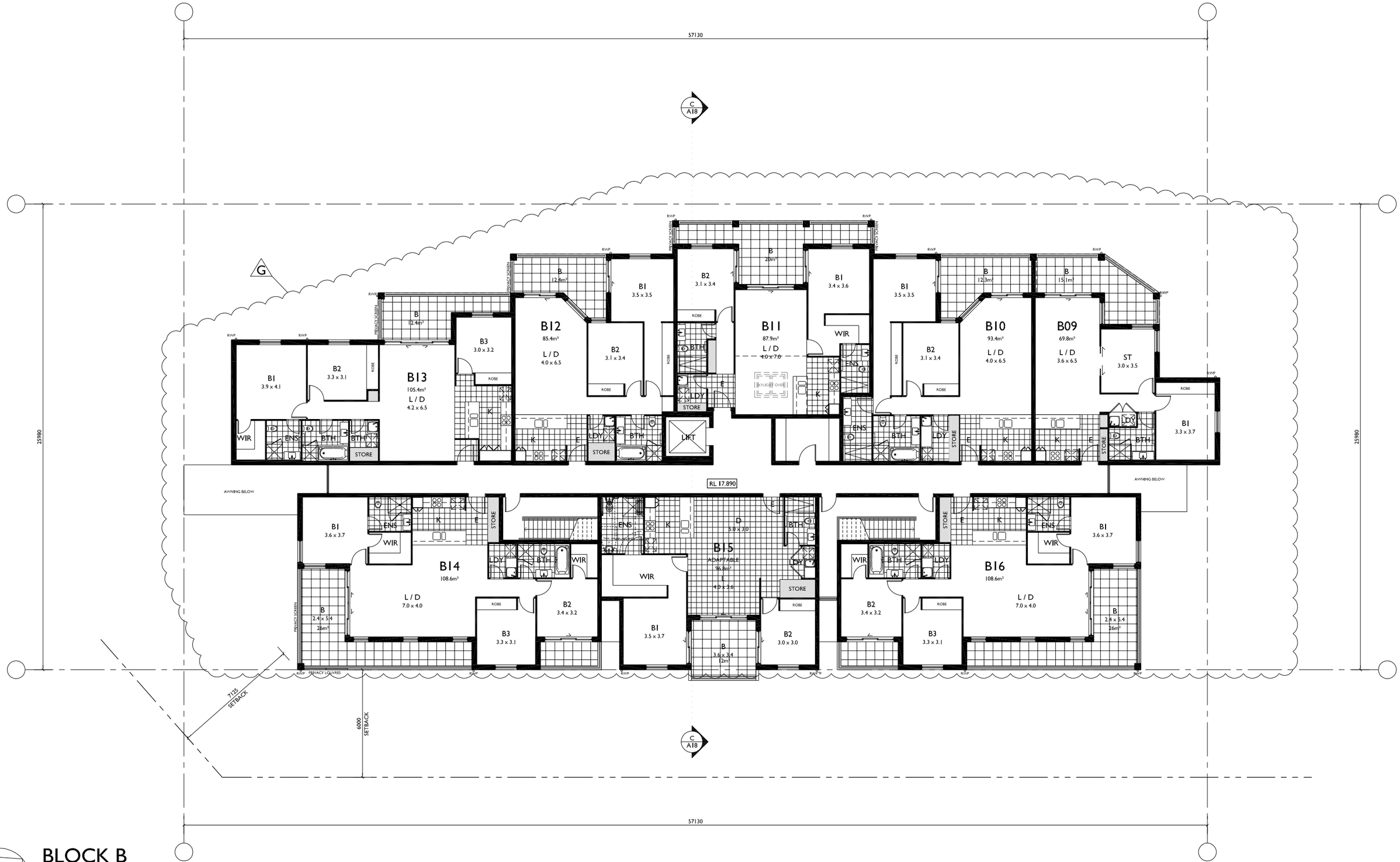
scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd	ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - GROUND FLOOR PLAN		
Project No.	Drawing No.	Issue	
2017-06	A14	F	



BLOCK B
LEVEL 1 PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
G	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
F	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
E	11.10.18	REISSUED FOR DEVELOPMENT APPLICATION	MC	ADM
D	02.08.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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CO-ORDINATION OF WORKS - These drawings are to be read in conjunction with the full set of consultant's drawings, specifications, reports and DA conditions.
NOMINATED ARCHITECT- The nominated Architect for ADM Projects (Australia) Pty Ltd T/AS ADM Architects is Angelo Di Martino ARB No.7608

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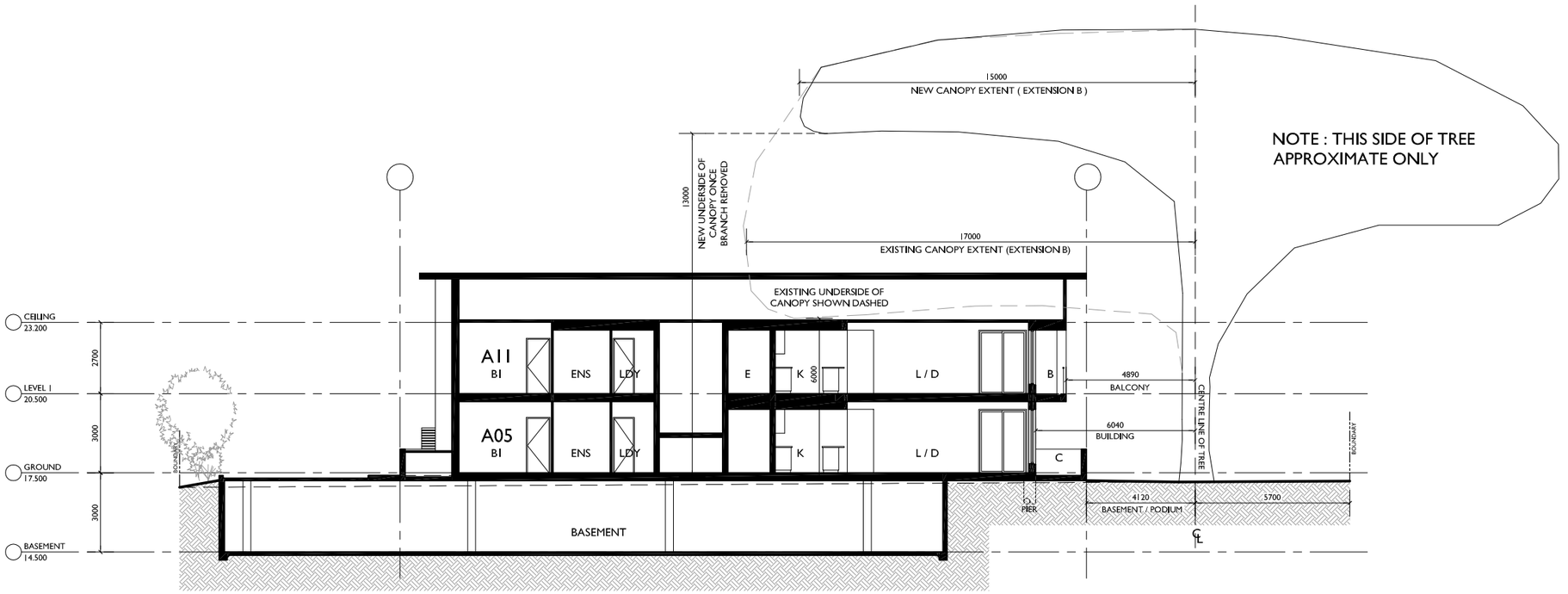
scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd ADM	
drawing	DEVELOPMENT APPLICATION		
	BLOCK B - LEVEL 1 PLAN		
Project No.	Drawing No.	Issue	
2017-06	A15	G	



SECTION D-D

ARBORIST REFERENCE - EXTENSION B

BLOCK A
TREE SECTION DD

ISSUE	DATE	DESCRIPTION	Initials	chkd
C	29.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	26.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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CORRIMAL

scale	1:100 @ A1 1:200 @ A3
date	OCTOBER 2018
drawn	RC MC chkd ADM
drawing	DEVELOPMENT APPLICATION BLOCK A - TREE SECTION DD
Project No.	2017-06
Drawing No.	A12a
Issue	C

SOUTH-WEST ELEVATION

BLOCK B ELEVATIONS

ISSUE	DATE	DESCRIPTION	initials	chkd
D	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	MC	ADM

sign date

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scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd ADM	
drawing	DEVELOPMENT APPLICATION BLOCK B - ELEVATIONS		
Project No.	Drawing No.	Issue	
2017-06	A16	D	

SOUTH-EAST ELEVATION

SOUTH-WEST ELEVATION

BLOCK B
ELEVATIONS

ISSUE	DATE	DESCRIPTION	initials	chkd
D	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	MC	ADM

sign date

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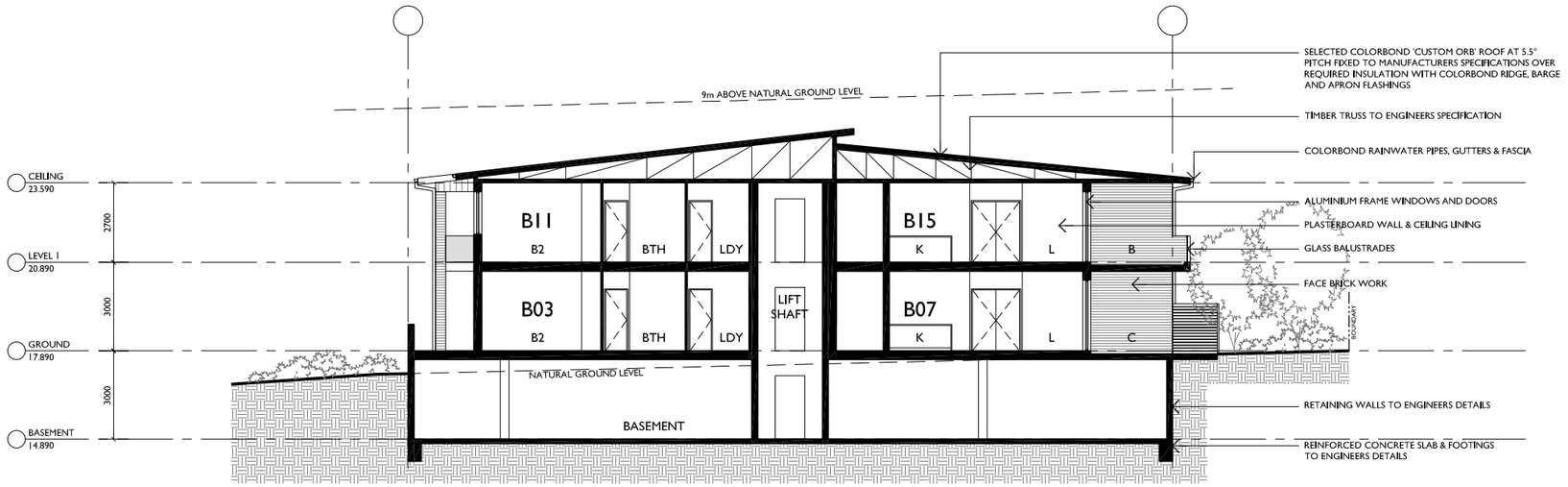
scale	1:100 @ A1 1:200 @ A3
date	OCTOBER 2018
drawn	RC MC chkd ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - ELEVATIONS
Project No.	2017-06
Drawing No.	A17
Issue	D



SECTION C-C

BLOCK B SECTION

ISSUE	DATE	DESCRIPTION	initials	chkd
B	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	MC	ADM

sign date

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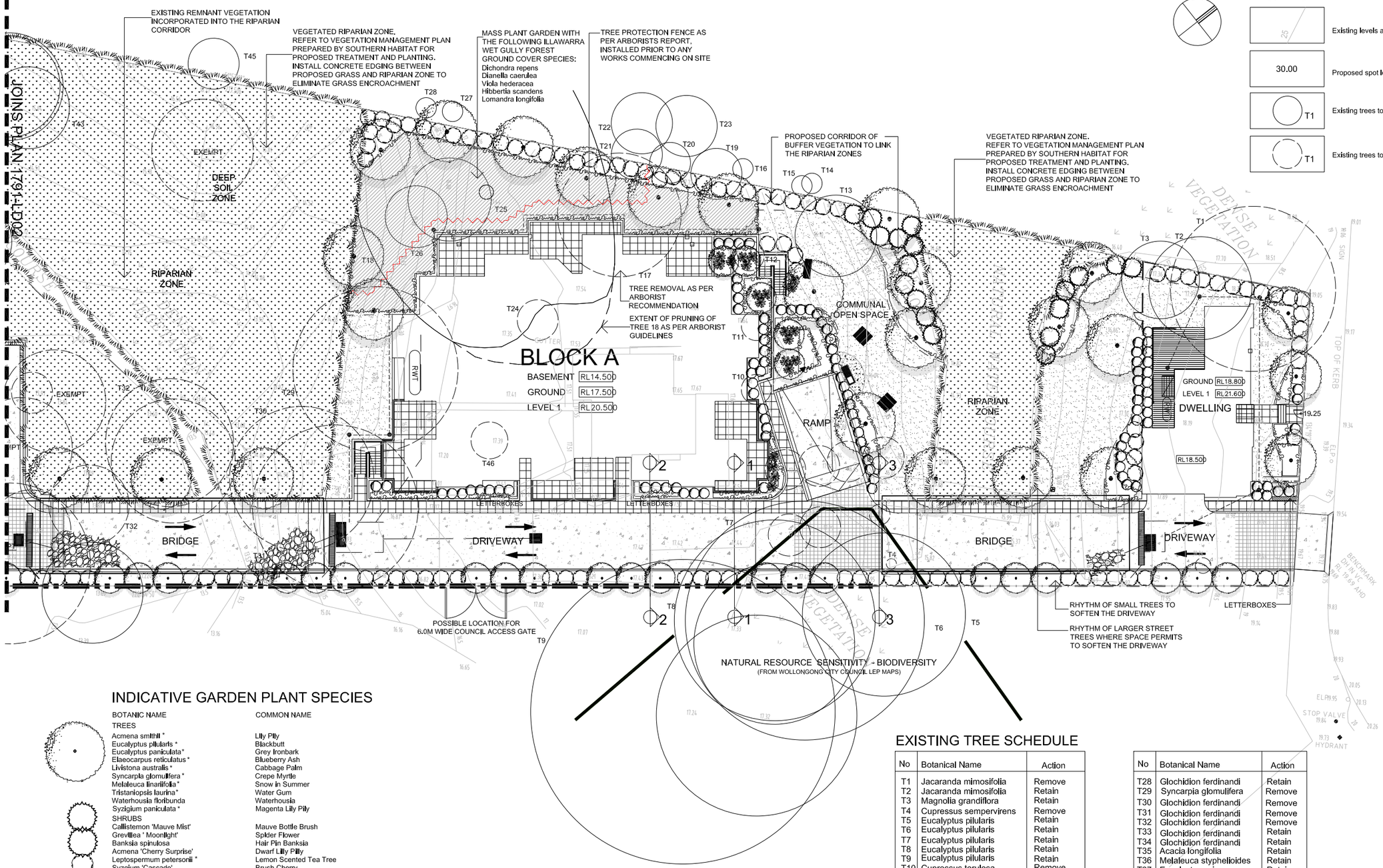
scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd	ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - SECTION		
Project No.	Drawing No.		Issue
2017-06	A18		B



LEGEND

- Existing levels and contours
- 30.00 — Proposed spot levels
- T1 — Existing trees to be retained
- T1 — Existing trees to be removed
- Proposed tree planting
- Proposed mass shrub planting
- Vegetated treatment including extensive planting to the Riparian Zone as per the VMP Prepared by Southern Habitat
- Proposed turf with concrete edging
- Proposed select unit paving
- Proposed charcoal coloured concrete driveway
- Proposed stencilled concrete driveway Colour: Charcoal
- 1400mm high timber fence
- 1200mm Metal rod fence
- 1800mm high open pallisade fence
- Tree protection fence as per arborists report, installed prior to any works commencing on site
- Letterbox
- Potential Barbeque
- Potential seating

INDICATIVE GARDEN PLANT SPECIES

BOTANIC NAME	COMMON NAME
TREES	
Acmena smithII *	Lilly Pilly
Eucalyptus pllularis *	Blackbutt
Eucalyptus paniculata*	Grey Ironbark
Elaeocarpus reticulatus *	Blueberry Ash
Livistona australis *	Cabbage Palm
Syncarpia glomulifera *	Crepe Myrtle
Melaleuca linariifolia *	Snow in Summer
Tristaniopsis laurina*	Water Gum
Waterhousia floribunda	Waterhousia
Syzigium paniculata *	Magenta Lilly Pilly
SHRUBS	
Callistemon 'Mauve Mist'	Mauve Bottle Brush
Grevillea ' Moonlight'	Spider Flower
Banksia spinulosa	Hair Pin Banksia
Acmena 'Cherry Surprise'	Dwarf Lilly Pilly
Leptospermum petersonii *	Lemon Scented Tea Tree
Syzgium 'Cascade'	Brush Cherry
Doryanthes excelsa *	Gymea Lily
Backhousia citriodora	Lemon myrtle
Syzigium leuhmannII 'Petite Blush'	Brush Cherry
Synoum glandulosum *	Bastard Rosewood
Crinum pendunculatum *	Swamp lily
Notelaea longifolia *	Escallonia
Westringia 'Jervis Gem'	Coastal Rosemary
Raphiolepis Indica 'Springtime'	Indian Hawthorn
Austromyrtus dulcis	Austromyrtus
Phormium cookinaum	New Zealand Flax
Phormium tenax 'Purpurea'	Purple New Zealand Flax
Westringia 'Zena'	Dwarf Coastal Rosemary
Correa baeuerlenii	Chefs hat correa
SMALL ACCENTS/GROUNDCOVERS	
Dichondra repens*	Kidney Weed
Dianella revoluta	Paroo Lily
Dianella caerulea *	Paroo Lily
Viola hederacea*	Native Violet
Myoprum parvifolium	Creeping Boobialla
Hibbertia scandens *	Snake Vine
Liriope muscari	Lilyturf
Lomandra longifolia*	Mat Rush
Lomandra 'Tanika'	Mat Rush
Phormium 'Bronze Baby'	Dwarf New Zealand Flax
Scaevola 'Purple Fanfare'	Purple Fan Flower
Westringia 'White Rambler'	Creeping Westringia
Viola hederacae*	Native Violet

* Locally Occuring Native Species

REFER TO THE VEGETATION MANAGEMENT PLAN PREPARED BY SOUTHERN HABITAT FOR DETAILED INFORMATION ON THE PROPOSED VEGETATED RIPARIAN ZONE

SITE AREA: 11,250m2
DEEP SOIL AREA (Including Riparian Zone): 4,506m2, 40%
TOTAL LANDSCAPED AREA (Including Riparian Zone): 7,009m2, 62.30%

EXISTING TREE SCHEDULE

No	Botanical Name	Action
T1	Jacaranda mimosifolia	Remove
T2	Jacaranda mimosifolia	Retain
T3	Magnolia grandiflora	Retain
T4	Cupressus sempervirens	Remove
T5	Eucalyptus pilularis	Retain
T6	Eucalyptus pilularis	Retain
T7	Eucalyptus pilularis	Retain
T8	Eucalyptus pilularis	Retain
T9	Eucalyptus pilularis	Retain
T10	Cupressus torulosa	Remove
T11	Cupressus torulosa	Remove
T12	Cupressus torulosa	Remove
T13	Lagerstroemia Indica	Retain
T14	Glochidion ferdinandi	Retain
T15	Glochidion ferdinandi	Retain
T16	Glochidion ferdinandi	Retain
T17	Syncarpia glomulifera	Remove
T18	Eucalyptus pilularis	Retain
T19	Eucalyptus pilularis	Retain
T20	Eucalyptus pilularis	Retain
T21	Eucalyptus pilularis	Retain
T22	Eucalyptus pilularis	Retain
T23	Eucalyptus pilularis	Retain
T24	Glochidion ferdinandi	Remove
T25	Pittosporum undulatum	Retain
T26	Brachychiton acerifolius	Retain
T27	Glochidion ferdinandi	Retain

NOTE: The above tree schedule has been extracted from the arborist's report prepared by Allied Tree Consultancy dated 30.06.17
Refer to the arborist's report for further details on the existing trees.

NOTE: Existing trees numbers T4, T6, T14, T15, T16, T19, T20, T21, T22, T123, T24,T27,T28, T26, T37, T38, T44 & T45 are indicative only and are subject to survey.

No	Botanical Name	Action
T28	Glochidion ferdinandi	Retain
T29	Syncarpia glomulifera	Remove
T30	Glochidion ferdinandi	Remove
T31	Glochidion ferdinandi	Remove
T32	Glochidion ferdinandi	Remove
T33	Glochidion ferdinandi	Retain
T34	Glochidion ferdinandi	Retain
T35	Acacia longifolia	Retain
T36	Melaleuca styphelioides	Retain
T37	Eucalyptus scias	Retain
T38	Eucalyptus tereticornis	Retain
T39	Glochidion ferdinandi	Remove
T40	Quercus robur	Retain
T41	Acacia longifolia	Retain
T42	Acacia longifolia	Retain
T43	Glochidion ferdinandi	Retain
T44	Acacia longifolia	Retain
T45	Acacia longifolia	Retain
T46	Polyspora axillaris	Remove

REFER TO PLAN 1791-LD02 FOR RIPARIAN SPECIES AND 1791-LD03 FOR SECTIONS

ISSUE: Amended Development Application 29.11.18
ISSUE: Amended Development Application 05.11.18
ISSUE: For Co-ordination 26.10.18
ISSUE: Amended Development Application 21.03.18
ISSUE: Development Application 16.08.17,18.08.17
ISSUE: For Comment 17.07.17, 14.08.17
REV C: Amend garden, existing trees 25 and 26
REV B: Amend Block B, landscape, species, T18 retention 26.10.18
REV A: Amend building, landscape, add sections 23.02.18

ochre landscape architects
PO Box 395 Wollongong NSW 2520
Tel. 0452 576427
Email: design@ochre.net.au

PROJECT
Proposed Unit Developement
39 Angel Street
CORRIMAL

DRAWING TITLE
Landscape Concept Plan

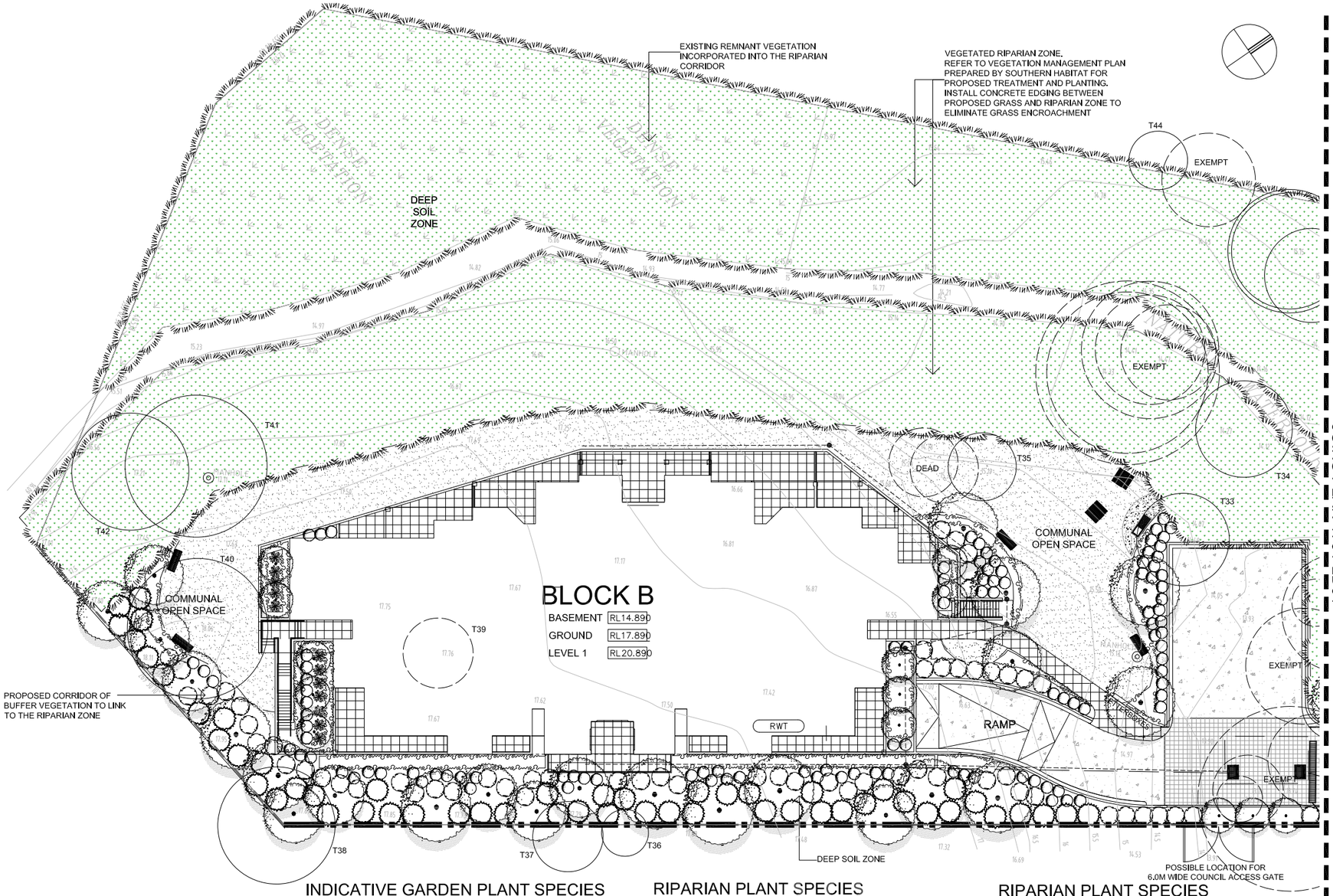
CLIENT
Shoalhaven Lifestyle Living Pty Ltd

DRAWING NO.
1791-LD01C

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

DRAWN: DF CHECKED: TW

DATE. 14.0717



LEGEND

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Livistona australis *	Cabbage Palm
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Melaleuca linariifolia *	Snow in Summer
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Waterhousia floribunda	Waterhousia
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Austromyrtus dulcis	Austromyrtus
Phormium cookinaum	New Zealand Flax
Phormium tenax 'Purpurea'	Purple New Zealand Flax
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Dianella revoluta	Paroo Lily
Dianella caerulea *	Paroo Lily
Viola hederacea *	Native Violet
Myoprum parvifolium	Creeping Boobialla
Hibbertia scandens *	Snake Vine
Liripope muscari	Lilyturf
Lomandra longifolia*	Mat Rush
Lomandra 'Tanika'	Mat Rush
Phormium 'Bronze Baby'	Dwarf New Zealand Flax
Scaevola 'Purple Fanfare'	Purple Fan Flower
Westringia 'White Rambler'	Creeping Westringia
Viola hederacae*	Native Violet

* Locally Occuring Native Species

RIPARIAN PLANT SPECIES

ADJACENT TO FRONT DWELLING

BOTANIC NAME	COMMON NAME	QTY
IN STREAM AQUATICS		
Baumea rubiginosa	Baumea	60
Gahnia clarkei	Tall Saw Sedge	20
Juncus usitatus	Common Rush	60
Persicaria decipiens	Slender Knotweed	30
Persicaria stringosa	Spotted Knotweed	30
GRONDCOVERS		
Calochlaena dubia	Rainbow Fern	40
Carex appressa	Tall Sedge	60
Commelina cyanea	Scurvy Weed	60
Dianella caerulea	Blue Flax Lily	70
Dichondra repens	Kidney Weed	50
Doodia aspera	Rasp Fern	40
Imperata cylindrica	Blady Grass	70
Lomandra longifolia	Spiny Headed Mat Rush	50
Oplismenus imbecillis	Basket Grass	60
Pandorea pandorana ssp. pandorana	Wonga Wonga Vine	10
Pseuderanthermum variabile	Pastel Flower	60
Tylophora barbata	Bearded Tylophora	20
SHRUB/SMALL TREE		
Acacia maidenii	Maidens Wattle	5
Allocasuarina torulosa	Forest Oak	5
Breynia obolongifolia	Coffee Bush	10
Livistona australis	Cabbage Tree Palm	5
Notelaea venosa	Smooth Mock Olive	5
Pittosporum revolutum	Rough Fruited Pittosporum	5
Pittosporum undulatum	Sweet Pittosporum	5
TREES		
Ficus coronata	Sand Paper Fig	10
Glochidion ferdinandi var. ferdinandi	Glochidion ferdinandi var. ferdinandi	2
Syncarpia glomulifera ssp. glomulifera	Syncarpia glomulifera ssp. glomulifera	2

EXTRACTED FROM THE VEGETATION MANAGEMENT PLAN PREPARED BY SOUTHERN HABITAT

RIPARIAN PLANT SPECIES

ADJACENT TO BLOCK A & B

BOTANIC NAME	COMMON NAME	QTY
IN STREAM AQUATICS		
Baumea rubiginosa	Baumea	1500
Gahnia clarkei	Tall Saw Sedge	80
Juncus usitatus	Common Rush	200
Persicaria decipiens	Slender Knotweed	150
Persicaria stringosa	Spotted Knotweed	150
GRONDCOVERS		
Calochlaena dubia	Rainbow Fern	250
Carex appressa	Tall Sedge	600
Commelina cyanea	Scurvy Weed	350
Dianella caerulea	Blue Flax Lily	500
Dichondra repens	Kidney Weed	350
Entolasia marginata	Bordered Panic	350
Doodia aspera	Rasp Fern	250
Imperata cylindrica	Blady Grass	60
Lomandra longifolia	Spiny Headed Mat Rush	500
Oplismenus Imbecillis	Basket Grass	350
Pandorea pandorana ssp. pandorana	Wonga Wonga Vine	200
Poa labillardierei var. labillardierei	Tussock	500
Pseuderanthermum variabile	Pastel Flower	250
Tylophora barbata	Bearded Tylophora	200
SHRUB/SMALL TREE		
Acacia maidenii	Maidens Wattle	100
Allocasuarina torulosa	Forest Oak	100
Breynia obolongifolia	Coffee Bush	250
Clerodendrum tomentosum	Hairy Clerodendrum	100
Livistona australis	Cabbage Tree Palm	200
Notelaea venosa	Smooth Mock Olive	100
Pittosporum revolutum	Rough Fruited Pittosporum	150
Pittosporum undulatum	Sweet Pittosporum	150
TREES		
Eucalyptus botryoides	Southern Mahogany	50
Eucalyptus paniculata ssp. paniculata	Grey Ironbark	50
Eucalyptus pllularis	Blackbutt	200
Ficus coronata	Sand Paper Fig	80
Glochidion ferdinandi var. ferdinandi	Glochidion ferdinandi var. ferdinandi	80
Syncarpia glomulifera ssp. glomulifera	Syncarpia glomulifera ssp. glomulifera	150

EXTRACTED FROM THE VEGETATION MANAGEMENT PLAN PREPARED BY SOUTHERN HABITAT

REFER TO THE VEGETATION MANAGEMENT PLAN PREPARED BY SOUTHERN HABITAT FOR DETAILED INFORMATION ON THE PROPOSED VEGETATED RIPARIAN ZONE

ISSUE: Amended Development Application 05.11.18
ISSUE: For Co-ordination 26.10.18
ISSUE: Amended Development Application 21.03.18
ISSUE: Development Application 16.08.17,18,08.17
ISSUE: For Comment 17.07.17, 14.08.17

REV B: Amend Block B, landscape, species, T18 retention 26.10.18
REV A: Amend building, landscape, add sections 23.02.18

ochre landscape architects
PO Box 395 Wollongong NSW 2520
Tel. 0452 576427
Email: design@ochre.net.au

PROJECT
Proposed Unit Developement
39 Angel Street
CORRIMAL

DRAWING TITLE
Landscape Concept Plan

CLIENT
Shoalhaven Lifestyle Living Pty Ltd

DRAWING NO.
1791-LD02B

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

DRAWN: DF CHECKED: TW

DATE. 14.0717

ALLIED TREE CONSULTANCY

Level 5 and 8 Arboriculturist

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P 1300 767 414
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W www.alliedtrees.com.au
ABN 21 801 712 156

Reference: **3107D**

Semaan Property
C/- ADM Architects

Arborist Addendum

Re: Lot 56, no. 39 Angel Street, CORRIMAL, NSW 2518, within the D.P. 27796

Introduction

The following addendum has been requested by *Semaan Property* based on the correspondence[1] from Wollongong City Council and referring to an amendment to the design proposed to facilitate the retention of tree No. 18. The data and respective zones of protection (Tree Protection Zone; TPZ and Structural Root Zone; SRZ) have been referenced within the Arboricultural Impact Assessment issued with the initial application and referenced D3107, dated August 2017. The response to this request has required an additional site assessment to determine the specific crown dimensions including both heights and spread within the area of the assessment. As well as correspondence with *ADM Architects* to provide a design that allows for encroachment onto the dripline and root zone (i.e., TPZ) although allows for long-term tree retention.

Documents Issued

The following documentation consists of the amended design and has been provided to *Allied Tree Consultancy* and utilised within this addendum. The drawings illustrate the dripline based on the data collected by *Allied Tree Consultancy*.

4.4.2A Design, amended
Drawn by *ADM P/L*
Date: August 2017
Reference: 2017-06
Drawing No: A02 (D), A03 (D), A04 (E), A07 (C), A12a (C), A13 (C)

Discussion

This report discusses the impact of the trees adjacent to the area of the proposed amended design, 'Block A'. Eleven trees (trees No. 10, 11, 12, 17, 18, 24, 25, 26, 30, 31 and 46) are located adjacent to the area of the 'Block A', and based on the encroachment, all will retain the nomination for retention/removal relative to the proposed design as included in the initial arborist report (referenced D3107, dated August 2017) other than tree No. 18. Tree

[1] Wollongong City Council-Wollongong Local Planning Panel (WLPP), 15th August 2018; Determination and Statement of Reasons, 3 pages.

No. 18 has been encroached upon by the design and the discussion relating to this impact follows.

Assumption 1; The calculations of the zones of protection (TPZ, SRZ) are based on the arbitrary formulae provided in the AS 4970, and this document provides scope for modifying this zone, however with supporting evidence. This tree is located on the top edge of a bank, where the entire western side of the TPZ resides downslope and into an area adjacent to a watercourse. Root growth is opportunistic where areas of ground that provide greater benefit to root growth, that is moisture content will proliferate as opposed to areas that do not. Based on this premise, the creek area and respective water table (to the west) will provide an area where an increased root mass for this tree will proliferate. That is, the area to the west of this tree is considered to cater for the significant root mass and offer greater significance for retention and protection than the proportion of TPZ outside of this area.

Tree No. 18 is subject to a *major encroachment*, that is, in excess of 10% of the TPZ. This has been calculated to be 22%, irrespective of the potential restricted root mass based on Assumption 1. The encroachment consists of the footprint of Block A. Although this is further divided between the excavation required for the basement (taking into account the overcut) being 13 percentage points and the remaining 9 percentage points is related to the floor footprint.

Based on the basement depth, approximately 3000mm below grade, this excavation will remove all root system contained in the proportion of encroachment (see Drawing A07 (C)). This encroachment is three percentage points in excess of a minor encroachment and is not considered to pose any significant impact on the tree. Accounting for Assumption 1, this is likely less.

The encroachment associated with the remaining footprint is not considered to render a significant impact. This is based on the grade of the proposed floor to be elevated above the natural grade (see Drawing A12a (C)), therefore removing any excavation required for this area and allowing gas exchange with the retained grade. The means of support have been illustrated as a pier and cantilevered. The floor area within this area of the design will require the following conditions so that the root system in this area is retained;

1. No excavation exists in this area, other than the piers
2. The floor is suspended above grade, and include a bed of stone aggregate to retain gas exchange.
3. No strip type footing or strip type excavation is permissible.

Based on the broad crown mass, and low dripline, some pruning will need to be accommodated to allow for the height of the proposed design. A single 1st order branch (450mm in diameter, 16m long) extending south has been nominated for removal. This will elevate the crown mass and reduce the dripline marginally. This has been illustrated in Drawing A08 (C), where the black dashed line represents the existing dripline, and the red dashed line indicates the new dripline after the proposed pruning and Drawing A12a (C)), which illustrates the height of the design relative to the existing and proposed pruning. The removal of this branch will not distort or unbalance the habit, and the limited proportion of crown mass attributable to this branch (15%) is not excessive and conforms with industry

standards for maintaining the vitality. The dripline extends over the design and consumes approximately 15% of the footprint. Based on the encroachment by the dripline, measures that can reduce issues related to tree debris fallout should be incorporated into the design, example, gutter guard.

Protection measures

The following protection measures are required to be implemented for tree No. 18 before initiation of site works (including demolition/excavation) and retained until the landscaping works are required unless otherwise specified.

Protective fence

A protective fence is required to be installed to protect the TPZ from all site-related work and are recommended to be located in accordance with the requirements of the AS 4970, listed in Appendix B, See Arborist report. The fence is required to be secured to the ground with pegs to avoid movement during construction. This must be installed prior to the commencement of any demolition, excavation or construction works and shall be maintained throughout the entire construction phase of the development, and until landscaping works and installation of the drive/cross-overs is required. See Appendix C for plan of protection measures.

Summary of Impact

The amended design has allowed for the retention of No. 18. This tree can be retained relative to the nominated zones of protection (TPZ, SRZ) and based on the requirements of the Protection Specification, Section 8.0, see Arborist Report. The following conditions are required for the design to accommodate this tree;

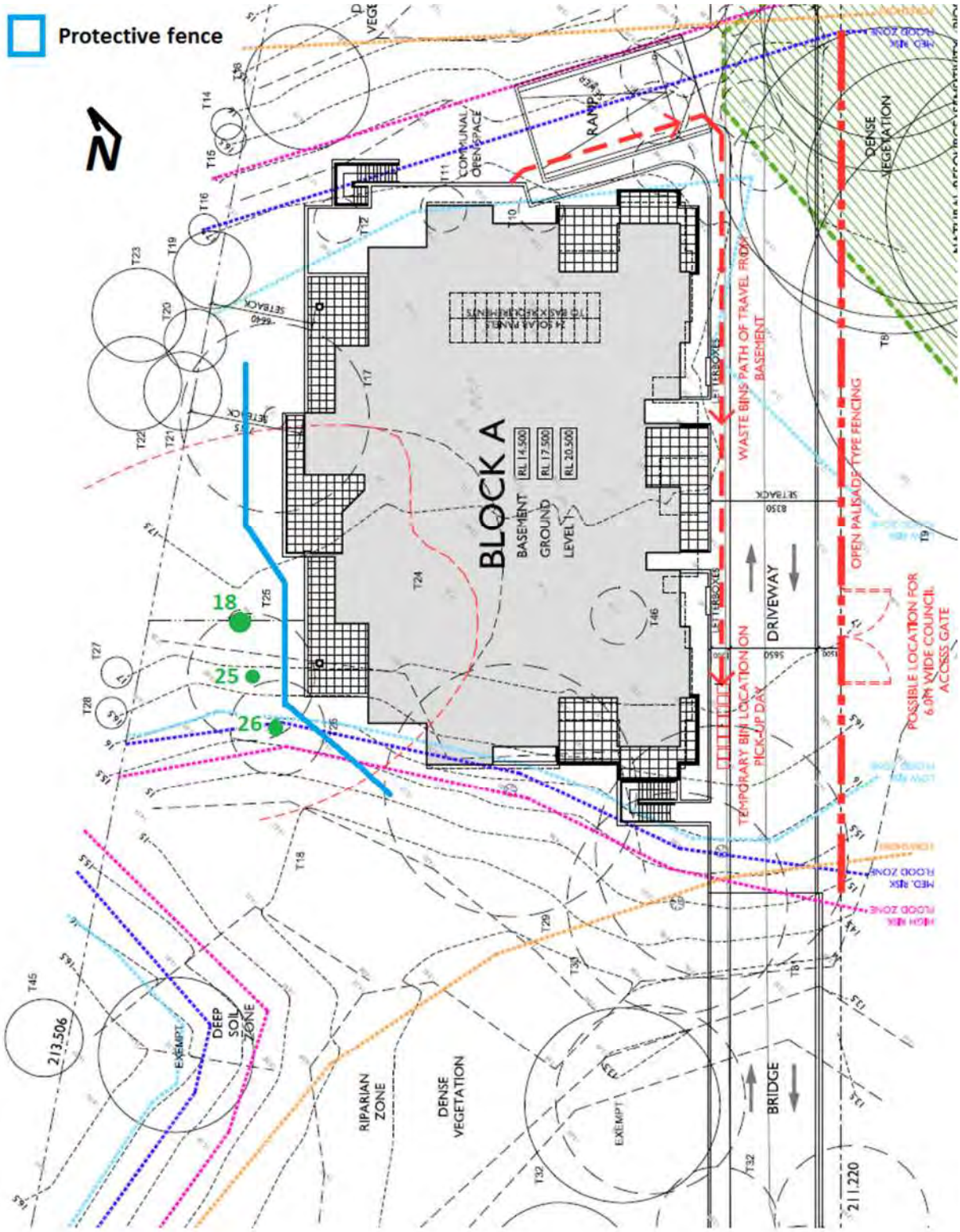
1. No excavation exists in the area of the TPZ, other than the basement and piers
2. The floor is suspended above grade, and include a bed of stone aggregate to retain gas exchange,
3. No strip type footing or strip type excavation is permissible in the area of the TPZ.
4. A single 1st order branch (450mm in diameter, 16m long) extending south has been nominated for removal.
5. Measures that can reduce issues related to tree debris fallout should be incorporated into the design, example, gutter guard.
6. Installation of nominated tree protection measures.

The opinions expressed in this addendum by the author have been provided within the capacity of a Consulting Arborist. Any further explanation or details can be provided by contacting the author.

DATED: 31st October 2018

Warwick Varley
Consulting Arborist
Level 5 and 8; Arboriculturist
MIACA; Reg. #18, MISA, MIAH; Reg. # 32

Appendix C; Plan illustrating protection measures



Not to scale

Source: Adapted from *ADM P/L,* drawing A03 (D)

MOORE TREES
Consulting Arborist

30th October 2018

Semaan Pty Ltd
Suite 1a 12-16 Princess Highway
Fairy Meadow NSW 2519

Site: 39 Angel Street, Corrimal
Re: Assessment of Tree 18 for project impacts

This Report has been commissioned by John Molnar of Molnar Property Group. The Report concerns a tree located near a proposed block of units for the site at 39 Angel Street, Corrimal. The subject tree has been numbered as Tree 18 in a previous report by Allied Trees.

1. Introduction: This report is independent of the Allied Trees' Report and I have not been provided the Allied Trees Report. This report is an Arboricultural Impact Assessment Report and does not constitute a Tree Protection Report. The health and condition of the tree has been assessed.

Recommendations have been made for this tree based on the project requirements and the current condition of the tree, taking into consideration surrounding trees and the project impacts.

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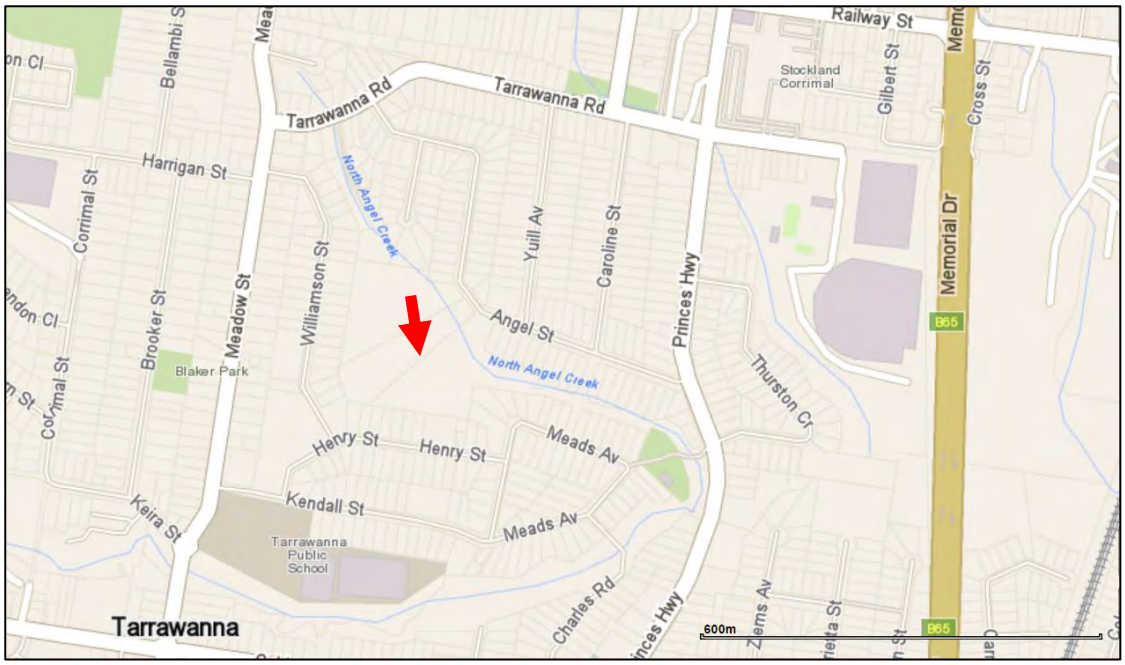


Diagram 1: Image showing the tree location. Whereis 2018.

2. Methodology: A Visual Tree Assessment (VTA) was performed on this tree on 28th October 2018 by Paul Vezgoff. The VTA consists of a detailed inspection of the subject tree from ground level to the upper canopy. This method of tree evaluation is adapted from Matheny and Clark, 1994 and is recognised by The International Society of Arboriculture, Arboriculture Australia and The Institute Australian of Consulting Arborists (IACA). It is also known as a Level 1: Limited Visual Assessment Process as per the International Society of Arboriculture best management practices titled *'Tree Risk Assessment"*. The inspection was undertaken from the ground. No diagnostic devices were used on the tree.

3. Height: The heights and distances within this report have been measured with a Bosch DLE 50 laser measure.

4. Tree Protection Zones (TPZ): The TPZ is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. The TPZ has been calculated for the tree to determine construction impacts. The TPZ calculation is based on the Australian Standard *Protection of trees on development sites,* AS 4970, 2009.

5. Structural Root Zone (SRZ): The SRZ is a specified distance measured from the trunk that is set aside for the protection of tree roots, both structural and fibrous. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The TPZ and SRZ are measured as a radial measurement from the trunk. No roots should be severed within this area. A detailed methodology on the TPZ and SRZ calculations can be found in Appendix 2.

6. Safe Useful Life Expectancy (SULE): The subject tree was assessed for a Safe Useful Life Expectancy (SULE). A detailed explanation of SULE can be found in Appendix 1.

7. Impact Assessment: An impact assessment was conducted on Tree 18. This was conducted by assessing the project plans provided by John Molnar. The plans provided were assessed for the following:

- Reduced Level (R.L.) at base of tree.
- Incursions into the Tree Protection Zone (TPZ).
- Assessment of the likely impact of the works.

8. The Tree: The subject tree is numbered as Tree 18 from a previous report by Allied Trees. The tree is a large mature Blackbutt *(Eucalyptus pilularis)* in good health and condition. It is a multi-stemmed specimen at approximately 2.5 metres, bifurcating into five (5) main branches (Plate 1).

The tree is approximately twenty (20) metres in height with a fourteen (14) metre symmetrical canopy spread. It is in a reasonably exposed position and would be considered as a dominant specimen. The tree is in good health and condition. The main trunk, first and second order branches are free of any cracks, splits or fruiting bodies. Old pruning wounds are showing good occlusion, a sign that the tree is photosynthesizing effectively. New extension growth was noted with leaf colour showing good vitality. The tree would be considered to have a 95% live canopy. The basal area and woody root zone were free of any ground heaving, or lifting.

The diameter at breast height (DBH) of the tree is approximately one thousand, four hundred and sixty (1460) millimetres. This will give a TPZ of fifteen (15) metres and SRZ of four (4) metres (Diagram 2).

Plate 1: Image showing Tree 18. P. Vezgoff

9. Impacts: Following some initial discussions, the basement has been moved away from Tree 18 to reduce the incursion to 11% (Diagrams 2 and 3). The Australian Standard *Protection of trees on development sites,* (AS 4970) recommends no more than 10% encroachment unless the TPZ can be compensated elsewhere and contiguous with the TPZ. The basement excavation is just on this threshold.

As for the above ground structure, provided the existing ground levels can be maintained and the portion of footings across the TPZ area can be bridged via the use of pier and beam construction, this would allow the development to comply with AS4970. The project engineer should be consulted to ensure this is possible. Any roots under fifty (50) millimetres in diameter may be pruned cleanly with a sharp saw. Any roots found that are over fifty (50) millimetres in diameter shall require further assessment by the Project Arborist.

Reduction pruning of the southern side of the canopy will be required to allow for the structure. These branches should be reduced back so as to maintain the canopy of the tree (i.e., no lopping or 'flat topping'). This pruning is known as selective pruning and can be read about in more detail in the Australian Standard for the Pruning of Amenity Trees (AS 4373) 2007. Suggested limbs have been marked in Plates 2 and 3. It should be noted that the upper canopy will overhang the proposed development.

Also important for the ongoing health of the tree is the landscaping of the TPZ area below Tree 18. Decades of lawn maintenance would have compacted the TPZ area below this tree. Mulching and planting of the TPZ area will help with soil microbe activity, reduce moisture loss and reduce compaction. Mulching and planting of the TPZ will be a beneficial improvement for this tree.

Plate 2: Image showing a distance of 6.5 metres to the lower limb (Red arrow). Blue arrow shows the recommended pruning location for this limb. P. Vezgoff

Plate 3: Image showing recommended reduction pruning points on the southern side of the canopy. P. Vezgoff

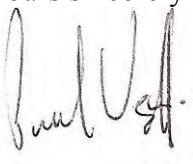
10. The Rural Fire Service (RFS) 10/50 Vegetation Clearing Code of Practice (The Code) has been prepared in accordance with section 100Q of the Rural Fires Amendment (Vegetation Clearing) Act 2014.

The online assessment tool ("Tool") is provided by the NSW Rural Fire Service ("the NSW RFS") to help assess whether the 10/50 Code will allow you to clear vegetation on your property. A search of the site address shows that the property is not a designated 10/50 vegetation entitlement clearing area. Clearing can only occur in accordance with the Code.

Although the site is not classified as Bushfire prone, a portion of canopy will still overhang the dwelling and steps should be made to reduce leaf build up in the gutters. Further advice should be sought from the contractor for design specification.

If you have any questions in relation to this report please contact me.

Yours sincerely



Paul Vezgoff
Consulting Arborist
Dip Arb (Dist), Arb III, Hort cert, AA, ISA

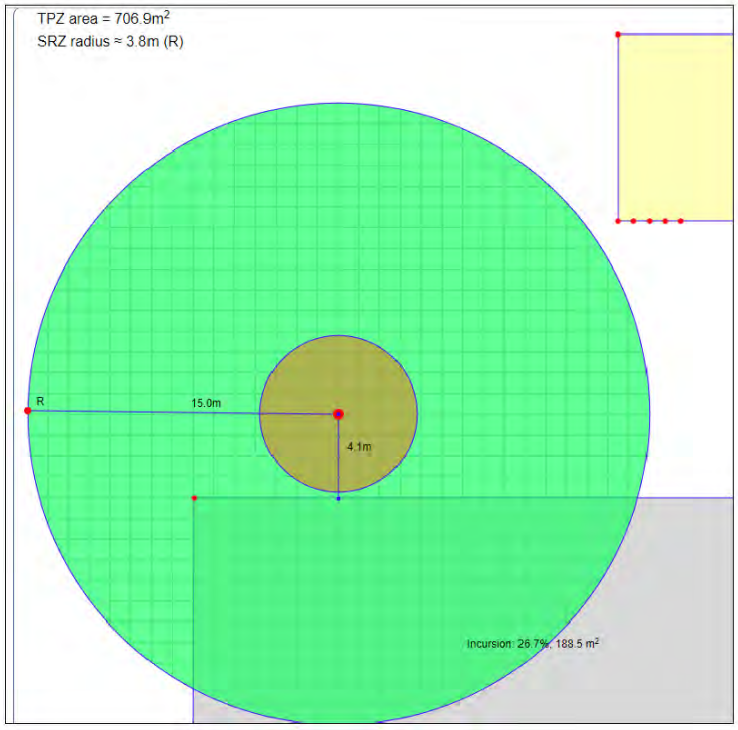


Diagram 2: Based on the original design the basement incursion of the works for the site tree calculates to 26.7%. The green circle is the TPZ area. The brown circle is the SRZ area.

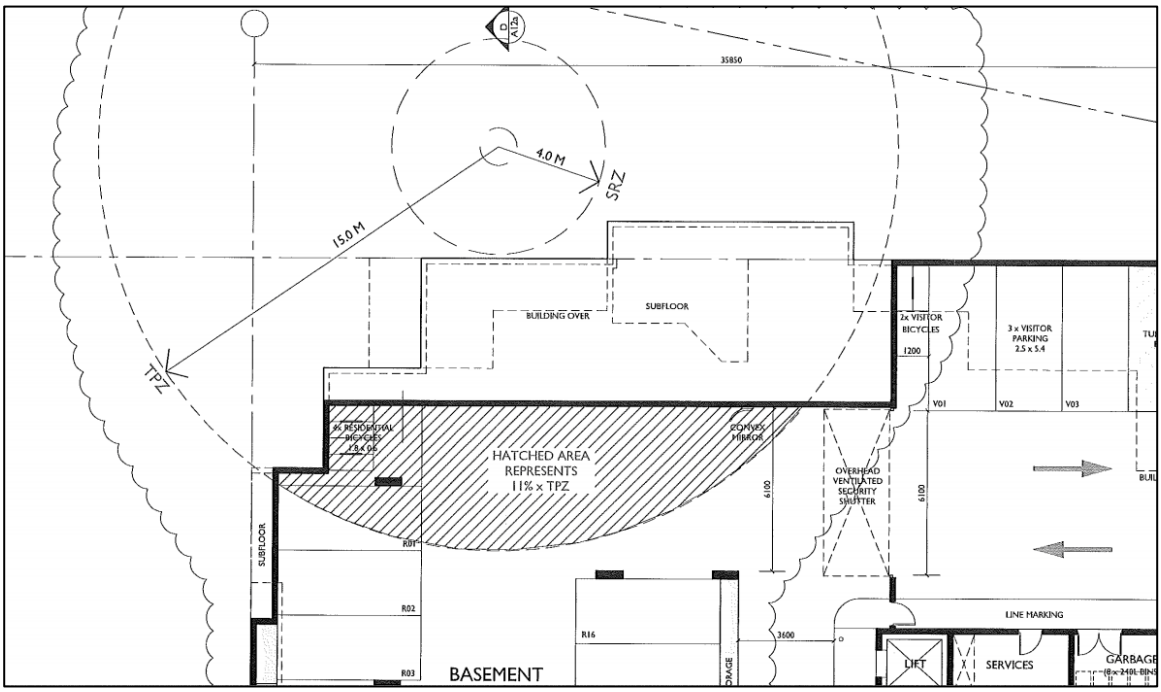


Diagram 3: The amended design has reduced the basement incursion to 11% (Hatched area).

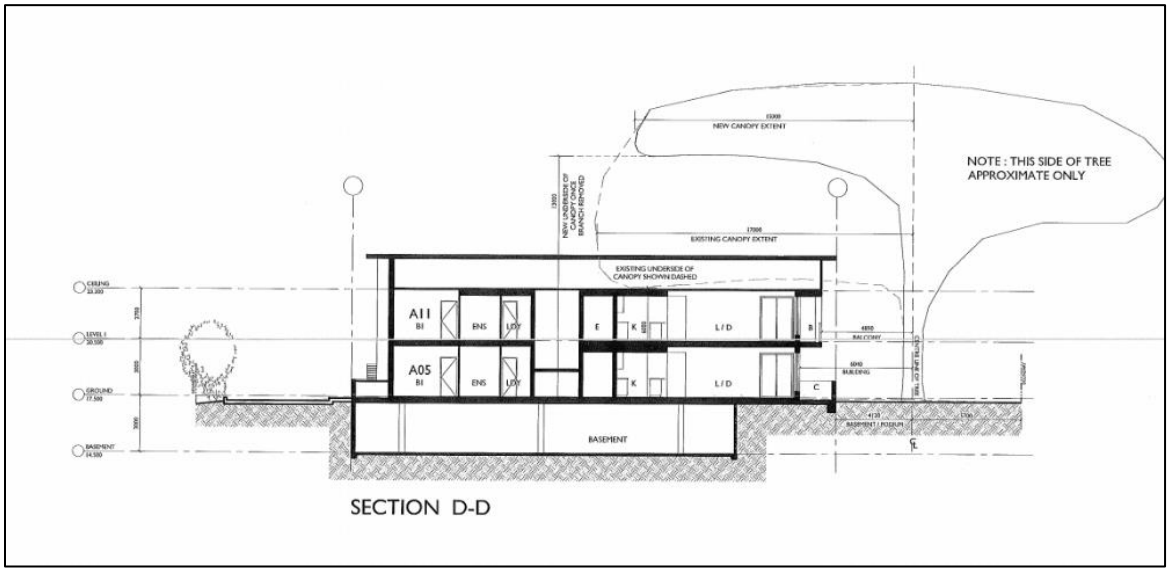


Diagram 4: The amended design has reduced the basement set back to Tree 18.

Appendix 1

SULE categories (after Barrell, 2001)[1]

SULE Category	Description
Long	*Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.*
1a	Structurally sound trees located in positions that can accommodate for future growth
1b	Trees that could be made suitable for retention in the long term by remedial tree care.
1c	Trees of special significance that would warrant extraordinary efforts to secure their long term retention.
Medium	*Trees that appeared to be retainable at the time of assessment for 15-40 years with an acceptable level of risk.*
2a	Trees that may only live for 15-40 years
2b	Trees that could live for more than 40 years but may be removed for safety or nuisance reasons
2c	Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide for new planting.
2d	Trees that could be made suitable for retention in the medium term by remedial tree care.
Short	*Trees that appeared to be retainable at the time of assessment for 5-15 years with an acceptable level of risk.*
3a	Trees that may only live for another 5-15 years
3b	Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.
3c	Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
3d	Trees that require substantial remedial tree care and are only suitable for retention in the short term.
Remove	*Trees that should be removed within the next five years.*
4a	Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.
4b	Dangerous trees because of instability or loss of adjacent trees
4c	Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.
4d	Damaged trees that are clearly not safe to retain.
4e	Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
4f	Trees that are damaging or may cause damage to existing structures within 5 years.
4g	Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f).
4h	Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.
Small	*Small or young trees that can be reliably moved or replaced.*
5a	Small trees less than 5m in height.
5b	Young trees less than 15 years old but over 5m in height.
5c	Formal hedges and trees intended for regular pruning to artificially control growth.

updated 01/04/01)

1 (Barrell, J. (2001) "SULE: Its use and status into the new millennium" in *Management of mature trees*, Proceedings of the 4th NAAA Tree Management Seminar, NAAA, Sydney.

TPZ and SRZ methodology

Determining the Tree Protection Zone (TPZ)

The radium of the TPZ is calculated for each tree by multiplying its DBH x 12.

TPZ = DBH x 12

Where

DBH = trunk diameter measured at 1.4 metres above ground

Radius is measured from the centre of the stem at ground level.

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

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

Determining the Structural Root Zone (SRZ)

The SRZ is the area required for tree stability. A larger area is required to maintain a viable tree.

The SRZ only needs to be calculated when major encroachment into a TPZ is proposed.

There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the following formula or Figure 1. Root investigation may provide more information on the extent of these roots.

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

Where

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

NOTE: The SRZ for trees with trunk diameters less than 0.15m will be 1.5m (see Figure 1).

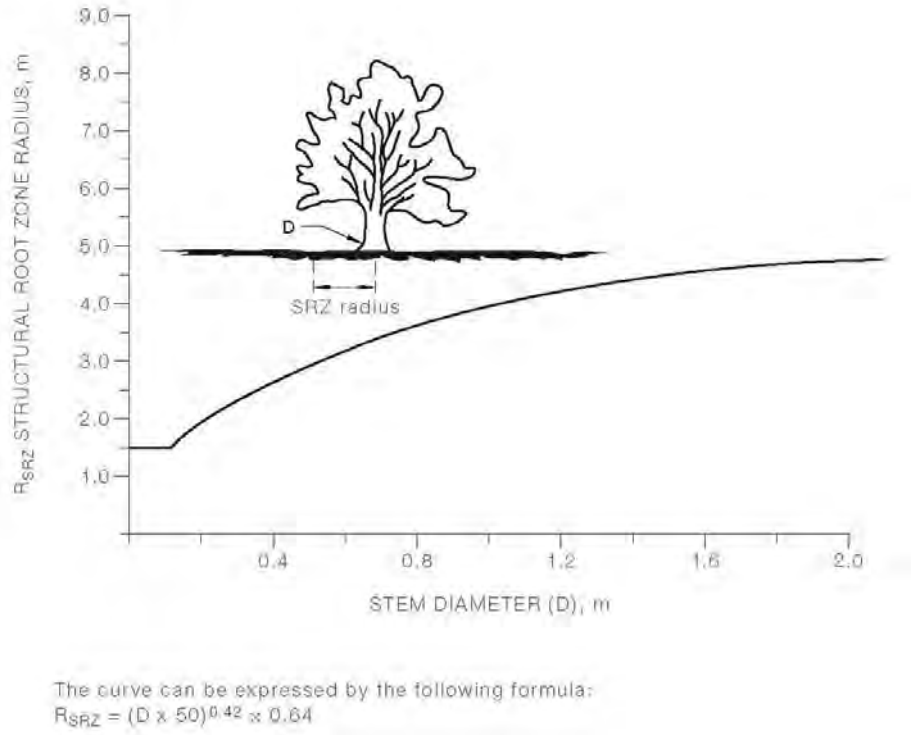


FIGURE 1 - STRUCTURAL ROOT ZONE

Notes:

1 R_{SRZ} is the structural root zone radius.
2 *D* is the stem diameter measured immediately above root buttress.
3 The SRZ for trees less than o.15 metres diameter is 1.5 metres.
4 The SRZ formula and graph do not apply to palms, other monocots, cycads and tree ferns.
5 This does not apply to trees with an asymmetrical root plate.

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Our Reference: P3508.001L
Your Reference:

4 October 2018

Semaan Pty Ltd
C/- Molnar Property Group
62 Flinders Street
Wollongong NSW 2500

Attention: John Molnar
Sent via email: johnm@molnarpropertygroup.com

Dear John

RE : 39 ANGEL STREET CORRIMAL REQUEST FOR INFORMATION – WLPP RESPONSE COVER LETTER

1.0 BACKGROUND

Bitzios Consulting has been commissioned by Semaan Pty Ltd to prepare a response to the concerns raised by the Wollongong City Council – Wollongong Local Planning Panel (WLPP) during the public meeting held on 15th August 2018 to determine DA-2017/1064.

The WLPP indicated that the following traffic and transport aspects of the proposed development had not been adequately resolved:

- *a traffic safety audit under the Austroad Guidelines has not been carried out to establish the best location and geometry for the access to the development; and*
- *actual traffic counts have not been provided for Angel Street to properly establish and quantify the traffic impacts of the development.*

2.0 ROAD SAFETY AUDIT

A detailed design road safety audit (RSA) was undertaken for the proposed driveway access. The report prepared as part of the RSA is provided in Attachment 1. It should be noted that the RSA did not raise any issues with the location or geometry of the proposed development access.

3.0 TRAFFIC DATA

3.1. Survey Overview

Automatic tube counts (ATC) were undertaken by Matrix Traffic and Transport Data at two (2) locations on Angel Street for a period of seven (7) days from Friday 24th August 2018 to Thursday 30th August 2018. One survey site was located at the northern end of Angel Street (west of St Andrews Place) and the other at the southern end (east of Caroline Street). Summaries of the ATC are provided in Attachment 2.

3.2. Traffic Volumes

Table 1 below summarises the daily background traffic volumes for each survey site across the survey period.

Table 1: Daily Background Traffic Volumes

Survey Site	Daily Background Traffic Volumes (vpd)						
	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Angel Street North	310	349	319	355	336	329	279
Angel Street South	1,140	1,154	1,150	1,172	1,184	997	760

3.3. Speed Surveys

The automatic tube counts also collected speed data across the survey period. Angel Street is sign-posted as a 50km/h Area. Table 2 below summarises the average and 85th percentile speeds at each of the survey sites for both directions of travel.

Table 2: Angel Street Vehicle Speeds – 7-day Averages

Survey Site	Westbound		Eastbound	
	Average Speed (km/h)	85th Percentile Speed (km/h)	Average Speed (km/h)	85th Percentile Speed (km/h)
Angel Street North	31.1	34.7	30.3	34.9
Angel Street South	29.0	32.9	33.2	38.5

As shown in Table 2, the average and 85th percentile speeds surveyed on Angel Street do not exceed the sign-posted speed limit in either direction at both locations.

3.4. Road Capacity

Table 3 below provides details on the two differing road cross sections along the extent of Angel Street.

Table 3: Road Section Capacity Details

Road Section (Survey Site)	Hierarchy	Carriageway Width	Maximum Daily Traffic Threshold (vpd)
Princes Highway to Yuill Avenue (Angel Street South)	Local Street – Major	10.5m	3,000
Yuill Avenue to Tarrawanna Road (Angel Street North)	Local Street – Minor	7.5m	1,000

It is noted that the section of Angel Street between Princes Highway and Yuill Avenue does not align with the specific road types detailed in Council's Development Control Plan. However, noting it has a carriageway width of 10.5m, it is most appropriately classified as a Local Street – Major which has a minimum carriageway width of 9.5m.

The distribution of daily trips to/from the development in either direction along Angel Street has been derived on the basis of existing daily traffic volumes. The distribution expects that 25% of trips will travel to/from the north/west end of Angel Street. The remaining 75% are expected to travel to/from the south/east end of Angel Street.

Table 4 quantifies the daily design traffic and compares it against the maximum daily traffic thresholds for each road section. The maximum daily background traffic adopted was for the day with the highest maximum daily background traffic for each road section. The daily development generated traffic for 41 Angel Street has also been included to estimate the cumulative impact of both developments.

Table 4: Road Section Capacity Assessment Summary

Road Section (Survey Site)	Maximum Daily Traffic Threshold (vpd)	Maximum Daily Background Traffic (vpd)	Daily Development Generated Traffic – 39 Angel Street (vpd)	Daily Development Generated Traffic – 41 Angel Street (vpd)	Daily Design Traffic (vpd)
Princes Highway to Yuill Avenue (Angel Street South)	3,000	1,184	38	30	1,252 (<3,000)
Yuill Avenue to Tarrawanna Road (Angel Street North)	1,000	355	111	90	566 (<1,000)

As identified in Table 4, both road sections are expected to accommodate the estimated increase in daily traffic volumes as a result of the inclusion of the proposed development.

Yours faithfully

Adrian Bitzios
Principal Traffic Engineer and Transport Planner
BITZIOS CONSULTING

ATTACHMENT 1

ROAD SAFETY AUDIT REPORT

39 ANGEL STREET, CORRIMAL
ROAD SAFETY AUDIT

FOR

SEMAAN PTY LTD

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Project No: P3508 Version No: 001 Issue date: 18 September 2018

DOCUMENT CONTROL SHEET

Issue History

Report File Name	Prepared by	Reviewed by	Issued by	Date	Issued to
P3508.001R 39 Angel Street RSA	A. Giyahi	A Finlay	L. Johnston	18/9/2018	John Molnar Molnar Property Group johnm@molnarpropertygroup.com

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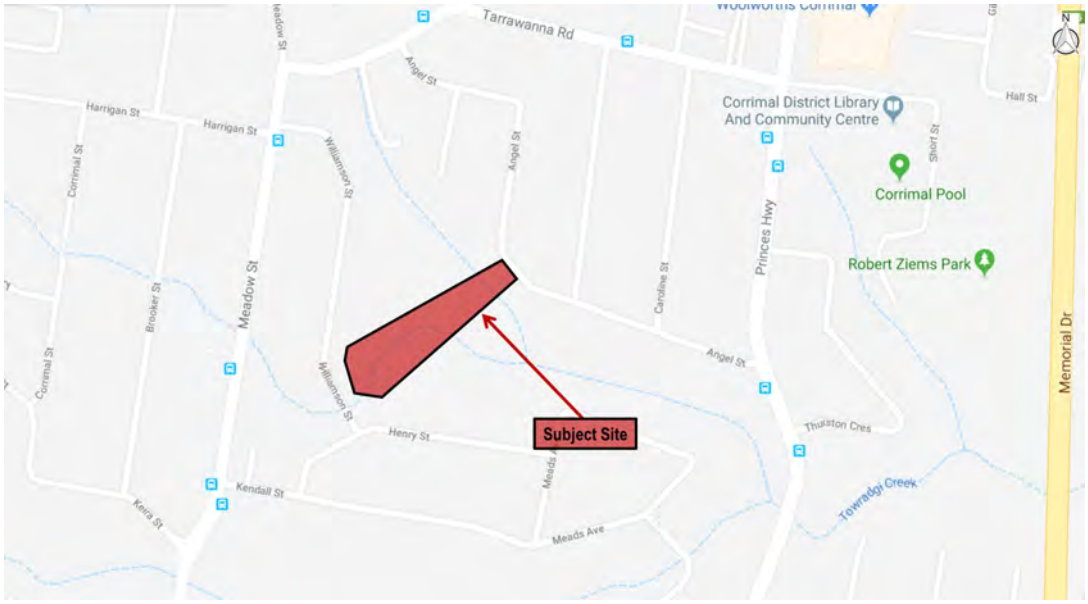
1. INTRODUCTION

1.1 BACKGROUND

Bitzios Consulting was commissioned by Seeman Pty Ltd to undertake a Detailed Design Road Safety Audit for the proposed driveway access located at 39 Angel Street, Corrimal. This road safety audit is provided in response to concerns raised in the Wollongong Local Planning Panel meeting on 15 August 2018. Figure 1.1 depicts the locality of the proposed development.



Source: Google Maps

Figure 1.1: Locality Plan

1.2 SCOPE OF AUDIT

The road safety audit was undertaken in accordance with the procedure set out in the AustRoads Guide to Road Safety Audit Part 6: Road Safety Audit (2009). The audit involved undertaking a *Detailed Design Road Safety Audit* of an access driveway highlighted lot in Figure 1.1.

The scope of road safety audit included reviewing the proposed detailed design plans (Appendix A) of the proposed access to the 39 Angel Street development and an assessment of Angel Street in the immediate vicinity of the access.

Specifically, the following items were reviewed from an operational road safety perspective:

- sight distances and grades;
- signs and pavement markings;
- roadside objects and hazards; and
- drivers' sight distance to pedestrian, cyclists and vehicles emerging from subject driveway;

This road safety audit details a list of issues identified during the assessment that present a road safety risk.

2. ROAD SAFETY AUDIT PROCESS

2.1 DEFINITIONS

The AustRoads Guide to Road Safety Audit Part 6: Road Safety Audit (2009) defines a road safety audit as:

"a formal examination of a future road or traffic project or an existing road, in which an independent, qualified team reports on the project's crash potential and safety performance"

The essential elements of this definition are that it is:

- a formal process and not an informal check;
- an independent process;
- carried out by someone with appropriate experience and training; and
- restricted to road safety issues.

The objectives of a road safety audit are:

- to identify potential safety problems for road users and others affected by a road project; and
- to ensure that measures to eliminate or reduce the problems are considered fully.

The benefits of a road safety audit are:

- the likelihood of accidents on the road network can be reduced; and
- the severity of accidents can be reduced.

The aim of a road safety audit is:

"to identify any existing deficiencies of design, layout and road furniture which are not consistent with the road's function and use. There should be a consistency of standards such that the road users' perception of local conditions assists safety behaviour."

2.2 METHODOLOGY

The road safety audit was carried out as per the procedures set out in the AustRoads Guide to Road Safety Audit Part 6: Road Safety Audit (2009). Items audited as part of this road safety audit included (but was not limited to) the following:

- sight distances and grade;
- drivers sight distances to pedestrian and cyclists and vehicles emerging from driveways particularly the subject driveway;
- signs and pavement markings; and
- roadside objects and hazards.

2.3 AUDIT TEAM

The road safety audit was carried out by an audit team comprising:

- Alan Finlay– NSW Level 3 Lead Road Safety Auditor (Lead Auditor); and
- Alex Giyahi - NSW Level 3 Road Safety Auditor (team member)

2.4 INFORMATION SOURCES

Data sources for the road safety audit included:

- detailed design drawings referred to with this RSA, as attached in Appendix A;
- Angel Street 7-day tube count/speed data;
- Austroads Guide to Road Safety publications; and
- RMS Guidelines for Road Safety Audit Practices.

2.5 SITE INSPECTION

Both day time and a night time walk through and drive through site inspections were carried out as part of the road safety audit. The site inspections were carried out on the 13th September 2018. The weather on the day was fine and visibility was good.

Prior to the site inspection, a desktop review of the driveway detailed design plans was undertaken, The site inspections were to determine the existing geometry, gradients, illumination and sight lines potential safety issues and their impact on the proposed amendments to the road geometry in the future.

2.6 AUDIT HISTORY

The audit team has not been made aware of any previous audits undertaken for this project.

2.7 CLOSE OUT

No close out meetings were held at the end of this Road Safety Audit.

2.8 RISK ASSESSMENT

The issues identified have been prioritised based on AustRoads' standards risk assessment. The risk level is based on a combination of the frequency that a crash type will happen by the severity of the resulting crash. Table 2.1 below is from the AustRoads Guide to Road Safety, Part 6.

Table 2.1: Risk Matrix

Severity	Frequent	Probable	Occasional	Improbable
Catastrophic	Intolerable	Intolerable	Intolerable	High
Serious	Intolerable	Intolerable	High	Medium
Minor	Intolerable	High	Medium	Low
Limited	High	Medium	Low	Low

Source: AustRoads Guide to Road Safety Part 6 Road Safety Audits

3. DETAILED DESIGN ROAD SAFETY AUDIT

This section summarises the safety issues identified during the audit. The audit findings are outlined in Table 3.1 below.

3.1 AUDIT FINDINGS

Sightlines to the proposed driveway, existing driver behaviour, speed profiles at both ends of Angel Street and detailed design plans were carefully examined during day and night conditions. Walk through and drive through site inspections and examination of detailed design plans, did not reveal any major safety issues of concern which may require further attention of mitigation measures. Therefore, no safety issues were identified/documented in this Road Safety Audit report.

In support of our findings, we include Figure 3.1, Figure 3.2 and Figure 3.3 below, showing the driver views approaching the driveway from each direction in Angel Street and driver views to Angel Street from the proposed driveway. Note the smooth road surface, appropriate curve sign posting, adequate sight distance and street lighting.

Figure 3.1: Sightlines to 39 Angel Street Driveway – Looking South

Figure 3.2: Sightlines to 39 Angel Street Driveway – Looking North

Figure 3.3: Sightlines to Angel Street (North and South) from the Proposed Driveway

4. CONCLUDING STATEMENT

We have examined the site and the plans provided. The audit has been carried out to identify any features of the project which could be altered or removed to improve safety. No safety issues have been raised in the report. Hence, no response from the design team would be required.

Alan Finlay, Level 3 Road Safety Auditor (Lead Auditor)

Alex Giyahi, Level 3 Road Safety Auditor (Team member)

APPENDIX A

DETAILED DESIGN PLANS

DO NOT SCALE

LEGEND

- DENOTES EXISTING DRAINAGE NETWORK
- DENOTES PROPOSED PITS & PIPES
- DENOTES NATURAL CONTOURS
- DENOTES PRELIMINARY FINISHED CONTOURS
- EXISTING STRUCTURE/DWELLING
- NATURAL WATERCOURSE

OVERALL PLAN

SCALE 1:500 @A1

Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised

KFW INFRASTRUCTURE PROFESSIONALS

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Surveyor -	Date June 2017	Drawing Title	Project No. KF112585
Date of Survey	Drawn C. Roberts	PROPOSED DEVELOPMENT LOT 56 DP 27796 39 ANGEL STREET, CORRIMAL STORMWATER PLAN	Drawing No. C001
Height Datum AHD	Designed C. Roberts BE (Civil) GradIEAust		Sheet 1 Of 6 / Revision -
Origin	Checked J. Green BE (Civil) MIEAust CPEng NPR		
Horiz. Datum -	Approved	Scale 1:500 @ A1, 1:1000 @ A3 / Drawing Status ISSUED FOR DA	

FILENAME: X:\KF112585\Civil\Drawings\KF112585-C-DA.dwg
PLOTTED BY: crobi

ATTACHMENT 2

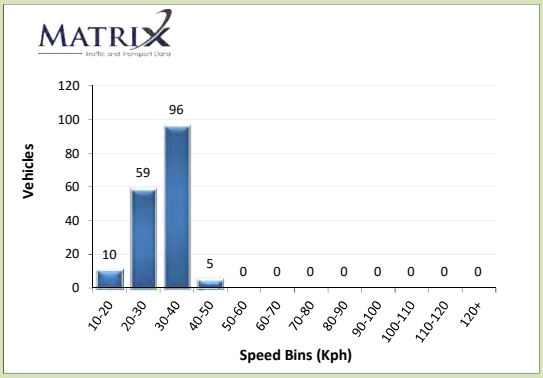
TRAFFIC SURVEY DATA

Job No	N4458 - Corrimal ATC
Client	Bitzios Consulting
Site	Angel Street North - west of St Andrews Place
Location	Tarrawanna
Site No	1
Start Date	24-Aug-18
Day	7 Day Ave
Direction	EB
Description	Speed Summary

Select Site

1. Angel Street North - west of St Andrews Place

Select Day 7 Day Ave **Select Direction** EB



Bin Summary	
10-20	6.1%
20-30	34.5%
30-40	56.6%
40-50	2.9%
50-60	0.0%
60-70	0.0%
70-80	0.0%
80-90	0.0%
90-100	0.0%
100-110	0.0%
110-120	0.0%
120+	0.0%
30.3	**34.9**

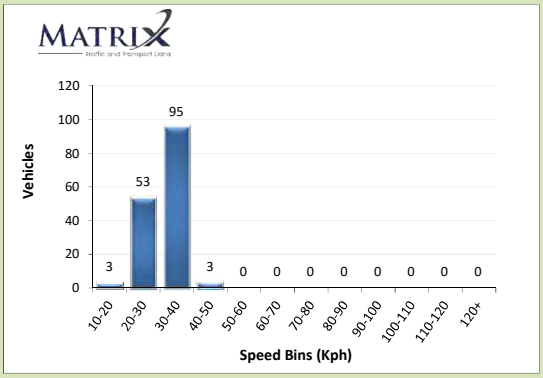
Hour	Vehicle Speed Bins (kph)												Speed	
Starting	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120+	Ave	85%ile
0:00	0	0	0	0	0	0	0	0	0	0	0	0	30.8	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	29.9	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	32.7	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	37.2	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	26.1	0
5:00	0	1	2	1	0	0	0	0	0	0	0	0	32.8	0
6:00	1	3	2	0	0	0	0	0	0	0	0	0	26.2	33.9
7:00	1	3	4	0	0	0	0	0	0	0	0	0	28.8	33.9
8:00	1	4	9	1	0	0	0	0	0	0	0	0	30.8	36.3
9:00	1	3	5	0	0	0	0	0	0	0	0	0	30.1	33.5
10:00	1	4	6	0	0	0	0	0	0	0	0	0	28.9	32.7
11:00	1	4	6	0	0	0	0	0	0	0	0	0	30.2	34.3
12:00	1	3	5	0	0	0	0	0	0	0	0	0	30.3	35.1
13:00	1	5	5	0	0	0	0	0	0	0	0	0	28.4	34.1
14:00	1	5	7	0	0	0	0	0	0	0	0	0	30.0	35.6
15:00	1	6	9	0	0	0	0	0	0	0	0	0	30.2	35.3
16:00	0	4	8	0	0	0	0	0	0	0	0	0	30.9	35.9
17:00	1	5	11	0	0	0	0	0	0	0	0	0	31.1	35.7
18:00	0	2	6	0	0	0	0	0	0	0	0	0	32.7	37.4
19:00	0	1	5	0	0	0	0	0	0	0	0	0	33.6	33.3
20:00	0	1	4	0	0	0	0	0	0	0	0	0	32.8	34.7
21:00	0	1	1	0	0	0	0	0	0	0	0	0	28.5	0
22:00	0	0	1	0	0	0	0	0	0	0	0	0	27.5	0
23:00	0	0	1	0	0	0	0	0	0	0	0	0	36.2	0
Total	10	59	96	5	0	0	0	0	0	0	0	0	30.3	34.9

Job No	N4458 - Corrimal ATC
Client	Bitzios Consulting
Site	Angel Street North - west of St Andrews Place
Location	Tarrawanna
Site No	1
Start Date	24-Aug-18
Day	7 Day Ave
Direction	WB
Description	Speed Summary

Select Site

1. Angel Street North - west of St Andrews Place

Select Day 7 Day Ave **Select Direction** WB



Bin Summary	
10-20	1.9%
20-30	34.4%
30-40	61.5%
40-50	2.2%
50-60	0.0%
60-70	0.0%
70-80	0.0%
80-90	0.0%
90-100	0.0%
100-110	0.0%
110-120	0.0%
120+	0.0%
31.1	**34.7**

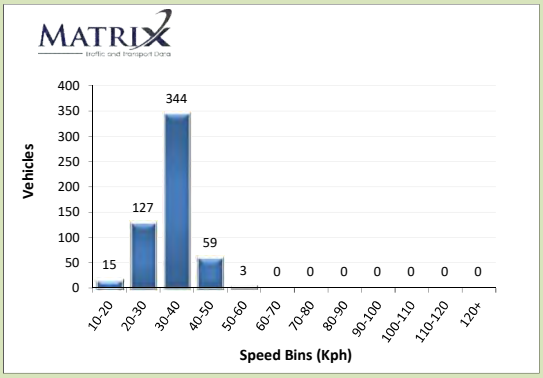
Hour	Vehicle Speed Bins (kph)												Speed	
Starting	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120+	Ave	85%ile
0:00	0	1	0	0	0	0	0	0	0	0	0	0	29.4	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	29.1	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	30.8	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	38.7	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	29.9	0
5:00	0	0	1	0	0	0	0	0	0	0	0	0	31.3	0
6:00	0	2	1	0	0	0	0	0	0	0	0	0	28.9	0
7:00	0	2	3	0	0	0	0	0	0	0	0	0	31.2	0
8:00	1	3	4	0	0	0	0	0	0	0	0	0	30.2	35.2
9:00	0	2	6	0	0	0	0	0	0	0	0	0	32.0	34.7
10:00	0	4	5	0	0	0	0	0	0	0	0	0	29.8	32.7
11:00	1	5	5	0	0	0	0	0	0	0	0	0	29.5	33.4
12:00	0	4	5	0	0	0	0	0	0	0	0	0	31.1	34.1
13:00	0	3	5	0	0	0	0	0	0	0	0	0	30.7	35.3
14:00	0	3	6	0	0	0	0	0	0	0	0	0	31.9	34.6
15:00	1	6	9	0	0	0	0	0	0	0	0	0	30.2	34.9
16:00	1	6	9	0	0	0	0	0	0	0	0	0	30.7	35.5
17:00	0	4	11	1	0	0	0	0	0	0	0	0	32.0	35.9
18:00	0	3	9	0	0	0	0	0	0	0	0	0	32.7	35.1
19:00	0	2	6	0	0	0	0	0	0	0	0	0	31.4	33.8
20:00	0	2	6	0	0	0	0	0	0	0	0	0	32.5	35.2
21:00	0	1	3	0	0	0	0	0	0	0	0	0	34.1	0
22:00	0	0	1	0	0	0	0	0	0	0	0	0	29.3	0
23:00	0	0	1	0	0	0	0	0	0	0	0	0	35.0	0
Total	3	53	95	3	0	0	0	0	0	0	0	0	31.1	34.7

Job No	N4458 - Corrimal ATC
Client	Bitzios Consulting
Site	Angel Street South - east of Caroline Street
Location	Tarrawanna
Site No	2
Start Date	24-Aug-18
Day	7 Day Ave
Direction	EB
Description	Speed Summary

Select Site

2. Angel Street South - east of Caroline Street

Select Day 7 Day Ave **Select Direction** EB



Bin Summary	
10-20	2.7%
20-30	23.3%
30-40	62.8%
40-50	10.7%
50-60	0.5%
60-70	0.0%
70-80	0.0%
80-90	0.0%
90-100	0.0%
100-110	0.0%
110-120	0.0%
120+	0.0%
33.2	**38.5**

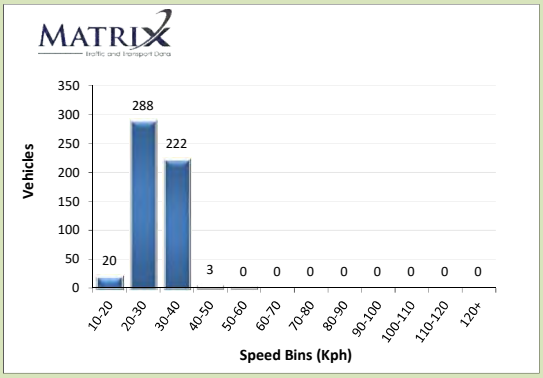
Hour	Vehicle Speed Bins (kph)												Speed	
Starting	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120+	Ave	85%ile
0:00	0	1	3	1	0	0	0	0	0	0	0	0	32.7	0
1:00	0	1	1	0	0	0	0	0	0	0	0	0	33.1	0
2:00	0	1	2	0	0	0	0	0	0	0	0	0	31.3	0
3:00	0	1	1	0	0	0	0	0	0	0	0	0	30.3	0
4:00	0	1	4	0	0	0	0	0	0	0	0	0	35.8	0
5:00	0	0	7	0	0	0	0	0	0	0	0	0	35.8	37.9
6:00	0	3	11	3	0	0	0	0	0	0	0	0	35.2	38.0
7:00	0	6	12	3	0	0	0	0	0	0	0	0	33.0	39.1
8:00	1	8	18	2	0	0	0	0	0	0	0	0	32.1	37.4
9:00	1	9	18	3	0	0	0	0	0	0	0	0	32.0	37.2
10:00	2	8	17	3	0	0	0	0	0	0	0	0	32.0	37.4
11:00	1	12	18	2	0	0	0	0	0	0	0	0	31.5	37.9
12:00	2	9	21	3	0	0	0	0	0	0	0	0	32.1	38.2
13:00	1	9	17	2	0	0	0	0	0	0	0	0	31.8	37.4
14:00	1	7	23	5	0	0	0	0	0	0	0	0	34.3	40.4
15:00	1	11	30	5	0	0	0	0	0	0	0	0	33.1	38.9
16:00	1	11	30	8	1	0	0	0	0	0	0	0	33.7	39.2
17:00	1	12	38	6	0	0	0	0	0	0	0	0	33.3	38.3
18:00	1	8	23	2	0	0	0	0	0	0	0	0	32.8	37.6
19:00	0	3	18	5	0	0	0	0	0	0	0	0	34.7	39.6
20:00	1	3	12	3	0	0	0	0	0	0	0	0	34.8	39.6
21:00	0	2	9	3	0	0	0	0	0	0	0	0	35.5	40.9
22:00	0	1	5	1	0	0	0	0	0	0	0	0	34.4	41.4
23:00	0	0	5	0	0	0	0	0	0	0	0	0	33.8	35.6
Total	15	127	344	59	3	0	0	0	0	0	0	0	33.2	38.5

Job No	N4458 - Corrimal ATC
Client	Bitzios Consulting
Site	Angel Street South - east of Caroline Street
Location	Tarrawanna
Site No	2
Start Date	24-Aug-18
Day	7 Day Ave
Direction	WB
Description	Speed Summary

Select Site

2. Angel Street South - east of Caroline Street

Select Day 7 Day Ave **Select Direction** WB



Bin Summary	
10-20	3.7%
20-30	54.1%
30-40	41.6%
40-50	0.6%
50-60	0.1%
60-70	0.0%
70-80	0.0%
80-90	0.0%
90-100	0.0%
100-110	0.0%
110-120	0.0%
120+	0.0%
29.0	**32.9**

Hour	Vehicle Speed Bins (kph)												Speed	
Starting	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120+	Ave	85%ile
0:00	1	1	0	0	0	0	0	0	0	0	0	0	28.3	29.4
1:00	0	1	1	0	0	0	0	0	0	0	0	0	30.5	0
2:00	0	0	1	0	0	0	0	0	0	0	0	0	30.1	0
3:00	0	2	1	0	0	0	0	0	0	0	0	0	27.8	0
4:00	0	3	6	0	0	0	0	0	0	0	0	0	30.5	32.8
5:00	0	5	8	0	0	0	0	0	0	0	0	0	30.3	33.8
6:00	0	15	13	0	0	0	0	0	0	0	0	0	29.7	33.0
7:00	1	21	18	0	0	0	0	0	0	0	0	0	29.5	33.0
8:00	1	27	16	0	0	0	0	0	0	0	0	0	28.7	32.4
9:00	2	20	15	0	0	0	0	0	0	0	0	0	28.5	32.4
10:00	2	22	13	0	0	0	0	0	0	0	0	0	28.5	32.7
11:00	2	20	14	0	0	0	0	0	0	0	0	0	28.3	32.9
12:00	2	20	12	1	0	0	0	0	0	0	0	0	28.8	33.5
13:00	1	17	16	1	0	0	0	0	0	0	0	0	29.5	33.9
14:00	1	18	19	0	0	0	0	0	0	0	0	0	29.6	33.8
15:00	2	23	13	0	0	0	0	0	0	0	0	0	28.2	32.6
16:00	1	20	12	0	0	0	0	0	0	0	0	0	28.4	32.0
17:00	1	21	11	0	0	0	0	0	0	0	0	0	28.4	31.2
18:00	1	13	13	0	0	0	0	0	0	0	0	0	29.6	33.1
19:00	0	8	8	0	0	0	0	0	0	0	0	0	29.5	33.2
20:00	0	6	6	0	0	0	0	0	0	0	0	0	29.3	33.8
21:00	0	2	4	0	0	0	0	0	0	0	0	0	30.5	33.2
22:00	0	2	1	0	0	0	0	0	0	0	0	0	29.9	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	29.4	0
Total	20	288	222	3	0	0	0	0	0	0	0	0	29.0	32.9

Job No	N4458 - Corrimal ATC
Client	Bitzios Consulting
Site	Angel Street North - west of St Andrews Place
Location	Tarrawanna
Site No	1
Start Date	24-Aug-18
Description	Volume Summary
Direction	Combined

MATRIX Traffic and Transport Data

Hour Starting	Day of Week							W'Day Ave	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	27-Aug	28-Aug	29-Aug	30-Aug	24-Aug	25-Aug	26-Aug		
AM Peak	25	25	25	19	37	28	39		
PM Peak	43	40	31	36	39	33	29	**334**	**325**
0:00	1	1	0	2	0	4	2	1	1
1:00	0	2	0	2	0	0	0	1	1
2:00	1	0	1	0	1	1	2	1	1
3:00	0	2	0	0	1	1	0	1	1
4:00	1	0	1	2	1	0	1	1	1
5:00	2	7	6	8	7	3	0	6	5
6:00	15	10	8	12	13	5	1	12	9
7:00	10	17	18	17	10	9	6	14	12
8:00	25	25	25	19	37	15	12	26	23
9:00	21	14	14	16	20	19	19	17	18
10:00	22	17	23	16	17	17	34	19	21
11:00	16	17	17	18	18	28	39	17	22
12:00	17	19	15	15	14	33	15	16	18
13:00	15	12	15	22	22	25	22	17	19
14:00	14	26	25	25	19	26	17	22	22
15:00	43	36	30	31	37	28	22	35	32
16:00	28	40	24	36	17	26	27	29	28
17:00	29	40	31	34	39	28	29	35	33
18:00	13	27	19	36	26	17	12	24	21
19:00	26	14	9	14	16	14	9	16	15
20:00	7	11	24	19	12	10	5	15	13
21:00	4	6	11	5	5	12	2	6	6
22:00	0	5	2	3	2	3	2	2	2
23:00	0	1	1	3	2	5	1	1	2
Total	310	349	319	355	336	329	279	334	325

7-19	253	290	256	285	276	271	254	272	269
6-22	305	331	308	335	322	312	271	320	312
6-24	305	337	311	341	326	320	274	324	316
0-24	310	349	319	355	336	329	279	334	325

Job No	N4458 - Corrimal ATC
Client	Bitzios Consulting
Site	Angel Street South - east of Caroline Street
Location	Tarrawanna
Site No	2
Start Date	24-Aug-18
Description	Volume Summary
Direction	Combined

MATRIX Traffic and Transport Data

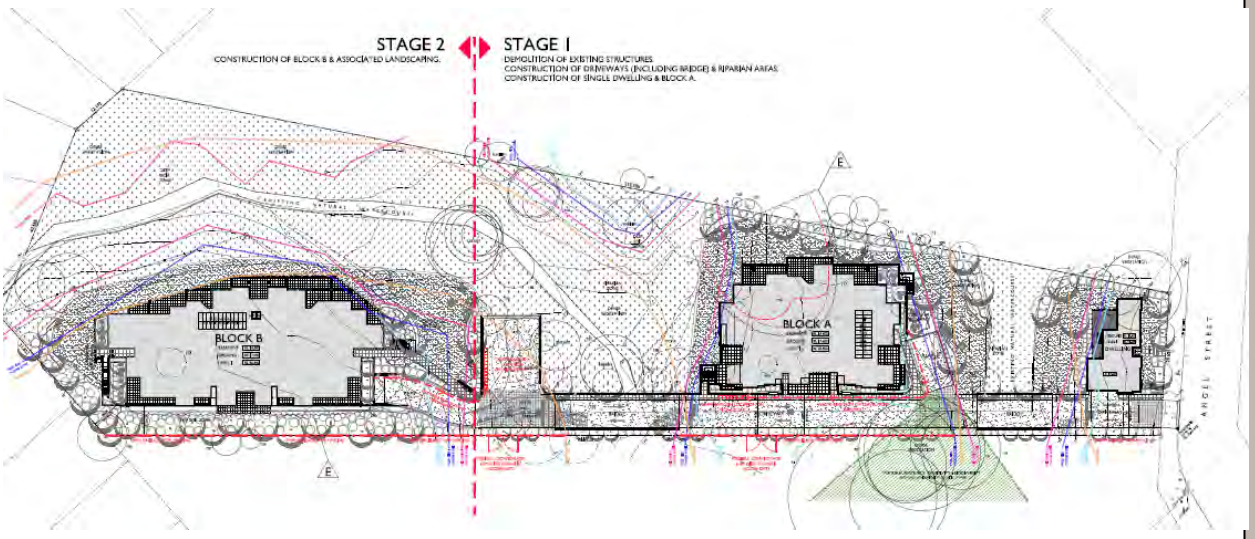
Hour Starting	Day of Week							W'Day Ave	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	27-Aug	28-Aug	29-Aug	30-Aug	24-Aug	25-Aug	26-Aug		
AM Peak	82	88	74	82	99	97	78		
PM Peak	111	103	108	99	103	79	66	**1160**	**1080**
0:00	8	6	8	3	4	5	17	6	7
1:00	2	2	4	6	2	5	9	3	4
2:00	2	2	0	3	3	8	6	2	3
3:00	7	7	4	4	3	1	3	5	4
4:00	14	23	20	22	15	4	2	19	14
5:00	30	22	22	31	24	9	5	26	20
6:00	57	52	61	52	62	32	5	57	46
7:00	64	85	73	65	78	35	25	73	61
8:00	82	88	74	82	99	48	39	85	73
9:00	70	71	72	66	56	74	68	67	68
10:00	76	62	55	64	64	77	67	64	66
11:00	60	62	62	68	60	97	78	62	70
12:00	59	66	60	80	83	78	61	70	70
13:00	61	60	61	73	63	56	66	64	63
14:00	79	68	85	78	86	78	50	79	75
15:00	99	98	85	93	95	79	56	94	86
16:00	111	102	90	90	89	63	50	96	85
17:00	94	103	108	99	103	72	56	101	91
18:00	61	69	72	80	65	45	34	69	61
19:00	60	42	45	41	47	47	21	47	43
20:00	20	30	52	36	30	27	18	34	30
21:00	17	16	17	25	31	26	13	21	21
22:00	6	13	14	7	13	20	4	11	11
23:00	1	5	6	4	9	11	7	5	6
Total	1140	1154	1150	1172	1184	997	760	1160	1080

7-19	916	934	897	938	941	802	650	925	868
6-22	1070	1074	1072	1092	1111	934	707	1084	1009
6-24	1077	1092	1092	1103	1133	965	718	1099	1026
0-24	1140	1154	1150	1172	1184	997	760	1160	1080

Revised Statement of Environmental Effects

Development Application DA-2017/1064

Staged Development: Demolition of Existing Structures, and Construction of Two (2) Storey Residential Flat Buildings plus Basement Parking Level (Comprising a Total of 28 Dwellings) and a Two Storey Dwelling at 39 Angel St, Corrimal (Lot 56 DP 27796)



Excerpt from 'Overall Site Plan' (Dwg No. A02 Issue E, dated 6/11/18) by ADM Architects

Prepared for Semaan Pty Ltd

6 November 2018

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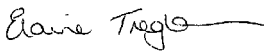
URBAN DESIGN

Document Status			Approved For Issue	
Version	Author	Reviewer	Signature	Date
Draft	Nadine Page	Elaine Treglown	Authorised	24.8.2017
Final	Nadine Page	Elaine Treglown		25.8.2017
Draft V2	Nadine Page	Nadine Page	Authorised	2/11/2018
Final V2	Nadine Page	Nadine Page		6/11/2018

Contents

1 Executive Summary

TCG Planning has been engaged by Semaan Pty Ltd to prepare a Statement of Environmental Effects to accompany a development application for the demolition/removal of the existing dwelling and associated outbuildings/structures, removal of 16 trees and the construction of a residential development at No. 39 Angel Street, Corrimal. The subject site, which is formally known as Lot 56 DP 27796, is a significant sized parcel of 11,250m^2 in area, which splays in width from its 28.61m frontage to Angel Street. An upper arm/tributary of Towradgi Creek flows through the site in two separate locations being across the front of the site and also meandering through the rear and centre of the site. As a result of the watercourse, the site has varied levels and associated flood affectation. The site contains both extensive cleared areas and stands of mature vegetation. The land is affected by a Foreshore Building Line as mapped by Wollongong local Environmental Plan 2009. Variation is sought to allow for encroachment of a minor section of the rear building, due to the unique site characteristics.

The proposed development comprises construction of a two storey dwelling and two separate residential flat buildings (Block A and B) with basement parking, linked by a new driveway. The residential flat buildings will contain a total of 28 dwellings, with 12 dwelling to be located in Block A and 16 in Block B. Extensive vegetation planting and rehabilitation of riparian areas is to be provided as recommended in the Vegetation Management Plan accompanying the application. The proposed development is intended to be staged, with Stage 1 comprising the dwelling and Block A and internal driveway and turning area and Stage 2 being Block B.

DA-2017/1064 was considered by the Wollongong Local Panel (LPP) on 15 August 2018, with the Panel resolving to defer the application pending the receipt of revised plans to address to address a range of matters including the retention of a tree, reduction of encroachments into the foreshore building line, ecological amendments, traffic safety audit and traffic counts.

This revised Statement of Environmental Effects addresses these matters and the overall revised proposal under the appropriate heads of consideration of the *Environmental Planning and Assessment Act 1979*; relevant state and regional policies and strategies; *Wollongong Local Environmental Plan 2009 (WLEP 2009)*; and *Wollongong Development Control Plan 2009 (WDCP 2009*). This Statement confirms that the proposed development is compliant with the majority of numerical standards of Chapter B1 Residential Development of WDCP 2009, with the exception of the minor variations with respect to the front setback to the dwelling, number of single aspect one bedroom apartments, and the size of one ground floor terraces (by only 2m^2) due to the significant landscaped and open space areas available.

The initial application (and subsequent amended plans) was accompanied by supporting documents to address tree removal, vegetation management site management, flood affectation, drainage, landscaping, adaptability and BASIX. This revised Statement also references additional documents (arborist report, traffic report and amended plans) that support the revised scheme following the requirements of the LPP.

Having regard to such documents it is considered that the site is suitable for the proposed development and approval is therefore sought.

2 Site Context

2.1 Subject Site

The subject site comprises a large, linear site with a relatively narrow (28.651m) eastern frontage to Angel Street, Corrimal. The site is formally known as Lot 56 DP 27796 and is 11,250m^2 in area. The southern (side) boundary is 211 metres in length and the northern (other side) boundary is 213 metres in length. The western rear boundaries are splayed and have a combined length of 84.57 metres. The location of the subject site is shown in the aerial photograph in Figure 1.

The site comprises a single storey dwelling and garage/outbuildings (proposed to be demolished). A creek flows through the site in two separate locations (being an upper arm/tributary of Towradgi Creek): across the front of the site; and also meandering through the rear and centre of the site. As a result of the watercourse, the site has varied levels and associated flood affectation. The site contains both extensive cleared areas and stands of mature vegetation. Refer to Figures 2-6 which illustrate the site.

A review of Council's online mapping and the Section 149(5) Certificate (Ref: 201602821 dated 4 July 2016) indicates that the land is flood-affected, and contains riparian land, a foreshore building line restriction and a small portion of the land (adjacent to south-eastern boundary) is mapped as 'natural resources sensitivity - biodiversity.' The land is not bushfire prone, is not located in an area where landslip and/or land subsidence have occurred, does not contain acid sulfate soils, and is not known to be contaminated.

Figure 1: Location of the subject site at 39 Angel St, Corrimal, showing subject site and surrounds *(Ref: https://maps.six.nsw.gov.au/).*

Figure 2 – The subject land as viewed from Angel Street Frontage.

Figure 3 – Existing bridge over creek to dwelling.

Figure 4 – Existing dwelling (to be demolished) and outbuildings taken from adjacent property to south (council reserve).

Figure 5 – Creek line near centre of property (looking toward existing house) Large stand of trees in background are on adjacent Council Reserve to south.

Figure 6 – Western portion of subject site taken near rear fence of No. 43 Williamson Street, Tarrawanna. Upper part of watercourse located on the site.

2.2 Surrounding Development

Angel Street is characterised by mostly low (with some medium) density dwellings. To the west is a low density residential area (Henry Street and Williamson Street, Tarrawanna) whose rear fences adjoin the subject site. The subject site is adjoined to the immediate south by a Council-owned park fronting Angel Street (the eastern portion is heavily vegetated, with the south-western portion cleared). Adjoining the site to the north is a large triangular-shaped property (No. 41 Angel Street, 15,375m^2 in area) with similar characteristics to the subject land (undulating, partly cleared with isolated vegetation stands, partly flood-affected land with a single dwelling, and narrow frontage to Angel Street via a bridge over a creek). An Integrated Development Consent (DA-2015/2016) was granted in September 2015 for the demolition of existing structures and construction of multi dwelling housing (21 dwellings) on this adjacent land. There is an expectation that this land will be developed in the near future for this purpose. The ADM Architects Dwg A01 (Site Analysis) illustrates an outline of the building footprints of this approved development to place in context with the subject land.

Figure 7 – Angel Street looking north-west Council reserve & frontage of subject site at left and surrounding low density dwellings at right.

Figure 8 – Angel Street looking south-east (Nos 33-37) and Council Reserve.

Figure 9 – Nos 43 & 45 Angel Street (dwellings)

Figure 10 – Medium Density dwellings No 22-26 Angel Street

Figure 11 – Taken from Western side of site (Williamson Street, Tarrawanna). Drainage line in foreground. Dwelling at No. 26 Henry Street to right. Rear fence adjoins western boundary of subject site. .

Figure 12 – Dwelling at 43 Williamson Street- rear fence adjoins western boundary of subject site.

3 Proposed Development

3.1 Development History

Development Application DA-2017/1064 was lodged on 25 August 2018 and during the assessment phase amended plans and additional documentation was provided. The application was renotified in July 2018. Development Application DA-2017/1064 was considered by the Wollongong Local Planning Panel (WLPP) on 15 August 2018 at which time the Panel deferred the application until certain matters were resolved, as detailed below in the excerpt from the 'Determination and Statement of Reasons':

"*Panel Consideration and Decision*

The Panel considered the matters listed at item 7, the material presented at the meeting and the matters observed at the site inspection listed at item 8 in Schedule 1.

The Panel is concerned that the following aspects of the proposed development have not been adequately resolved:

- *The size of the building footprints for Blocks A & B should be reduced to facilitate retention of the existing mature Blackbutt tree in the vicinity of Block A, to avoid the need for encroachment into the foreshore building line and to provide improved amenity for future occupants;*
- *Implementation of the applicant's ecological report (Biosis, April 2018) recommendation in Table 4 to avoid clearing of Illawarra Wet Gully Forest by "incorporating remnant vegetation into the design as native garden";*
- *A traffic safety audit under the Austroad Guidelines has not been carried out to establish the best location and geometry for the access to the development;*
- *Actual traffic counts have not been provided for Angel Street to properly establish and quantify the traffic impacts of the development;*

The Panel determined to defer the development application as described in Schedule 1 to allow the applicant an opportunity to address the concerns raised by the Panel.

Reasons for the Decision

- *The development application contains insufficient information in relation to traffic and ecological matters.*
- *The size of the proposed building footprints of buildings A & B is not acceptable due to the adverse impacts described above."*

3.2 Response to WLPP Matters: Design Amendments and Additional Information

In response to the above matters, aspects of the development have been revised and additional has been prepared. Section 3.4 of this Statement lists the full details of plans and documents referenced below.

ADM Architects Plan Amendments:

The specific amendments to the each of the amended plans prepared by ADM Architects are listed below. The changes allow for the retention of Tree No. 18 and avoidance of encroachment within the Foreshore Building Line and therefore satisfies the first point of the WLPP's concerns.

- *A00_D Title Sheet*: development summary amended accordingly. GFA and parking requirements reduced.
- *A02_E, A03_E, A04_F Site Plans*: amended accordingly
- *A07_C BLOCK A* – Basement Plan: tree protection zone (TPZ) and Structural Root Zone (SRZ) added; basement amended to reduce TPZ encroachment
- *A08_D BLOCK A* – Ground Floor Plan: extent of tree canopy noted (existing and new to arborist report)
- *A09_C BLOCK A* – Level 1 Plan: extent of tree canopy noted (existing and new to arborist report)
- *A12a_B BLOCK C* – Tree Section DD: new drawing showing block A in relation to the existing tree

- *A13_C BLOCK B* – Basement Plan: basement amended to avoid foreshore building line encroachment: residential parking spaces reduced from 24 to 23. Complies with DCP.
- *A14_F BLOCK B* – Ground Floor Plan: unit B01 reduced from 3 bed to 1 bed: unit B02 mirror-reversed and slightly amended layout: unit B03 reduced from 3 bed to 2 bed; unit B04 mirror-reversed and slightly amended layout: unit B05 redesigned: unit B06 unchanged: unit B07 increased from 1 bed to 2 bed: unit B08 unchanged
- *A15_G BLOCK B* – Level 1 Plan: unit B09 reduced from 3 bed to 1 bed: unit B10 mirror-reversed and slightly amended layout: unit B11 reduced from 3 bed to 2 bed: unit B12 mirror-reversed and slightly amended layout: unit B13 redesigned: unit B14, B15, B16 unchanged

The submitted amended compliance table demonstrates that the key numerical amenity considerations of the DCP for each dwelling have been met with the amended design.

Arborist Addendum Report

This report assesses the impact of the revised design, which encroaches within the dripline and root zone of Tree 18. The report confirms that the design will "allow for long-term tree retention" and the encroachment "is not considered to pose any significant impact on the tree", thereby satisfying the first point of the WLPP's concerns (retention of Tree 18). The summarises the impact as follows:

"*The amended design has allowed for the retention of No. 18. This tree can be retained relative to the nominated zones of protection (TPZ, SRZ) and based on the requirements of the Protection Specification, Section 8.0, see Arborist Report. The following conditions are required for the design to accommodate this tree;*

1. *No excavation exists in the area of the TPZ, other than the basement and piers*
2. *The floor is suspended above grade, and include a bed of stone aggregate to retain gas exchange,*
3. *No strip type footing or strip type excavation is permissible in the area of the TPZ.*
4. *A single 1st order branch (450mm in diameter, 16m long) extending south has been nominated for removal.*
5. *Measures that can reduce issues related to tree debris fallout should be incorporated into the design, example, gutter guard.*
6. *Installation of nominated tree protection measures."*

Amended Landscape Plan

Ochre Landscape advised that the submitted Landscape Plan already incorporated remnant vegetation into the riparian zones. However, the amended Landscape Plan clearly indicates this and slightly extends some of the proposed boundary gardens with notes included regarding linkages to the riparian zones. The amended Landscape Plan also now includes additional locally growing native species to the proposed species list which are highlighted with an asterisk. The amended plan also indicates riparian zones coloured in green to clearly illustrate the extent of upgrading and planting. The amended Landscape Plan therefore incorporates the recommendation in Table 4 of the Biosis ecological report (April 2018) to avoid clearing of Illawarra Wet Gully Forest by "*incorporating remnant vegetation into the design as native garden*". Therefore, the second point of the WLPP's concerns (native vegetation retention) is satisfied.

Road Safety Audit and Traffic Data

Bitzios Consulting provided a report that includes a traffic safety audit and provision of traffic data (based on a traffic count survey undertaken in two locations in Angel Street for a period of one week in August 2018). In

summary, the road safety audit did not raise any issues with the location or the geometry of the proposed development access. The traffic count considered traffic volumes, speed surveys and road capacity. The survey assessment identified the following:

"Table 4 quantifies the daily design traffic and compares it against the maximum daily traffic thresholds for each road section. The maximum daily background traffic adopted was for the day with the highest maximum daily background traffic for each road section. The daily development generated traffic for 41 Angel Street has also been included to estimate the cumulative impact of both developments. As identified in Table 4, both road sections are expected to accommodate the estimated increase in daily traffic volumes as a result of the inclusion of the proposed development."

Therefore, points 3 and 4 of the concerns of the WLPP (traffic) have been satisfied.

3.3 Summary Description of Revised Development Proposal

The proposed development comprises the demolition/removal of the existing fibrous cement and tile dwelling and associated outbuildings/structures, removal of 16 trees and construction of a residential development comprising a two storey dwelling, and two separate residential flat buildings with basement parking (containing a total of 28 apartments), linked by a new driveway. A more detailed description of the key components of the proposed residential development is provided below.

- Common Driveway: The existing bridge structure will be demolished. Vehicular access to all buildings is proposed via a new common ingress/egress driveway from Angel Street located adjacent to the southern (side) boundary of the site and includes two creek crossings. The driveway is 6 metres for its entire length. A turning area is provided between Apartment Blocks A and B.
- Two storey dwelling: Located at the front of the site, facing Angel Street. The double garage is accessed from by the common driveway. The living rooms are located on the ground floor and three bedrooms located on the upper level. Total gross floor area is 208.7m^2.
- Apartment Block A: Comprises a two storey apartment building with a basement car park (21 spaces). Each level has six apartments (total 12 dwellings), comprising a total of 8x3 bedroom, 2x2 bedroom units and 2x1 bedroom units. Total gross floor area 1216m^2.
- Apartment Block B: Comprises a two storey apartment building with a basement car park (27 spaces). Each level has eight apartments (total 16 dwellings), comprising a total of 9x3 bedroom, 6x2 bedroom units and 1x1 bedroom units. Total gross floor area 1720m^2.
- Landscaping/Vegetation/Riparian Management: Extensive vegetation planting and rehabilitation of riparian areas as recommended in the Vegetation Management Plan accompanying the application.

The proposed development is intended to be staged, with Stage 1 comprising the dwelling and Block A and internal driveway and turning area; and Stage 2 being Block B (refer ADM Architects Dwg A02).

3.4 Accompanying Revised and Supplementary Documentation

The revised development application is accompanied by the following amended plans and supplementary documentation, and where relevant supersede previously submitted plans.

- Architectural Plans prepared by ADM Architects (Project No. 2017-06 Drawing Nos. A00-A25 – full set): Amended Plans: dated 25/10/2018 and 6/11/2018: Dwgs A00-Rev D; A02-E; A03-E; A04-F; A07-C; A08-D; A09-C; A12a-C; A13-C; A14-F; A15-G; A16-D; A17-D; A18-B; (Refer Appendix 1)
- Compliance Table prepared by ADM Architects, listing features of units, Issue D, dated 25/10/18;

- Landscape Concept Plan prepared by Ochre Landscape Architects (Ref 1791-LD01B-LD02B dated 26/10/2018);
- Arborist Addendum Report prepared by Allied Tree Consultancy (Ref: D3107D dated 31/10/2018);
- Stormwater and Drainage Plans, Road/Bridge Concept Details and Soil and Water Management Plan prepared by KFW Consulting (Ref: KF112585-F-01 Dwg C001_C, C002_C dated 5/11/18; C005_B, C008_C and C009_B dated 1/11/2018 and C004_A, C003_A, C006_A dated 26/3/2018).
- Correspondence and Road Safety Audit prepared by Bitzios Consulting (Ref: P3508.001L dated 4/10/2018).

3.5 Previously Submitted Accompanying Documentation

The development application is accompanied by the following documentation (excluding architectural, landscape and stormwater plans which are superseded by the above list at Section 3.4:

Originally submitted documents submitted August 2018:

- Arborist Report prepared by Allied Tree Consultancy (Ref: D3107 dated August 2017);
- BASIX Certificate and Assessor Certificates (Nos. 853237S for the dwelling and 852776M for the apartment buildings) prepared by Greenview Consulting dated 24/8/2107;
- Statement of Compliance Access for People with a Disability (Ref: 217150, prepared by Accessible Building Solutions, dated 21/8/17)
- Site Waste Minimisation and Management Plan prepared by ADM Architects dated 11/8/2017.

Additional Information submitted April 2018

- Correspondence by TCG Planning (various matters) dated 12/4/2018
- Streetscape Analysis prepared by TCG Planning;
- Traffic Impact Assessment Report prepared by Bitzios Consulting dated 23/2/2018;
- Flood Study prepared by KFW (Revision C dated 26/3/2018)
- Water Sensitive Urban Design Assessment prepared by KFW, dated 29/3/18);
- Vegetation Management Plan prepared by Southern Habitat (Version 3, dated March 2018);
- Flora and Fauna Assessment prepared by Biosis (ref: 27189, dated 5 April 2018).
- Arborist Addendum' prepared by Allied Tree Consultancy (Ref: 3107A, dated 13 April 2018).

4 State and Regional Planning Framework

4.1 'Integrated Development' (Section 91 of the *Environmental Planning and Assessment Act 1979*)

Integrated development is development (not being State significant development or complying development) that, in order for it to be carried out, requires development consent and one or more of the approvals from certain State legislation as listed in Section 91 of the EP&A Act. Having regard to the presence and location of the watercourses on the site, the proposed development is located within "waterfront land" and hence a controlled activity approval will be required pursuant to the *Water Management Act 2000*. The development application is therefore 'Integrated Development' and will require referral to the Natural Resources Access Regulator [formerly known as Department of Primary Industries (DPI) - Office of Water] as part of the development application process. Refer to Sections 7.2.13 and 7.2.12 of this Statement which addresses riparian and vegetation management associated with the proposed development, which is of relevance to the Natural Resources Access Regulator in its consideration of the application and preparation of General Terms of Approval (GTA).

The Assessment Report to the WLPP (15 August 2018) indicated that the Natural Resources Access Regulator issued GTAs requiring a Controlled Activity Approval on 14 February 2018.

No other approvals are required under Section 91.

4.2 State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land requires Council to consider the possibility of contamination on land that is the subject of a development application. Clause 7 of the SEPP specifies that a consent authority must not consent to the carrying out of any development on land unless 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 it is satisfied that the land will be remediated before the land is used for that purpose.*

Visual inspection of No. 39 Angel Street, Corrimal, in addition to an online review of Council's development application register and historical photographs, suggests that the subject site has a history of residential use only. The Section 149 Certificate confirms that Council has not been advised that the land is contaminated. Hence, there is no evidence of a potentially contaminating land use having occurred on the sites as listed in Appendix A of the *'Managing Land Contamination – Planning Guidelines SEPP 55 Remediation of Land'* prepared by the (then) NSW Department of Urban Affairs and Planning. Accordingly, it is considered that the requirements of SEPP 55 have been satisfied and there is no requirement for further investigation.

4.3 State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

State Environmental Planning Policy (SEPP) (BASIX) 2004 applies to buildings that are defined as 'BASIX affected development'. In terms of the subject development, *BASIX affected development* means

(a) development that involves the erection (but not the relocation) of a BASIX affected building,

According to the Environmental Planning and Assessment Regulations 2000, a *"BASIX affected building"* means "any building that contains one or more dwellings, but does not include a hotel or motel". Under the provisions of this SEPP a BASIX certificate is required. The application is accompanied by a BASIX Certificate and Assessor

Certificate which confirms that the proposed BASIX commitments achieve the SEPP requirements for thermal comfort and water and energy efficiencies.

4.4 SEPP 65 Design Quality of Residential Flat Buildings

The *Environmental Planning and Assessment Amendment (SEPP 65) Regulation 2002* and State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development were gazetted on 26 July 2002. Amendment 3 of SEPP 65 commenced operation on 17 July 2015. The amended policy applies to development for the purpose of a residential flat building, shop top housing or mixed use development with a residential accommodation component if:

"(a) the development consists of any of the following:

(i) the erection of a new building,

(ii) the substantial redevelopment or the substantial refurbishment of an existing building,

(iii) the conversion of an existing building, and

(b) the building concerned is at least 3 or more storeys (not including levels below ground level (existing) or levels that are less than 1.2 metres above ground level (existing) that provide for car parking), and

(c) the building concerned contains at least 4 or more dwellings" (Clause 4).

The provisions of SEPP 65 and the associated Apartment Design Guide do not apply to this development as the residential flat buildings each contain only 2 storeys, and the basement car park does not extend more than 1.2m above existing ground level. This is demonstrated on Drawing A17 which shows that the basement is a maximum of 1140mm above natural ground level, with the extent of the basement area shown. The area which extends beyond the basement, as shown on this elevation, is subfloor area only. Hence the design is not captured by Clause 4(b) of the SEPP.

4.5 State Environmental Planning Policy No. 71 - Coastal Protection

State Environmental Planning Policy No. 71 - Coastal Protection does not apply as the site is not within the 'coastal zone', however part of the site is located at the western-most edge of the mapped area applicable to the *Draft Coastal Management SEPP 2016* (refer Figure 13 below). The subject lands are proposed to be located within the 'Coastal Use Area', as illustrated on the Draft SEPP maps. There are no anticipated impacts on coastal foreshore having regard to the distance from the foreshore.

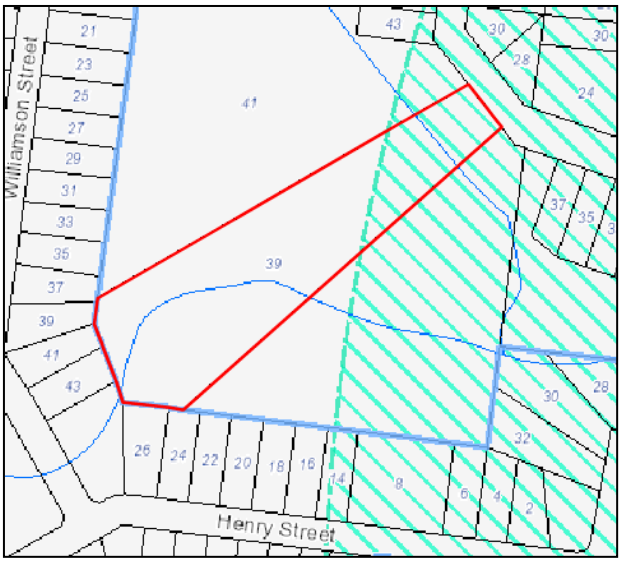


Figure 13: Extract of Draft NSW Coastal Management SEPP Map showing subject site *(Ref: Wollongong City Council).*

5 Wollongong Local Environmental Plan 2009 (WLEP 2009)

5.1 Site Zoning

The land is situated within the R2 Low Density residential zone pursuant to the *Wollongong Local Environmental Plan 2009* (WLEP 2009), as is shown in Figure 14. The land is adjoined to the south by a Council reserve zoned RE1 Public Recreation.

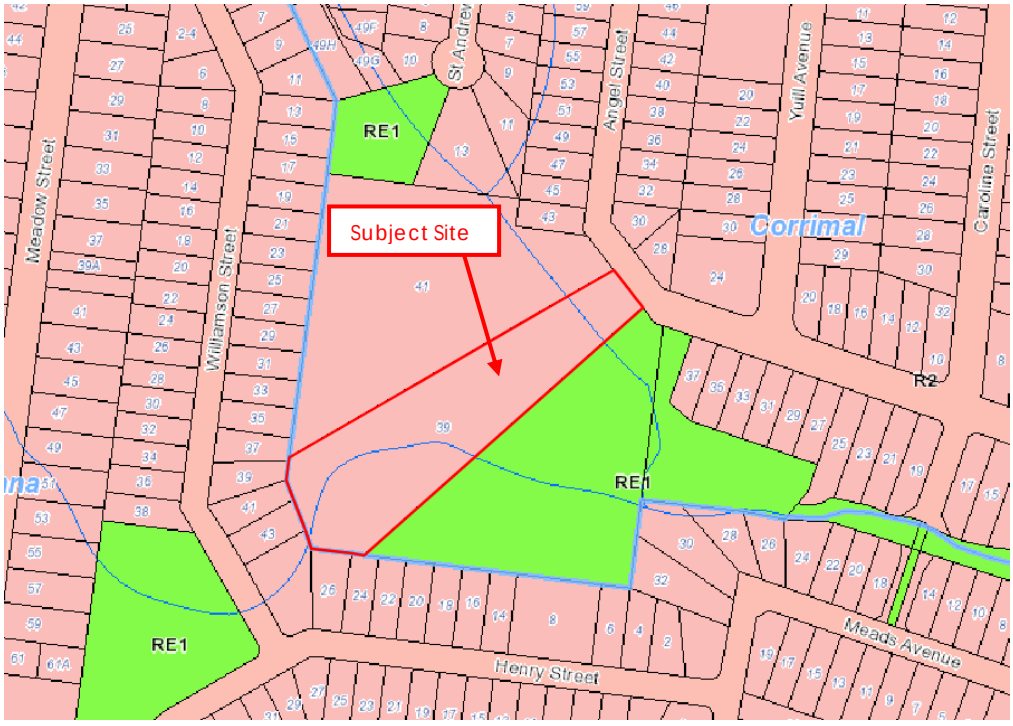


Figure 14: Extract of WLEP 2009 showing zoning of subject site and surrounds *(Ref: Wollongong City Council).*

5.2 Land Use Table and Zone Objectives

The objectives of the R2 Low Density Residential zone are:

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

The proposed development will be consistent with the first objective of the R2 zone as it will provide an appropriate housing type within the locality in the form of a dwelling and apartments.

The proposed development is defined as a "dwelling house" (front two storey house) and "residential flat building" (Blocks A and B) which are permissible with consent within the R2 Low Density Residential zone under WLEP 2009.

5.3 Other Relevant Provisions of WLEP 2009

Clause 2.7 Demolition requires development consent

Demolition of the existing dwelling and outbuildings is sought under this clause.

5.4 Part 4 Principal Development Standards

Clause 4.3 - Height of Buildings

The *'Height of Buildings'* map specified in Wollongong LEP 2009, which is referenced in Clause 4.3 specifies that a maximum building height of nine (9) metres applies to the subject land. The maximum building height (measured from natural ground level to top of roof) of Building A is 8.445m and Building B is 8.795m. Complies

Clause 4.4 - Floor Space Ratio

The *floor space ratio* of buildings on a site is a ratio of the gross floor area of all buildings within the site to the site area. This clause specified that the maximum floor space ratio of a site is not to exceed the floor space ratio identified within the Floor Space Ratio Map. This map specifies a maximum floor space ratio of 0.5:1. The proposed development has a total gross floor area of 3144.7m^2. The total site area of the subject land is 11,250m^2, thereby having a floor space ratio of 0.28:1 which complies with the LEP 2009 requirements of 0.5:1. Complies.

5.5 Other Provisions

Clause 5.9: Preservation of trees or vegetation

This application seeks approval for the removal of 16 existing trees on the site in accordance with this clause. The accompanying Landscape Plan and Arborist report identify the existing trees to be removed and retained to accommodate the proposed development.

Clause 7.1 Public Utilities Infrastructure

Clause 7.1 requires that infrastructure is available to the site (water, sewer, electricity). The existing public utilities infrastructure is anticipated to be adequate to service the proposed development, subject to confirmation from service authorities at the construction certificate stage. Complies.

Clause 7.2 Natural Resources Sensitivity - Biodiversity

A small portion of the property is mapped on the Natural Resources Sensitivity - Biodiversity Map (refer Figure 15 below). This area comprises overhanging trees located on the adjacent land (Council reserve) which are proposed to be retained. There is no native vegetation within this mapped area located on the subject land. While the proposed driveway is located beneath the tree canopy within this small mapped area, there will be no adverse impacts to this vegetation subject to implementation of tree protection measures as confirmed by the accompanying Arborist report. Hence the objectives and requirements of this clause will be met. Complies.

Figure 15: Extract of WLEP 2009 showing Natural Resource Sensitivity - Biodiversity Map in proximity of subject site
(Ref: Wollongong City Council).

This clause applies to (a) the land identified as "flood planning areas" on the Flood Planning Map and (b) other land at or below the flood planning level. There is no Flood Planning Map applicable to the land, however the Section 149 Certificate and Flood Study accompanying this report confirms that the land is flood affected. *"Flood planning level"* means "the level of a 1:100 ARI (average recurrent interval) flood event plus 0.5 metres freeboard." The accompanying Flood Study prepared by KFW addresses the provisions of this clause, including that the floor habitable floor levels of the development will be above the flood planning level and/or flood-proofed, the development will not adversely affect flood behaviour or detrimentally impact other properties, and will not affect the evacuation from the land.

Clause 7.4 Riparian Land

The objective of clause 7.4 is to ensure that development does not adversely impact upon riparian lands, and applies to land which is show as "riparian land" on Council's Riparian Land Map (refer Figure 16). Council's mapping of riparian corridors reflects the two creek locations on the site, (being an upper arm/tributary of Towradgi Creek) - across the front of the site, and also meandering through the rear and centre and rear of the site. According to clause 7.4.2, despite any other provision of the WLEP 2009, development consent must not be granted for development on land where riparian land has been mapped unless the consent authority has considered the impact of the proposed development on the land and any opportunities for rehabilitation of aquatic and riparian vegetation and habitat on that land. This clause is considered to be satisfied as the provisions are addressed within the Vegetation Management Plan accompanying the application, as detailed in Sections 7.2.12 and 7.2.13 of this Statement. Satisfied.

Figure 16: Extract of WLEP 2009 showing riparian lands in proximity of subject site *(Ref: Wollongong City Council).*

Clause 7.6 Earthworks

The objective of this clause is to ensure that any earthworks will not have a detrimental impact on environmental functions and processes, neighbouring uses or heritage items and features surrounding land. Approval is sought for excavation to accommodate the basement of Blocks A and B and the basement design is integrated within the building and site works. Onsite management measures to be incorporated at the construction stage are detailed in the Soil and Sedimentation Plan and Details prepared by KFW.

Clause 7.7 Foreshore Building Line

The objective of clause 7.7 is to ensure that development in the foreshore area will "not impact on natural foreshore processes or affect the significance and amenity of the area" and applies to land shaded on the Foreshore Building Line Map (refer Figure 17). This area reflects the creekline and riparian areas within the site. These areas are privately-owned land and are not publicly accessible.

As indicated on the amended plans by ADM Architects in response to the WLPP concerns, there is no development proposed within the mapped Foreshore Building Line.

Satisfied.

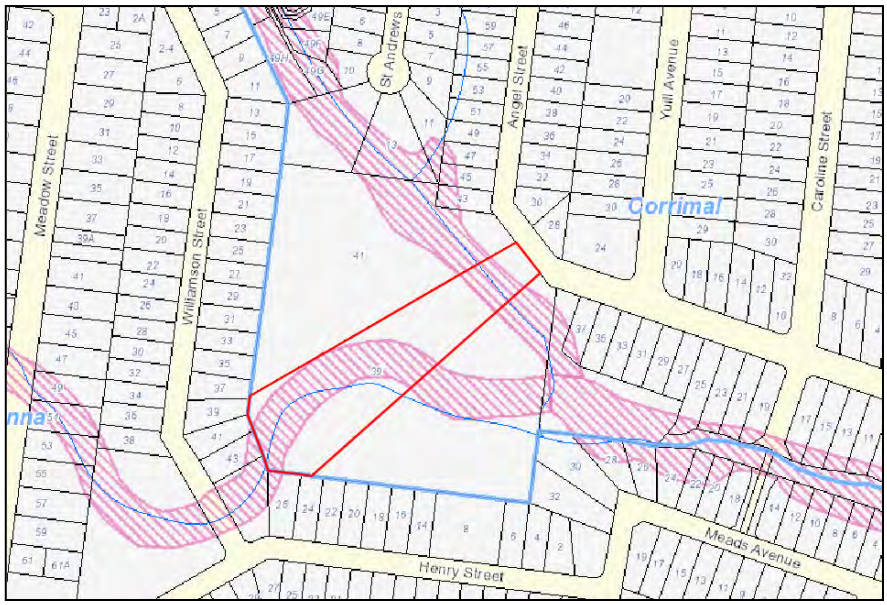


Figure 17: Extract of WLEP 2009 showing foreshore building line in proximity of subject site *(Ref: Wollongong City Council).*

Clause 7.14 Minimum Site Width

According to subclause (2) development consent must not be granted for development with the purpose for residential flat building unless the site has a dimension of at least 24m across the entire site. The site, including at the narrowest point (Angel Street frontage), is a minimum of 28.651 metres in width. Complies.

6 Wollongong Development Control Plan 2009

Wollongong Development Control Plan (WDCP) 2009 came into effect on the 3 March 2009. The manner in which the proposed development complies with the standards contained in the relevant chapters of this DCP is outlined in the following tables. The tables below addresses the primary controls and relevant standards contained within the DCP.

Amendments to the proposal are highlighted within the table where relevant.

The provisions of Chapter B1: Residential Development applies as this chapter of the DCP applies to all types of residential development (including dwellings and residential flat development) in standard residential zones. It is noted that within this Chapter:

For the Dwelling House: Part 4 'General Residential Controls' applies;

For the Residential Flat Building: Part 6 'Residential Flat Buildings' and clauses 4.13 to 4.19 of Part 4 apply.

Section 6.2 addresses the relevant Parts and Clauses within Chapter B1 Residential Development.

Chapter D1: Character Statements also assists understanding not only the existing character of the locality which is present but also the desired future character of the area. Section 6.1 below describes Corrimal's present and future desired character.

The following other chapters of WDCP 2009 are also applicable to the development and are addressed in Section 7 of this Statement (as referenced below):

- Chapter E1 Access for People with a Disability - refer Section 7.2.9
- Chapter E3 Car Parking, Access, Servicing/Loading Facilities and Traffic - Refer 7.2.7 and Table 2
- Chapter E6 Landscaping - refer Section 7.2.8
- Chapter E7 Waste Management - refer Section 7.2.10
- Chapter E13 Floodplain Management - refer Section 7.2.14
- Chapter E14 Stormwater Management - refer Section 7.2.14
- Chapter E17 Preservation and Management of Trees and Vegetation - refer Section 7.2.11
- Chapter E21 Demolition and Asbestos Management- refer Section 7.2.15
- Chapter E22 Soil Erosion and Sediment Control - refer Section 7.2.15
- Chapter E23 Riparian Land Management - refer Section 7.2.13

6.1 Chapter D1 ' Existing and Proposed Character': Clause 3.18 Corrimal

The relevant excerpts from Chapter D1 is as follows:

"Existing Character

Corrimal is framed by the Illawarra Escarpment and is positioned east of the escarpment landmark known as Brokers Nose.

Corrimal has a low to medium density residential character and is characterised by a mix of residential housing types including one to two storey detached dwelling-houses including circa 1920's - 1930's weatherboard and corrugated iron and brick and tile inter-war bungalows as well as newer larger brick and tile dwelling-houses as well as medium density villas and townhouses.

Desired Future Character

The lower density residential areas of Corrimal will retain their low density character. In this respect, it is likely that the replacement of some older dwelling stock will occur with newer two storey dwelling-houses. Any new building should be designed to be sympathetic with the prevailing streetscape and any adjoining dwelling-house, especially an inter-war bungalow.

Additional medium density housing is likely to occur within or in close walking distance (ie 400 – 600 metres) of the Corrimal retail and business centre."

The development proposes a two storey dwelling fronting Angel Street which is consistent with the existing type and built form of dwellings within the street. Blocks A and B are low-scale (two storey) residential flat buildings that provide a suitable solution to provide residential accommodation on the highly constrained site. The development will be provide a mix of accommodation to the locality and is within close proximity to the Corrimal Town Centre (approximately 600m walking distance from the Angel Street frontage to the Princes Highway/Tarrawanna Road/Short Street intersection). The residential flat buildings will not be immediately visible from the street frontage and will be well separated from existing and proposed future residential development to the north and west. The proposed development therefore conforms to the desired future character of the locality.

6.2 Chapter B1 'Residential Development'

Part 4: General Residential Controls

The following clauses apply to the proposed dwelling house at the Angel Street frontage. It is noted that the isolated application of some controls for the dwelling is limited (eg site coverage, landscaping, rear setbacks etc) as the dwelling is located at the front of a large site also comprising residential flat buildings. However these will be addressed in Part 6 (Residential Flat Buildings) later in this Section.

- 4.1 Number of Storeys: Two storeys. Complies.
- 4.2 Front Setbacks: Minimum of 4.5m from the front boundary. Variation Sought (6m required). Refer Section 7.2.1
- 4.3 Side and rear setbacks: Minimum side setback 2.31m (north) and 8.6m (to south). Rear setback: not applicable. There is ample separation between the dwelling and proposed Apartment Building A. Complies
- 4.4 Site Coverage (maximum 50%): Not applicable. Ample landscaped area (62.3%) of the entire site is provided. Satisfactory
- 4.5 Landscaped Area: Refer to Landscape Area controls in Part 6 (Residential Flat Buildings) later in this Section.
- 4.6 Private Open Space: A level deck (20m^2 in area) is provided adjacent to the living room (minimum 4m dimension). An ample turfed yard area is provided to the north of the proposed dwelling. A 1.4m high timber fence and landscaping is proposed to provide screening to the open space. Refer Landscape Plan. Complies
- 4.7 Solar Access: The proposed dwelling will not overshadow any other residential properties. The living areas and external open space of the dwelling will receive ample solar access will be achieved. Complies

- 4.8 Building Character and Form: The two storey detached dwelling will complement existing dwellings in the immediate locality. The garage door does not face the street. Refer to Variation Statement regarding the front setback at Section 7.2.1 of this Statement. Satisfactory
- 4.9 Fences: A 1.4m high timber fence and associated perimeter landscaping is proposed to provide screening to the open space (rear and northern perimeter). A 1.2m high metal rod fence and associated landscaping will define the frontage.
- 4.10 Car Parking and Access: Two car garage proposed, access from proposed common driveway for the development. Driveway separated from side boundary by 1.5m. Complies
- 4.11 Storage Facilities: Will be incorporated into the design of the dwelling, including rear of garage, linen and under stair store. Complies
- 4.12 Site Facilities: Water tank, drying area and letterbox indicated on Landscape Plan. Complies

The following clauses apply to the entire development:

- 4.13 Fire Brigade Servicing: Vehicle access and manoeuvring on-site required to be provided in accordance with the Fire and Rescue *NSW Code of Practice - Building Construction - NSWFB Vehicle Requirements*. If the on-site turning area does not comply with the access provisions, a hydrant will be provided in accordance with this control. Can comply.
- 4.14 Services: Refer WLEP 2009 Clause 7.1.
- 4.16 View Sharing: Existing views are limited to escarpment views to the west and north and are limited by existing mature vegetation. The proposed buildings are limited to two storeys and provide ample setbacks from side and rear properties and hence view sharing considerations and measures are considered to be satisfactory. Complies
- 4.17 Retaining Walls: Proposed. Refer KFW Plan C002. To be designed by a structural engineer.

Part 6: Residential Flat Buildings

The following table addresses the relevant controls for residential flat buildings.

Table 1: Chapter B1 Residential Development			
WDCP Requirements		Proposed	Compliance
6.2 Minimum site width requirement	*A minimum of 24m is required for residential apartment buildings, measured for the full length of the building envelope and perpendicular to the side boundary.*	The site has a minimum dimension of 28.651m at the Angel Street frontage.	Complies
6.3 Front Setbacks	*Same distance as one of adjoining buildings (if difference less than 2.0m) or average of adjoining buildings (if greater than 2.0m).* *Minimum of 6m, where above calculation less than 6m.*	Not applicable as the proposed dwelling house fronts Angel Street and the residential flat buildings are located behind the single dwelling house.	Not applicable
6.4 Side and Rear Setbacks and Building Separation	*For buildings up to 4 storeys (12m), the minimum setback to be:* ▪ *6m where a habitable room/balcony on a development site;* ▪ *3.5m where a non-habitable/blank wall*	Block A: Side setbacks: Northern boundary: 6.64m Southern boundary: 8.35m Block B: Side setbacks: Northern boundary: approx 30m+ Southern boundary: 6m Rear boundary (west): 6m	Complies

Table 1: Chapter B1 Residential Development			
WDCP Requirements		Proposed	Compliance
6.5 Built Form	*The design, height and siting of the development must respond to its context, being both the natural and built features of an area.*	The proposed building forms and design is appropriate. Refer to discussion at Section 7.2.1 of this Statement.	Complies
6.6 Visual Privacy	*Objectives:* *a) To provide reasonable levels of visual privacy externally and internally, during the day and at nighttime.* *b) To maximise outlook and views from principal rooms and private open space without compromising visual privacy.*	As indicated in Clause 6.4 (Side and Rear Setbacks) above, the two storey Blocks A and B have ample setbacks from adjacent properties, including by deep soil zones. The property to the immediate south is a passive/partly bushland Public Reserve and there will be no privacy impacts.	Complies
6.7 Acoustic Privacy	*Objective:* *(a) To ensure a high level of amenity by protecting the privacy of occupants both within apartments and in private open space areas / balconies in the building.*	There are no adjoining or nearby noise generating uses. Blocks A and B have been designed to consider acoustic amenity for future residents.	Complies
6.9 Basement Car Parking	*The roof of any basement podium, measured to the top of any solid wall located on the podium, must not be greater than 1.2m above natural or finished ground level, when measured at any point on the outside walls of the building. On sloping sites, a change in level in the basement must be provided to achieve this maximum 1.2m height. Should this circumstance arise the additional portion of the podium above 1.2m in height must be included in the total GFA calculation.*	The roof of the basement does not exceed 1.2m above natural ground level. The maximum protrusion of the basement podium is 1.14m. This is demonstrated on Drawing A17 which shows the extent of the basement area and its height above natural ground. The area which extends beyond the basement, as shown on this elevation, is subfloor area only.	Complies
	In addition, the following must be satisfied: *i. landscaped terraces are provided in front of the basement podium to reduce the overall visual impact;* *ii. the height of the basement does not result in the building having a bulk and scale that dominates the streetscape; and*	The basement will not be visible/protrude from the rear and side property boundaries and will be provided with landscaping to minimise any visual impact. The basement entrance ramps are located at the northern side of both Buildings A and B adjacent to the driveway.	Complies
	iii. the main pedestrian access to the building is identifiable and readily accessible from the street frontage	Main pedestrian access is located on the southern side of the Building A and the eastern side of Building B adjacent to the driveway entrance into the site. It is identifiable via a portico-style entry feature.	Complies
	The following setbacks from front, side and rear boundaries apply to basement podiums: *i. where the height of the basement podium (measured to the top of any solid wall located on the podium) is less than 1.2m above natural or finished ground level (whichever distance is greater), the basement podium may extend to the property boundary.*	The basement podium does not extend to the boundary and is provided with substantial setbacks to enable landscaping and deep soil areas.	Complies
	ii. any portion of the basement which exceeds 1.2m above natural or finished ground level (whichever	The basement podium is setback a minimum of 6 metres from all property boundaries.	Complies

Table 1: Chapter B1 Residential Development			
WDCP Requirements		Proposed	Compliance
	distance is greater) must be setback from the property boundaries by a ratio 1:1 (height: setback). A min setback of 1.5m applies in this instance, with this area to be landscaped.		
	Where parking is provided in a basement, ventilation structures for the basement parking and air conditioning units must be orientated away from windows of habitable rooms and private open space areas. Ventilation grills must be integrated into the design of the façade of the building to minimise their visual impact.	There are no basement ventilation grills due to flood affectation. There will be mechanical to roof, and partially naturally ventilated from garage door when open.	Complies
	The visual impact of all basement walls must be minimised through the use of various design techniques including well-proportioned ground level articulation and relief, mixed finishes and materials, terracing and/or dense landscaping.	Ground level articulation and variation in height is provided to the building, as well as a mix of materials and finishes (refer to Colours and Materials Schedule), landscaping and terracing, particularly in the front building setback area.	Complies
	Basements must be protected from inundation from 100-year ARI flood levels (or greater)	Yes. Addressed in Flood report accompanying the application	Complies
6.10 Access Requirements	*Driveways to be located a minimum of 6m from the intersection of two roads and 1.5m from the site boundary* *For 6-20 dwellings* *Crossover width:4-6 metres combined to within 6m internally of the front property boundary* *Driveway width: min. 3m*	The driveway access off Angel Street is located more than 6m from any street intersection and is setback from the side southern boundaries by a minimum of 1.5 metres, with a crossover width of 6m. The ramp/driveway to the basement level is more than 4m in width.	Complies
6.11 Landscape Requirements	*Landscaped area is defined as area not occupied by buildings, hard surface and can include planting on the podium.* *30% of the total site area to be provided as landscaping, 1.5m wide landscaping bed to be provided on side boundaries.* *Minimum number of trees to be planted (for sites > 1500m²): 1 large tree or 2 medium trees per 80m² of DSZ*	A total of 3375m² (30%) of the site is required to be provided as landscaped area. 7009m² is provided (62.3%). Refer to Landscape Plan prepared by Ochre Landscape Architects. Extensive tree planting is proposed throughout the site.	Complies
6.12 Deep Soil Zone	*The siting of the deep soil zone must be determined following a site analysis to investigate whether this area should be located: (a) Centrally within the site; (b) At the rear of the site to allow for separation from adjacent; or (c) Elsewhere within a site.* *A minimum of half of the landscaped area (i.e. 15% of the site) must be provided as a deep soil zone, where the deep soil zone is not located at the rear of the site. It is to have a minimum dimension of 6m.*	The deep soil area is located adjacent to the southern boundary of the site (providing screening existing residential areas), with a minimum dimension of 6m, also in compliance with the DCP 2009 controls. The deep soil areas (including the riparian zone) is 4506m² (40% of the site area).	Complies
6.13 Communal Open Space	*Developments with more than 10 dwellings must incorporate communal open space. The minimum size of this open space is to be calculated at 5m² per dwelling. Any area to be included in*	Block A Requires a COS area of 60m². A COS area of approx 200m² is provided at the northern side of the building.	Complies

Table 1: Chapter B1 Residential Development			
WDCP Requirements		Proposed	Compliance
	the communal open space calculations must have a minimum dimension of 5 metres.	Block B Requires a COS area of 80m². A COS area of approx 300m² is provided in two separate areas, at the northern and southern sides of the building.	
6.14 Private Open Space	*The courtyard/terrace for the ground level dwellings must have a minimum area of 25m² and width of 2 metres. This area must be separated from boundaries by at least 1.5m with a vegetated landscaping bed and must not encroach upon deep soil zone landscaping areas.* *Where private open space is provided in the form of a balcony, the following requirements must also be met:* *a) Avoid locating the primary balconies where they address side setbacks* *b) The balcony must have a minimum area of 12m2 open space and a minimum depth of 2.4 metres.* *The primary private open area of at least 70% of the dwellings within a residential apartment building must receive a minimum of three hours of direct sunlight between 9.00am and 3.00pm on June 21.*	Each apartment dwelling has a private open space in the form of a balcony or terrace. All units are provided with min 12m² balconies and min 25m² terraces for ground floor units, all ground level unit courtyards have a minimum area of 25m² with the exception of the 1 bedroom Unit (A06) which has 23m² courtyard area (ie. non-compliant by only 2m²). This minor variation is considered acceptable, in particular for a one bedroom unit as the private open space for A06 will meet the objectives of this control as: (i) the apartment is well designed, functional, and is directly connected to living areas and the main bedroom; and (ii) provides future residents excellent amenity including a natural outlook and spacious environment. Refer to the ADM Apartment Compliance Table at Appendix 2. 72% of apartments receive the required level of solar access. Balconies have a range of orientations (only some to the site boundaries), however ample setbacks are provided.	Minor Variation sought - Refer Section 7 Complies
6.15 Adaptable and Universally Designed Housing	*Within a residential apartment building incorporating more than six (6) dwellings, 10% of all dwellings (or at least 1 dwelling) must be designed to achieve the Silver Standards of the Liveable Housing Design Guideline (Liveable Housing Australia 2015)* *Where possible adaptable dwellings shall be located on the ground floor. Dwellings located above the ground level of a building may only be provided as adaptable dwelling where lift access is available within the building. The lift access must provide access from the basement.* *The DA must be accompanied by certification from a suitably qualified Access Consultant to confirm the adaptable dwellings are capable of being modified.*	The development has a total of 28 residential units, therefore requiring 2.8 (3) adaptable Units. Four residential units (being Unit Nos. A06, A12, B07 and B15) are provided as adaptable units. Four disabled car parking spaces are provided according to basement floor plan. A Statement of Compliance Access for People with a Disability prepared by Accessible Building Solutions accompanies the application and confirms compliance with the relevant legislative requirements.	Complies Complies Refer Access Statement
6.17 Apartment Size and Layout Mix for Larger Res Flat Building Developments	*A mix of apartment sizes and layouts is required for residential apartment buildings involving ten (10) or more dwellings.* *A minimum of 10% of the apartments must be one bedroom and/or studio apartments to provide for housing choice.*	The amended development provides: 3x1 bedroom units (10%); 8 x 2 bedroom units (29%) and 17 x 3 bedroom units (61%).	Complies

Table 1: Chapter B1 Residential Development			
WDCP Requirements		Proposed	Compliance
6.18 Solar Access	*<u>Solar Access into Residential Apartment Buildings</u>* *The living rooms and private open space of at least 70% of apartments should receive a minimum of three hours of direct sunlight between 9.00am and 3.00pm.* *The number of single aspect apartments with a southerly aspect (south-westerly to south-easterly) is limited to a maximum of 10% of the total number of apartments proposed.* *<u>Solar Access into Living Areas and Private Open Space Area of Adjoining Properties</u>* *Windows to ;living rooms and private open space in adjacent residential buildings must receive at least 3 hours of direct sunlight between 9.00amd and 3.00pm on June 21.*	The development provides northern aspect and dual aspect to most apartments in Blocks A and B. As indicated in the Apartment Compliance Table at Appendix 2, 72% of apartments receive a minimum 3 hours sunlight. Four (4) of the 28 apartments (14%) are single aspect apartments with a south-easterly aspect. This is due to the east west orientation of site and the site constraints which has resulted in Block B being long and narrow in shape. The application is accompanied by a Shadow Analysis Study prepared by ADM Architects (Dwg A23) which indicates there is no overshadowing impacts to adjoining residential properties.	Complies Variation sought- Refer section 7 Complies
6.19 Natural Ventilation	*All residential apartment buildings shall have a building depth of between 10 and 18 metres. The depth is measured across the shortest dimension of the building.* *Dwellings should be a maximum depth of 21 metres, measured from the outside of the balcony.* *A minimum of sixty percent (60%) of all residential apartments shall be naturally cross ventilated.* *Twenty five (25%) of kitchens within a development must have access to natural ventilation. Where kitchens do not have direct access to a window, the back of the kitchen must be no more than 8 metres from a window.* *Single aspect apartments must be limited in depth to 8 metres from a window.*	Both Blocks A and B have a maximum building depth of 25m. Apartment depth is less than 21m. 62% of apartments achieve cross ventilation. The back of kitchens and single aspect apartments do not exceed 8m to a window.	Satisfactory Refer comment Complies Complies Complies

6.3 Chapter E3 Car Parking, Access, Servicing and Loading Facilities

Table 2: Chapter E3 Car Parking, Access, Servicing and Loading Facilities			
WDCP Requirements		Proposed	Compliance
Section 7: Parking Demand and Servicing Requirements			
7.1 Car Parking, Motor Cycle, Bicycle requirements and delivery / serving vehicle requirements	*(1) Car parking requirements are outlined in Schedule 1 of Chapter E3* *(2) All parking and bicycle facilities must be fully provided on site.* *(3) Where a formula in Schedule 1 results in a fraction, numbers are to be rounded up to the nearest whole number.* *Schedule 1* *CARS:* *Residential flat building (City Wide)* *1 car space per dwelling (<70m²)* *1.5 car spaces per dwelling (70-110m²)* *2 spaces per dwelling (>110m²)* *PLUS:* *0.2 spaces per dwelling for visitors* *BICYCLE:* *1 space per 3 dwellings (residents);* *PLUS: 1 space per 12 dwellings (visitor).* *MOTORCYCLE:* *1 space per 15 dwellings* *SERVICING:* *Large rigid vehicle (Waste contractor)*	CARS Most apartment sizes in Block A and B are between 70-110m² (generating 1.5 spaces each). Four units (A06, A12, B01, and B09) are less than 70m², generating one space each. Block A: Cars (10 x 1.5)+(2x1) = 17 resident spaces reqd 17 spaces provided 0.2 x 12 = 3 visitor spaces required 3 visitor spaces provided Total required: 20 spaces 20 spaces provided Bikes: Required: 4 resident and 1 visitor space Provided: 4 resident and 2 visitor space Motorcycle: Required: 1 space (provided) Block B: (14 x 1.5)+(2x1) = 23 resident spaces reqd (23 provided) 0.2x16 = 4 visitor spaces required (4 provided) Total required: 27 spaces 27 spaces provided Bikes: Required: 6 resident and 2 visitor space Provided: 8 spaces Motorcycle: Required: 2 spaces (2 provided) The turning area can be access by a large rigid vehicle for waste collection.	Complies Complies Complies
7.2 Disabled Access and Parking	*Disabled access and parking facilities are contained in Schedule 2.*	A disabled parking space is not required for this development as residential flat buildings are not listed in Schedule 2. However, two (2) accessible parking spaces per building are located within the basement level in proximity to the lift to be allocated to the accessible units.	Not applicable/ provided
7.3 Bicycle parking / storage	*Provision of bicycle parking for a particular use shall be in accordance with Schedule 1 (see section 7.1 above).*	Bicycle spaces are provided at the basement ground level.	Complies
7.7 Car Parking Layout and Design	*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.* *Vehicles must be able to enter and leave the site in a forward direction.*	The site access and parking has been designed to comply with AS2890.1-2004. ADM have designed the basement car parks for Blocks A and B in accordance with the relevant standards and all vehicles can enter and leave the site in a forward direction, with adequate turning area available for both visitor and resident vehicles. Two turning bays	Complies Complies

Table 2: Chapter E3 Car Parking, Access, Servicing and Loading Facilities			
WDCP Requirements		Proposed	Compliance
	Pedestrian and vehicular entrances are to be separated.	provided in the basement. Separate vehicular and pedestrian access is provided.	Complies
7.8 Basement Car Parking	*A min 2.4m headroom height shall be provided.* *If waste collection vehicles will be entering the basement, the basement needs to be designed with the appropriate height and manoeuvring space to allow vehicles to exit in a forward manner.*	The headroom height within the basement is 2.7m which accords with the Australian Standard	Complies with Australian Standard
Section 9: Loading/Unloading Facilities and Service Vehicle Manoeuvring			
9.1 General	*The minimum loading dock requirements are:* *<u>Residential flat building:</u> 1 designated loading/unloading area* *Schedule 1 identifies the requirement for a development comprising more than 10 dwellings is a side loading waste collection vehicle.*	Waste collection will occur from the internal driveway (refer bin collection locations on Landscape Plan) Gladstone Avenue. A truck turning/standing area is provided that will allow for waste and larger vehicles to access the site.	Complies
9.2 Loading/ Unloading and Manoeuvring Area requirements	*All servicing vehicles must be able to manoeuvre entirely on-site and enter and leave the site in a forward direction. All truck turning or manoeuvring areas must be separate from areas of normal pedestrian or vehicular traffic.* *All loading dock facilities must guarantee satisfactory on-site manoeuvring areas for trucks in accordance with AS2890.2.*	The development does not contain a commercial component. A truck turning/standing area is provided that will allow for waste and larger vehicles to access the site.	Satisfactory

7 Section 4.15 – Matters for Consideration

7.1 The provisions of:

7.1.1 Any environmental planning instrument

The proposed development is classified as a *'Dwelling house'* OR '*Multi-Dwelling Housing'* and *'Residential Flat Building*' which is permissible within the R2 Low Density Residential zone under the applicable planning instrument, being *Wollongong Local Environmental Plan 2009*. The proposed development meets the objectives of the R2 zone and meets the development standards (including floor space ratio and height) and local provisions within the WLEP 2009. The development also conforms with the relevant State Planning Policies.

7.1.2 Any development control plan

The applicable chapters of the WDCP 2009 and the sections of this report in which they are addressed is as follows:

Chapter B1 Residential Development - Section 6

Chapter D1 Character Statement - Corrimal - Section 6

Chapter E1 Access for People with a Disability - refer Section 7.2.9

Chapter E3 Car Parking, Access, Servicing/Loading Facilities and Traffic - Refer 7.2.7 and Table 2

Chapter E6 Landscaping - refer Section 7.2.8

Chapter E7 Waste Management - refer Section 7.2.10

Chapter E13 Floodplain Management - refer Section 7.2.14

Chapter E14 Stormwater Management - refer Section 7..2.14

Chapter E17 Preservation and Management of Trees and Vegetation - refer Section 7.2.11

Chapter E21 Demolition and Asbestos Management- refer Section 7.2.15

Chapter E22 Soil Erosion and Sediment Control - refer Section 7.2.15

Chapter E23 Riparian Land Management - refer Section 7.2.13

7.2 Likely Impacts of the Development – Section 4.15(1) (b)

7.2.1 Streetscape Integration and Front Setbacks (WDCP 2009 Chapters D1 and B1)

The proposed development is consistent with the intended future character of the locality in terms of the likely bulk and scale of developments, as expressed in the Wollongong LEP 2009 and Wollongong DCP 2009. The development proposes a new two storey dwelling fronting Angel Street which is consistent with the existing character of the streetscape, which is a mix of older style dwellings and newer development, including two storey townhouses (refer also to variation statement below regarding the front setback).

Blocks A and B are low-scale (two storey) residential flat buildings that will have limited visibility from the street as they are set well within the site and will be well separated from existing and proposed future residential development to the north and west. The siting of these buildings is suitable solution within the highly constrained site. It is considered that the design and height of the apartment buildings responds to its context, being both the natural and built features of an area and meets the objectives and controls for built form. The proposed development therefore conforms to the existing and desired future character of the locality.

Variation Statement - Front Setback to Dwelling

Clause 4.2 'Front Setbacks' requires that a minimum setback of 6m from the front property boundary to the front facade is required. The proposed front facade is splayed and provides a 4.5m (minimum) to 5.2m setback. However the controls permit "*less than 6 metres where the prevailing street character permits and the future desired character of the area is not prejudiced. Reduced setbacks must be demonstrated through a Site and Context Analysis".* Figure 18 below is an extract from ADM Architects Site Analysis Dwg A01 which provides an analysis of the Angel Street streetscape. Figures 19 and 20 are photographs of the single storey dwelling and townhouses directly opposite the proposed two storey dwelling fronting Angel Street. The proposed setback of 4.5m to the dwelling is considered to be a commensurate built form outcome for the streetscape and will not be detrimental to the locality. The site analysis plan also indicates that the natural watercourse to the rear within the subject site, which constrains to footprint of where a dwelling can be located near the Angel Street frontage. The flood-free portion of the site necessitates the siting of the dwelling to have a 4.5m setback.

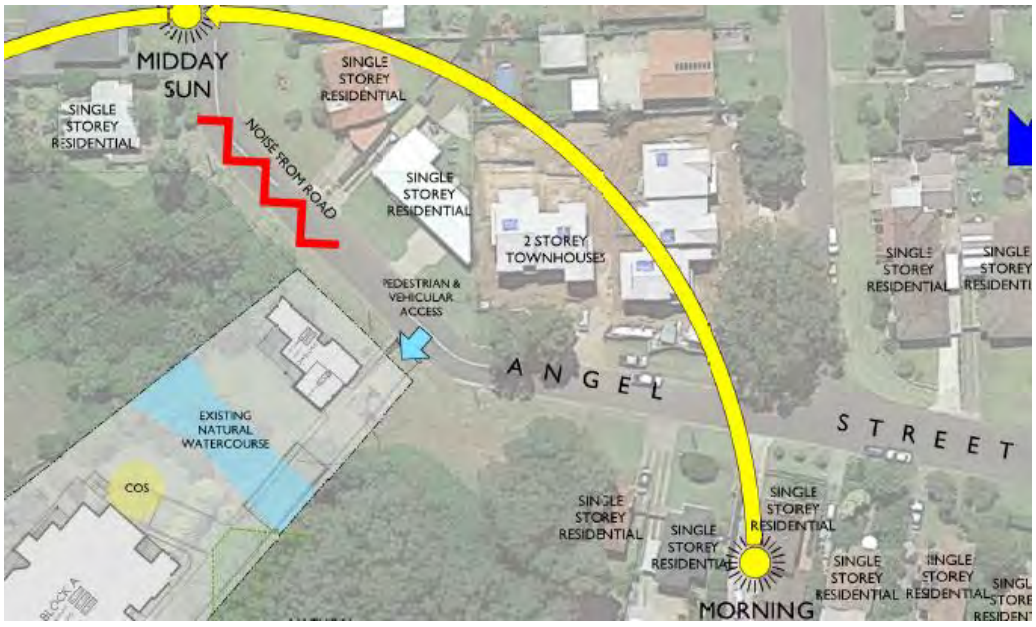


Figure 18: Excerpt from ADM Architects' Site Analysis Plan (A01) indicating Angel Street context and watercourse constraint for location of proposed dwelling.

Figure 19: Dwelling at No. 26 Angel Street opposite site

Figure 20: Two storey townhouse development opposite side of Angel Street, No 24)

The following objectives are relevant to the control:

a) To reinforce the existing character of the street and locality by acknowledging building setbacks.

b) To ensure that buildings are appropriately sited, having regard to site constraints.

c) To ensure building setbacks are representative of the character of the area.

d) To provide for compatibility in front setbacks to provide unity in the building line.

e) To ensure that setbacks do not have a detrimental effect on streetscape or view corridors.

f) To ensure that hard stand areas can be provided in front of garage without imposing on movement corridors (pathways, cycle ways and road reserves).

A streetscape analysis prepared by TCG Planning (refer Appendix 3) illustrates the proposed street setback of the proposed two storey dwelling facing Angel Street (minimum 4.5m to 5.2m) in the context of indicative street setbacks of neighbouring dwellings. It is noted that, while the minimum setback is 4.5m, the façade is splayed and the majority of the setback is 5m or greater. This analysis indicates that:

- The surrounding dwellings are setback a range of approximately 5.5m (including dwellings immediately across the road) to 7m and therefore there is already a variation in the 6m front setback of the DCP within the surrounding neighbourhood. If the proposed dwelling were set back 5.5m (ie. only one metre more than that proposed), similar to the reduced setback precedent of the nearby dwellings, it would have limited visual difference and arguably no additional adverse visual impacts to the streetscape.
- The subject site is located at a bend in the road, and has a different context to that of other dwelling locations within the streetscape, particularly having regard to the vacant/vegetated lands either side that will not be developed at the street frontage due to Council ownership and flood constraints (refer later point below).
- New development in the immediate vicinity (eg. townhouses at No. 24 opposite) are two storeys and the predominant older housing stock (single storey cottage) are likely to be redeveloped at this scale. The proposed two storey detached dwelling is proportionate with and consistent in character with the bulk and scale of these newer surrounding two storey dwellings.
- Furthermore, the site analysis plan (ADM Architects Dwg A01) also indicates that the natural watercourse to the rear within the subject site constrains the footprint of where a dwelling can be located near the Angel Street frontage. The flood-free portion of the site necessitates the siting of the dwelling to have a 4.5m setback. The dwelling footprint is minimal to and is restricted to flood-free areas. Council is requested to have regard to this significant constraint. If a dwelling was not located in this space, a significant portion of the site would be unnecessarily sterilised.
- The property to the south (Council Reserve) will not be built on and will remain an open space. Similarly, the property to the north (No. 41 Angel Street) is likely to be redeveloped (an Integrated Development Consent DA-2015/2016 was granted in September 2015 for the demolition of existing structures and construction of multi dwelling housing comprising 21 dwellings). The ADM Architects Dwg A01 (Site Analysis) illustrates an outline of the building footprints of this approved development to place in context with the subject land. As also shown on this Streetscape Analysis at Appendix 1, the "front" dwelling that is closest to Angel Street of the adjacent land (at No 41) has a considerable setback to avoid the creek location. The effect of this large setback is that the proposed two storey dwelling at No. 39 will be adjacent to large open space/unbuilt areas to either side that will not be built on. This will assist to minimise any impacts of the proposed built form compared to a situation where the properties on either side were developed for dwellings.

Having regard to the above analysis, it is considered that the proposed front setback of the dwelling fronting Angel Streets is acceptable having regard to the objectives of Development Control 4.2 and Council's support for the variation is sought.

7.2.2 Side and Rear Setbacks

Generous side and rear setbacks to adjoining properties is provided and separation by landscaping (including deep soil zone and riparian areas) and/or driveway and perimeter landscaping is provided which provides ample screening to/from adjoining land.

7.2.3 Apartment Amenity- Cross Ventilation and Solar Access

Cross Ventilation:

Most apartments are dual-aspect and the Apartment Amenity Compliance Table (at Appendix 2) confirms that the required number of apartments achieve cross ventilation, providing amenity to future residents of the apartments.

Solar Access - Variation Statement:

Clause 6.18 of Chapter B1 requires that the number of single aspect apartments with a southerly aspect (south-westerly to south-easterly) is limited to a maximum of 10% of the total number of apartments proposed.

The objectives of this control are:

(a) To minimise the extent of loss of sunlight to living areas and private open space areas of adjacent dwellings.

(b) To maximise solar access into living rooms and private open space of dwellings in the subject development.

(c) To provide an appropriate level of natural sunlight to living spaces to improve residential amenity and minimise the use of artificial light.

(d) To use a consistent sunlight access assessment approach for the assessment of solar access issues.

In this respect it is noted that four (4) of the 28 apartments (14%) are single aspect apartments with a south-easterly aspect. This is due to the east west orientation of site and the site constraints, including the siting of the watercourse which meanders through the site, and which has resulted in Block B being long and narrow in shape. In support of this variation it is noted that:

- The affected dwellings are Apartments A06, A12, B7 and B15. Such apartments are not directly southern facing but have a south-easterly orientation, allowing for natural sunlight access in the morning period.
- Despite this variation the development continues to met the requirements with respect to 70% of units achieving sunlight access (at 72%) and 60% of units achieving cross ventilation (at 62%).
- The development will therefore meet the objectives of this clause by maintaining an acceptable degree of sunlight access to living areas and private open spaces, based on adherence to the 70% sunlight access standard. Variation to the 10% southern facing unit standard is therefore considered to be justified.

7.2.4 Visual Impact and View Impacts

Existing views are limited to escarpment views to the west and north and are limited by existing mature vegetation. The proposed buildings are limited to two storeys and provide ample setbacks from side and rear properties and hence view sharing considerations and measures are considered to be satisfactory.

7.2.5 Overshadowing and Solar Access

Adjoining Properties: Overshadowing diagrams prepared by ADM Architects (Dwgs A23) confirms that no adjoining residential properties will be overshadowed.

Proposed Residential Development: The Shadow diagrams prepared by PRD Architects also confirm that the dwelling yard area and communal open spaces of Blocks A and B will receive the prescribed minimum amount of sunlight on June 21. The Apartment Amenity Compliance Table (at Appendix 2) also confirms that 71% of the 28 apartments receive the required level of sunlight access achieved on June 21.

7.2.6 Private Open Space - Variation to Balcony Areas of Unit A06

The front dwelling achieves the requirements for open space areas in Section 4 of Chapter B1. Section 6.14 of Chapter B1 Residential Development specifies that private open space areas must be provided for each dwelling within a residential apartment building in the form of a balcony, courtyard, terrace and/or roof garden. Private open space areas for each apartment meet the solar access requirements of the DCP and there is ample privacy to each dwelling having regard to the generous setbacks (including deep soil zone planting) that screens these areas from adjacent properties.

A variation is sought to the requirement for the ground floor apartment terraces of Unit A06 to have a minimum area of 25m^2.

Justification: All ground level unit courtyards have a minimum area of 25m^2 with the exception of the 1 bedroom Unit (A06) which has 23m^2 courtyard area. The variation sought therefore is limited to one unit (reduced from three) which is non-compliant by only 2m^2. This minor variation is considered acceptable, in particular for a one bedroom unit as the private open space for A06 will meet the objectives of this control as: (i) the apartment is well designed, functional, and is directly connected to living areas and the main bedroom; and (ii) provides future residents excellent amenity including a natural outlook and spacious environment. In addition, favourable orientation providing solar access is achieved. Hence support for the variation is sought.

7.2.7 Parking, Traffic and Access (WDCP 2009 Chapter E3)

The site design incorporates an internal combined ingress/egress driveway providing access to the front dwelling (double garage), and the basement parking areas of Blocks A and B. A turning area for large vehicles is provided between Blocks A and B. The driveway has been designed to cross the watercourses that traverse the site and in accordance with flooding considerations. The basement parking areas provide the required resident and visitor car parking space in addition to motorcycle and bicycle spaces.

A Traffic Impact Assessment prepared by Bitzios Consulting (dated 23/2/2018) accompanies the application and concludes the following:

> *"The key findings of the traffic impact assessment for the proposed residential development located at 39 Angel Street, Corrimal, are as follows:*

- *the proposed development will consist of 28 medium-density residential flats and one (1) low-density residential dwelling;*
- *the proposed development is estimated to generate 17 vehicle trips in the AM and PM peak hours;*
- *the estimated traffic generated by the development is not expected to have any notable adverse impact on the surrounding road network or intersections;*
- *the expected daily traffic volumes post development construction are not expected to exceed road hierarchy thresholds of Angel Street;*
- *the on-site parking layout shall comply with the relevant requirements of Australian Standards AS2890and Council's DCP;*
- *the required sight distance, in accordance with AS2890.1, is achievable in both directions from the proposed driveway;*
- *driveway gradients, to be confirmed by KF Williams, shall not exceed 1:6.5 (15.4%) and rate of change of grade must not exceed 1:16 (7.25%) in 7m of travel;*
- *swept path assessment demonstrates that a 12.5m HRV can safely and efficiently service the site, manoeuvre within the site and ingress and egress in forward gear;*
- *bus stops servicing several routes are available within 400m of the development site and train stations are located approximately 2km from the site. As such, there is an acceptable level of amenity for public transport usage; and*
- *there are no existing pedestrian or cycle facilities on Angel Street.*

Based on the above assessment, we conclude that there are no significant traffic or transport impacts associated with the proposed development to preclude its approval and relevant conditioning on transport planning grounds."

In addition, a report addressing Traffic Data and a Road Safety Audit (prepared by Bitzios Consulting Ref: P3508.001L dated 4/10/2018) now accompanies the application to address matters raised by the Local Planning Panel at its meeting of August 2018. The traffic data provided was based on a traffic count survey undertaken in two locations in Angel Street for a period of one week in August 2018. The traffic count considered traffic volumes, speed surveys and road capacity and the survey assessment identified the following:

"*Table 4 quantifies the daily design traffic and compares it against the maximum daily traffic thresholds for each road section. The maximum daily background traffic adopted was for the day with the highest maximum daily background traffic for each road section. The daily development generated traffic for 41 Angel Street has also been included to estimate the cumulative impact of both developments. As identified in Table 4, both road sections are expected to accommodate the estimated increase in daily traffic volumes as a result of the inclusion of the proposed development.*"

The road safety audit did not raise any issues with the location or the geometry of the proposed development access.

7.2.8 Landscaping and Deep Soil Zone (WDCP 2009 Chapter E6)

The Landscape Plan (Ref: 1662-LD01) prepared by Ochre shows the siting of planting for the entire site and illustrates the extensive areas of the site to be planted, including mass planting of the deep soil zone, communal areas for use by future residents of Blacks A and B, and vast riparian areas (with species to be consistent with the accompanying Vegetation Management Plan). A total of 7009m^2 of landscaped area is provided which equates to 62.3%, in compliance with the 30% required under the provisions of Chapter B1 of WDCP 2009. The deep soil area is located adjacent to the southern boundary of the site (providing screening

existing residential areas), with a minimum dimension of 6m, also in compliance with the DCP 2009 controls. The deep soil areas (including the riparian zone) is 4506m^2 (40% of the site area).

7.2.9 Adaptable Unit and Access for People with a Disability (WDCP 2009 Chapter E1)

A 'Statement of Compliance Access for People with a Disability' prepared by Accessible Building Solutions (Job No: 217150 dated 21.8.17) accompanies the application and addresses compliance of the proposal with the following:

- The access provisions of the Building Code of Australia;
- The Access to Premises Standard;
- AS1428 suite of standards;
- AS2890.6 for car parking;
- AS1735.12 for lifts;
- AS4299 Adaptable Housing;
- WDCP 2009 Chapter E1 'Access for People with a Disability'

The report indicates that:

- *Four (4) adaptable units are required by the Council's DCP. The units designated as adaptable are units numbers A06, A12, B07 & B15.*
- *At DA stage there is insufficient information to certify compliance with the Standard, however, in accordance with the table below, the units can comply with the spatial requirements of AS4299 for Adaptable Housing.*
- *Statement of Compliance: On the basis of the....assessment, I am satisfied that the proposal can achieve compliance with the access provisions of the BCA, and the essential requirements of AS4299 – Adaptable Housing.*

7.2.10 Residential Waste Management (WDCP 2009 Chapter E7)

A Site Waste Minimisation and Management Plan prepared by ADM Architects outlines the waste storage bin requirements for the development utilising the rates within the DCP. Blocks A and B (combined) generate need for 6x240L recycling bins; 2 green waste bins, and 10 waste bins to be stored in a dedicated common storage room within the basements of these buildings (Block A provides for 8 bins, and Block B 12 bins). A caretaker will wheel the bins along a suitable grade to the designated temporary bin pick up areas located along the proposed driveway for collection by a private waste contractor (refer to areas indicated on Landscape Plan). The front dwelling is to be provided with one 240L bin each for waste, recycling and green waste to be put on the Angel Street kerb for Council collection.

7.2.11 Tree Removal and Protection (WDCP 2009 Chapter E17)

An Arboriculture Impact Assessment prepared by Allied Tree Consultancy dated 30 June 2017 accompanies the development application. The report assesses forty-six trees located on and adjacent to the lot (that would pose part of the TPZ to encroach into the lot), and discusses the viability of these trees based on the proposed works. The trees are a combination of planted and remnant species. The report provide recommendations based on the tree significance and condition, together with the impact on these trees by the development. The recommendations of the report are summarised as follows:

- *7.1.1 Trees and zones of protection (TPZ/SRZ) outside of the proposed design: The following trees can be retained as the proposed works do not conflict with their location: Trees no. 3, 9, 13, 14, 15, 16, 19, 20, 21, 22, 23, 27, 28, 33, 34, 35, 36, 37, 40, 41, 42, 43, 44, and 45.*
- *7.1.2 Trees providing poor form (Low significance, can be removed): Trees no. 4, 35 and 41*
- *7.1.3 Trees directly conflicting with the design (require removal): Trees no. 4, 10, 11, 12, 17, 24, 25, 26, 31, 32, 39 and 46*
- *7.1.4 Trees subject to a minor encroachment (could be retained relative to the design): Trees no. 1, 2, 38.*
- *7.1.5 Trees subject to a major encroachment: and require removal (Trees 18, 29 and 30):*
    - *Tree No 18: This tree cannot be retained. This tree would require removal due to the conflicting location with the design.*
    - *Tree no 29: The tree will directly conflict with the basement excavation. Based on this proposed design, this tree cannot be retained. This tree would require removal due to the conflicting location with the design.*
    - *Tree No 30: The encroachment is composed of the excavation required for the basement and driveway. This tree would require removal due to the conflicting location with the design.*
- *7.1.5 Trees subject to a major encroachment: which are significant plantings and are neighbouring assets, therefore must be retained and protected from any site works (Trees no. 5, 6, 7 and 8)*
    - *Tree no. 5: the extent of works comprising the encroachment should not adversely affect the root system within the TPZ due to the lack of excavation.*
    - *Tree no. 6: The encroachment of 28.5% only consists of 3.3 percentage points of the TPZ that is adversely affected. The remaining portion of the encroached TPZ though coved by bridge/drive will retain the root system and is not considered to offer an adverse impact on the tree.*
    - *Tree no. 7: The encroachment of 19% consists of 9.5 percentage points of the TPZ that is adversely affected. The remaining portion of the encroached TPZ though coved by drive will retain the root system and is not considered to offer an adverse impact on the tree.*
    - *Tree No 8: The encroachment is three percentage points in excess of the minor encroachment and is not considered to provide sufficient impact to compromise the tree.*
- *7.2 Compensatory Planting: Based on the tree loss, and the size of the proposed lot relative to the scale of the proposed development. Compensatory planting is recommended to be included in the landscape plan. At least ten (10) trees are recommended to be included in the landscape plan for this lot. The tree species chosen must produce a mature height of at least 15m and be indigenous to the Illawarra.*

The submitted Landscape Plan by Ochre Landscape Architects references the Arborist Report and, in accordance with the above recommendations, identifies 16 trees on the site to be removed. The remaining 30 trees assessed (including some located on adjacent properties) are to be retained.

Of particular significance is that the area shown as located within the WLEP 2009 Natural Resources Sensitivity - Biodiversity Map contains trees that overhang the subject land but are located within the adjacent Council reserve (Trees 5, 6, 7, 8 and 9). All of these trees are proposed to be retained and, Trees 5-8 have minor encroachments to the tree protection zone, however the Arborist Report indicates that the development will not have an adverse impact on these trees.

In April 2018 further information was provided by TCG Planning seeking justification for the removal of Tree 18:

"Regarding Tree 18, it is the proponent's intention to remove this tree, noting that its siting centrally within the site, adjacent to the (limited) flood-free areas within the highly constrained site. The Landscape Plan confirms that as many trees as possible will remain on the site, and where a loss of trees is to occur, compensatory planting will provided. The Arboricultural Impact Assessment dated August 2017 prepared by Allied Tree Consultancy addresses all trees on site. It is noted from Table 1 - Tree Species Data that a total of 10 Eucalyptus pilularis (Blackbutt) will be retained across the site. It is therefore only one of these 11 Blackbutt trees across the site which will be removed (Tree 18). All remaining Blackbutt trees - Tree 5, 6, 7, 8, 9, 19, 20, 21, 22, 23, 24 will remain.

Further root mapping for Tree Nos. T5, T6, T7 and T8 (as requested by Council) was addressed on the 'Arborist Addendum' prepared by Allied Tree Consultancy (Ref: 3107A, dated 13 April 2018). The Addendum provided the methodology and outcomes of a detailed root mapping exercise to identify the impact of the development (principally the proposed driveway) on these trees. The report concludes:

"Based on the number of roots exposed and the proposed design, the impact on these roots by severance is not considered to provide an impact on the stability or vitality for trees no. 5, 6, 7 and 8. This has not allowed for the bridge design, however accounting for the bridge location and footing type, the root impact could be less than those uncovered during this exercise. Any root severance must follow the conditions titled; Root pruning."

Revised Design: Retention of Tree 18 and Remnant Vegetation

Development Application DA-2017/1064 was considered by the Wollongong Local Planning Panel (WLPP) on 15 August 2018 at which time the Panel deferred the application as it was "*concerned that the following aspects of the proposed development have not been adequately resolved:*

- *The size of the building footprints for Blocks A & B should be reduced to facilitate retention of the existing mature Blackbutt tree in the vicinity of Block A, to avoid the need for encroachment into the foreshore building line and to provide improved amenity for future occupants;*
- *Implementation of the applicant's ecological report (Biosis, April 2018) recommendation in Table 4 to avoid clearing of Illawarra Wet Gully Forest by "incorporating remnant vegetation into the design as native garden"*

Accompanying this revised Statement are revised architectural plans that amends the basement of Building A to accommodate the retention of Tree 18. An Arborist Addendum Report (Allied Tree Consultancy, October 2018) is also submitted that assesses the impact of the revised design, which encroaches within the dripline and root zone of Tree 18. The report confirms that the design will "allow for long-term tree retention" and the encroachment "is not considered to pose any significant impact on the tree", thereby satisfying the first point of the WLPP's concerns (regarding the retention of Tree 18). The addendum report summarises the impact as follows:

"The amended design has allowed for the retention of No. 18. This tree can be retained relative to the nominated zones of protection (TPZ, SRZ) and based on the requirements of the Protection Specification, Section 8.0, see Arborist Report. The following conditions are required for the design to accommodate this tree;

1. *No excavation exists in the area of the TPZ, other than the basement and piers*
2. *The floor is suspended above grade, and include a bed of stone aggregate to retain gas exchange,*

3. *No strip type footing or strip type excavation is permissible in the area of the TPZ.*
4. *A single 1st order branch (450mm in diameter, 16m long) extending south has been nominated for removal.*
5. *Measures that can reduce issues related to tree debris fallout should be incorporated into the design, example, gutter guard.*
6. *Installation of nominated tree protection measures."*

An amended Landscape Plan also accompanies the revised design (Ochre Landscape Architects, Rev B dated 26/10/18). In response to the second point of the WLPP's concerns, Ochre Landscape Architects advised TCG Planning that the submitted Landscape Plan already incorporated remnant vegetation into the riparian zones. Ochre indicated that the amended Landscape Plan slightly extends some of the proposed boundary gardens with notes included about linkages to the riparian zones. The amended Landscape Plan also now includes additional locally growing native species to the proposed species list (which are highlighted with an asterisk). The amended plan also indicates riparian zones coloured in green to clearly illustrate the extent of upgrading and planting. Hence. The updated Landscape Plan incorporates the recommendation in Table 4 of the Biosis ecological report (April 2018) to avoid clearing of Illawarra Wet Gully Forest by *"incorporating remnant vegetation into the design as native garden"*. Therefore, the second point of the WLPP's concerns (native vegetation retention) is satisfied.

7.2.12 Vegetation Management (WDCP 2009 Chapters E6, E17, E23)

A Vegetation Management Plan (VMP) prepared by Southern Habitat accompanies the development application. The VMP aims to (page 6):

- *Provide an assessment of the current vegetation of the site (both native and weed species);*
- *Provide an assessment of site habitat values and restoration potential;*
- *Provide recommendations for the management of native and weed species on the site;*
- *Provide a comprehensive works methodology to enable rehabilitation activities to take place, thereby creating a sustainable environmental state that will contribute to the overall health of the site;*
- *Provide a framework for the maintenance of the site during and following restoration activities.*

The key outcomes of the VMP are summarised below:

- *Summary of Habitat Values (p26-27): the habitat value of the subject site was strengthened by the: (1) lack of herbivory or vegetation damage to native vegetation; (2) presence of mature, healthy native canopy species and (3) potential for native recruitment from upstream sources. The habitat value of the subject site was weakened by the: (1) high abundance and diversity of weed species; (2) low diversity and abundance of native species; (3) recruitment of exotic vines into the canopy; (4) the discontinuous nature of the subject site to surrounding vegetation and (5) the level of anthropogenic disturbance within the subject site and it's surrounds. Based on the accumulation of our observations, we consider the habitat value to be low across the subject site.*
- *Restoration Potential (p27): The subject site contains a low to moderate assemblage of native species with low structural diversity (i.e. groundcover, shrubs, vines and trees). Some native trees were observed in a healthy state however connectivity was deficient. Understorey species included Centella asiatica, Commelina cyanea, Oplismenus aemulus and Pseuderanthemum variabile in low abundance and*

restricted to areas of limited weed occupancy. We consider that the subject site contains a low resilience and will require intervention to rehabilitate the site.

- *Recommended Species for Revegetation (p45-46): The subject site contains a low to moderate assemblage of native species with low structural diversity (i.e. groundcover, shrubs, vines and trees). Some native trees were observed in a healthy state however connectivity was deficient. Understorey species included Centella asiatica, Commelina cyanea, Oplismenus aemulus and Pseuderanthemum variabile in low abundance and restricted to areas of limited weed occupancy. We consider that the subject site contains a low resilience and will require intervention to rehabilitate the site. At the completion of primary and secondary weeding, a combination of planting (assisted restoration) and ongoing weed control will result in appropriate densities commensurate the EBF community. Consideration has also been given to the intended roughness of the corridor with respect to conveyance of stormwater through the waterway. We anticipate the overall composition density of 3.00 units/m2. A minimum maintenance period of 2 years is recommended (p50) following weed control and revegetation.* TCG Note: the accompanying Landscape Plan prepared by Ochre Landscape Architects references the VMP and the recommended species listed in this section.
- *Monitoring and Reporting (p53-54): A monitoring program will provide an objective measurement of any changes to the site at a species, population and community level. A series of reports will be prepared during the recommended reporting period, with the aim to provide an objective assessment of the performance of the site against the Performance Criteria outlined in Table 5. As well as this quantitative component, the interim reports will also provide a review of the protection, enhancement and rehabilitation measures being undertaken as outlined in this VMP. A report shall be prepared by the consultant every six (6) months during the recommended two-year maintenance period that commences at the completion of revegetation of each nominated riparian stage on the subject site and any subsequent monitoring period that may be required. Once completed, reports shall be submitted to Seeman Pty Ltd and Wollongong City Council and DPI (Water).*

The VMP Concludes (p58):

- *This VMP provides the guiding documentation for the rehabilitation of the riparian corridors of the two tributaries within the subject site.*
- *All recommendations have been made following the legislative framework and guidelines from NSW Office of Water and Wollongong City Council. The VMP will provide the agreed basis for the restoration of the subject site.*
- *The provision of prescriptive Performance Criteria will allow the objective evaluation of the site's performance over the two year maintenance period and effective determination of whether successful environmental restoration has been achieved.*

- *If adopted, the recommendations made within this report will dramatically improve the health of vegetation throughout the site, assist in mitigating further erosional degradation as well as adding value to the surrounding area and contribute to landscape outcomes across the property and downstream.*

7.2.13 Riparian Management (WDCP 2009 Chapter E23)

The Vegetation Management Plan (VMP) prepared by Southern Habitat, in addition to addressing the vegetation habitat assessment and management for the site (refer Section 7.2.12 above) describes the

riparian environment and riparian corridor management for the site. The key aspects of the report (p11-14) that address riparian management (including reference to WDCP 2009 Chapter E23 'Riparian Land Management') are summarised as follows:

- *Riparian Areas within the Site: The riparian treatment zone, which forms the basis of this VMP, consists of a surface area of approximately 4,171m². Two tributaries traverse the subject site. One parallels the north-east boundary for approximately 34m. The other enters the site from the south-west boundary and travels north-east after which is meanders and exits from the eastern boundary for a total of approximately 155m. The proposed development will be directly adjacent to both riparian corridors.*
- *Hydrology (p14): Surface water moves across the site from west and north to the east. The measures outlined within this report will assist in improving the quality and flow of water entering the tributaries of Towradgi Creek from the proposed development and minimise sedimentation downstream.*
- *Creek Categorisation and Riparian Zones required (p11-13): The tributaries of Towradgi Creek within the subject site are indicating to be Category 2 – Terrestrial and Aquatic Habitat, determined utilising the Planning and Constraints Map for Wollongong City Council. The width requirements for this category involves 20m for the core riparian zone (CRZ) and a 10m vegetated buffer for each side of the watercourse, equating to a total vegetated riparian zone (VRZ) of 60m. Southern Habitat notes that the Wollongong DCP Chapter E23 – Riparian Land Management is superseded by and inconsistent with the NSW Office of Water's Guidelines for riparian corridors on waterfront land (NSW Office of Water, 2012). Employing the Strahler System, both tributaries within the subject site are categorised as a 2nd order watercourse. The requirement for this classification is 20m for each side of the watercourse from top of bank, totalling 40m plus the channel width (NSW Office of Water, 2012). In this case, the riparian corridor is degraded upstream, downstream and along the embankments of the subject site. Weed species are prolific and established along the tributaries, providing significant propagule source.*
- *Justification for Variation to Riparian Corridor Width required by DCP: Council may consider a variation to the minimum riparian corridor width for proposals involving alterations or additions to an existing building where, in the opinion of Council, the variation will not result in any adverse impact upon the functions of the riparian corridor or any adverse flood hazard risk or other hazard risk. In order to adhere to the requirements for a 2nd order watercourse, 7,960m² would be required for VRZ of the 11,250m² lot. This would encompass approximately 70% of the total land cover of the lot.*
- *Due to the level of degradation upstream, downstream and within the subject site of both tributaries, it is suggested that the riparian corridors aim to encompass any remnant vegetation along the waterways. Managing 5m of each embankment for the tributary adjacent to proposed Unit 1 for the length of the site will effectively assist in treating the predominant cover of weed species and provide opportunity for native revegetation and bank stabilisation for steep embankments. This covers an area of approximately 263m² including the channel width. Embankments adjacent to proposed Units 19-34 are more gently graded and also experience a high level of weed species occupation. By managing the minimum width of 10m for the southern embankment and offsetting the rest of the land to the northern boundary for the length of the tributary, a beneficial management zone can be obtained. A width of 10m north-east should be established to denote the VRZ to the east and run perpendicular to the lot boundary. This will cover an approximate area of 3,908m² for the second tributary and, therefore, a total area of approximately 4,171m² to be managed in accordance with this VMP. The recommended vegetation management zones are outlined in yellow in Figure 2 (of the VMP). These recommendations are believed to be more*

proportionate to the size of lot and the development, the current condition of extant vegetation and the condition of the tributaries upstream and downstream from the subject site.

- *Three areas of encroachment occur along the western tributary. These areas are a result of Block B and the associated driveway. The total area of encroachment is approximately 319m² and defined in red in Figure 3 (of the VMP) reproduced in this Statement as Figure 18 below. The total offset area to the north of the tributary is approximately 1,200m² and defined in blue in Figure 18 below. This effectively manages areas of remnant vegetation and those experiencing higher levels of weed occupation within the subject site.*

Figure 21: Map of the vegetation management zones (yellow), areas of encroachment (red) and offset (blue) of the riparian corridors. *(Source: Figure 3 of VMP by Southern Habitat)*

7.2.14 Flooding and Stormwater Management (WDCP 2009 Chapter E13 and E14)

The site is flood affected and a Flood Study prepared by KF Williams and Associates (Ref: KF112585-F-02 dated 22 August 2017) accompanies the application. This study was updated in March 2018 (Revision C) which addressed some matters raised by Council. Appendix B of the Study is a Flood Level Information Advice Certificate from Wollongong Council (Ref: 201700289, dated 22 March 2017) which provides the extracts from the Review Towradgi Creek Flood Study dated February 2015, indicating the 20% AEP (Annual Exceedance Probability), 1% AEP and PMF (Probable Maximum Flood) flood levels in the vicinity of the subject property.

- *<u>Report Purpose</u>: The purpose of this flood study is to demonstrate that the proposed internal access road crossing the two tributary watercourses can be designed to service the proposed development (which will involve the removal & replacement of an existing bridge). Appendix F of the report provides flood inundation maps for the 100 year ARI flood and PMF showing depth, flood level, velocity, VxD, and hazard over the flood plain/site. Comparison of flood levels are shown for each scenario.*
- *<u>Proposed Floor Levels</u>: Finished floor levels for each of the proposed blocks should be set at or above the greater of the PMF levels & the 100 year + 500mm freeboard levels. Nominated levels for each of the proposed blocks are as follows:*
    - *House FFL = at or above 17.50m AHD (above PMF)*
    - *Block A FFL = at or above 17.50m AHD (above PMF)*
    - *Block B FFL = at or above 18.1m AHD (100 year ARI plus freeboard)*

- *In order to comply with overall building height restrictions, the proposed ground floor level for Block B has been restricted to 17.89m AHD.*
- *In order to ensure habitable floors are protected from inundation in the event of a PMF, it it proposed to flood-proof the ground floor of Block B up to 18.30m AHD.*
- *This will be achieved by constructing a nib on courtyards set to RL18.3 and setting entry stair levels to RL 18.3.*
- *Additional refuge is available on the upper floor.*

- *Impact on other properties: A comparison of pre-development and post-development flood levels show that flood levels in the vicinity of neighbouring properties are unchanged.*
- *Capacity of bridge openings: The two proposed bridges modelled in the system have the capacity to convey the 100 year ARI and PMF discharge without overtopping in the post developed unblocked and blocked scenario.*
- *Hazard of bridge crossing: As no overtopping of the bridges occurs in the unblocked scenario, access the road can be classified low hazard as defined by the NSW flood plain development manual.*
- *Road Access: The access road is unaffected by a 100 year ARI flood and therefore provides safe pedestrian and vehicle access for floods up to and including 100 year ARI. The access road may be inundated at two locations during a PMF. The access road may be inundated at CH141 during PMF blocked conditions to a maximum depth of approximately 75mm. The duration of the overtopping in the event of a PMF will be quite short. Retaining walls set 100mm above PMF blocked levels are proposed at the basement ramps to prevent ingress of flood waters into the basement car parks.*

The report concludes:

- *The proposed access road and bridges have no adverse impact on other neighboring properties no upstream and downstream.*
- *The bridges do not overtop in the blocked and unblocked scenario*
- *Minor overtopping of the access road occurs in the bridge blocked scenario*
- *A bridge provided at the two crossings at the nominated levels will provide safe and satisfactory access to the entirety of the development.*

The Architectural plans indicate the finished floor levels and flood-proofing to be in accordance with the KFW study.

The KFW Stormwater Plan (C002) indicates all buildings to be connected to stormwater lines which flow to two On Site Detention points, which discharge to the two creeks with scour protection.

7.2.15 Construction Management: Demolition, Waste, Soil & Water (WDCP 2009 Chapters E7, E21, E22)

The following documents satisfy the requirements during the construction phase of the development regarding demolition, site management and waste disposal:

- Demolition Plan prepared by ADM Architects (Ref: A23) confirms the buildings to be demolished and the management measures during demolition.
- Landscape Plan (Ref: 1791-LDO1 and LD02) prepared by Ochre Landscape Architects indicate the trees proposed to be removed.

- The Soil and Water Management Plan (Ref: KF112585 Dwg C0005) prepared by KFW Engineers details the measures to be introduced during construction including soil management measures, sediment protection (silt stop fence, straw bale dam) and temporary entry/exit, and operational sequence.
- The Site Waste Minimisation and Management Plan prepared by ADM Architects details the anticipated quantity of demolition and construction waste for reuse, recycling and disposal.

7.2.16 Cumulative Impact

There is unlikely to be any adverse cumulative impacts as a result of the proposed development, given that the proposal is consistent with the objectives of the R2 Low Density Residential zone contained in WLEP 2009, and with the intent of the controls of WDCP 2009.

7.3 Suitability of the Site for the Development – Section 4.15(1) (c)

The subject site is zoned R2 Low Density Residential zone and has been designed having regard to the provisions of Wollongong LEP 2009 and DCP 2009. The site design has taken into consideration the constraints of the site, and it is considered that the site is suitable for the proposed development.

Appendix 1: Revised Architectural Plans (ADM Architects)

PROPOSED MULTI UNIT DEVELOPMENT
CONSTRUCTED IN TWO STAGES
COMPRISING OF A DETACHED DWELLING
AND TWO BUILDINGS ABOVE
BASEMENT PARKING

AT

LOT 56 DP 27796
39 ANGEL STREET
CORRIMAL

ARCHITECTURAL DRAWING SCHEDULE

No.	DESCRIPTION	SCALE @ A1
A00	TITLE SHEET	NTS
A01	SITE ANALYSIS	NTS
A02	OVERALL SITE PLAN	1:500
A03	DETAILED SITE PLAN A	1:200
A04	DETAILED SITE PLAN B	1:200
A05	DWELLING - PLANS	1:100
A06	DWELLING - ELEVATIONS & SECTION	1:100
A07	BLOCK A - BASEMENT PLAN	1:100
A08	BLOCK A - GROUND FLOOR PLAN	1:100
A09	BLOCK A - LEVEL 1 PLAN	1:100
A10	BLOCK A - ELEVATIONS	1:100
A11	BLOCK A - ELEVATIONS	1:100
A12	BLOCK A - SECTION	1:100
A12a	BLOCK A - TREE SECTION DD	1:100
A13	BLOCK B - BASEMENT PLAN	1:100
A14	BLOCK B - GROUND FLOOR PLAN	1:100
A15	BLOCK B - LEVEL 1 PLAN	1:100
A16	BLOCK B - ELEVATIONS	1:100
A17	BLOCK B - ELEVATIONS	1:100
A18	BLOCK B - SECTION	1:100
A19	COLOURS & MATERIALS SCHEDULE	NTS
A20	PRE & POST ADAPTATION PLANS	1:50
A21	PRE & POST ADAPTATION PLANS	1:50
A22	SHADOW ANALYSIS	NTS
A23	DEMOLITION PLAN	NTS
A24	STREETSCAPE PERSPECTIVE	NTS
A25	PERSPECTIVE	NTS

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THERMAL SPECIFICATION

NatHERS Thermal Performance Specification			
External Walls			
Wall Type	***Insulation***	***Colour***	***Comments***
Cavity Brick	Foilboard. Total Wall R1.8	Dark - SA > 0.7	Throughout all units
Brick Veneer	R2.0	Dark - SA > 0.7	As per house elevations except
Weatherboard Cladding	R2.0	Dark - SA > 0.7	As per house elevations except
SA - Solar Absorptance			
Internal Walls			
Wall Type	***Insulation***	***Comments***	
Plaster board on Stud	None	Internally in units and house	
Brick + Plaster Lining	None	Party walls	
Brick + Plaster Lining	R2.5	Walls between units and lobbies/stairs	
Floors			
Floor Type	***Insulation***	***Comments***	
Concrete	R1.4	All units with suspended slab over carpark	
Concrete	None	All units with adjoining unit below	
Concrete	None	House slab on ground	
Timber	None	House first floor except as below	
Timber	R2.5	House first floor suspended over outside air	
Ceilings			
Ceiling Type	***Insulation***	***Comments***	
Plasterboard	None	House & units ceilings with level above	
Plasterboard	R2.5	Ceiling with roof above	
Insulation loss due to downlights has not been modelled in this assessment. A sealed exhaust fan has been included in every kitchen, bathroom, laundry and ensuite.			
Roof			
Roof Type	***Insulation***	***Colour***	***Comments***
Metal	R1.3 Anticon foil faced blanket	Light - SA < 0.475	Throughout all house and units
SA - Solar Absorptance			
Glazing			
Glazing & Frame Type	***U-Value***	***SHGC***	***Comments***
Single Clear Aluminium	6.7	0.70	Sliding Doors throughout except as below
Single Clear Aluminium	6.7	0.57	Awning Type throughout except as below
Single Clear Low e Aluminium	5.4	0.58	Sliding Doors for units A01,05,07,11 & B06,08,14,16 and House
Single Clear Low e Aluminium	5.4	0.49	Awning Type for units A01,05,07,11 & B06,08,14,16 and House
U and SHGC values are based on the AFRC Default Windows Set. Glazing systems to be installed must have an equal or lower U value and a SHGC value ± 10% of the above specified values.			
Skylights			
Skylight Type	***Frame Type***		***Comments***
Single Glazed Clear	Timber and Aluminium		As per plans

DEVELOPMENT SUMMARY

SITE AREA	11250 m²
PERMISSIBLE FSR	0.5 : 1
PERMISSIBLE GFA	5625 m²
PROPOSED FSR	0.28 : 1
PROPOSED GFA	3144.7 m²
GFA BREAKDOWN	
DWELLING	208.7 m²
GROUND FLOOR	91.1 m²
LEVEL ONE	117.6 m²
BLOCK A (12 UNITS)	1216 m²
GROUND FLOOR	606 m²
LEVEL ONE	610 m²
BLOCK B (16 UNITS)	1720 m²
GROUND FLOOR	857 m²
LEVEL ONE	863 m²
PARKING REQUIREMENTS	
BLOCK A (10 UNITS 70-110m², 2 UNITS <70m²)	20 SPACES
RESIDENTIAL SPACES REQUIRED	17
RESIDENTIAL SPACES PROVIDED	17
VISITOR SPACES REQUIRED	2.4
VISITOR SPACES PROVIDED	3
BLOCK B (14 UNITS 70-110m², 2 UNITS <70m²)	27 SPACES
RESIDENTIAL SPACES REQUIRED	23
RESIDENTIAL SPACES PROVIDED	23
VISITOR SPACES REQUIRED	3.2
VISITOR SPACES PROVIDED	4
REQUIRED LANDSCAPE AREA - 30% OF SITE	3375 m²
PROPOSED LANDSCAPE AREA - 62% OF SITE	7009 m²
REQUIRED DEEP SOIL ZONE - 15% OF SITE	1688 m²
PROPOSED DEEP SOIL ZONE - 40% OF SITE	4506 m²

ISSUE	DATE	DESCRIPTION	Initials	chkd
D	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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FIGURED DIMENSIONS - These drawings are not to be scaled. Figured dimensions shall be used in all cases.
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COMPRISING OF A DETACHED DWELLING
AND TWO BUILDINGS ABOVE
BASEMENT PARKING
at
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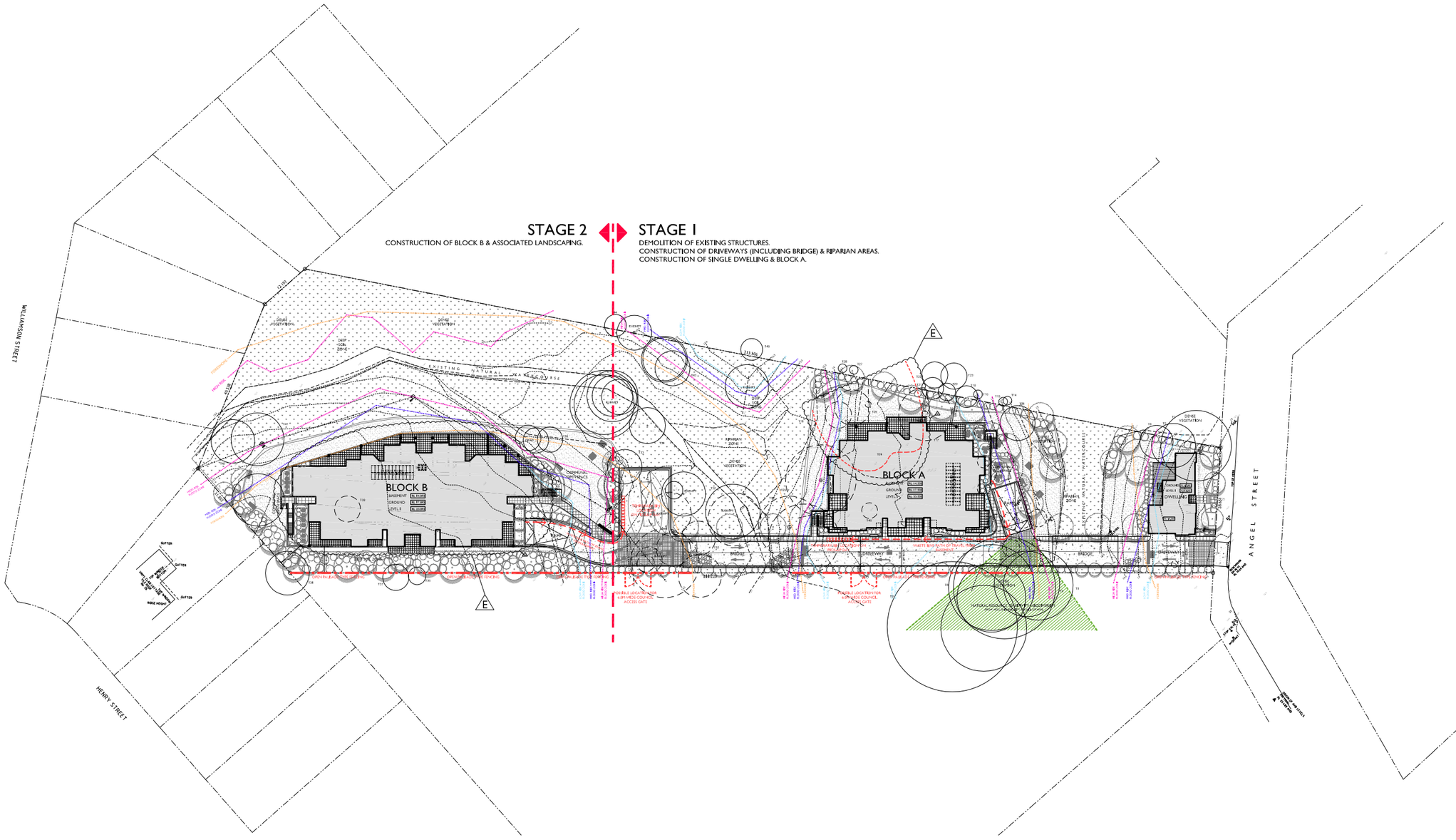
39 ANGEL STREET
CORRIMAL

scale NTS
date OCTOBER 2018
drawn RC MC chkd ADM
drawing
DEVELOPMENT APPLICATION
TITLE SHEET
Project No. 2017-06
Drawing No. A00
Issue D



OVERALL SITE PLAN

REFER TO CIVIL ENGINEER'S DOCUMENTATION FOR STORMWATER COLLECTION & ALL EXTERNAL SURFACE LEVELS.

REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION FOR ALL PAVING & PLANTING DETAILS.

ISSUE	DATE	DESCRIPTION	Initials	chkd
E	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
D	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	02.08.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
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at
LOT 56 DP 27796
39 ANGEL STREET
CORRIMAL

scale	1:500 @ A1	1:1000 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd	ADM

drawing
DEVELOPMENT APPLICATION
OVERALL SITE PLAN

Project No.	Drawing No.	Issue
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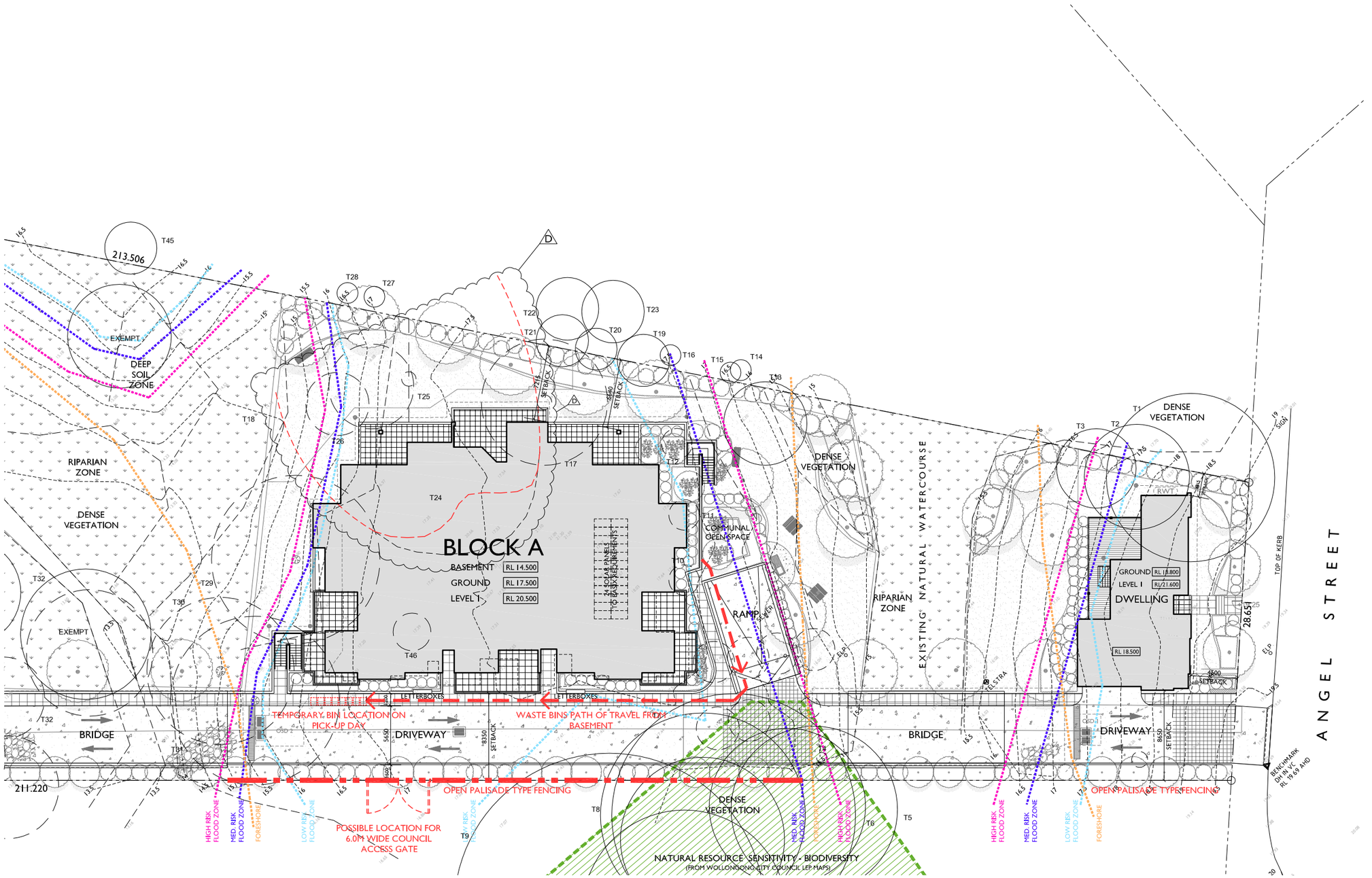

DETAILED SITE PLAN A

REFER TO CIVIL ENGINEER'S DOCUMENTATION FOR STORMWATER COLLECTION & ALL EXTERNAL SURFACE LEVELS.

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ISSUE	DATE	DESCRIPTION	initials	chkd
E	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
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C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
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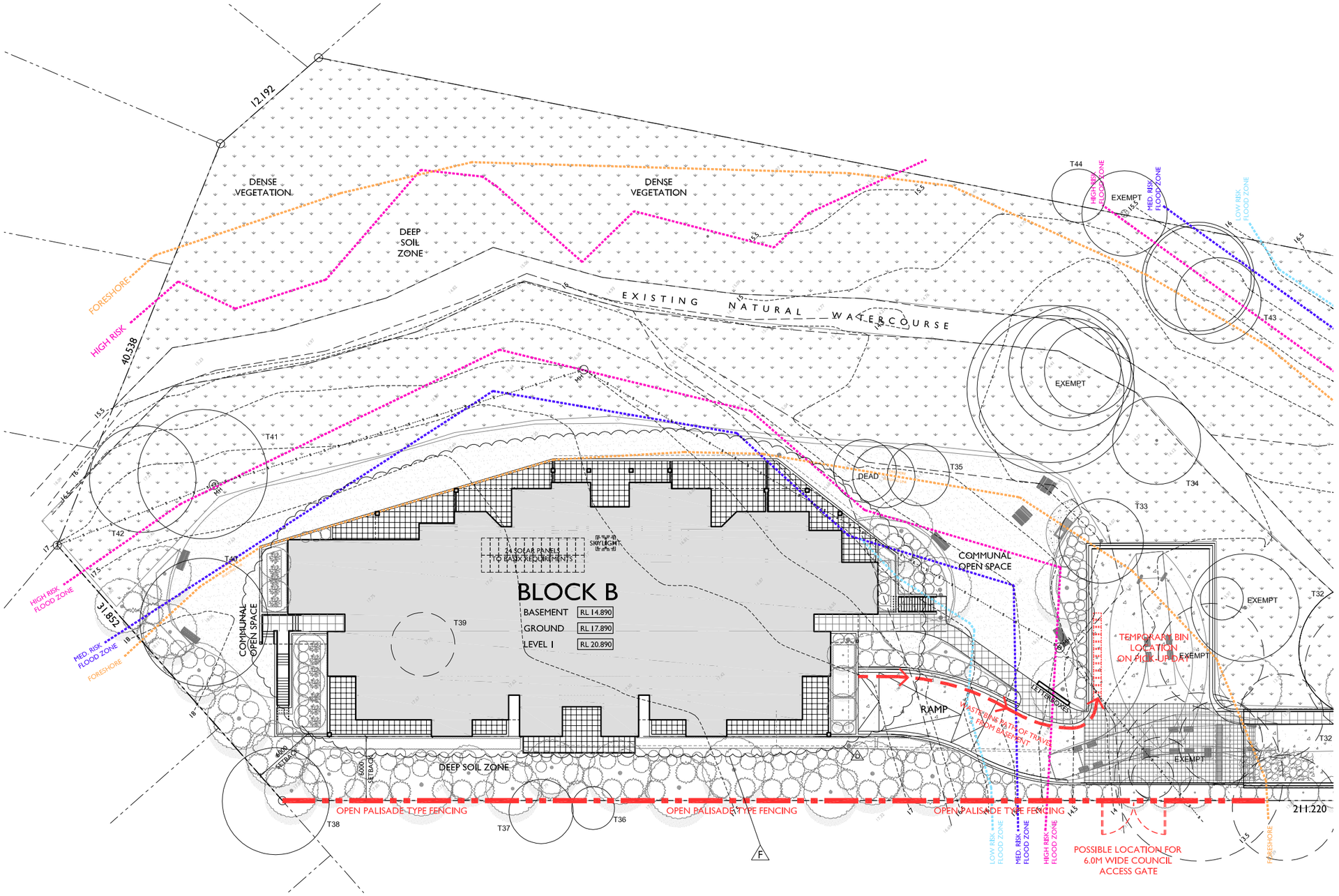
Project No.	2017-06
Drawing No.	A03
Issue	E



DETAILED SITE PLAN B

REFER TO CIVIL ENGINEER'S DOCUMENTATION FOR STORMWATER COLLECTION & ALL EXTERNAL SURFACE LEVELS.

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F	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
E	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
D	02.08.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
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scale	1:200 @ A1	1:400 @ A3	
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drawing	DEVELOPMENT APPLICATION DETAILED SITE PLAN B		
Project No.	Drawing No.	Issue	
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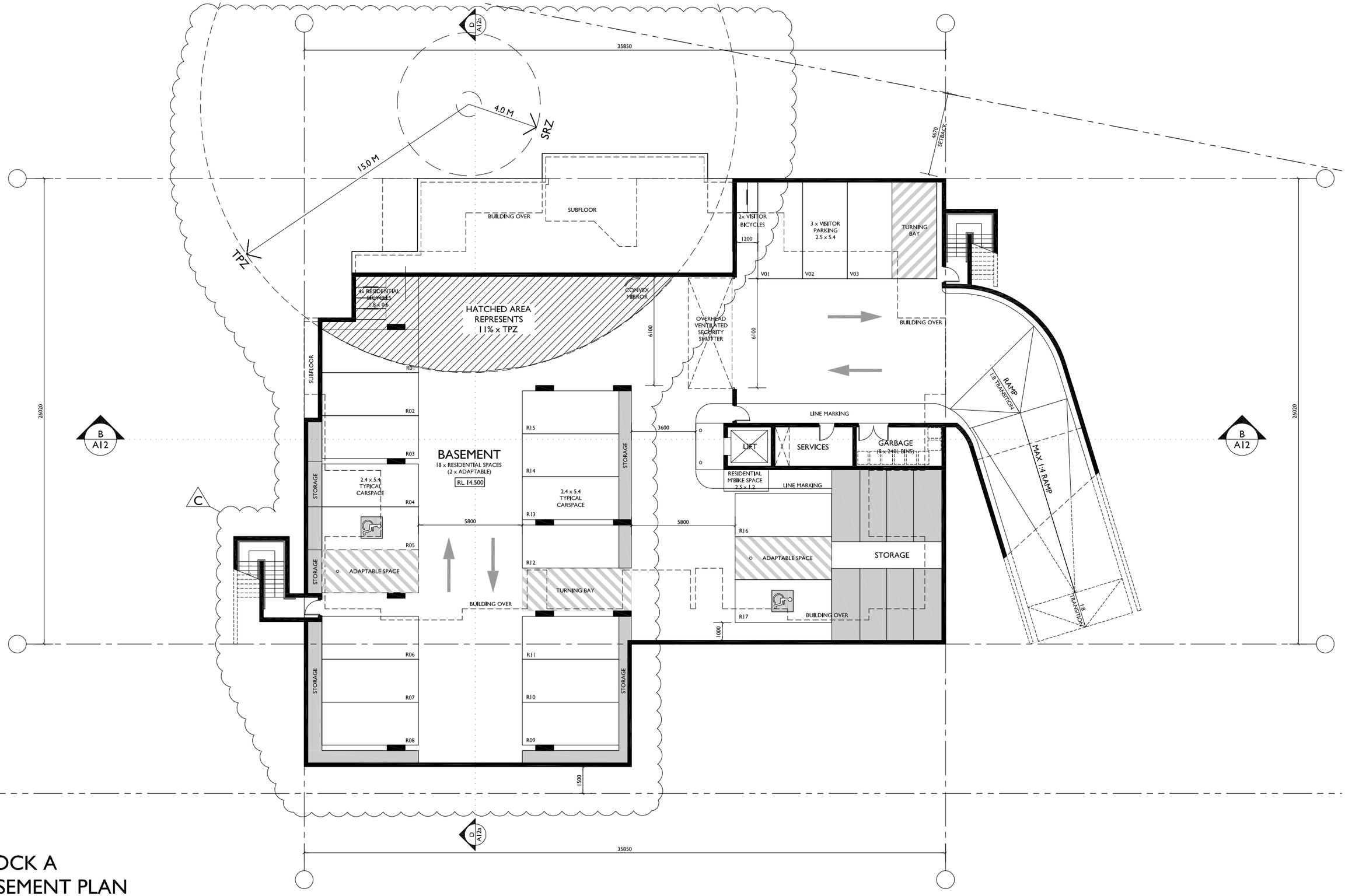

BLOCK A
BASEMENT PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
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scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
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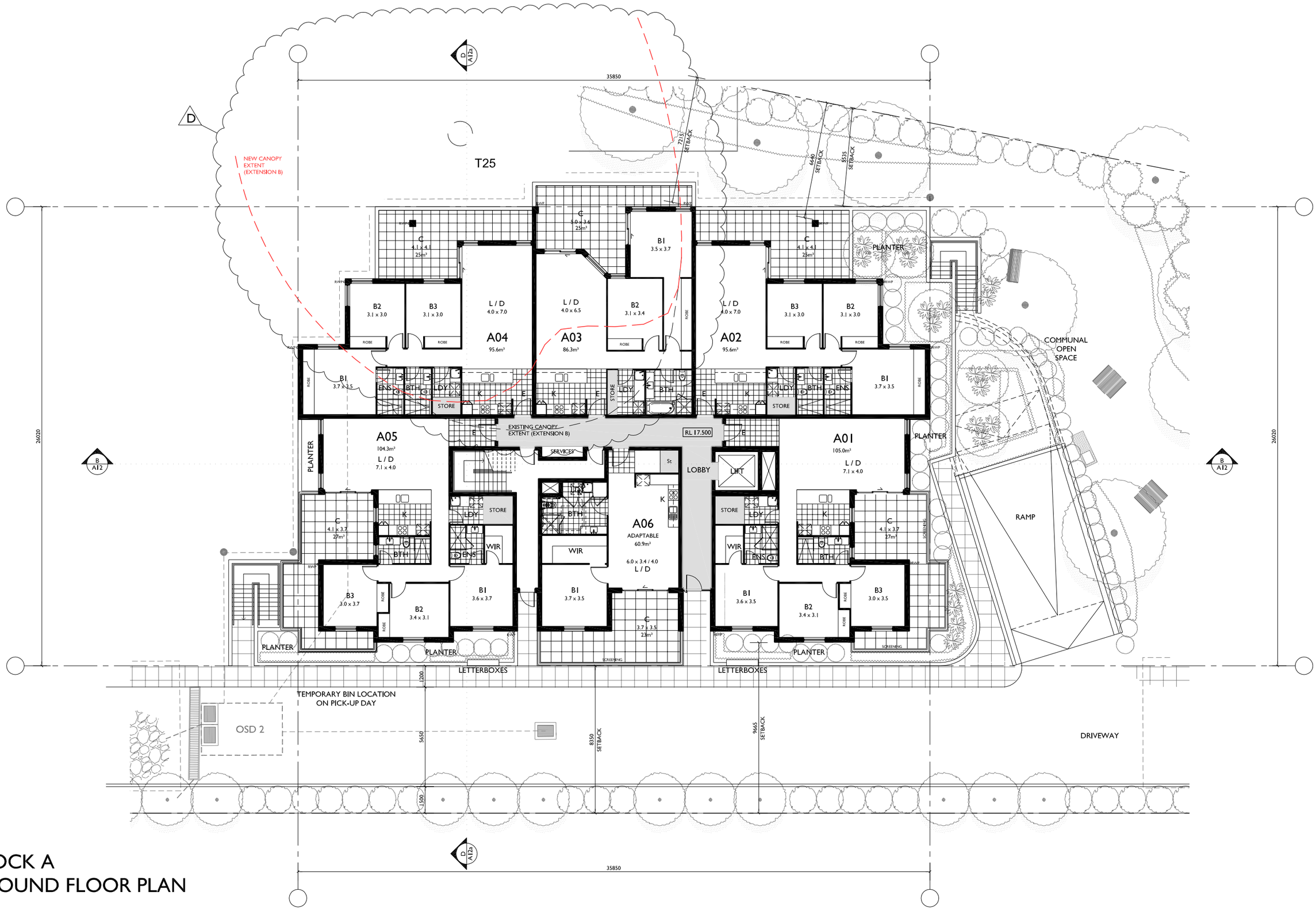
drawing	DEVELOPMENT APPLICATION BLOCK A - BASEMENT PLAN		
Project No.	Drawing No.	Issue	
2017-06	A07	C	



BLOCK A
GROUND FLOOR PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
D	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
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39 ANGEL STREET
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scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
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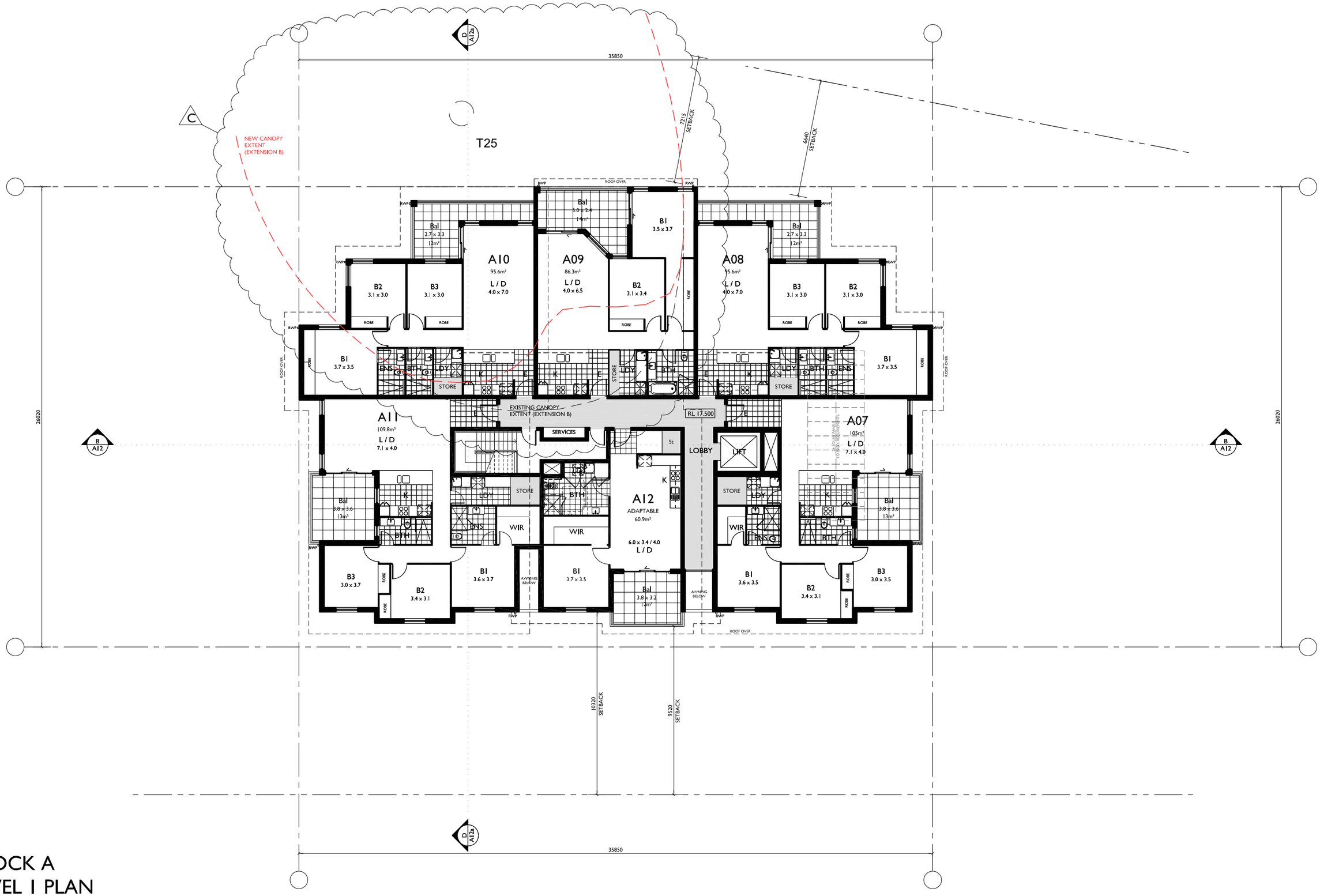
drawing	DEVELOPMENT APPLICATION BLOCK A - GROUND FLOOR PLAN		
Project No.	Drawing No.		Issue
2017-06	A08		D



BLOCK A
LEVEL 1 PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
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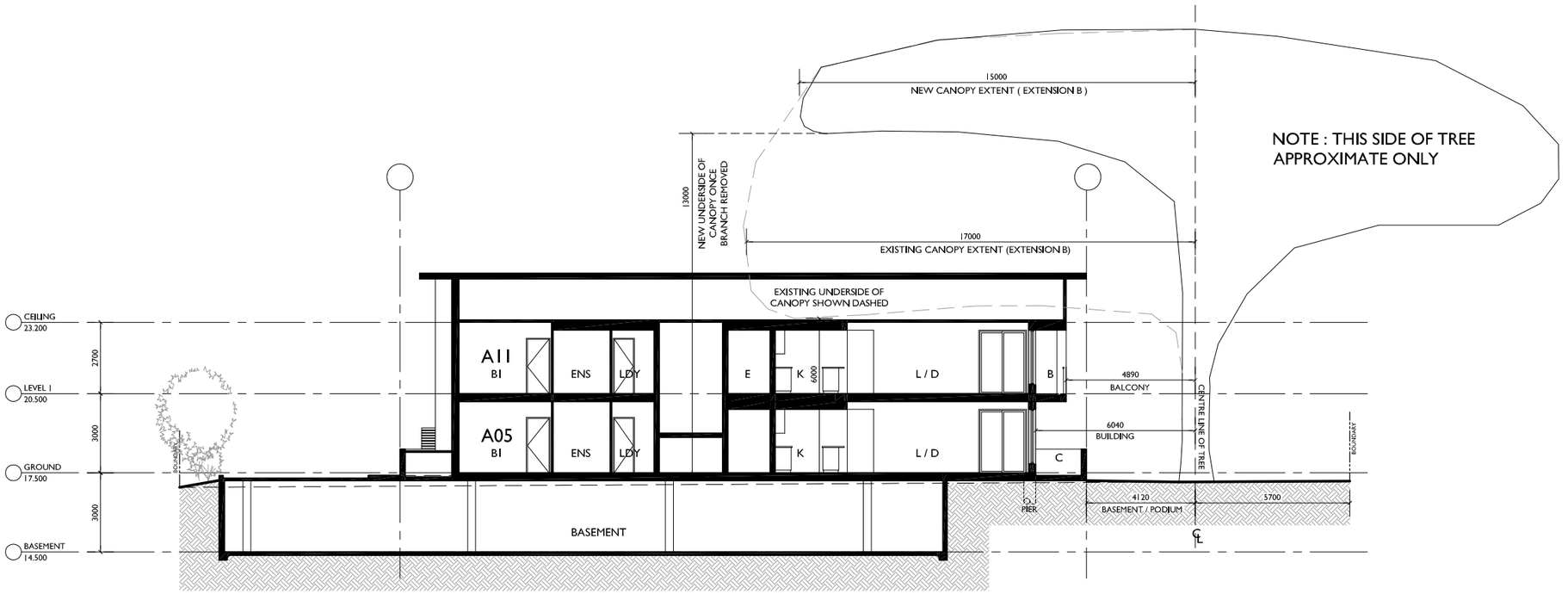
SHOALHAVEN LIFESTYLE LIVING PTY LTD

Project
PROPOSED MULTI UNIT DEVELOPMENT CONSTRUCTED IN TWO STAGES COMPRISING OF A DETACHED DWELLING AND TWO BUILDINGS ABOVE BASEMENT PARKING
at
LOT 56 DP 27796
39 ANGEL STREET
CORRIMAL

scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd	ADM
drawing	DEVELOPMENT APPLICATION		
	BLOCK A - LEVEL 1 PLAN		
Project No.	Drawing No.		Issue
2017-06	A09		C



SECTION D-D

ARBORIST REFERENCE - EXTENSION B

BLOCK A
TREE SECTION DD

ISSUE	DATE	DESCRIPTION	Initials	chkd
C	29.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	26.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

e These drawings are not to be scaled. Figured dimensions shall be used in all cases.

adm ARCHITECTS
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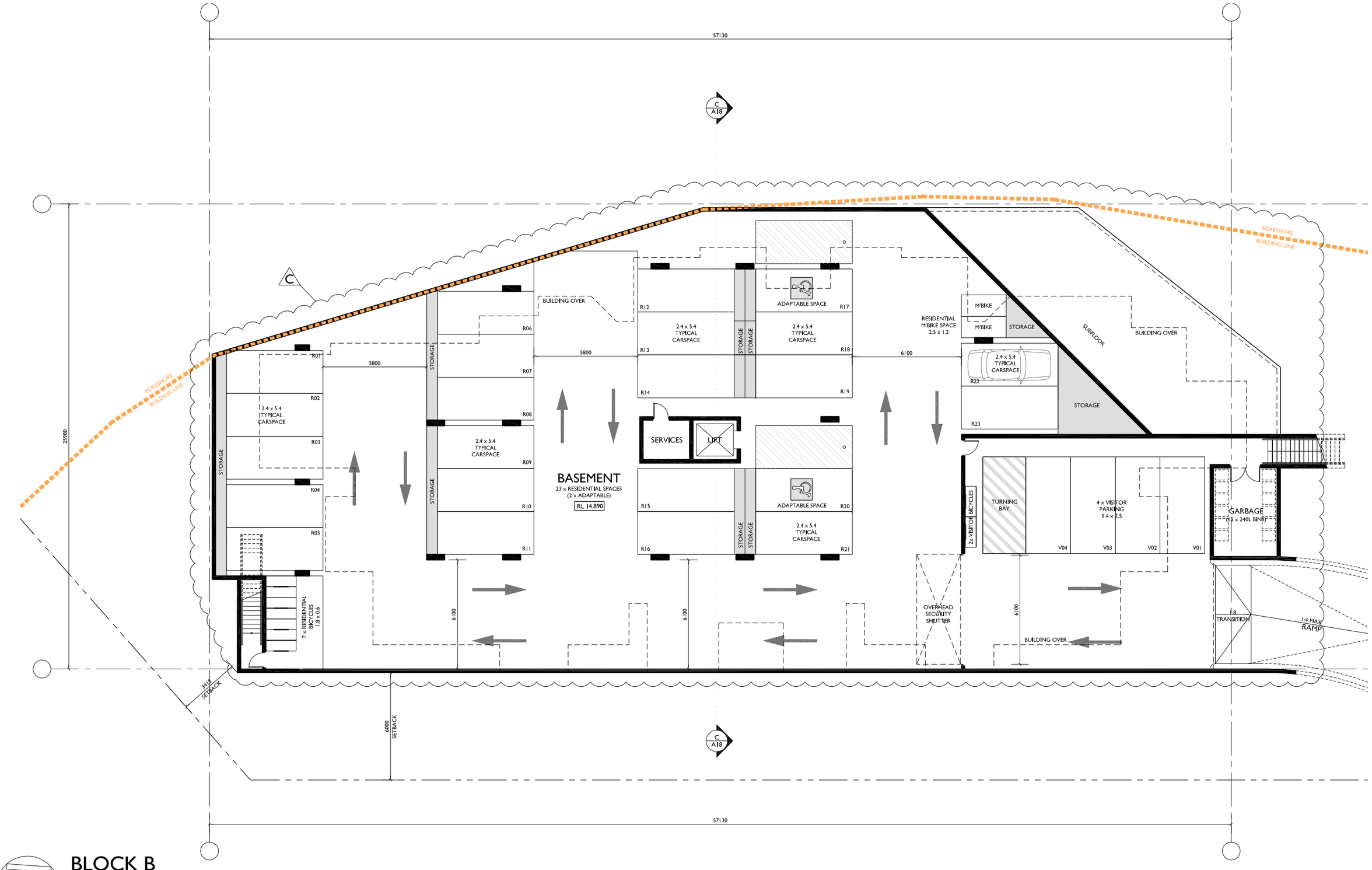
scale	1:100 @ A1 1:200 @ A3
date	OCTOBER 2018
drawn	RC MC chkd ADM
drawing	DEVELOPMENT APPLICATION BLOCK A - TREE SECTION DD
Project No.	2017-06
Drawing No.	A12a
Issue	C



BLOCK B
BASEMENT PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
C	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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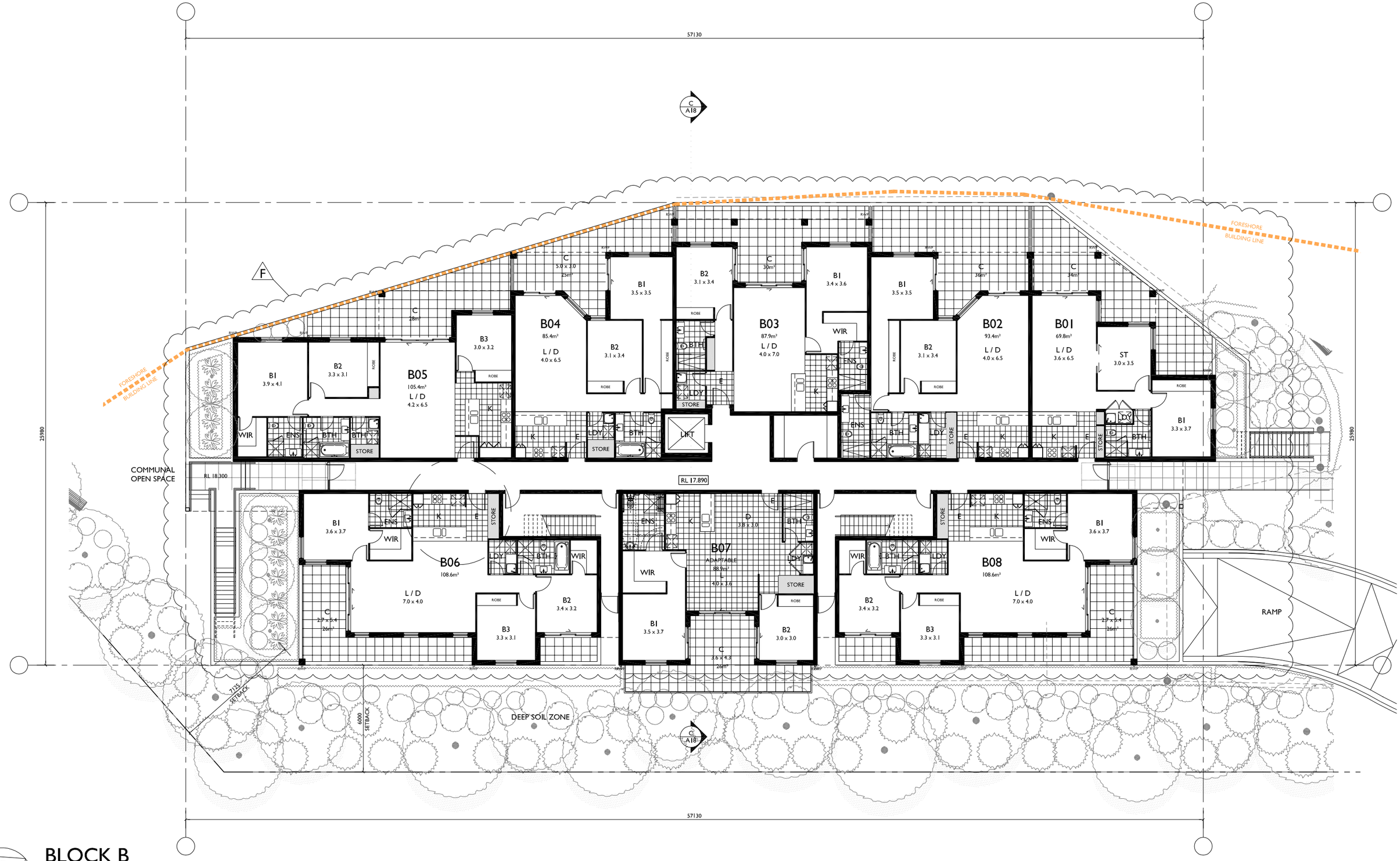
scale	1:100 @ A1 1:200 @ A3
date	OCTOBER 2018
drawn	RC MC chkd ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - BASEMENT PLAN
Project No.	2017-06
Drawing No.	A13
Issue	C



BLOCK B
GROUND FLOOR PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
F	06.11.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
E	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
D	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	11.10.18	REISSUED FOR DEVELOPMENT APPLICATION	MC	ADM
B	02.08.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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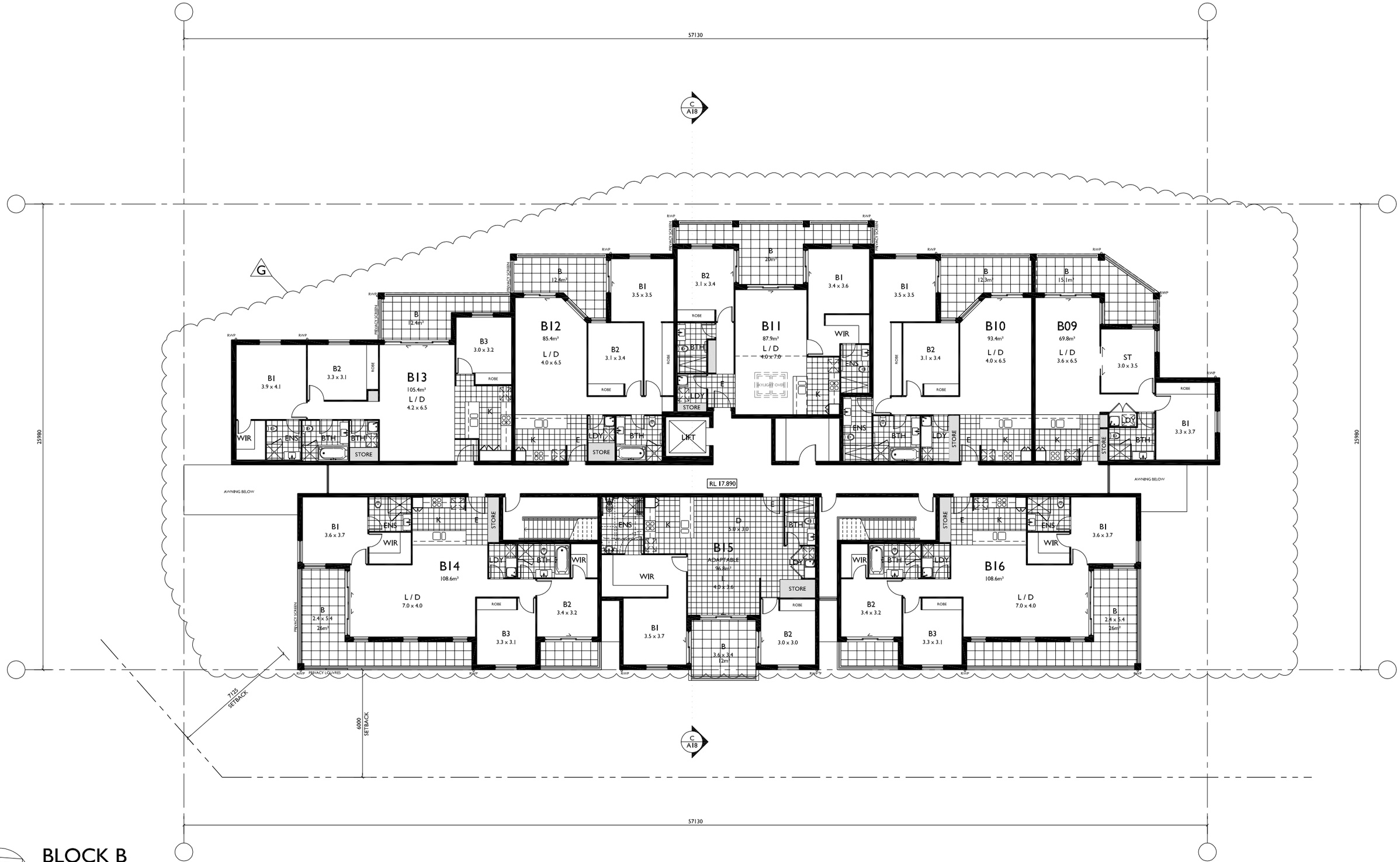
scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd	ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - GROUND FLOOR PLAN		
Project No.	Drawing No.	Issue	
2017-06	A14	F	



BLOCK B
LEVEL 1 PLAN

ISSUE	DATE	DESCRIPTION	initials	chkd
G	25.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
F	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
E	11.10.18	REISSUED FOR DEVELOPMENT APPLICATION	MC	ADM
D	02.08.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	RC	ADM

sign date

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FIGURED DIMENSIONS - These drawings are not to be scaled. Figured dimensions shall be used in all cases.
DISCREPANCIES IN DIMENSIONS/POSITIONS/LOCATIONS/FINISHES The Contractor is to verify any dimensional, location or finish discrepancy with ADM Architects prior to any physical construction or setting out so that ADM Architects is given the opportunity to resolve potential discrepancies or conflicts in sufficient time without causing abortive work. The Contractor shall be responsible for notifying ADM Architects of any such discrepancy or conflict that may arise on site.
CO-ORDINATION OF WORKS - These drawings are to be read in conjunction with the full set of consultant's drawings, specifications, reports and DA conditions.
NOMINATED ARCHITECT- The nominated Architect for ADM Projects (Australia) Pty Ltd T/AS ADM Architects is Angelo Di Martino ARB No.7608

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scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd ADM	
drawing	DEVELOPMENT APPLICATION		
	BLOCK B - LEVEL 1 PLAN		
Project No.	Drawing No.	Issue	
2017-06	A15	G	

SOUTH-WEST ELEVATION

BLOCK B ELEVATIONS

ISSUE	DATE	DESCRIPTION	initials	chkd
D	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	MC	ADM

sign date

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scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd ADM	
drawing	DEVELOPMENT APPLICATION BLOCK B - ELEVATIONS		
Project No.	Drawing No.	Issue	
2017-06	A16	D	

SOUTH-EAST ELEVATION

SOUTH-WEST ELEVATION

BLOCK B
ELEVATIONS

ISSUE	DATE	DESCRIPTION	initials	chkd
D	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
C	01.06.18	REISSUED FOR DEVELOPMENT APPLICATION	DQ	ADM
B	20.02.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	MC	ADM

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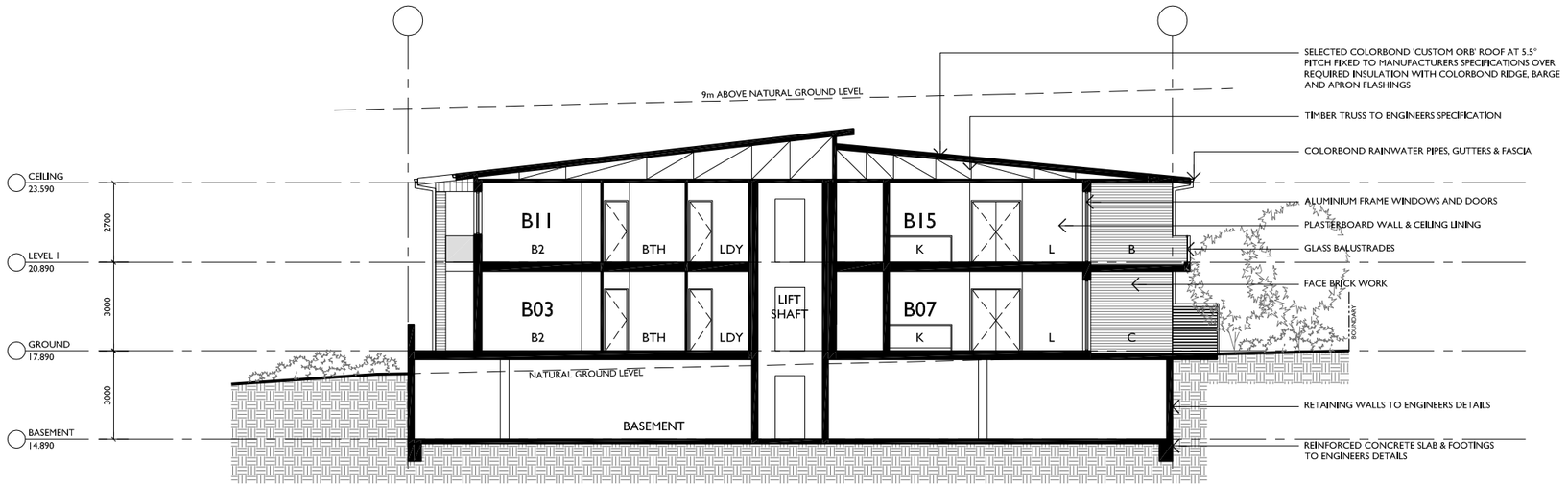
scale	1:100 @ A1 1:200 @ A3
date	OCTOBER 2018
drawn	RC MC chkd ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - ELEVATIONS
Project No.	2017-06
Drawing No.	A17
Issue	D



SECTION C-C

BLOCK B SECTION

ISSUE	DATE	DESCRIPTION	initials	chkd
B	15.10.18	REISSUED FOR DEVELOPMENT APPLICATION	RC	ADM
A	25.08.17	ISSUE FOR DEVELOPMENT APPLICATION	MC	ADM

sign date

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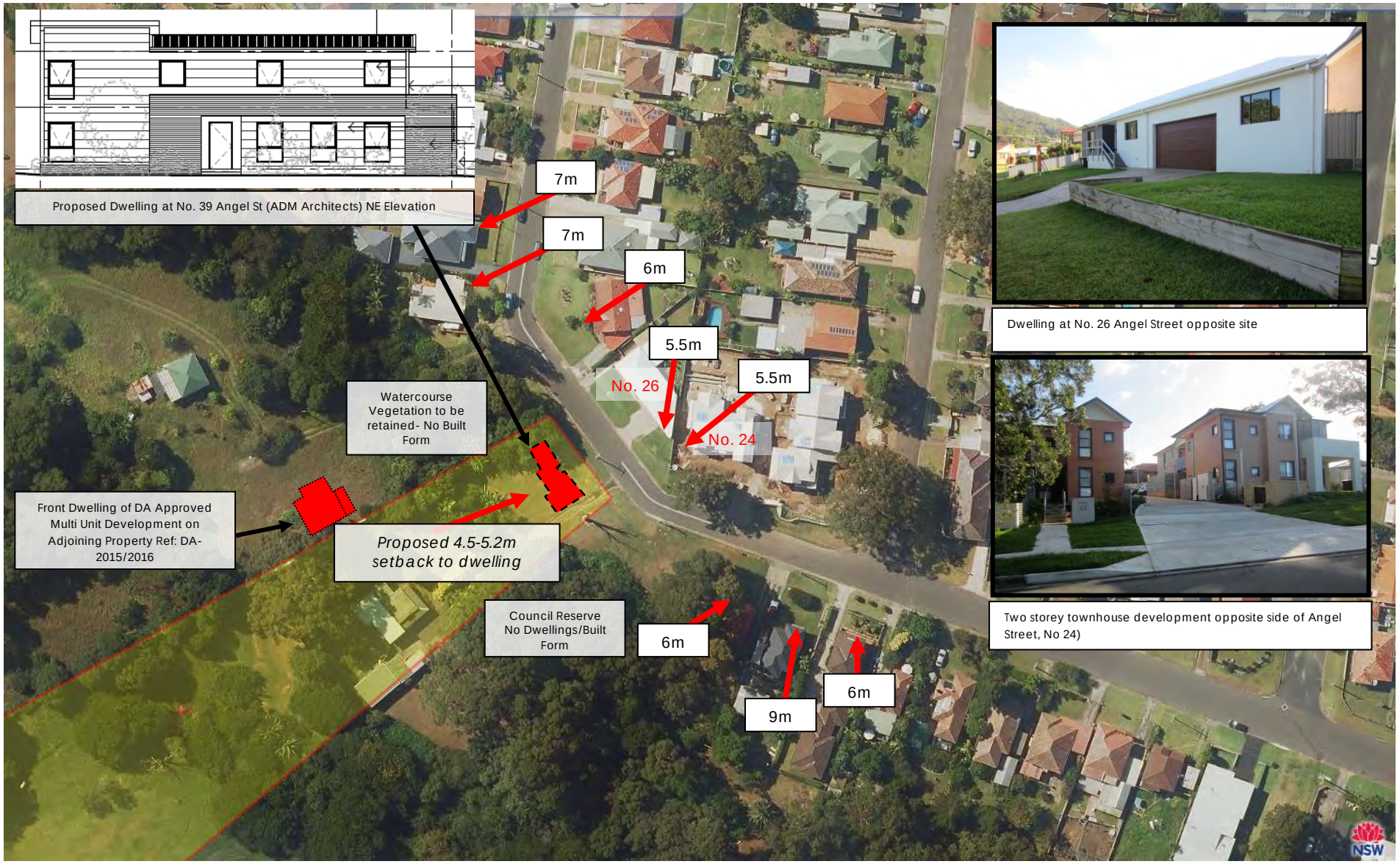
scale	1:100 @ A1	1:200 @ A3	
date	OCTOBER 2018		
drawn	RC MC	chkd	ADM
drawing	DEVELOPMENT APPLICATION BLOCK B - SECTION		
Project No.	Drawing No.		Issue
2017-06	A18		B

Appendix 2: Revised Apartment Amenity Compliance Table (ADM Architects)

COMPLIANCE TABLE					
Project No: 2017-06 Angel St Lot 56 DP 27796 39 Angel Street, Corrimal					
UNIT	**TYPE**	**SIZE**	**POS AREA**	**SUNLIGHT ACCESS**	**CROSS VENT**
DWELLING	4B	208.7m²	20.9m²	✓	✓
A01	3B	105.m²	27.m²	✓	✓
A02	3B	95.6m²	25.m²	✓	✓
A03	2B	86.3m²	25.m²	✓	✗
A04	3B	95.6m²	25.m²	✓	✓
A05	3B	104.3m²	27.m²	✗	✓
A06	1B	60.9m²	23.m²	✗	✗
A07	3B	105.m²	13.m²	✓	✓
A08	3B	95.6m²	12.m²	✓	✓
A09	2B	86.3m²	14.m²	✓	✗
A10	3B	95.6m²	12.m²	✓	✓
A11	3B	109.8m²	13.m²	✗	✓
A12	1B	60.9m²	12.m²	✗	✗
B01	2B	69.8m²	34.m²	✓	✓
B02	2B	93.4m²	36.m²	✓	✗
B03	3B	87.9m²	30.m²	✓	✗
B04	2B	85.4m²	25.m²	✓	✗
B05	3B	105.4m²	28.m²	✓	✓
B06	3B	108.6m²	26.m²	✗	✓
B07	1B	88.9m²	26.m²	✗	✗
B08	3B	108.6m²	26.m²	✓	✓
B09	3B	69.8m²	15.1m²	✓	✓
B10	2B	93.4m²	12.3m²	✓	✗
B11	3B	87.9m²	20.m²	✓	✓
B12	2B	85.4m²	12.4m²	✓	✗
B13	3B	105.4m²	12.4m²	✓	✓
B14	3B	108.6m²	26.m²	✗	✓
B15	2B	96.8m²	12.m²	✗	✗
B16	3B	108.6m²	26.m²	✓	✓
TOTALS		2813.5m²	616.1m²	21	18
OVERALL		2813.5m²			
PERCENTAGES				72%	62%
REQUIRED				>70%	>60%

Appendix 3: Streetscape and Setback Analysis (TCG Planning)

Streetscape Analysis (TCG Planning)



Imagery: Six Maps data https://maps.six.nsw.gov.au/ Distances approximate using measurement tool

Attachment 7 DRAFT CONDITIONS FOR: DA-2017/1064

The development proposed is integrated development and approval is required from the approval bodies listed below:

Department of Industries (DOI) Water (formerly DPI Water)
Pursuant to Section 91A (3) of the Water Management Act 2000 – Controlled Activity Approval – General Terms of Approval issued by DOI Water dated 14 February 2018 as attached shall form part of this Notice of Determination.

Conditions imposed by Council as part of this Integrated Development Consent are:

Approved Plans and Documents

1 The development shall be implemented substantially in accordance with the details and specifications set out on Project No 2017-06 Drawing A02-E, A03-E, A04-F, A08-D and A14-F dated 6 November 2018, A12a-C dated 29 October 2018, A07-C, A09-C, A13-C and A15-G dated 25 October 2018, A-16-D, A17-D and A18-B dated 15 October 2018, A10-B and A11-B dated 20 February 2018 and A05-A and 06-A dated 25 August 2017 prepared by adm Architects and Drawing 1791-LD01C dated 29 November 2018 and 1791-LD02B dated 5 November 2018 prepared by ochre landscape architects 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 **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.

3 **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.

4 **Disability Discrimination Act 1992**
This consent does not imply or confer compliance with the requirements of the Disability Discrimination Act 1992.

It is the responsibility of the applicant to guarantee compliance with the requirements of the Disability Discrimination Act 1992. The current Australian Standard AS1428.1 (2009) – Design for Access and Mobility is recommended to be referred for specific design and construction requirements, in order to provide appropriate access to all persons within the building.

5 **Vegetation Management Plan Reporting**
Six (6) monthly reports on the progress of the implementation of the Vegetation Management Plan prepared by Southern Habitat dated March 2018 shall be submitted to Council's Environmental Strategy and Planning Division and DPI Water during the two year maintenance period and until the performance criteria has been met.

6 **Front Fence Height and Style**
All fencing on the land fronting the street must be constructed using 1200 mm high metal rod fencing.

7 **Restricted Vegetation Removal**

This consent permits the removal of trees and other vegetation from the site within three (3) metres of the approved buildings. This consent also permits the pruning of trees within three (3) metres of approved buildings in accordance with AS 4373-2007 Pruning of Amenity Trees. No other trees or vegetation shall be removed or pruned, without the prior written approval of Council.

8 **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.

9 **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.

10 **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.

11 **Tree Retention/Removal**

The developer shall retain the existing trees indicated on the on the Landscape Plan by Ochre Landscape Architects dated 25 August 2017 and Arborist report by Allied Tree Consultancy dated August 2017 consisting of trees numbered T3, T5, T6, T7, T8, T9, T13, T14, T15, T16, T18, T19, T20, T21, T22, T23, T25, T26, T27, T28, T34, T36, T37, T38, T40, T42, T43, T44, and T45.

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 in Arborist's Report by Allied Tree Consultancy dated August 2017 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 T1, T2, T4, T10, T11, T12, T17, T24, T29, T30, T31, T32, T33, T35, T39, T41 and T46 as indicated on the Landscape Plan by Ochre Landscape Architects dated 25 August 2017 and Arborist report by Allied Tree Consultancy dated August 2017. No other trees shall be removed without prior written approval of Council.

12 **Phased Development**

This consent is for a phased development:

Phase 1: demolition of existing dwelling, tree removals and construction of a two storey residential flat building containing 12 apartments (Block A) plus basement parking, a two storey dwelling, riparian area works, driveway and bridge access.

Phase 2: construction of a two storey residential flat building containing 16 apartments (Block B) plus basement parking.

Separate Construction Certificates may be obtained for each phase of the development.

Prior to the Issue of the Construction Certificate

13 The proposed bridges must be designed and certified by a suitably qualified Structural Engineer.

The bridges must be able to withstand the weight of the largest anticipated vehicle to enter the site eg. Construction vehicles such as a fully laden concrete truck and a Fire Truck. This requirement shall be reflected on the Construction Certificate plans.

14 **Scour Protection**

The stormwater outlet to the watercourse shall be treated with appropriate scour/erosion protection measures in accordance with good engineering practice. All scour protection measures and headwall structures within the watercourse shall be designed and constructed to match existing surface levels to ensure that there will be no change in flooding behaviour. All stormwater outlets shall be taken to the low flow channel and orientated in the direction of natural flow of the receiving watercourse. The final details of the proposed scour/erosion protection measures shall be undertaken by a suitably qualified civil engineer and reflected on Construction Certificate plans.

15 **Design in Accordance with Flood Study**

The detailed design of the development (incl. earthworks, pavement, bridges, finished surface levels, and surface treatment) shall be generally in accordance with The Flood Study, Job No KF112585 Revision D by KFW, dated 3 July 2018. This requirement shall be reflected on the Construction Certificate plans and certified by a suitably qualified civil engineer prior to the release of the Construction Certificate.

16 **Basement Waterproofing**

Full engineering details of the proposed wall around the basement car park shall be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate. These shall include construction details indicating that no ingress of stormwater is possible into the basement levels other than from sub-soil drainage, vehicle wash water and runoff from the driveway that drains towards the basement. This applies to any proposed opening such as doors or ventilation louvres. The problem of backwater from the stormwater pipeline entering the basement car park level shall be addressed by a method such as a flap gate or one-way valve system.

17 **Pump System**

A pump system shall be provided in association with the detailed drainage design for the site to cater for stormwater from a prolonged/extreme storm event entering the basement. The pump system shall be designed by a suitably qualified and experienced civil engineer and reflected on the Construction Certificate plans and supporting documentation.

18 **Loss of Flood Storage**

The detailed design of the development shall ensure no net loss of existing flood storage in any storm event (up to the PMF). Construction details of compensatory flood storage areas (where required) shall be prepared by a suitably qualified civil engineer and reflected on the Construction Certificate plans. This must include detailed plans showing finished surface levels, finished surface treatment and the flood storage volume. Certification from a suitably qualified civil engineer verifying that these requirements have been met shall be submitted to the Principal Certifying Authority prior to the release of the Construction Certificate.

19 **Fencing and Gate Adjoining Public Reserve**

The south-eastern boundary adjoining the public reserve is to be fenced with open palisade type fencing as shown on the approved Landscape Plan. Two gates are to be provided to provide access for Council vehicles and staff for maintenance purposes. The gates must be 6m wide (3m double gate) and fitted with an AG 2 padlock. Details are to be shown on the Construction Certificate plans.

20 **Fire Safety Schedule**

When issuing a Construction Certificate, a certifying authority must attach a Fire Safety Schedule specifying all of the fire safety measures required for the building to ensure the safety of persons in the building in the event of fire.

21 **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.

22 **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.

23 **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.

24 **Muted Bushland Tones – External Finishes**
To ensure the development is compatible with the surrounding environment, colours and finishes are to be muted bushland tones. In this regard white, light or bright colours are not permissible.

25 **Obscure Glazing for all Bathroom and WC Windows**
The bathroom and WC windows for each dwelling in the development shall be frosted or opaque glass. This requirement shall be reflected on the Construction Certificate plans.

26 **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.

27 **Fencing**
The development is to be provided with fencing and screen walls at full cost to the applicant/developer as follows:

a where a screen wall faces the road, pedestrian walkway, reserve or public place that wall shall be constructed of the same brickwork as that used in the external wall of the building; and

b 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.

28 In order to reduce the opportunities for "hiding places" the proposed landscaping must:

a use shrubs/plants which are no higher than 1 metre.
b the type of trees proposed must have a sufficiently high canopy, when fully grown, so that pedestrian vision is not impeded.

This requirement shall be reflected on the Construction Certificate plans.

29 The development shall incorporate appropriate design measures to minimise any crime risk to patrons or staff and motor vehicles within the car parking areas, including (but not limited to) the following:

a Landscape treatment which allows visibility from the road way and other public areas;

b Landscaping at ground level provided which is difficult or uncomfortable to hide in or traverse,

c Provide clearly marked and sign posted visitor car parking signs (including security/intercom system);

d Ensure that fire rated doors in the car park have a clear glass panel located no more than 1.5 m from the floor. The panel shall have a minimum dimension of 300 mm x 300 mm to allow visual surveillance within the stairwell and/or next room/space.

This requirement shall be reflected on the Construction Certificate plans.

30 The development shall provide suitable light spillage mitigation measures within the development to mitigate against any adverse light spillage impacts upon surrounding properties. This requirement shall be reflected on the Construction Certificate plans. The implementation of the approved light spillage mitigation measures is required prior to the use or occupation of the development.

31 **Car Parking and Access**
The development shall make provision for the following parking requirements:

Block A

- 17 residential car parking spaces (including 2 spaces capable of adaption for people with disabilities)
- 3 visitor car parking spaces
- 4 secure class 2 residential bicycle spaces
- 1 visitor bicycle space
- 1 motorcycle space.

Block B

- 23 residential car parking spaces (including 2 spaces capable of adaption for people with disabilities)
- 4 visitor car parking spaces
- 6 secure class 2 residential bicycle spaces
- 2 visitor bicycle spaces
- 2 motorcycle spaces.

This requirement shall be reflected on the Construction Certificate plans. Any change in the above parking numbers shown on the approved DA plans shall be dealt with via a section 96 modification to the development. The approved parking spaces shall be maintained to the satisfaction of Council, at all times.

32 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.

33 **Designated Loading/Unloading Facility**
The designated loading/unloading facility must be clearly delineated with appropriate signage and or line marking to ensure the area is kept clear at all times. The designated loading/unloading facility shall be shown on the Construction Certificate plans.

34 The provision of suitable barriers, line-marking and painted signage delineating vehicular flow movements within the car parking areas. These details shall be reflected on the Construction Certificate plans.

35 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.

36 **Gradients of Ramps and Driveways as per AS 2890.1**

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.

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.

37 **Site Management, Pedestrian and Traffic Management Plan (Where Works are Proposed in a Public Road Reserve)**

The submission of a Site Management, Pedestrian and Traffic Management Plan to the Principal Certifying Authority and Council (in the event that Council is not the Principal Certifying Authority) for approval of both the Principal Certifying Authority and Council is required, prior to the issue of the Construction Certificate. This plan shall address what measures will be implemented for the protection of adjoining properties, pedestrian safety and traffic management and shall be in compliance with the requirements of the latest versions of Australian Standard AS1742 - Traffic Control Devices for Works on Roads and the RMS Traffic Control at Worksites Manual.

This plan is required to maintain public safety, minimise disruption to pedestrian and vehicular traffic within this locality and to protect services, during demolition, excavation and construction phases of the development. This plan shall include the following aspects:

a proposed ingress and egress points for vehicles to/from the construction site;
b proposed protection of pedestrians, adjacent to the construction site;
c proposed pedestrian management whilst vehicles are entering/exiting the construction site;
d proposed measures to be implemented for the protection of all roads and footpath areas surrounding the construction site from building activities, crossings by heavy equipment, plant and materials delivery and static load from cranes, concrete pumps and the like;
e proposed method of loading and unloading excavation machines, building materials formwork and the erection of any part of the structure within the site;
f proposed areas within the site to be used for the storage of excavated material, construction materials and waste containers during the construction period;
g proposed traffic control measures such as advanced warning signs, barricades, warning lights, after hours contact numbers etc are required to be displayed where works are in progress in any road reserve and shall be in accordance the latest versions of the NSW Roads and Maritime Service's Specification - "Traffic Control at Work Sites Manual" and the Australian Standard AS1742. – "Manual of Uniform Traffic Control Devices" and accompanying field handbooks (SAA HB81);
h proposed method of support of any excavation, adjacent to adjoining buildings or the road reserve. The proposed method of support is to be certified by an accredited certifier in Civil Engineering; and
i proposed measures to be implemented, in order to ensure that no soil/excavated material is transported on wheels or tracks of vehicles or plant and deposited on the roadway.

The approved plan shall be implemented, prior to the commencement of any works upon the construction site.

Note: Any proposed works or placement of plant and equipment and/or materials within any road reserve will require the separate approval of Council, prior to the commencement of such works, pursuant to the provisions of the Roads Act 1993.

38 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.

39 **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.

40 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.

41 **Landscaping**
The submission of a final Landscape Plan will be required in accordance with the requirements of Wollongong City Council DCP 2009 Chapter E6 and the approved Landscape Plan (ie as part of this consent) for the approval by the Principal Certifying Authority, prior to the release of the Construction Certificate.

42 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:

a any proposed hard surface under the canopy of 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.
b All garden edges, mowing strips and retaining walls are to be of masonry construction;

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

43 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.

44 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.

45 **Tree Protection and Management**
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:

a 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.
b 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.
c Irrigate: Areas within the Tree Protection Zone are to be regularly watered in accordance with the arborist's recommendations.

46 **Provision of a Fire Hydrant**
The provision of a fire hydrant in accordance with AS2419 (1994) Fire Hydrant Installations and any requirements of the NSW Rural Fire Service and/or NSW Fire Brigades. The final details of

the location of the fire hydrant shall be reflected on the Construction Certificate plans prior to the issue of the Construction Certificate.

47 **Engineering Plans and Specifications - Retaining Wall Structures Greater than One (1) Metre**

The submission of engineering plans and supporting documentation of all proposed retaining walls greater than 1m 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:

47.1 A plan of the wall showing location and proximity to property boundaries;
47.2 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;
47.3 Details of fencing or handrails to be erected on top of the wall;
47.4 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;
47.5 The proposed method of subsurface and surface drainage, including water disposal;
47.6 Reinforcing and joining details of any bend in the wall at the passing bay of the accessway;
47.7 The assumed loading used by the engineer for the wall design.
47.8 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.
47.9 Balustrading to be provided for retaining walls over 1 metre.

48 **Bicycle Parking Facilities**

Bicycle parking facilities must have adequate weather protection and provide the appropriate level of security as required by the current relevant Australian Standard AS2890.3 - Bicycle Parking Facilities and Austroads Guide to Traffic Management Part 11: Parking (Commentary 9: C9.2). In the absence of internal bicycle storage areas in private residential garages, the proposed external bicycle spaces are to have adequate weather protection, passive surveillance, and be secured within a lockable enclosure with access via a combination lock or communal key. This requirement shall be reflected on the Construction Certificate plans.

49 **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. Enquiries regarding property addressing may be made by calling 4227 8660.

50 **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.

51 **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:

a 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, being the Stormwater Plan, Job No KF112585 drawing C002 Revision A by KFW dated 26 March 2018.

b Include details of the method of stormwater disposal. Stormwater from the development must be piped to natural watercourse

c 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.

d 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.

52 **Flood Level Requirements**

The following requirements shall be reflected on the Construction Certificate plans, prior to the release of the Construction Certificate:

a Habitable floor levels must be constructed at a minimum of highest adjacent 100 year flood level as determined by a suitably qualified civil engineer plus 500 mm freeboard.

b Any portion of the building or structure below the highest adjacent 100 year flood level as determined by a suitably qualified civil engineer plus 500 mm freeboard should be built from flood compatible materials. Where materials are proposed and not listed in Appendix B of Chapter E13 of the Wollongong DCP2009, relevant documentation from the manufacturer shall be provided demonstrating that the materials satisfy the definition of 'flood compatible materials' as stated in Chapter E13 of the Wollongong DCP2009.

c The proposed development shall be designed to withstand the forces of floodwater, debris and buoyancy up to and including the highest adjacent PMF flood level as determined by a suitably qualified civil engineer plus 500mm freeboard when utilised for onsite refuge.

d The proposed development shall be designed to withstand the forces of floodwater, debris and buoyancy up to and including highest adjacent 100 year flood level as determined by a suitably qualified civil engineer plus 500mm freeboard.

53 **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:

a Must be prepared by a suitable qualified engineer in accordance with Chapter E14 of the Wollongong DCP 2009.

b 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.

c The OSD facilities 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.

d The OSD facilities shall incorporate a minimum 900mm x 6900mm 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.

e 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.

f Details of the orifice plate's including diameter of orifice and method of fixing shall be provided.

g Must include details of a corrosion resistant identification plaque for location on or close to the OSD facilities. 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-2017/1064;
- Any specialist maintenance requirements.

h Must include a maintenance schedule for the OSD system, generally in accordance with Chapter E14 of the Wollongong DCP2009.

54 **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.

55 **Development Contributions**

Pursuant to Section 4.17(1)(h) of the Environmental Planning and Assessment Act 1979 and the Wollongong City-Wide Development Contributions Plan (2018), a monetary contribution of $92,410.00 (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:

Contribution at time of payment = $C x (CP2/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: 889188	• Credit Card
In Person	Wollongong City Council Administration Building - Customer Service Centre Ground Floor 41 Burelli Street, WOLLONGONG	• 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 Section 94 Development Contributions Plan 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

56 **Appointment of Principal Certifying Authority**
Prior to commencement of work, the person having the benefit of the Development Consent and a Construction Certificate must:

a 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
b 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.

57 **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

a 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

b 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.

58 **Sign – Supervisor Contact Details**
Before commencement of any work, a sign must be erected in a prominent, visible position:

a stating that unauthorised entry to the work site is not permitted;
b showing the name, address and telephone number of the Principal Certifying Authority for the work; and

c 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.

59 **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:

a a standard flushing toilet; and
b 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.

60 **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.

61 **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.

62 **Demolition Works**

The demolition of the existing dwelling and outbuildings 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.

63 **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.

64 **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:

a the location of hazardous materials throughout the site;
b a description of the hazardous material;
c the form in which the hazardous material is found, eg AC sheeting, transformers, contaminated soil, roof dust;
d an estimation (where possible) of the quantity of each particular hazardous material by volume, number, surface area or weight;

e 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;

f identification of the disposal sites to which the hazardous materials will be taken.

65 **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.

66 **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.

67 **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.

68 **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.

69 **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.

70 **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.

71 **Certification from Arborist - Adequate Protection of Trees to be Retained**

A qualified arborist is required to be engaged for the supervision of all on-site excavation or land clearing works. The submission of appropriate certification from the appointed arborist to the Principal Certifying Authority is required which confirms that all trees and other vegetation to be retained are protected by fencing and other measures, prior to the commencement of any such excavation or land clearing works.

72 **Application for Occupation, Use, Disturbance or Work on Footpath/Roadway**

Any occupation, use, disturbance or work on the footpath or road reserve for construction purposes, which is likely to cause an interruption to existing pedestrian and/or vehicular traffic

flows requires Council consent under Section 138 of the Roads Act 1993. An application must be submitted and approved by Council prior to the works commencing where it is proposed to carry out activities such as, but not limited to, the following:

a Digging or disruption to footpath/road reserve surface;
b Loading or unloading machinery/equipment/deliveries;
c Installation of a fence or hoarding;
d Stand mobile crane/plant/concrete pump/materials/waste storage containers;
e Pumping stormwater from the site to Council's stormwater drains;
f Installation of services, including water, sewer, gas, stormwater, telecommunications and power;
g Construction of new vehicular crossings or footpaths;
h Removal of street trees;
i Carrying out demolition works.

73 **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:

a 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".
b 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.

During Demolition, Excavation or Construction

74 **Protection of Native Vegetation**

Native vegetation beyond the development footprint area shall be protected from disturbances particularly during the excavation and construction phases. No construction materials, machinery or other substances shall be stored in these areas to avoid physical damage to the vegetation there.

75 **Removal of Trees Without Hollows**

Prior to removal, the trees without hollows approved for removal under this development consent shall be closely inspected for native vertebrate fauna occupation, and if occupied by native vertebrate fauna, then the NSW Wildlife Information, Rescue and Education Service (WIRES) shall be contacted for advice (phone 1300 094 737).

76 **Removal of Trees With Hollows**

Prior to removal, any trees with hollows approved for removal under this development consent shall be closely inspected for native vertebrate fauna occupation by an ecologist, and if occupied by native vertebrate fauna, then the advice of the ecologist shall be followed.

77 **Injured Native Fauna**

If any native fauna are injured during tree removal, then all reasonable steps shall be taken to ensure the fauna individual is collected and treated.

78 **Implementation of Vegetation Management Plan**

The Vegetation Management Plan prepared by Southern Habitat dated March 2018 shall be implemented by a bush regenerator with a minimum Certificate III in Conservation and Land

Management (Natural Area Restoration) or equivalent study and/or experience, in addition to two (2) years experience in ecological restoration.

79 **Disposal of Excess Removed Vegetation Off-site**
Any excess removed vegetation taken from the site shall be disposed of only at a location that may lawfully accept that waste.

80 **Weed Control**
No known environmental weeds or known invasive plant species shall be used in any plantings or landscaping on the subdivision site, or otherwise brought onto the site.

81 **Weed and Contaminant Free Mulch**
Any imported mulch used on the site shall be weed and contaminant free.

82 **Survey Report for Floor Levels**
A Survey Report must be submitted to the Principal Certifying Authority verifying that each floor level accords with the floor levels as per the approved plans under this consent. The survey shall be undertaken after the formwork has been completed and prior to the pouring of concrete for each respective level of the building (if the building involves more than one level). All levels shall relate to Australian Height Datum.

83 **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.

84 **Copy of Consent to be in Possession of Person carrying out Tree Removal**
The applicant/developer must ensure that any person carrying out tree removal/vegetation clearance is in possession of this development consent and/or the approved landscape plan, in respect to the trees/vegetation which have/has been given approval to be removed in accordance with this consent.

85 **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:

a the variation in hours required (length of duration);
b the reason for that variation (scope of works);
c the type of work and machinery to be used;
d method of neighbour notification;
e supervisor contact number;
f 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.

86 **Site Management**
Stockpiles of sand, gravel, soil and the like must be located to ensure that the material:

a Does not spill onto the road pavement and
b is not placed in drainage lines or watercourses and cannot be washed into these areas.

87 Should during construction any waste material or construction material be accidentally or otherwise spilled, tracked or placed on the road or footpath area without the prior approval of Council's Works Division this shall be removed immediately. Evidence that any approval to place

material on the road or road reserve shall be available for inspection by Council officers on site at any time.

88 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.

89 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.

90 **Excavation/Filling/Retaining Wall Structures**
Any proposed filling on the site must not:

a encroach onto the adjoining properties, and
b adversely affect the adjoining properties with surface run-off.

91 **Asbestos – Removal, Handling and Disposal Measures/Requirements Asbestos Removal by a Licensed Asbestos Removalist**
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>).

92 **Asbestos Clearance Certificate**
A Clearance Certificate to certify that the site area is free of asbestos is to be submitted to Council by a licensed asbestos assessor within fourteen (14) days of the completion of demolition works.

93 **Asbestos Waste Collection, Transportation and Disposal**
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 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.

94 **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.

95 **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:

- 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
- if a replacement BASIX Certificate accompanies any subsequent application for a construction certificate, the replacement BASIX Certificate; and
- BASIX Certificate has the meaning given to that term in the Environmental Planning & Assessment Regulation 2000."

96 **Excess Excavated Material – Disposal**
Excess excavated material shall be classified according to the 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.

97 **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.

98 **Electricity Substation Requirements**
The installation of an electricity substation must be in accordance with the design plans approved by Council and Endeavour Energy's standard and requirements.

99 **Fences**
Any new fences constructed on the site and located in the flood plain shall be of a type that will not obstruct the free flow of floodwaters and not cause damage to surrounding land in the event of a flood.

Prior to the Issue of the Occupation Certificate

100 **Flood/Stormwater Affectation Certification**
The submission of a report from a suitably qualified and experienced civil (hydrology) engineer to the Principal Certifying Authority is required, prior to the issue of the Occupation Certificate. This report is required to certify that the 'as-constructed' development will not result in any detrimental increase in flood affectation to other development or properties due to loss of flood storage, changes in flood levels, diversion of floodwater flows, and/or alteration of flood conveyance. The report must also certify that the 'as constructed' development will not result in any adverse stormwater impacts to the adjoining land due to obstruction and/or ponding of surface water runoff.

101 **Creation of Right of Access in favour of Wollongong City Council**

a The creation of rights of access 6 metres wide pursuant to Section 88E of the Conveyancing Act 1919 over the extent of the proposed access way over Lot 56, in order to guarantee the provision of suitable vehicular and pedestrian access to Wollongong City Council Staff.

b The creation of a restriction over the access way 6 metres wide indicating that the land owner burdened, Lot 56, is responsible for all maintenance and repair for the access driveway and bridge, and Wollongong City Council is indemnified from all claims of damage, injury and associated costs for the access way and bridge.

The 88E Instrument shall contain a provision that this clause may not be altered, modified or extinguished, except with the written consent of Wollongong City Council.

102 **Restriction on Fencing of Lot adjoining Public Reserve or Drainage Reserve**
The creation of a restriction on the use of the land pursuant to Section 88B of the Conveyancing Act 1919 providing that:

a No fence shall be erected on the boundary of any lot adjoining Public Reserve or Drainage Reserve without the written consent of Wollongong City Council.

b Such consent shall not be withheld, however, if such fence and gates is erected without expense to Wollongong City Council and consistent with the fence and gates approved under DA-2017/1064;

c The restrictions shall remain in force only during such time as Wollongong City Council is the registered proprietor of the land immediately adjoining the land burdened in the plan and shall bond all successive owners and assigns of each lot burdened. The 88B Instrument shall contain a provision that it may not be altered, modified or extinguished, except with the written consent of Wollongong City Council.

103 **Provision of Keys and Locks for Boundary Access Gates for Wollongong City Council**
Prior to the release of the occupation certificate, keys and associated locks for the boundary gates adjoining the public reserve, must be provided to Wollongong City Council – Northern Depot.

104 **Fire Safety Certificate**

A Fire Safety Certificate must be issued for the building prior to the issue of an Occupation Certificate. As soon as practicable after a Fire Safety Certificate is issued, the owner of the building to which it relates:

a Must cause a copy of the certificate (together with a copy of the current fire safety schedule) to be given to the Commissioner of New South Wales Fire Brigades, and

b must cause a further copy of the certificate (together with a copy of the current fire safety schedule) to be prominently displayed in the building.

105 **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.

106 **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.

107 **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.

108 **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.

109 **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.

110 **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.

111 **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.

112 **Structural Soundness Certification**
The submission of a report from a suitably qualified and experienced structural engineer to the Principal Certifying Authority is required, prior to the issue of the final Occupation Certificate and commencement of use. This report is required to verify that the development can withstand the forces of floodwater, debris and buoyancy up to and including the highest adjacent 100 year flood level as determined by a suitably qualified civil engineer plus 500 mm freeboard or greater. This report shall also verify that the supporting structure of the upper storey/flood refuge can withstand the forces of floodwater, debris and buoyancy up to and including the highest adjacent PMF flood level plus 500mm freeboard.

113 **Access Certification**
Prior to the occupation of the building, the Principal Certifying Authority must ensure that a certificate from an "accredited access consultant" has been issued certifying that the building complies with the requirements of AS 1428.1.

Operational Phases of the Development/Use of the Site

114 All waste collection is to be carried out from within the site from the designated loading/unloading facility. All waste collection and service vehicles must enter and exit the site in a forward direction.

115 **Waste Collection**
Waste collection is to occur on site via a private waste contractor using a 9.64m side-loading refuse collection vehicle. Waste bins for the residential flat buildings are not to be stored on the public road.

116 All vehicles must enter and exit in a forward direction.

117 **Fire Safety Measures**
All new and existing fire safety measures shall be maintained in working condition, at all times.

118 **Clothes Drying on Balconies/Terrace Areas Prohibited**
The use of the balconies/terrace areas for the external drying of clothes is strictly prohibited.

119 **Loading/Unloading Operations/Activities**
All loading/unloading operations are to take place at all times wholly within the confines of the site.

Department of Primary Industries
Water

Contact: Jeremy Morice
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General Manager
Wollongong City Council
Locked Bag 8821
Wollongong DC NSW 2500

Our ref: IDAS1102187
Your Ref: 2017/1064

Attention: Kristy Robinson

14 February 2018

Dear Kristy

Re: Integrated Development Referral – General Terms of Approvals
Development Reference: 2017/1064
Description: Multi Unit Residential Phased Development
Location: 39 Angel Street, Corrimal NSW 2518

I refer to your recent letter regarding an integrated Development Application (DA) proposed for the above location. Attached, please find DPI Water's General Terms of Approval (GTA) for part of the proposed development requiring a Controlled Activity approval under the *Water Management Act 2000* (WM Act), as detailed in the subject DA.

Please note Council's statutory obligations under section 91A (3) of the *Environmental Planning and Assessment Act 1979* (EPA Act) which requires a consent, granted by a consent authority, to be consistent with the general terms of any approval proposed to be granted by the approval body.

If the proposed development is approved by Council, DPI Water request these GTA's be included (in their entirety) in Council's development consent. Please also note DPI Water requests notification:

- If any plans of documents are amended and these amendments significantly change the proposed development or result in additional works or activities (i) in the bed of any river, or lake or estuary; (ii) on the banks of any river, lake or estuary; (iii) on land within 40 metres of the highest bank of a river, lake or estuary; or (iv) any excavation which interferes with an aquifer.

  DPI Water will ascertain from the notification if the amended plans require review of or variation/s to the GTA. This requirement applies even if the amendment is part of Council's proposed consent conditions and do not appear in the original documentation.

- If Council receives an application under s96 of the EPA Act to modify the development consent and the modifications change the proposed work or activities described in the original DA.

- Of any legal challenge to the consent.

As the proposed work or activity cannot commence before the applicant applies for and obtains an approval, DPI Water recommends the following condition be included in the development consent:

The attached GTA issued by DPI Water do not constitute an approval under the *Water Management Act 2000*. The development consent holder must apply to DPI Water for a Controlled Activity approval **after consent** has been issued by Council **and before** the commencement of any work or activity.

A completed application form must be submitted to DPI Water together with any required plans, documents, application fee, security or bank guarantee (if required) and proof of Council's development consent. Finalisation of an approval can take up to eight (8) weeks from the date the application and all required supporting documentation is received.

Application forms are available from the DPI Water website at:

www.water.nsw.gov.au › Water licensing › Approvals.

DPI Water requests that Council provide a copy of this letter to the development consent holder.

DPI Water also requests a copy of the determination for this development application be provided by Council as required under section 91A (6) of the EPA Act.

Yours sincerely

Brendan Mee
Water Regulation Office
Water Regulatory Operations
Lands & Water

Department of Primary Industries
Water

General Terms of Approval

for proposed development requiring approval under s89, 90 or 91 of the Water Management Act 2000

Reference Number:	IDAS1102187
Issue date of GTA:	14 February 2018
Type of Approval:	Controlled Activity
Description:	multi Unit residential Building
Location of work/activity:	39 Angel Street Corrimal NSW 2518
DA Number:	DA2017/1064
LGA:	Wollongong City Council
Water Sharing Plan Area:	Greater Metropolitan Region Unregulated River Water Sources

The GTA issued by DPI Water do not constitute an approval under the *Water Management Act 2000*. The development consent holder must apply to DPI Water for the relevant approval **after development consent** has been issued by Council **and before** the commencement of any work or activity.

Condition Number	Details
	Design of works and structures
GT0009-00004	Before commencing any proposed controlled activity on waterfront land, an application must be submitted to Crown Lands and Water Division, and obtained, for a controlled activity approval under the Water Management Act 2000.
GT0019-00002	Any proposed excavation on waterfront land must be undertaken in accordance with a plan submitted as part of a controlled activity approval, to be approved by Crown Lands and Water Division.
	Erosion and sediment controls
GT0014-00003	A. The consent holder must ensure that any proposed materials or cleared vegetation, which may: i. obstruct water flow, or ii. wash into the water body, or iii. cause damage to river banks, are not stored on waterfront land, unless in accordance with a plan held by Crown Lands and Water Division as part of a controlled activity approval. B. When the carrying out of the controlled activity has been completed, surplus materials must be removed from waterfront land.
GT0021-00004	The proposed erosion and sediment control works must be inspected and maintained throughout the construction or operation period of the controlled activity and must not be removed until the site is fully stabilised.
	Plans, standards and guidelines
GT0002-00128	A. This General Terms of Approval (GTA) only applies to the proposed controlled activity described in the plans and associated documents found in Schedule 1, relating to Development Application 20171064 provided by Council to Crown Lands and Water Division. B. Any amendments or modifications to the proposed controlled activity may render the GTA invalid. If the proposed controlled activity is amended or modified, Crown Lands and Water Division, Wollongong Office, must be notified in writing to determine if any variations to the GTA will be required.
GT0004-00002	A. A security deposit must be provided, if required by Crown Lands and Water Division. B. The deposit must be: i. a bank guarantee, cash deposit or equivalent, and ii. equal to the amount required by Crown Lands and Water Division for that controlled activity approval.
GT0005-00053	A. The application for a controlled activity approval must include the following plan(s): - 1. Detailed construction drainage plans; 2. Erosion and sediment control plans; 3. Structural bridge and culvert plans; 4. Project costings . B. The plan(s) must be prepared in accordance with Crown Lands and Water Division's

Department of Primary Industries
Water

General Terms of Approval

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Water Sharing Plan Area:	Greater Metropolitan Region Unregulated River Water Sources

	guidelines located on the website http://www.water.nsw.gov.au/water-licensing/approvals/controlled-activity.
GT0010-00003	All documents submitted to Crown Lands and Water Division as part of an application for a controlled activity approval must be prepared by a suitably qualified person.
GT0012-00002	Any proposed controlled activity must be carried out in accordance with plans submitted as part of a controlled activity approval application, and approved by Crown Lands and Water Division.
GT0030-00001	The application for a controlled activity approval must include plans prepared in accordance with Crown Lands and Water Division's guidelines located on the website as follows: http://www.water.nsw.gov.au/water-licensing/approvals/controlled-activity.

Rehabilitation and maintenance

GT0007-00003	When the proposed controlled activity is completed, and the rehabilitation plan has been implemented, maintenance of the site must be carried out for a period of 2 years in accordance with that rehabilitation plan submitted as part of the controlled activity approval, and approved by Crown Lands and Water Division.
GT0023-00001	Vegetation clearance associated with the proposed controlled activity must be limited to where the controlled activity is to be carried out, as shown on the approved plan(s).

Reporting requirements

GT0015-00006	A. A written report must be provided on the controlled activity carried out under a controlled activity approval to Crown Lands and Water Division, Wollongong Office. B. Each report must: i. address the implementation requirements of the plan(s) being submitted as part of the controlled activity approval, and ii. be submitted at the interval(s) specified in the plan(s). C. The report must be approved by Crown Lands and Water Division before the controlled activity can commence.
GT0016-00002	The consent holder must inform Crown Lands and Water Division in writing when any proposed controlled activity carried out under a controlled activity approval has been completed.

SCHEDULE 1

The plans and associated documentation listed in this schedule are referred to in general terms of approval (GTA) issued by DPI Water for integrated development associated with DA2017/1064 as provided by Council:

- SEE (25 August 2017)
- VMP (3 August 2017)
- Stamped Plans (August 2017)
- Flood Study (22 August 2017)