PPSSSH-9 - 310 – 314 Taren Point Road, Caringbah 2229

DA19/0756

ASSESSMENT REPORT APPENDICES

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APPENDIX A

DRAFT CONDITIONS OF CONSENT

Development Application No. 19/0756

1. Approved Plans and Documents

The development must be undertaken substantially in accordance with the BASIX certificate, details and specifications set out on the following approved plans:

Plan number	Reference	Prepared by	Date
DA002 Rev.L	Yield Summary	Manor House Design	Prepared 29.09.2020
DA010 Rev.K	Site Plan	Manor House Design	Prepared 01.05.2020
DA101 Rev.K	Basement 2 Plan	Manor House Design	Prepared 01.05.2020
DA102 Rev.K	Basement 1 Plan	Manor House Design	Prepared 01.05.2020
DA103 Rev.L	Ground Level Plan	Manor House Design	Prepared 29.09.2020
DA104 Rev.L	Level 1 Plan	Manor House Design	Prepared 29.09.2020
DA105 Rev.L	Level 2 Plan	Manor House Design	Prepared 29.09.2020
DA106 Rev.L	Level 3 Plan	Manor House Design	Prepared 29.09.2020
DA107 Rev.L	Level 4 Plan	Manor House Design	Prepared 29.09.2020
DA108 Rev.L	Roof Plan	Manor House Design	Prepared 29.09.2020
DA201 Rev.K	West Elevation	Manor House Design	Prepared 01.05.2020
DA202 Rev.K	South Elevation	Manor House Design	Prepared 01.05.2020
DA203 Rev.L	East Elevation	Manor House Design	Prepared 29.09.2020
DA204 Rev.L	North Elevation	Manor House Design	Prepared 29.09.2020
DA301 Rev.L	Section AA	Manor House Design	Prepared 29.09.2020
DA302 Rev.L	Section BB	Manor House Design	Prepared 29.09.2020
DA303 Rev.L	Section CC	Manor House Design	Prepared 29.09.2020
DA501 Rev.H	Adaptable Apartment Plans	Manor House Design	Prepared 28.08.2019
DA523 Rev.K	ADG Storage Diagrams	Manor House Design	Prepared 01.05.2020
DA524 Rev.K	ADG Storage Diagrams	Manor House Design	Prepared 01.05.2020
DA525 Rev.K	ADG Storage Diagrams	Manor House Design	Prepared 01.05.2020
DA526 Rev.K	ADG Storage Diagrams	Manor House Design	Prepared 01.05.2020
DA527 Rev.K	G.09 Apartment Sections	Manor House Design	Prepared 01.05.2020

DA527B Rev.K	G.05/G06 Apartment Section	Manor House Design	Prepared 01.05.2020
DA528 Rev.H	Materials and Finishes	Manor House Design	Prepared 28.08.2019
DA530 Rev.K	Façade Sections	Manor House Design	Prepared 01.05.2020
DA534 Rev.A	Window Schedule	Manor House Design	Prepared 29.09.2020
L-02 D	Detailed Plan - GF	Site design + Studios	Prepared 06.10.2020
L-03 D	Detailed Plan - Level 1-3	Site design + Studios	Prepared 06.10.2020
L-04 D	Detailed Plan - Level 4	Site design + Studios	Prepared 06.10.2020
L-05 D	Detailed Plan - Roof	Site design + Studios	Prepared 06.10.2020
L-06 D	Section - GF	Site design + Studios	Prepared 06.10.2020
L-07 D	Section - GF	Site design + Studios	Prepared 06.10.2020
L-08 D	Planting Details	Site design + Studios	Prepared 06.10.2020
L-09 D	Existing Tree	Site design + Studios	Prepared 06.10.2020
L-10 D	Notes	Site design + Studios	Prepared 06.10.2020
L-11 D	Specification	Site design + Studios	Prepared 06.10.2020
C01 Rev. 4	Notes & Legends	Greenview Consulting	Prepared 08.05.2020
C02 Rev. 4	Basement 2 Drainage Plan	Greenview Consulting	Prepared 08.05.2020
C03 Rev. 4	Basement 1 Drainage Plan	Greenview Consulting	Prepared 08.05.2020
C04 Rev. 4	Ground Floor Drainage Plan	Greenview Consulting	Prepared 08.05.2020
C05 Rev. 4	Site Stormwater Details Sheet 1	Greenview Consulting	Prepared 08.05.2020
C06 Rev. 1	Site Stormwater Details Sheet 2	Greenview Consulting	Prepared 08.05.2020
ESM1 Rev 2	Notes & Legend	Greenview Consulting	Prepared 08.05.2020
ESM2 Rev 2	Environmental Site Management Layout	Greenview Consulting	Prepared 08.05.2020
20 / 134 Sheet 1 of 9	[Strata] Location Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020
20 / 134 Sheet 2 of 9	[Strata] Basement 2 Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020
20 / 134 Sheet 3 of 9	[Strata] Basement 1 Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020
20 / 134 Sheet 4 of 9	[Strata] Ground Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020

20 / 134 Sheet 5 of 9	[Strata] First Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020
20 / 134 Sheet 6 of 9	[Strata] Second Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020
20 / 134 Sheet 7 of 9	[Strata] Third Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020
20 / 134 Sheet 8 of 9	[Strata] Fourth Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020
20 / 134 Sheet 9 of 9	[Strata] Roof Floor Plan	Cibar Surveying Pty Ltd	Prepared 01.10.2020

and any details on the application form and on any supporting information received with the application except as amended by the following conditions.

Note: The following must be submitted to Sutherland Shire Council prior to the commencement of any building work.

i) A Construction Certificate.

ii) Notification of the appointment of a Principal Certifying Authority and a letter of acceptance from that Principal Certifying Authority.

iii) Notification of the commencement of building works with a minimum of 2 days' notice of such commencement.

2. Design Changes Required

A. Design and Construction

The following design changes must be implemented:

i) Apartment G.09 - The main bedroom is to be enlarged to achieve an internal size of 10m^2 excluding the wardrobe. This is to be achieved by repositioning the master bedroom eastern wall and sliding door to the north 0.2m.

ii) Apartment 4.05 - Plans are to indicate that an openable window will be fitted above the entry door to facilitate cross ventilation.

iii) G.05 and G.06 - A 400mm high fixed louvered privacy screen is to be attached to the northern rear wall of the planterbox to improve privacy for both occupants and neighbours. The planter and privacy screen combined is to achieve a height equal to 1.5m above the finished floor level of the private open space areas.

iv) The glazing comprising the upper portions of balcony balustrades on the southern, eastern, and northern elevations are to be obscure glazed to improve privacy for both occupants and neighbours.

v) ADG storage diagrams DA523 and DA524 are to be updated to reflect the repositioned equivalent storage areas on architectural floor plans. All apartments are to be provided with no less than the minimum storage specified by the Apartment Design Guide. Any storage areas within each unit specified for use as storage to meet the ADG storage requirements are to be fitout with a cupboard with shelving and doors.

vi) Section diagrams are to reflect the position of the atrium planter set down in the slab as depicted on the ground floor plan i.e. the atrium planter set down is to cease where it meets the designated waste collection bay directly beneath. The area within the atrium above the waste collection bay that cannot be set down is to comprise a planter bed with a minimum soil depth of 300mm that is designed to transition to the adjoining deep planter.

vii) The main security gates provided between the mailboxes and the atrium are to be open form, to permit a clear line of sight and to enable airflow to and from the atrium to the public domain.

viii) All apartments are to be allocated a minimum of 1 parking space, 3 bed apartments are to have 2 spaces each, 10 visitor spaces, and the balance of spaces are to be distributed amongst the 2 bed apartments. If storage is depicted at the rear of parking spaces this shall correspond with the parking allocation.

Details of these design changes must be included in documentation submitted with the application for a Construction Certificate.

3. Integrated Development Approval - Requirements of WaterNSW

A. General Terms of Approval from WaterNSW

The development must be undertaken in accordance with all General Terms of Approval (GTA) from WaterNSW issued under Section 4.46 of the Environmental Planning and Assessment Act 1979.

A copy of the GTA and any further requirements are attached to this development consent. These requirements must be incorporated in the application for a Construction Certificate and as required by the GTA, relevant approvals must be obtained prior to the release of the Construction Certificate.

4. Requirements from Other Authorities

A. Requirements from Other Authorities

The development must be undertaken in accordance with the requirements of Transport for NSW (TfNSW) as follows:

i) All buildings and structures, together with any improvements integral to the future use of the site are to be wholly within the freehold property (unlimited in height or depth), along the Taren Point Road boundary.

ii) The redundant driveways on the Taren Point Road boundary shall be removed and replaced with kerb and gutter to match existing. The design and construction of the kerb and guttering and new gutter crossing on Taren Point Road shall be in accordance with TfNSW requirements. Details of these requirements should be obtained by email to DeveloperWorks.Sydney@rms.nsw.gov.au <mailto:DeveloperWorks.Sydney@rms.nsw.gov.au>

Detailed design plans of the proposed gutter crossing and kerb and guttering are to be submitted to TfNSW for approval prior to the issue of a Construction Certificate and commencement of any road works. Please send all documentation to development.sydney@rms.nsw.gov.au.

A plan checking fee and lodgement of a performance bond is required from the applicant prior to the release of the approved road design plans by TfNSW.

iii) Detailed design plans and hydraulic calculations of any changes to the stormwater drainage system that impact upon Taren Point Road are to be submitted to TfNSW for approval, prior to the commencement of any works. Please send all documentation to development.sydney@rms.nsw.gov.au.

A plan checking fee will be payable and a performance bond may be required before TfNSW approval is issued.

iv) The developer is to submit design drawings and documents relating to the excavation of the site and support structures to TfNSW for assessment, in accordance with Technical Direction GTD2012/001.

The developer is to submit all documentation at least six (6) weeks prior to commencement of construction and is to meet the full cost of the assessment by TfNSW. Please send all documentation to development.sydney@rms.nsw.gov.au

If it is necessary to excavate below the level of the base of the footings of the adjoining roadways, the person acting on the consent shall ensure that the owner/s of the roadway is/are given at least seven (7) day notice of the intention to excavate below the base of the footings. The notice is to include complete details of the work.

v) The proposed development, noting its use, should be designed, as per the requirements of Clause 101 (2)(c) of the State Environmental Planning Policy (Infrastructure) 2007 such that it includes measures to ameliorate potential traffic noise or vehicle emissions noise within the site of the development arising from Taren Point Road. These measures shall be certified by an appropriately

qualified noise and air quality expert and noted on the plans prior to issue of a Construction Certificate.

vi) The developer shall be responsible for all public utility adjustment/relocation works, etc necessitated by the above/approved work and as required by the various public utility authorities and/or their agents.

vii) The layout of the proposed car parking areas associated with the subject development (including, driveways, grades, turn paths, sight distance requirements in relation to landscaping and/or fencing, aisle widths, aisle lengths, and parking bay dimensions) should be in accordance with AS 2890.1-2004, AS2890.6-2009 and AS 2890.2 - 2018 for heavy vehicle usage. Parking Restrictions may be required to maintain the required sight distances at the driveway.

viii) All vehicles are to enter and leave the site in a forward direction.

ix) The swept path of the longest vehicle (including garbage trucks, building maintenance vehicles and removalists) entering and exiting the subject site, as well as manoeuvrability through the site, shall be in accordance with AUSTROADS. In this regard, a plan shall be submitted to Council for approval, which shows that the proposed development complies with this requirement.

x) All demolition and construction vehicles are to be contained wholly within the site and vehicles must enter the site before stopping. A construction zone will not be permitted on Taren Point Road.

xi) A Road Occupancy Licence (ROL) should be obtained from Transport Management Centre for any works that may impact on traffic flows on Taren Point Road during construction activities. A ROL can be obtained through https://myrta.com/oplinc2/pages/security/oplincLogin.jsf

xii) A Construction Traffic Management Plan detailing construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be submitted to Council for approval prior to the issue of a Construction Certificate.

These requirements must be incorporated in the application for a Construction Certificate and where required, relevant approvals must be obtained prior to the release of the Construction Certificate.

5. Cross Ventilation

A. Design

To ensure the building achieves satisfactory cross ventilation:

All openings relied upon for this purpose as identified on the approved cross ventilation diagram, including those facing the atrium are to be operable/ openable. If fire protection of any of openings within a cross ventilation path is required, any protection is to be automatic in case of fire (eg. fire shutters/ curtains).

B. Before Construction

Details of the design satisfying 'A' above must accompany the application for a Construction Certificate.

C. Before Occupation

The Principal Certifying Authority must be satisfied that 'A' above has been complied with.

6. Rental Housing - Restriction as to User and Ongoing Management

A. Before Occupation

Prior to the issue of any Occupation Certificate:

i) A Restriction as to User must be registered against the title of the property in accordance with section 88E of the Conveyancing Act 1919. This restriction must:

a) Limit the use of the following apartments for the purposes of affordable housing for 10 years from the date of issue of any Occupation Certificate:

Ground Level	Level 1	Level 2	Level 3
G.02	1.02	2.02	3.02
G.03	1.03	2.03	3.03
G.04	1.05	2.05	3.05
G.05	1.06	2.06	3.06
G.07	1.08	2.08	3.08
G.08	1.09	2.09	3.09
G.10	1.11	2.11	3.11

b) Specify that the affordable housing must be managed by a registered community housing provider, in accordance with Clause 17 of the State Environmental Planning Policy (Affordable Rental Housing) 2009.

ii) Prior to issue of an Occupation Certificate, Council is to be notified of the community housing provider managing of each affordable housing unit.

B. Ongoing

The affordable housing component of the development must be managed by a registered community housing provider during the abovementioned 10 year period.

7. Roof top services

A. Design

This application does not approve the provision of any services (i.e water tanks, air conditioning units) on the roof of the building. Any services must be provided within the building or basement. If any air conditioning units or hot water heaters are located on a balcony, they must not be visible from the public domain and must not result in the area of the balcony being less than the minimum required by the Apartment Design Guide.

8. Boundary and front courtyard fencing

A. Design

i) Forward of the building line, any side boundary fence must taper down from 1.8m to 1.2m in height when measured from the existing ground level.

ii) Behind the building line the side and rear boundary fences must be no greater than 1.8m in height when measured from the existing ground level.

iii) Behind the building line, the side and rear boundary fences must be a solid material.

iv) The front courtyard fences must be constructed to a maximum height of 1.5m and either all open form or a combination of open form above a solid base to a maximum height of 700mm.

v) The solid wall shown to the emergency exit pathway next to the driveway ramp is required to be open form also so that vehicles exiting the basement can see pedestrians more clearly walking/riding north in this location.

B. Prior to Occupation

The Principal Certifying Authority must certify that the boundary fences have been constructed in accordance with 'A' above.

9. Sprinkler and hydrant booster assembly unit

A. Design and Construction

The sprinkler and hydrant booster assembly unit are to be integrated into the front landscape area and no fire protection walls are to be installed or will be approved in association with this infrastructure. If walls are necessary, these services are to be repositioned to negate the need for additional walls within the front landscape strip.

10. Material Selection and Weatherproofing of Atrium

A. Design

The ‘external walls’ within the central atrium and any openings are to be suitably weatherproofed, with walkways drained to avoid water penetrating apartments. All meter cupboards, electrical switches, lighting, fixtures and fittings and the like are to be of robust construction and suitable to their exposed environment

B. Prior to Construction

Details of the weatherproofing measures must to be provided to the PCA satisfying the matters in 'A' above. These details must accompany the application for a Construction Certificate.

C. Before Occupation

Prior to release of an occupation certificate, the work must be completed in accordance with 'A' above to the satisfaction of the PCA.

11. Public Place Environmental, Damage & Performance Security Bond

A. Before Issuing of any Construction Certificate

Prior to the issue of a Construction Certificate or the commencement of any works on site, whichever occurs first, the person acting on this consent must provide security to Sutherland Shire Council against damage that may be caused to any Council property and/or the environment as a consequence of the implementation of this consent. The security may be provided by way of a deposit with Council or a bank guarantee. A non-refundable inspection/administration fee is included in the bond value.

It is the responsibility of the person acting on this consent to notify Sutherland Shire Council of any existing damage to public areas in the vicinity of the development site by the submission of a current dilapidation report supported by photographs. This information must be submitted to Council at least 2 days prior to the commencement of works.

In the event that the dilapidation report is not submitted 2 days prior to commencement and the public area sustains damage the person acting on this consent may be held liable.

Should any public property and/or the environment sustain damage as a result of the works associated with this consent, or if the works put Council's assets or the environment at risk, Council may carry out any works necessary to repair the damage and/or remove the risk. The costs incurred must be deducted from the bond.

The value of the bond is $10,500

Note: Bond amount includes a non-refundable administration fee, specified in Council's Schedule of Fees and Charges, which must be paid separately if security is provided by way of a deposit with Council or a bank guarantee.

Use of Bank Guarantee: As bond releases may occur under different timeframes only one bond amount/bond purpose is permitted on a Bank Guarantee. Multiple bonds will require multiple bank guarantees to be lodged.

A Bank Guarantee may only be used where the minimum bond amount is $50,000.

The Bank Guarantee must also:

- Note Council as the interested party
- Have NO expiry date
- Describe the type of development using the description on the consent
- Include both the address of the development site and the application number
- NOT include the non-refundable administration fee; this must be paid separately.

B. After Occupation

A request for release of the bond may be made to Sutherland Shire Council after all works relating to this consent have been completed. Such a request must be submitted to Council on the 'Bond Release Request Form' signed by the owner or any person entitled to act on the consent and must be accompanied by a current dilapidation report including photographs.

12. Section 7.11 Contributions - Section 7.11 Development Contribution Plan 2016 - Caringbah Centre Precinct

A. Before Construction

Pursuant to Section 7.11 of the Environmental Planning and Assessment Act 1979 and Sutherland Shire Council Section 7.11 Development Contribution Plan 2016, a total monetary contribution of $360,000.00 must be paid to Sutherland Shire Council toward the cost of regional and local public domain works contained in the Works Programme of the Development Contribution Plan.

This contribution has been assessed and calculated in accordance with the Development Contribution Plan on the basis of 21 proposed Residential Flat Units, Apartments etc, with a concession for 3 existing allotments.

Infrastructure & Facilities	**Contribution Required**
Local open space and public domain works	$271,877.70
Regional open space	$88,122.30
Boarding House Rooms	$0

The contribution will be indexed on 1 July in each year in accordance with the Consumer Price Index (All Groups Index) for Sydney.

The formula to index a contribution rate is:

$$\text{New Contribution Rate} = \text{Current Contribution Rate} \times \frac{\text{Current CPI}}{\text{Previous year's CPI}}$$

As the cost of development is $10 million or more, payment must be made prior to the issue of the first Occupation Certificate in respect of any building to which this Consent relates.

If no Construction Certificate has been issued before or on 25 September 2022, the monetary contribution must be paid before the issue of the first Construction Certificate.

13. Approvals Required under Roads Act or Local Government Act

A. Before Construction

No occupation or works are to be carried out on public land (including a road or footpath) or access provided over a public reserve adjacent to the development site without approval being obtained from Sutherland Shire Council and the necessary fee paid under the Roads Act 1993 and/or the Local Government Act 1993. These approvals must be to the satisfaction of Council for the required development works and may include but are not limited to the following:

- Frontage works including construction of a driveway, footpath, etc.
- Road openings and restoration to provide services to the development.
- Work Zones and hoardings.
- Skip bins.
- Shoring / anchoring.
- Standing of cranes, concrete pumps, etc.

Note: All Plans and Permits are required to be on site, at all times and may be requested by Council officers at any time.

Note: Approval under the Roads Act or Local Government Act cannot be granted by a Principal Certifying Authority or by a Private Certifier. Failure to obtain approval may result in fines or prosecution.

B. During Works

There must be no occupation or works on public land (including a road or footpath) or access provided over a public reserve adjacent to the development site without approval being obtained from Sutherland Shire Council. Any work on public land must be undertaken strictly in accordance with the relevant approval issued under the Roads Act 1993 and/or the Local Government Act 1993 by Sutherland Shire Council.

14. Design and Construction of Works in Road Reserve (Council Design)

A. Design

Council has determined that the proposed development generates a need for the following works to be undertaken by the applicant in the road reserve. To this end a Detailed Frontage Works application under the Roads Act 1993 must be submitted to Sutherland Shire Council, prior to the release of the Construction Certificate. The form is available on Council's website. A fee applies for the relevant inspections, assessment, coordination, creation of design brief and the issue of permits providing consent to undertake frontage works. The design will be quoted separately by Council's Design Services unit.

This design will generally comply with the approved architectural design drawings and the current website version of Council's Public Domain Design Manual (PDDM) and Public Domain Technical Manual (PDTM) except where modified by/or addressing the following:

i) Property alignment/ boundary levels - establish the property alignment/ boundary levels and crossing profiles.

ii) Grades - regrade footpath verge to final design levels including topsoil, turf and all associated soft landscaping.

iii) Vehicle Crossings - construct a 6m wide vehicle crossing.

iv) Redundant Laybacks and Crossings - remove redundant laybacks and vehicle crossings and replace with kerb and gutter (including associated road reconstruction works).

v) Stormwater Connection - construct new stormwater infrastructure as required to facilitate drainage for the proposed development.

vi) Footpath - reconstuct footpath pavement along full frontage of site (as required).

vii) Infrastructure Transitions - ensure there are adequate transitions between newly constructed and existing infrastructure as required.

ix) Kerb and Gutter - reconstruct kerb and gutter as required including associated road reconstruction.

xii) Trees - remove one existing Tristaniopsis laurina street tree; and install Tristaniopsis laurina new street tree 4m to the south of the driveway.

xiv) Utility Services - adjust public services infrastructure as required.

xvii) NBN - the Australian Government has issued a new policy on the provision of telecommunication infrastructure in new developments. The policy is effective from 1 March 2015. Developers are responsible for providing telecommunications infrastructure in their developments. To provide this infrastructure, developers need to contract a carrier to install and operate a telecommunications network.

NBN is the IPOLR (infrastructure provider of last resort) in developments of 100 lots or more within its fixed-line footprint and in new development where its fixed-line network is available, or the NBN rollout has been announced (www.nbnco.com.au/learn-about-the-nbn/rollout-map.html).

If you use NBN, you will need to provide six months' notice before your network needs to be available.

Evidence of the lodgement of this application must be provided to the PCA prior to the release of the Construction Certificate

B. Before Construction

Prior to the release of the Construction Certificate property alignment levels and crossing profiles must be obtained from Sutherland Shire Council.

C. Before Occupation

Prior to the occupation of the building or the issue of an Occupation/Subdivision Certificate the following certification must be provided to Sutherland Shire Council:

i) The supervising engineer must certify that the road frontage works were constructed in accordance with the development consent and associated approval under the Roads Act 1993 including the approved drawings and specification.

15. Site Management Plan

A. Before Commencement of Works including Demolition

An Environmental Site Management Plan must accompany the Construction Certificate. If demolition is to commence prior to the issue of a Construction Certificate the applicant must submit to Sutherland Shire Council a separate Demolition Site Management Plan. These plans must satisfy the Objectives and Controls of Sutherland Shire Development Control Plan 2015 relating to environmental site management and must incorporate the following throughout demolition and construction:

i) Safe access to and from the site during construction and demolition.

ii) Safety and security of the site, road and footpath area including details of proposed fencing, hoarding and lighting.

iii) Method of loading and unloading excavation machines, building materials.

iv) How and where, construction materials, excavated and waste materials will be stored.

v) Methods to prevent material being tracked off the site onto surrounding roadways.

vi) Erosion and sediment control measures.

vii) All trees and their protection zones on and around the site identified for retention are to be protected according to Australian Standard AS 4970 - 2009 Protection of Trees on Development Sites using the methods outlined in that Standard.

B. During Works

The site management measures set out in the above plan must remain in place and be maintained throughout the period of works and until the site has been stabilised and landscaped.

C. Before Occupation

Before the issue of any Occupation Certificate, all foundations / materials associated with construction works (that do not form part of the approved works) must be removed. This includes but is not limited to foundations for tower cranes, vehicle access ways, stockpiles, building waste etc.

16. Pre-commencement Inspection

A. Before Works

A Pre-commencement Inspection/meeting is to be convened by the Applicant on-site a minimum 5 days prior to any demolition and/or construction activity and between the hours of 8.00 am and 4.30 pm Monday to Friday. The meeting must be attended by a representative of Council's Public Domain Assets Branch, the Principal Certifying Authority, the builder/site manager of the building/civil construction company and where necessary the supervising engineer. The attendance of the owner is required when it is intended to use more than one builder/principal contractor throughout the course of construction.

The purpose of the meeting is to:

i) Ensure safe passage for pedestrians, Work and Hoarded Zones are maintained in accordance with Council requirements.

ii) Check the installation and adequacy of all traffic management devices.

iii) Confirm that the supervising engineer has a copy of Council's Specification for Civil Works Associated with Subdivisions and Developments.

Note: An inspection fee must be paid to Council prior to the lodgement of the Notice of Commencement. Please refer to Sutherland Shire Councils Adopted Schedule of Fees and Charges.

17. Supervising Engineer

A. Before Construction

The applicant must engage an Accredited Certifier in civil engineering works or a Chartered Civil Engineer to supervise construction of any:

i) Road frontage works.

ii) Construction / installation of stormwater drainage.

iii) Rainwater harvesting and reuse.

iv) All other works that form part of a subdivision.

The PCA must be informed of the supervising engineer's name and contact details, in writing, prior to the commencement of any construction works.

B. During Construction

The engineer must supervise the works as listed above to ensure compliance with:

i) All relevant conditions of development consent.

ii) Any Consent issued under the Roads Act for this development.

C. Before Occupation

The supervising engineer must certify the works required in A. above were undertaken and completed in accordance with the requirements of this Development Consent and to their satisfaction.

18. Internal Driveway, Parking and Manoeuvring

A. Design

The internal driveway profile, parking and manoeuvring areas must be designed in accordance with the approved architectural plans except where modified by the following:

i) Align with Access and Alignment levels issued by Council's Public Domain Unit.

ii) The proposed loading and delivery area must be clearly defined with suitable signposting and pavement markings.

iii) The car park must be line marked to accommodate 53 vehicles.

iv) The internal driveway must be paved or concreted and must be finished in materials other than plain or exposed aggregate concrete.

v) Provide adequate sight distance for the safety of pedestrians using the footpath area.

vi) Provide a maximum grade of 5% for the first 3 metres inside the property boundary.

vii) Comply with AS2890.1(2004) in relation to the design of vehicular access, parking and general manoeuvring for the B85 vehicle.

x) Comply with AS2890.2(2002) in relation to the design of vehicular access, parking and general manoeuvring for the MRV vehicle.

xi) The maximum longitudinal grade of the driveway must not exceed 14%.

B. Construction

Certification from an appropriately qualified engineer to the effect that the design requirements of A. above have been met must accompany the Construction Certificate.

C. Occupation

Prior to the occupation of the development or the issue of any occupation certificate a suitably qualified engineer must certify that the works required in A. above were undertaken and completed to their satisfaction and in accordance with the requirements of this Development Consent. This certification must be provided to the PCA and a copy also provided to Council.

D. On-going

The approved parking must be used exclusively for car parking as approved for the life of the development.

19. Basement Car Park Design and Construction

A. Design

The basement car park must be designed in accordance with the approved architectural drawings, subject to the following modifications:

i) A minimum headroom of 2.2m measured from the parking floor to the underside of any beam, ventilation duct or service conduit, or to the underside of any door including a security door and fittings when those doors are in an open position in accordance with clause 5.3 of AS2890.1.

ii) Parking bays must not be enclosed, caged or a door provided.

iii) All parking bays must provide a minimum clear parking envelope in accordance with figure 5.2 of AS2890.1.

iv) Parking bays provided for adaptable units must have the minimum clear dimensions of 3.8m wide by 5.4m long or comply with AS2890.6.

viii) The security door fitted to the car parking area entrance must be independently mounted on rubber pads to prevent vibration noise transmission through the concrete walls and / or columns.

B. Prior to Construction

Certification from a Chartered Civil Engineer or a Registered Surveyor, to the effect that the car park layout and vehicle access-way design has been prepared in accordance with A above must accompany the Construction Certificate.

C. Occupation

Prior to the occupation of the development or the issue of any Occupation Certificate a Chartered Civil Engineer or a Registered Surveyor must certify that the works required in “A” above have been completed to their satisfaction and in accordance with the requirements of this Development Consent. This certification must be provided to the PCA and a copy provided to Council.

D. On-going

The approved parking must be used exclusively for car parking for the life of the development.

20. Stormwater Drainage

A. Design

The stormwater drainage system must be designed in accordance with the approved stormwater drainage design drawing; Australian Standard AS3500.3:2015; the BASIX Certificate issued for this development; Sutherland Shire Environmental Specification - Stormwater Management. Except where modified by the following:

i) A layout of the drainage system showing existing and proposed pipe sizes, type, class, grades, lengths, invert levels, finished surface levels and location of all pipes with levels reduced to Australian Height Datum. Impacts on existing trees must be indicated on the plan.

ii) Water from pathways and access driveways shall be prevented from entering the road basement as surface flow. This can be achieved by constructing a box drain at the basement entry equipped with a 300mm wide grate and frame to collect the flow or directing the flow to a sag pit within the property.

iii) The rainwater tank must have a minimum capacity of $6m^3$ per dwelling.

iv) Harvested rainwater must be used for irrigation.

v) The pipeline within the footpath verge must be a hot dipped galvanised steel hollow section with a minimum wall thickness of 4.0 millimetres or reinforced concrete pipe.

vi) Where pipelines are located within the "tree protection zone" of significant vegetation to be retained, the lines shall be excavated by hand or by directional underboring techniques to reduce any adverse impact on the root zone of the trees.

B. Before Construction

i) Certification from an Accredited Certifier in Civil Engineering or a Chartered Civil Engineer, to the effect that the drainage design is to their satisfaction and satisfies the design requirements in A. above must accompany the application for a Construction Certificate.

C. Before Occupation

Prior to the issue of an Occupation Certificate:

i) A Works-As-Executed drawing (WAED) of the stormwater drainage system must be prepared by a Registered Surveyor. This drawing must detail the alignment of pipelines, pits, the rainwater tanks and the detention facilities. An original or a colour copy must be submitted to Sutherland Shire Council.

ii) The supervising engineer must certify the WAED of the stormwater drainage system that the stormwater drainage works, rainwater harvesting facility and rainwater reuse systems were constructed to their satisfaction and in accordance with the Development Consent, and Public Domain Technical Manual. Prior to the occupation or use of the building the Applicant / Owner must submit to Council a copy of the aforementioned letter of certification.

D. Ongoing

i) The operation of all devices or appliances installed within the development approved by this consent as required by conditions pertinent to rainwater harvesting and rainwater reuse must be maintained in good operating order at all times.

ii) The stormwater detention, rainwater harvesting and stormwater treatment facilities must be:

- Kept clean and free from silt, rubbish and debris.
- Be maintained so that it functions in a safe and efficient manner.
- Not be altered without prior consent in writing of the Council.

Note 1: Upon submission of the Works-As-Executed drawing for the stormwater drainage system a notation will be added to the Section 10.7 certificate advising future owners that their property is burdened by a stormwater detention facility.

Note 2: Upon submission of the Certified Works-As-Executed drawing for the stormwater drainage system a notation will be added to the Section 10.7 certificate advising future owners that their property is burdened by a stormwater treatment device that must be maintained, serviced and cleaned.

21. Stormwater Treatment

A. Before Construction

Appropriate stormwater treatment measures, selected and designed in accordance with Engineers Australia (2006) Australian Runoff Quality - A guide to Water Sensitive Urban Design, Argue J R (2013) WSUD: Basic Procedures for 'Source Control' of Stormwater - A Handbook for Australian practice, or other relevant industry design guidelines, must be provided as part of the permanent site stormwater quality management system. Details of the design, construction and maintenance must accompany the Construction Certificate.

B. Before Occupation

The work required by A. above must be completed to the satisfaction of the supervising engineer before occupation of the site or the issue of any Occupation Certificate.

C. Ongoing

The stormwater treatment measure must be maintained in accordance with the manufacturers' or designer's specification for the life of the development.

Note: Upon approval of the stormwater management designs a notation will be added to the Section 10.7 certificate in relation to any required stormwater treatment device.

22. Waste Collection

A. Design

The waste collection point must be designed in accordance with the following requirements:

i) The driveway and loading bay pavement must be designed to withstand the loads generated by a 30 tonne waste collection vehicle.

ii) The waste collection point must be designed in accordance with the following requirements:

a. A “MRV” sized loading bay must be provided in accordance with AS2890.2 within the subject property for waste collection use.

b. The maximum long and cross section grade of the loading bay and temporary bin holding area must be ±5%.

c. Clear and direct access must be provided from the bin holding areas to the loading bay.

iii) The residential waste storage room/s must accommodate at least:

a. 9 x 660L garbage bins

b. 25 x 240L recycling bins

iv) The permanent communal garbage and/or recycling storage area must have a smooth impervious floor that is graded to a floor waste. A tap and hose must be provided to facilitate regular cleaning of the bins and all waste water must be discharged to the sewer in accordance with the requirements of Sydney Water. Garbage bins must be designed to prevent the escape of any liquid leachate and must be fitted with a lid to prevent the entry of vermin.

B. Before Construction

Prior to the issue of any Construction Certificate a suitable qualified civil engineer must certify that the waste collection point has been design in accordance with part A. above. A copy of this certification must accompany the Construction Certificate.

C. Before Occupation

Prior to the occupation of the site or the issue of any Occupation Certificate a suitable qualified civil engineer must certify that the waste collection point has been constructed to their satisfaction and in accordance with part A. above. A copy of this certification must accompany the Occupation Certificate.

D. On-going

All ongoing management, maintenance and cleaning of all waste and recycling management facilities, including suitable collection arrangements and how bins are to be moved from waste storage area/s to collection area/s are to carried out in accordance with the approved Waste Management Plan for the development.

i. All waste and recycling bins must be stored wholly within the approved permanent communal garbage and/or recycling storage area.
ii. All waste and recycling bins must be stored wholly within the approved waste storage area.
iii. Waste collection is to occur via a Medium Rigid Vehicle (MRV) wholly within the site
iv. The aforementioned waste collection requirement shall be adopted as a By-Law in any future Strata Plan.

23. Damage to Adjoining Properties

A. Before Works

To minimise vibration damage and loss of support to buildings / structures and properties in close proximity to the development site, a Geotechnical Engineer's Report must be prepared detailing constraints to be placed on earth moving and building plant and equipment and the method of excavation, shoring, underpinning and support. This report must be provided to the person undertaking the excavation and the Principal Certifying Authority.

B. During Works

The constraints and recommendations of the Geotechnical Engineers Report must be implemented.

24. Public Utilities

This condition is imposed to facilitate the provision of services to the development and reduce conflicts between services and lot boundaries, buildings or associated facilities.

A. Before Construction

Suitable arrangements must be made with all relevant utility service providers to ensure the development is appropriately serviced by electricity, gas, telecommunications (including NBN) and the like, and any necessary underground conduits are provided. The Australian Government has issued a new policy on the provision of telecommunications infrastructure in new development. This policy is effective from 1 March 2015. Developers are responsible for providing telecommunications infrastructure in their developments. To provide this infrastructure, developers need to contract a carrier to install and operate a telecommunications network. NBN is the IPOLR (infrastructure provider of last resort). NBN require 6 months' notice in order to make the network available.

A copy of the agreements/contracts with the utility providers must form part of the supporting construction certificate documentation.

B. Before Occupation/Subdivision

Prior to issue of any Occupation/Subdivision certificate, certification must be provided from each utility service provider/approved agent to the effect that each lot has been serviced to their satisfaction.

Prior to the issue of any Occupation/Subdivision certificate, evidence satisfactory to the Certifying Authority that arrangements have been made for:

i) The installation of fibre-ready facilities (conduits and pits) to all individual lots and/or premises/dwelling to enable fibre to be readily connected to any premises that is being or may be constructed on those lots. Certification from each carrier/provider must be provided to the PCA that they are satisfied that the fibre ready facilities are fit for purpose.

ii) The provision of fixed-line telecommunications infrastructure (cables) in the fibre-ready facilities to all individual lots and/or premises/dwellings must be installed and certification from the carrier/provider must be provided to the PCA stating that the infrastructure has been provided and to their satisfaction.

iii) Installation of gas and/or electricity must be constructed/installed by the utility service provider/approved agent to each allotment. Certification must be provided from each provider/agent stating that all allotments have been serviced to their satisfaction.

iv) WAE drawings must to be prepared by a registered surveyor detailing location and depth of conduits/pits and connection points/ties within allotments. A copy of the WAE drawings must form part of any Occupation/Subdivision certificate documentation.

Note: Should these requirements result in any significant change to the approved design an application must be made to modify the consent under s.4.55 of the Environmental Planning and Assessment Act.

25. Plan of Subdivision to conform with Development Consent

A. Before Subdivision

The Plan of Subdivision must conform with this development consent. A 3m landscape strip across the site frontage is to be allocated as common property on the future Strata Plan.

All works required by this development consent must be completed prior to the release of a Subdivision Certificate.

26. Allocation of Common Property

A. Ongoing

Common property must not be allocated by the Owners Corporation for the exclusive use of a proprietor. No modification may be made to a Plan of Strata Subdivision without the prior development consent of Council.

27. Management of Groundwater

A. During Works

The discharge of groundwater to Council's stormwater drainage system during any works must have a pH of between 6.5 and 8, and must not exceed a suspended sediment concentration of 50mg/L.

The discharge of groundwater to Council's stormwater drainage system must also be undertaken in accordance with, but not limited to:

a. Sutherland Shire Council's "Environmental Specification - Environmental Site Management 2007".

b. Sutherland Shire Council's "Environmental Specification - Stormwater Management 2009".

c. ANZECC "Australian and New Zealand Guidelines for Fresh and Marine Water Quality" 2000.

d. Managing Urban Stormwater, Soils & Construction, Volume 1, 4th Edition, 2004, Landcom.

28. Landscaping Works

A. Design

The landscaping works must be designed in accordance with the approved Landscape Plan except where modified by the following:

i) The podium planter boxes exposed to the central courtyard atrium (both at ground level and the upper levels) are to be provided with automated irrigation and drainage to enable the ongoing maintenance of the plantings in them.

ii) The externally exposed podium planters to all levels are required to have a minimum internal width of 400mm to provide sufficient volume of soil for the survival of the plantings in these planters.

iii) The Level 4 podium planters are to have automated irrigation and drainage

iv) Two additional Blueberry ash trees per private open space (6x trees) are to be provided to the units that front onto Taren Point Road to help with glare and noise attenuation in this location.

v) Two additional 45 litre potted Angophora costata trees are to be planted in the eastern boundary garden to replace the two large Casuarina trees that are to be removed in this location.

vi) A 75lt potted Tristaniopsis laurina - Dwarf water Gum is to be planted on the Taren Point Road street frontage 4 metres to the south of the driveway ramp. Its installation is to be in accordance with the Council's Street Tree planting specification.

vii) Tree Protection Zones (TPZ) / the location of tree protective fencing must be shown on plan for all existing trees and/or natural site features to be retained and protected.

viii) Provide minimum soil depths in planter boxes as follows:

- 1200mm for large trees.
- 900mm for small trees and tall shrubs.
- 600mm low shrubs.
- 450mm grass and ground covers.

ix) In the Communal Open Space (COS) provide a universal toilet, all-weather cover over the entry door, a shade structure of minimum size 6m x 4m, BBQ, basic kitchen facilities, planting and furniture. Furniture on roof or podium terraces must be fixed to meet BCA requirements.

x) All landscape retaining walls and planter boxes must be constructed in masonry, stone or gabions. Timber is not acceptable.

xi) Each ground floor unit must be provided with a clothes line easily accessible from the laundry. Each unit above the ground floor must be provided with a clothes line on a balcony located below balustrade height, with the balustrade treated so that clothes are not readily visible from the street.

xii) All fencing within the front setback must be a maximum height of 1.5m and either all open form or a combination of open form above a solid base to a maximum height of 700mm. Provide screen planting to achieve privacy where Private Open Space is required within the front setback. The solid wall shown to the emergency exit pathway next to the driveway ramp is required to be open form also so that vehicles exiting the basement can see pedestrians more clearly walking/riding north in this location.

xiii) The communal open space areas/ all landscaped areas and all planter boxes on slab must be provided with a water-efficient irrigation system and taps at 25m centres, connected to a wired in controller, pump and the rainwater tank, to enable effective landscape maintenance.

xiv) The private open space of each ground floor dwelling must be provided with a tap, connected to mains water.

xv) Provide screen planting of mixed indigenous or native species to a height of 3 mts along the northern side boundary.

xvi) To improve coverage and reduce weeds and maintenance, planting densities in all planting areas including planter boxes must achieve a minimum of 4 plants per square metre.

xvii) To reduce long term maintenance of planting beds turf species must be native grass such as *Zoysia macrantha* 'Nara' or Buffalo grass varieties.

xviii) As the subject site is identified as being within a Greenweb Restoration area, all new tree plantings must be indigenous species and 50% of understorey plants must be indigenous species. All indigenous species must be selected from Council's 'Native Plant Selector' available on Council's website (www.sutherlandshire.nsw.gov.au and search for Native Plant Selector).

The applicant must engage a suitably qualified Landscape Designer or Landscape Architect to oversee any design changes to the approved Landscape Plan and amendments required above. Details of these design changes must be included in the documentation submitted with the application for a Construction Certificate.

Notes:

A Landscape Designer is a person eligible for membership of the Australian Landscape Designers and Managers and a Landscape Architect is a person eligible for membership of the Australian Institute of Landscape Architects as a Registered Landscape Architect.

If demolition works are to occur prior to the Construction Certificate being issued, tree protection measures must be installed prior to commencement of demolition.

B. Prior to Occupation/Occupation Certificate

The landscape works must be completed in accordance with the approved Landscape Plan and amendments required by 'A' above by persons with a minimum AQF Level III certification in Horticulture or Landscape Construction.

A Final Landscape Inspection must be carried out and a certificate issued by Council's landscape officer prior to occupation or the issue of an Occupation Certificate. This certificate is required to ensure that all tree protection measures, landscaping works, replacement tree planting and the deep soil percentage requirements have been carried out in accordance with 'A' above and other conditions within this consent, that all new indigenous plants on the site and within the road reserve are the correct species and that all trees planted within the road reserve are in accordance with the detailed road frontage design where it forms part of the Roads Act Consent.

To arrange a Final Landscape Inspection please phone 9710-0333 a minimum of 48 hours prior to the required inspection date. An inspection fee will be charged in accordance with the current schedule of rates listed on Council's website. Any secondary inspections will incur a reinspection fee.

C. Ongoing

All landscaping works required by 'A' above must be maintained for 12 months following the final landscape inspection date. Trees required by this condition must be maintained and protected until they are covered by Council's Controls for Preservation of Trees and Bushland Vegetation (SSCDCP 2015 Chapter 39).

Any plants found faulty, damaged, diseased or dead shall be replaced with the same species in the same sized container within one month with all costs borne by the owner.

Note: If difficulty is experienced sourcing suitable indigenous plants from other suppliers, plants grown from locally provenance seed may be available from:

Sutherland Shire Council Nursery
345 The Boulevarde, Gymea
Ph: 02 9524 5672

29. Tree Removal on Private and Council Land (Projects Dual Occupancies and Larger) (ENV2030)

The removal of the following trees is approved:

i) Trees identified on the approved Landscape Plan as "existing tree to be removed"

ii) Any declared noxious plant. The applicant is to ensure that all noxious plants are properly identified and controlled/removed.

iii) Any tree species exempted by the Sutherland Shire Local Environmental Plan 2015.

All other vegetation that would require approval to be removed must be protected.

A. Tree Replacement

i) Fifteen (15x) trees are approved for removal as part of this consent. Where trees are proposed to be removed Sutherland Shire Council requires indigenous replacement canopy tree planting at a ratio of 8:1 on private land (dual occ / medium / high density) and 4:1 on Council land (Council Resolution EHR003-17 of 18 July 2016).

ii) Sixty eight (68x) replacement trees are required to be planted.
In determining this application, the extent of compensatory planting has been reduced as five of the trees located on the site are exempt species.

iii) A minimum number of thirty three (33x) indigenous trees must be planted on the site and/or the street. Replacement trees within the site must not be planted within 4m of an existing or approved building or swimming pool.

iv) Trees must have a minimum container size of 5 litres.

Note: For the remaining thirty five (35x) replacement trees required by "A ii)" above, Council offers offsite planting under a 'Deed of Agreement' as an alternative to on site planting, at a cost specified in Council's Schedule of Fees and Charges. Offsite planting will be undertaken as part of Council's Green Street Program. 'Deed of Agreement' forms can be downloaded from Council's website at www.sutherlandshire.nsw.gov.au/Development/Development-Applications/Off-Site-Tree-Replacement-and-Deed-of-Agreement. A completed form and payment must be submitted to Council prior to the release of the Construction Certificate.

B. Tree Removal on Council Land

Council has preferred supplier agreements in place with arborists who are approved to carry out arbor works on Council land. Removal / pruning of the tree/s listed below must only be undertaken using Council's preferred supplier at the applicant's expense. The applicant is responsible for contract management and payment of the arborist prior to works being undertaken.

Alternatively, if Council's Contractor is unavailable, the applicant may engage their own contractor with appropriate qualifications, licences and insurances and forward their name and details to Council prior to the commencement of work. This information will be kept on record in the event of any reportable incidents. The applicant is responsible for contract management and payment of the Arborist. Any contractor used must undertake all work according to the Australian Standard for Amenity Pruning (AS4373).

Select from Council's list of preferred suppliers listed on Council's website: http://www.sutherlandshire.nsw.gov.au/Residents/Trees/Trees-on-Council-or-Public-Land. Payment of the quoted amount must be made prior to any works commencing on site.

C. Prior to Occupation/Occupation Certificate

The replacement tree planting must be completed in accordance with the approved Landscape Plan/ required street tree planting. Certification will be provided as part of the Final Landscape Inspection by Council's landscape officer (refer Landscape Works Condition).

D. Ongoing

Trees required by this condition must be maintained and protected until they are covered by Council's Controls for Preservation of Trees and Bushland Vegetation (SSCDCP 2015 Chapter 39). Any replacement trees found damaged, dying or dead must be replaced with the same species in the same container size within one month with all costs to be borne by the owner.

Note: If you have difficulty sourcing suitable indigenous plants from other suppliers, plants grown from local provenance seed may be available from:

Sutherland Shire Council Nursery
345 The Boulevarde, Gymea
Ph: 02 9524 5672
Opening hours - Monday to Friday 7.00am-3.00pm (excluding public holidays).

30. Street Tree Planting

Sutherland Shire Council Development Control Plan 2015 requires street tree planting at a rate of 1 tree per 7.5m of frontage.

A. Design

The applicant must plant a 75lt potted Tristaniopsis laurina - Dwarf water Gum on the Taren Point Road Street verge fronting the subject property and not within 3 metres of the Council crossing.

Street tree planting must be in accordance with the "Street Tree Planting Specifications" which are located on Council's website through 'search'. These specifications include the provision of a timber border, tree cage, staked with star pickets and mulching of the trees. This is in accordance with Council's 4:1 replacement policy for street trees (Sutherland Shire Council's Development Control Plan).

B. Prior to Occupation/Occupation Certificate

Prior to occupation of the development or the issue of an Occupation Certificate the tree planting must be completed in accordance with the requirements in 'A' above / the approved Landscape Plan/Tree Location Plan. A Final Landscape Inspection must be carried out and a certificate issued by Council's landscape officer prior to occupation or the issue of an occupation certificate (interim or final). This certificate is

required to ensure that tree planting has been carried out in accordance with 'A.' above, and that all new indigenous plants on the site and within the road reserve are the correct species.

To arrange a Final Landscape Inspection please phone 9710-0333
48 hours prior to the required inspection date. An inspection fee will be charged in accordance with the current schedule of rates listed on Council's website. Any secondary inspections will incur a reinspection fee.

Note: If you have difficulty sourcing suitable indigenous plants from other suppliers, plants grown from locally provenanced seed, as well as tree cages etc are available from:

Sutherland Shire Council Nursery
345 The Boulevarde, Gymea
Ph: 02 9524 5672
Opening hours - Monday to Friday 7.00am-3.00pm (excluding public holidays).

C. Ongoing

Street trees must be maintained and protected until they are covered by Council's Controls for Preservation of Trees and Bushland Vegetation (SSCDCP Chapter 39 part 4). Any replacement trees found damaged, dying or dead must be replaced with the same species in the same container size within 1 month with all costs to be borne by the owner.

31. Tree Retention and Protection

The following condition applies to all trees on the subject site, trees on the adjoining sites (which are potentially affected by the development works), as well as trees on the adjoining Council land that are not approved for removal.

A. Before Works

Prior to the commencement of any demolition, excavation or construction works on site, the following tree protection measures must be put in place and maintained during the course of construction to prevent damage to trees.

i) Protective fencing constructed of 1.8m high chain wire mesh supported by robust posts must be installed at the distance required by Australian Standards AS4970- Protection of Trees on Development Sites. Signage must be erected on the fence with the following words clearly displayed "TREE PROTECTION ZONE, DO NOT ENTER".

ii) The tree protection zone within the protective fencing must be mulched with a maximum depth 75mm of suitable organic mulch (woodchips or composted leaf chip mulch) and kept regularly watered for the duration of the works subject to this consent.

iii) No development or associated activity is permitted within the fenced tree protection zone for the duration of works subject to this consent. This includes vehicular or pedestrian access, sheds, washout areas, excavations, backfilling, installation of services (including stormwater), removal of top soil, stockpiling of soil or building materials.

iv) Where site access/egress is required over the roots of trees identified for retention and protection, provide hardwood rumble boards over a 200mm thick layer of wood chip.

B. During Construction

i) The tree protection measures detailed in 'A' above must be maintained during construction.

ii) A supervising Arborist must be present during any approved hand excavation or under boring works within the Tree Protection Zone (TPZ) of any tree identified for retention and protection and have the authority to direct works to ensure the trees long term preservation;

iii) A supervising Arborist must strictly supervise that there is no disturbance or severing of roots greater than 30mm diameter and to cleanly cut those roots between 10-30mm in diameter.

iv) If the tree/s identified for retention in 'A' above are damaged or destabilised during construction then works must cease and Council's Tree Assessment Officer (ph. 9710 0333) must be contacted to assess the tree/s and recommend action to be taken.

32. Potential Contaminated Land - Unexpected Finds

A. During Works

If unexpected soil and/or groundwater contamination is encountered during any works; all work must cease and the situation must be promptly evaluated by an appropriately qualified and experienced environmental consultant. The contaminated soil and/or groundwater must then be managed under the supervision of the environmental consultant, in accordance with relevant NSW Environment Protection Authority (EPA) guidelines.

Note: The environmental consultant must be certified by one of the following certification schemes, or demonstrate an equivalent standard acceptable to Sutherland Shire Council, Manager Environmental Science:

- EIANZ 'Certified Environmental Practitioner - Site Contamination' scheme (CEnvP SC).

- Soil Science Australia 'Certified Professional Soil Scientist - Contaminated Site Assessment & Management' scheme (SSA CPSS CSAM).

B. Prior to recommencement of works

If unexpected contaminated soil or groundwater is treated and/or managed onsite; the supervising environmental consultant must verify that the situation was appropriately managed in accordance with relevant NSW EPA guidelines.

The verification documentation must be provided to the satisfaction of the Principal Certifier and Sutherland Shire Council, Manager Environmental Science, prior to the recommencement of any works.

33. Basement Design - Management of Groundwater

A. Design

The subsurface / basement structure must be designed with a waterproof retention system (i.e. tanking) with adequate provision for inundation of ground water. The subsurface structure is required to be designed with consideration of ground water seepage. Subsoil drainage around the subsurface structure must allow free movement of groundwater around the structure, but must not be connected to the internal drainage system.

B. Before Construction

Certification must be provided by a suitably qualified, chartered professional Civil or Structural Engineer that the subsurface / basement structure has been designed in accordance with 'A' above.

C. Before Occupation

Certification must be provided by a suitably qualified, chartered professional Civil or Structural Engineer that the subsurface / basement structure has been constructed to their satisfaction in accordance with the development consent prior to the issue of an occupation certificate.

34. Car Wash Bays

To prevent contamination of the stormwater drainage system a car-wash bay must be provided on site:

A. Design

The wash-bay must be graded to an internal drainage point and connected to the sewer.

B. Before Construction

Details of the design satisfying ‘A’ above must accompany the application for a Construction Certificate.

C. Before Occupation

The Principal Certifying Authority must be satisfied that:

i) ‘A’ above has been complied with; and

ii) any discharge to the sewer from the premises is in accordance with the requirements of Sydney Water.

D. Ongoing

All car-wash, engine degreasing and steam cleaning must be conducted in the wash-bay detailed in 'A' above. Wastewater must be treated in accordance with the requirements of Sydney Water.

35. External Lighting - (Amenity)

To ensure that adequate lighting is provided and the lighting installed on the site does not cause a nuisance to neighbours or motorists on nearby roads:

A. Design

A suitable energy efficient lighting system must be installed along the pedestrian entry pathway, the common vehicular driveway, basement and communal spaces.

All lighting must be designed in accordance with Australian Standard AS4282 - Control of the Obtrusive Effects of Outdoor Lighting.

B. Ongoing

All lighting must be operated and maintained in accordance with the Standard above.

36. Noise Control - Residential Air Conditioning Unit / Heat Pump Water Heater / Any other Pump

To minimise the noise impact on the surrounding environment:

A. Design

The equipment must be located, designed and/or acoustically attenuated so that noise emitted does not exceed a sound pressure level of 5dB LAeq (15 minute) above the ambient background level when measured on or within any other residential property boundary.

B. Before Occupation

The equipment must be installed in accordance with the manufacturer's specification and all required noise attenuation measures implemented to ensure that the equipment complies with "A" above.

C. Ongoing

i) All equipment must be operated in accordance with 'A' above.

ii) For air conditioning units / heat pump water heaters:

Between the hours of 10.00pm and 8.00am on weekends and public holidays and 10.00pm and 7.00am any other day, noise emitted must not be heard within any residence with its windows and/or doors open or closed.

iii) For any other pump:

Between the hours of 8.00pm and 8.00am on weekends and public holidays and 8.00pm and 7.00am any other day, noise emitted must not be heard within any residence with its windows and/or doors open or closed.

iv) Receipt of a noise complaint from the operation of this equipment will result in the requirement for certification from an acoustic engineer that the equipment is operating in accordance with the requirements of this condition. If the acoustic assessment reveals that the equipment is not operating in accordance with the consent it must make recommendations on what remediation measures are required to bring the equipment into compliance.

NB. Any other pump includes a swimming pool pump, a spa pump, a sump pump, a water cooler that uses a pump any other apparatus or machine for raising, driving, exhausting or compressing fluid by means of a piston, plunger or rotating vanes.

37. Noise Control - Design and Operation (General Use)

To minimise the impact of noise from the development, the use of the premises and all sound producing plant, equipment, machinery, mechanical ventilation system or refrigeration systems:

A. Design

The use of the premises and all plant and equipment must be designed and / or located so that the noise emitted does not exceed an LAeq sound pressure level of 5dB above the ambient background level when measured at the most affected point on or within any residential property boundary.

Note: The method of measurement of sound must be carried out in accordance with Australian Standard 1055.1.

B. Before Occupation

Prior to the occupation of the development or the issue of any Occupation Certificate certification must be provided by a qualified acoustic engineer that all work associated with the installation of the acoustic measures has been carried out in accordance with 'A' above.

C. Ongoing

All plant and equipment must be operated and maintained in accordance with 'A' above.

38. Noise from road and general noise (atrium)

To minimise the impact of noise from the adjoining major road corridor and general noise (atrium) on the occupants:

A. Design

The building design must be in accordance with the recommendations of the acoustic report by Renzo Tonin & Associates dated 30th September 2020 approved as part of this application.

B. Before Construction

Details of the acoustic attenuation treatment to satisfy "A" above must accompany the documentation forming part of the Construction Certificate.

C. Before Occupation

Prior to the occupation of the building or the issue of any Occupation Certificate certification demonstrating compliance with the requirements of the acoustic report detailed in "A" above must be provided to the Principal Certifier. This must include all post construction validation test results.

39. Noise and Vibration Control - Residential Car Park

To minimise noise and vibration from use of the security door in the car park:

A. Design

The proposed security door fitted to the car parking area entrance must be independently mounted on rubber pads or otherwise installed to prevent vibration noise transmission through the concrete walls and / or columns.

B. Before Occupation

The Principal Certifier must be satisfied that 'A' above has been complied with.

40. Building Ventilation

To ensure adequate ventilation for the building:

A. Design

The building mechanical and / or natural ventilation systems must be designed, in accordance with the provisions of:

i) The Building Code of Australia;

ii) AS 1668.1 2015;

iii) AS 1668.2 2012;

iv) The Public Health Act - 2010;

v) The Public Health Regulation 2012;

vi) AS 3666.1 -2011;

vii) AS 3666.2 -2011; and

viii) AS 3666.3 -2011.

B. Before Construction

Details of compliance with "A" above must form part of the documentation accompanying the application for a Construction Certificate.

C. Before Occupation

i) Prior to the occupation of the building or the issue of any Occupation Certificate certification must be provided by a qualified mechanical ventilation engineer that the installation of the ventilation system has been carried out in accordance with 'A' above.

ii) Occupation of the premises must not occur until a registration application has been submitted to Council's Environment and Health Regulation Department for any cooling tower / warm water system

D. Ongoing

The ventilation system must be operated and maintained in accordance with 'A' above.

41. Car Park Ventilation - Alternate System

To ensure adequate ventilation for the car park:

A. Design

As the basement car-park does not appear to comply with the natural ventilation requirements of Section 4 of Australian Standards AS1668.2 -2012, the car-park must be either mechanically ventilated by a system complying with AS1668.2 -2012 or alternatively, the natural ventilation system must be certified by a qualified mechanical ventilation engineer to the effect that the system is adequate. The certification shall confirm that the system will protect the health of occupants of the car park at any time it is used and satisfies the atmospheric contaminate exposure rates specified in the Worksafe Australia document: Workplace Exposure Standards for Airborne Contaminants.

B. Before Construction

Details of compliance with 'A' above must form part of the application for a Construction Certificate.

C. Before Occupation

Prior to the occupation of the building or the issue of any Occupation Certificate certification must be provided by a qualified mechanical ventilation engineer that the installation of the ventilation system has been carried out in accordance with 'A' above.

D. Ongoing

The ventilation system must be operated and maintained in accordance with 'A' above.

42. Demolition Work

To ensure that demolition of structures is carried out in an environmentally acceptable and safe manner:

A. Before Commencement

If works involve the removal of more than 10 square metres of asbestos material, a bonded asbestos licence is required. A friable asbestos licence is required to remove, repair or disturb any amount of friable asbestos. For further information contact SafeWork NSW.

B. During Works

i) The demolition of the existing building must be carried out strictly in accordance with Australian Standard 2601 - The Demolition of Structures.

ii) The applicant must ensure that the demolition contractor has a current public risk insurance coverage for a minimum of $5 million. A copy of the Policy must be submitted to the Council prior to demolition.

To ensure that the removal and transportation of any asbestos material, regardless of the quantity, is carried out in an environmentally acceptable and safe manner, all work must comply with the following:

a) Work Health and Safety Act 2011;

b) Work Health and Safety Regulation 2017;

c) Safe Work Australia Code of Practice - How to Manage and Control Asbestos in the Workplace;

d) Safe Work Australia Code of Practice - How to Safely Remove Asbestos;

e) Protection of the Environment Operations Act 1997; and

f) Protection of the Environment Operations (Waste) Regulation 2014.

Asbestos waste in any form must be disposed of at a waste facility licensed by the NSW EPA to accept asbestos waste. Any asbestos waste load over 100kg (including asbestos contaminated soil) or 10m² or more of asbestos sheeting must be registered with the EPA on-line reporting tool WasteLocate. More information can be found at <https://wastelocate.epa.nsw.gov.au>.

43. Dilapidation Report - Adjoining Properties

To assist in the resolution of any future disputes about damage to properties adjoining the development site.

A. Before Works

Prior to commencement of any work on site the Applicant or principal contractor must provide dilapidation reports on the adjacent buildings at Nos 316-320 Taren Point Road and 308 Taren Point Road, including any basements and ancillary structures. The reports must be provided to the Principal Certifier and to the owners of the properties that are the subject of the report.

The reports must be prepared by a suitably qualified and experienced person, such as a structural engineer.

44. Design Requirements for Adaptable Housing

A. Design

The development must provide 10 apartments as Adaptable Housing. A report prepared by a suitably qualified Adaptable Housing Specialist must be submitted with the Construction Certificate, demonstrating that the development complies with the requirements of AS4299 - Adaptable Housing. The report must contain a completed checklist (Appendix A - AS4299) demonstrating compliance with the requirements of a Class C Adaptable House.

B. Before Occupation

Prior to the occupation of the development, or this issue of any Occupation Certificate, a suitably qualified Adaptable Housing Specialist must certify that the development has been constructed in accordance with the requirements of "A" above. A copy of this certification must accompany the Occupation Certificate.

45. Design Requirements for Livable Housing

A. Design

The development must provide 5 apartments as Livable Housing. These units must be designed to the 'Silver Standard' as outlined in the *Livable Housing Design Guidelines* (prepared by Livable Housing Australia).

Details must be included in documentation submitted with the application for a Construction Certificate.

B. Before Occupation

Prior to the occupation of the development, or this issue of any Occupation Certificate, a suitably qualified Livable Housing Specialist must certify that the development has been constructed in accordance with the requirements of "A" above. A copy of this certification must accompany the Occupation Certificate.

46. Verification of Design for Construction - SEPP 65

A. Design

Design verification must be provided by a registered Architect in accordance with the requirements of SEPP 65 stating that the design intent approved by the Development Consent has been maintained in the building / architectural plans submitted with the Construction Certificate. This design verification must accompany the application for a Construction Certificate.

B. During Construction

The registered Architect must be engaged to undertake regular site inspections to ensure the design intent is being maintained during construction.

B. Before Occupation

Prior to the issue of any Occupation Certificate design verification must be provided by a registered Architect in detailing that the development has been completed in accordance with SEPP 65. This includes verification that external finishes have been carried out in accordance with the approved schedule as amended by any conditions of this consent.

Prior to any changes to external materials and/or details separate approval from Council is required.

47. External Walls and Cladding Flammability

A. Design

The external walls of the building, including attachments, must comply with the relevant requirements of the *National Construction Code (NCC)*. This includes the products and systems proposed for use or used in the construction of external walls including finishes and claddings such as synthetic or aluminium composite panels

B. Before Construction

Details of compliance with "A" above must form part of the application for a Construction Certificate.

C. Before Occupation

Prior to the occupation of the development, or the issue of any Occupation Certificate, certification, including an appropriate level of detail to demonstrate compliance with the NCC as built, must be provided to the PC by an appropriately accredited professional that external finishes of the building complies with "A" above.

48. Certification Requirement of Levels

A. During Construction

At the following stages of construction:

i) Prior to the pouring of each floor or roof slab,

A registered surveyor must provide the Principal Certifying Authority with Certification that the stage of structure complies with the development consent in respect of levels.

B. Before Occupation

The certification referred to above must form part of the application for an Occupation Certificate.

49. Sydney Water Requirements & Section 73 Compliance Certificate

A. Before Any Works

Prior to the commencement of any works on site, including demolition or excavation, the plans approved as part of the Construction Certificate must also be approved by Sydney Water. This allows Sydney Water to determine if sewer, water or stormwater mains or easements will be affected by any part of your

development. Customers will receive an approval receipt which must be included in the Construction Certificate documentation.

Please refer to the web site www.sydneywater.com.au.

B. Before Occupation / Subdivision Certificate

Prior to the issue of an Occupation Certificate or a Subdivision Certificate a Compliance Certificate under Section 73 of the Sydney Water Act, 1994, must be submitted to Council by the Principal Certifying Authority. Sydney Water may require the construction of works and/or the payment of developer charges. This assessment will determine the availability of water and sewer services, which may require extension, adjustment or connection to the mains.

Sydney Water Advice on Compliance Certificates:

Sydney Water will assess the development and if required will issue a Notice of Requirements letter detailing all requirements that must be met. Applications can be made either directly to Sydney Water or through a Sydney Water accredited Water Servicing Coordinator. Please make early contact with the Coordinator, since building of water / sewer extensions can be time-consuming and may impact on other services as well as building, driveway or landscaping design.

Go to www.sydneywater.com.au/section73 or call 1300 082 746 to learn more about applying through an authorised WSC or Sydney Water.

50. Dial Before You Dig

A. Before Construction

Underground assets may exist in the area that is subject to your application. In the interests of health and safety and in order to protect damage to third party assets please contact Dial Before You Dig at www.1100.com.au or telephone on 1100 before excavating or erecting structures (this is the law in NSW).

It is the individual's responsibility to anticipate and request the nominal location of plant or assets on the relevant property via contacting the Dial before you dig service in advance of any construction or planning activities.

51. Noise Control and Permitted Hours for Building and Demolition Work

A. General

To manage noise impacts to the surrounding properties, demolition, excavation, or construction activities should be managed in accordance with the NSW Department of Environment and Climate Change (now Environment Protection Authority). Interim Construction Noise Guideline (ICNG) 2009 and Australian Standard 2436 - 2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites.

Dilapidation reports

Subject to the receipt of permission of the affected landowner, dilapidation report/s of adjoining buildings are to be prepared by an appropriately qualified practising structural engineer and submitted for the approval of the Principal Certifier -

a) prior to the commencement of demolition/excavation works; and

b) on completion of construction demolition/excavation works.

Copies are to be provided to affected land owners of adjoining properties.

Demolition, Excavation and Construction Noise and Vibration Management Plan

A site specific noise management plan must be submitted to the Private Certifier and Council prior to issue of any Construction Certificate relevant to that stage of the development.

The Plan must be prepared by a suitably qualified person who is a member, at Member Level, of -

the Institution of Engineers Australia and the Australian Acoustic Society;

or working for, and under the supervision of, a firm that is a member of the Australasian Association of Acoustic Consultants.

The plan must include but not be limited to the following -

a) Identification of noise sensitive receivers near to the site.

b) A prediction as to the level of noise impact likely to affect the nearest noise sensitive receivers from the use and proposed number of high noise intrusive appliances intended to be operated onsite.

c) A statement should also be submitted outlining whether or not predicted noise levels will comply with the noise criteria stated Tables 3 and 4 of the Interim Construction Noise Guideline (ICNG) 2009 Section 4 Quantitative Assessment method.

   Where resultant site noise levels are likely to be in exceedance of this noise criteria then a suitable proposal must be given as to the duration and frequency of respite periods that will be afforded to the occupiers of neighbouring property.

d) A representative background noise measurement (LA90, 15 minute) should be submitted, assessed in the vicinity of any potentially affected receiver locations and measured in accordance with AS 1055:1.2.1997.

e) Confirmation of the level of community consultation that has/is and will be undertaken with Building Managers/ occupiers of the main adjoining noise sensitive properties likely to be most affected by site works and the operation of plant/machinery particularly during the demolition and excavation phases.

f) Confirmation of noise monitoring methodology that is to be undertaken during the main stages of work at neighbouring noise sensitive properties in order to keep complaints to a minimum and to ensure that noise from site works complies with the noise criteria Tables 3 and 4 of the Interim Construction Noise Guideline (ICNG) 2009.

g) What course of action will be undertaken following receipt of a complaint concerning offensive noise.

h) Details of any noise mitigation measures that have been outlined by an acoustic consultant or otherwise that will be deployed on site to reduce noise impacts on the occupiers of neighbouring noise sensitive property to a minimum.

i) What plant and equipment is to be used on site, the level of sound mitigation measures to be undertaken in each case and the criteria adopted in their selection taking into account the likely noise impacts on the occupiers of neighbouring property and other less intrusive technologies available.

Compliance with Demolition, Excavation and Construction Noise and Vibration Management Plan

All works conducted on site which form part of this development must be carried out in accordance with the submitted Demolition, Excavation, and Construction Noise and Vibration Management Plan.

The contractor must provide regular, appropriate, and sustained periods of respite in consultation with Council's Environmental Health and Building Unit:

- Where all control measures detailed in the Demolition, Excavation and Construction Noise and Vibration Management Plan have been implemented and the resultant noise and/or vibration levels at any sensitive receiver still exceed the applicable criteria and
- The development is giving rise to sustained complaints.

Hours of Operation

All demolition, excavation and building, work must be carried out only between the hours of:

- 7.00am and 6.00pm Monday to Friday inclusive,
- 8.00am and 3.00pm Saturdays.

No work is to be carried out on Sundays and Public Holidays.

On a maximum of 12 occasions extended hours may be carried out on the site:

- from 7.00am to 8.00pm Monday to Friday, excluding Public Holidays on a week day.

The purpose of the extended hours note reference ICNG 2009 for example, pouring large slab.

In order to activate the extended hours of operation both Council and affected neighbours must be notified a minimum of 48 hours prior to commencement.

Affected neighbours include those in the immediate vicinity, adjacent or adjoining the development site. Notification must be by way of written advice including:

- Date/s the extended hours will be utilised.
- The purpose of the extended hours note reference ICNG 2009 for example, pouring large slab.
- Address of the development works / site.
- Contact name and number of appropriate site officer (supervisor or manager) for enquiries.
- Include a copy of the letter and a map or list identifying those affected neighbours who have been notified.

52. Toilet Facilities

A. During Works

Toilet facilities must be available or provided at the work site at a ratio of one toilet plus one additional toilet for every 20 persons employed at the site before works begin and must be maintained until the works are completed.

Each toilet must:

i) be a standard flushing toilet connected to a public sewer, or
ii) have an on-site effluent disposal system approved under the Local Government Act 1993, or
iii) be a temporary chemical closet approved under the Local Government Act 1993.

53. Street Numbering and Provision of Letter Box Facilities

A. Before Occupation

i) Street / unit numbers must be clearly displayed.

ii) Suitable letterbox facilities must be provided in accordance with Australia Post specifications and AS4253.

iii) The dwellings must have the following street address format:

- G01-G10, 310 Taren Point Road, Caringbah
- 101-111, 310 Taren Point Road, Caringbah
- 201-211, 310 Taren Point Road, Caringbah
- 301-311, 310 Taren Point Road, Caringbah
- 401-406, 310 Taren Point Road, Caringbah

54. Graffiti

A. Design

All surfaces on the street level that are not glass are to utilise graffiti resistant paints and/or other surfaces that discourage graffiti.

55. Closed Circuit Television (CCTV)

A. Design

To increase resident safety and security, a CCTV system must be installed to monitor all common areas (including letter boxes), the access / exit driveway and all basement car park levels including lift areas.

Digital technology will be required to be used to record images from the camera and this is to be located in a secure location. The surveillance equipment will need to be able to zoom in and out on a person without losing focus. It must be maintained in working order at all times and installed by a qualified and reputable company.

56. Basement Car Park Security Requirements

A. Design

The following design requirements must be satisfied:

i) Security shutters / roller door must be installed at the main entry to the basement car park levels. An intercom system must be installed for visitors to gain entry.

57. Access Control

A. Prior to Occupation

All entry points to the development, including the car park are to be fitted with appropriate access control devices in line with Australian Standards.

No entry to the building through the fire escape stairs is to be gained. Stairs are to be well lit at all times.

END OF CONDITIONS

Appendix B

Compliance table against the requirements of ARH SEPP

State Environmental Planning Policy (Affordable Rental Housing) 2009			
Division 1 – Infill affordable housing			
CLAUSE	**REQUIREMENT**	**PROPOSAL**	**COMPLIANCE**
10 (*Land to which Division 1 Applies*)	Applies to development for the purposes of dual occupancies, multi dwelling housing or residential flat buildings if: • permissible with consent under another EPI	Residential Flat Buildings are a permissible use in the R4 zone.	Yes
	• Not on land that contains a heritage item, IHO or on the SHR	Not identified as Heritage Item/ IHO or listed on SHR	
	• All or part of the development must be in an accessible area	670m walking distance to the public entrance of Caringbah Station	
13 (*Floor Space Ratios*)	0.5:1 bonus (if the existing max FSR is less than 2.5:1 and 50% used as affordable housing)	Total Proposed GFA: 3,553.42m^2 Proposed Affordable housing GFA: 1,782.04m^2 (50%) SSLEP 2015 = 5.2:1 ARH BONUS = 0.5:1 Proposed FSR: 1.7:1	Yes
14 *(Standards that cannot be used to refuse consent)*			
Site Area	If the site area on which it is proposed to carry out the development is a least 450m^2	2090.3m^2	Yes
Landscaped Area (Deep soil and podium garden areas combined)	30% of the site area is to be landscaped	30.4%	Yes
Deep Soil Zones	There is soil of a sufficient depth to support the growth of trees and shrubs on an area of not less than 15% of the site area (the deep soil zone), (In this case 313.02m^2) Each area forming part of the deep soil zone has a minimum dimension of 3m, and If practicable, at least 2/3 of the deep soil zone is located at the rear of the site area	26.4% (551.8m^2) with a dimension greater than 3m with approximately 50% at the rear	Yes
Solar Access	If living rooms and POS for a min. 70% of dwellings receive a min. 3 hours direct sunlight between 9 and 3 in midwinter	26% (13 units) receive 3 hours 71.4% (35 Units) receive 2 hours as required by the ADG	Acceptable on the basis of consistency with the ADG requirements
Parking	At least: 1 bedroom = 0.5 parking spaces (21 dwellings = 10.5 spaces) 2 bedroom = 1 parking space (23 dwellings = 23 spaces) 3+ bedrooms = 1.5 parking spaces (5 dwellings = 7.5 spaces) Total of 41 spaces required	Total of 43 residential spaces provided, 10 visitor spaces and 2 carwash bays	Yes
Dwelling Size	35m^2 (bedsitter or studio)	All comply	Yes
	50m^2 (1 bed dwelling)		
	70m^2 (2 bedroom dwelling)		
	95m^2 (3+ bedroom dwelling)		
15 ***(Design Requirements)***			
15(1) *(Seniors Living Policy)*	A consent authority must not consent to development to which this Division applies unless it has taken into consideration the provisions of the Seniors Living Policy: Urban Design Guidelines for Infill Development published by the Department of Infrastructure, Planning and Natural Resources in March 2004, to the extent that those provisions are consistent with this Policy.	N/A	N/A (SEPP 65 Applies)

15(2) *(SEPP 65)*	This clause does not apply to development to which clause 4 of State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development applies.	SEPP 65 Applies	Noted
16 *(Continued application of SEPP 65)*	Nothing in this Policy affects the application of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development to any development to which this Division applies.	SEPP 65 Applied	Noted
16A *(Character of local area)*	Must not consent to development unless taken into consideration whether the design of the development is compatible with the character of the local area	Compatible in terms of accommodation type, scale and landscaped setting	Yes
17 *(Must be used for affordable housing for 10 years)*	Must not consent to development to which this Division applies unless conditions are imposed by the consent authority to the effect that: a) for 10 years from the date of the issue of the occupation certificate: (i) the dwellings proposed to be used for the purposes of affordable housing will be used for the purposes of affordable housing, and (ii) all accommodation that is used for affordable housing will be managed by a registered community housing provider, and (b) a restriction will be registered, before the date of the issue of the occupation certificate, against the title of the property on which development is to be carried out, in accordance with section 88E of the conveyancing act 1919, that will ensure that the requirement if paragraph (a) are met.		Conditioned
18 *Subdivision*	Land on which development has been carried out under this division may be subdivided with consent	Strata subdivision proposed	Yes

Appendix "C"

An assessment of the proposal having regard to the design quality principles of SEPP 65

Design Quality Principles	Assessment
Principle 1: Context and neighbourhood character	The site has is zoned R4 high density residential under SSLEP 2015 and forms part of the North Caringbah Precinct within SSDCP 2015. The proposal is generally an appropriate response to the new development standards applicable under SSLEP 2015 and bonus FSR permitted under the Affordable Rental Housing SEPP. The building will sit comfortably within the higher density streetscape, with a similar height and footprint to that constructed to the immediate south, and a transition to the recently approved 5 storey flat building to the north. The development is consistent with the desired future character of the Caringbah North Precinct as envisaged by SSLEP 2015 and SSDCP2015.
Principle 2: Built Form and Scale	The built form and scale is acceptable in the context of the recent development on adjacent and surrounding sites, maintaining a similar form, height and footprint within well landscaped surrounds. The built form is a modern design that is adequately articulated and whilst a minor height variation is proposed as discussed in the Assessment Section the proposal is acceptable.
Principle 3: Density	The density proposed is permitted under the affordable housing SEPP. The building is adequately articulated and the setbacks provided minimise the bulk of the building when viewed from the street and adjoining properties.
Principle 4: Sustainability	The development incorporates BASIX requirements and sustainability measures into its overall design to enhance water and energy efficiency and to provide suitable amenity to the building's future occupants.
Principle 5: Landscape	The proposed development includes deep soil areas in accordance with the Affordable Rental Housing SEPP. The south, east and front setback of the site and within common areas will be adequately landscaped to enhance the site and be consistent with the character of the locality. The landscaping proposed will provide a high degree of amenity for future residents, particularly those units at ground floor level. This is a positive attribute of the proposed development.
Principle 6: Amenity	The proposal generally satisfies the provisions of the ADG with respect to including appropriate floor plan layouts, solar access, natural ventilation and visual/acoustic privacy.
Principle 7: Safety	The proposed development incorporates suitable Crime Prevention Through Environmental Design (CPTED) Principles in the design. The development provides territorial reinforcement via landscaping, fencing and access arrangements. Passive surveillance to and from public and private areas within the development is evident with windows and loaded entry corridors facing onto the central atrium and balconies and windows facing onto Taren Pont Road. The central entrance is wide with clear sightlines from the street.
Principle 8: Housing Diversity and Social Interaction	The proposal provides a mix of apartment types (including 1, 2 and 3 bedroom units which will encourage diversity in the future occupation of the development. The development also includes facilities to encourage social interaction including communal open space areas upon the rooftop, seating provided within the central atrium area near the lifts, and an incidental seating arrangement at the entry point to the development near the street front boundary.
Principle 9: Aesthetics	An appropriate composition of building elements, textures, materials and colours within the development has been generally achieved and the development will make a positive contribution to the locality.

Appendix "D"

An assessment of the proposal against the ADG design criteria

Apartment Design Guide (ADG) –Building Key Design Criteria				
Objective	**Design Criteria**		**Proposal**	**Complies**
3D-1 Communal Open Space (COS)	COS has a minimum area equal to 25% of the site.		11.7% (245m^2 rooftop) 15% (including 67.6m^2 atrium)	**No**. Acceptable on the basis that this is in excess of the 100m2 required by SSDCP.
	A minimum of 50% direct sunlight to the principle usable part of COS for a minimum of 2 hours between 9am and 3pm on 21 June (mid-winter).		>50%	Yes
3E-1 Deep Soil Zones	Min. dimensions of 6m and min. 7% of site (146.3m2)		11.6% (241.9m^2)	Yes
3F-1 Visual Privacy	Up to four storeys (approx. 12m) • Habitable (6m) • Habitable to Non Habitable (4.5m) • Non Habitable (3m)	Ground: 6m		Yes
		Levels 1, 2 and 3: 6m with the following exceptions:		Yes
		North	• 5.8m to exterior of balcony balustrade • 5.7m to building articulation	**No*** (-0.2m) **No*** (-0.3m)
		South	• Point encroachment to 'fins' Unit 1.10 (4.95m) & units 2.10 & 3.10 (4.8m) • 5.6m to balcony planters (6.3m to balconies)	**No*** (-1.05m & -5.2m) **No*** (-0.4m)
		East	• 5.4m to balconies: Units 2.08, 2.09, 2.10, 3.08 3.09 and 3.10	**No*** (-0.6m)
			*****see 'assessment' section of this report	
	Five to Eight Storeys (approx. 25m high) • Habitable (9m) • Habitable to Non Habitable (6m) • Non Habitable (4.5m)	Level 4: 9m with the following exceptions:		Yes
		North	7m to balcony edge 6.15m to balcony planter	**No*** (-2m) & (-2.85m)
		East	7.65m to balcony 6.85m to balcony planter	**No*** (-1.35m) & (-2.15m)
		Roof terrace	>9m	Yes
			*****see 'assessment' section of this report	
3J-1 Car Parking	Sites within 800m to railway in Sydney metropolitan area the minimum car parking rates set out in Guide to Traffic Generating Development or the requirement prescribed by the council whichever is lesser.		Sutherland Shire does not contain any Metropolitan Regional (CBD) or Metropolitan Sub-Regional Centres and ordinarily the SSDCP 2015 figures would be applied. However, in this instance, the proposal has	N/A

		been submitted pursuant to the ARH SEPP which prevails.	
4A-1 Solar and Daylight Access	Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid-winter. A maximum of 15% of apartments in a building receive no direct sunlight between 9am and 3pm at mid-winter.	71.4% (35 units) 8% (4 units)	Yes Yes
4B-3 Natural ventilation	At least 60% of apartments are naturally cross ventilated in the first nine storeys. Overall depth of cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line.	65.2% (30 units) Apartment cross depths are all all <18m	Yes Yes
4C-1 Ceiling heights	Habitable - 2.7m Non-habitable – 2.4m	2.72m habitable and 2.435 non-habitable	Yes
4D-1 Apartment Size & Layout	Minimum internal areas of; • 1 bedroom = 50m^2 • 2 bedroom = 70m^2 (+5m^2 with 2 bathrooms) • 3 bedroom = 90m^2 Habitable rooms to have window with area not less than 10% of floor area	All apartments comply Designed to comply	Yes Yes
4D-2 Room Depth	Habitable room depths are limited to maximum 2.5 x the ceiling height In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window	All apartments comply with maximum depth of 8m from a window.	Yes
4D-3 Room Dimensions	Master bedrooms - min area of 10m^2 other bedrooms 9m^2 (excluding wardrobe space) Bedrooms to have min dimension of 3m. Living rooms or combined living/dining rooms have a min width of: • 3.6m for 1 bedroom • 4m for 2 and 3 bedroom	All comply with the exception of G.09 master bedroom (approx. 9.5m^2) and is to be addressed by a condition of consent. All comply Designed to comply	Yes Yes Yes
4E-1 Private Open	All apartments are required to have a primary balcony as follows; • 1 bedroom = 8m^2 (depth of 2m)	All comply	Yes

Spaces / Balconies	• 2 bedroom = 10m^2 (depth of 2m) • 3+ bedroom = 12m^2 (depth of 2.4m). Ground Level / Podium apartments = 15m^2 (depth of 3m)	All comply with the exception of G.04 which otherwise complies with the primary balcony provisions	**No** Acceptable due to the elevated position of the unit.
4F-1 Common Circulation	Maximum apartments of single circulation core = 8	The maximum is 11 of a single circulation core	**No.** However is acceptable as is serviced by two centrally positioned lifts and is consistent with design guidance 4F-1 that permits up to 12 units.
	For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40	The building is less than 10 storeys, and 2 lifts are provided	N/A
4G-1 Storage	In addition to storage in kitchens, bathrooms and bedrooms the following storage is provided • 1 bedroom = 6m^3 • 2 bedroom = 8m^3 • 3 bedroom =10m^3 At least 50% of the required storage is to be located within the apartment.	Areas are depicted on storage diagrams which cannot be included (eg. kitchen cupboards in units) however excluding these units, the storage provided will still meet the volume requirements.	Yes (it being noted that the storage diagram needs to be updated to reflect the architectural diagrams – conditioned)
4J - Noise and Pollution	In noisy or hostile environments the impacts of external noise and pollution are minimised through the careful siting and layout of buildings Appropriate noise shielding or attenuation techniques for the building design, construction and choice of materials are used to mitigate noise transmission	Acoustic report provided with measures to address impacts.	Yes
4K - Apartment Mix	Provide variety appropriate to distance to public transport, market demand, social and affordable housing and cultural and socioeconomic groups	Satisfactory mix provided	Yes

Appendix "E"

An assessment of the proposal against the SSDCP 2015 design criteria

Sutherland Shire Development Control Plan 2015 – Chapter 7 (R4 Caringbah North Precinct)			
Clause/ Control	**REQUIRED**	**PROPOSAL**	**COMPLIANCE**
1-4 Background and Strategy			
5 Streetscape and Building Form			
5.2.1 Minimum lot width: 26m		45.72m	Yes
5.2.2 Designed and sited to address the street, with a clearly identifiable entry. Where possible, ground floor units facing the street should have street access.		Designed to comply	Yes
5.2.3 The building form must be articulated to avoid large expanses of unbroken wall, and to visually reduce bulk.		Built form modulation with recesses, angled walls, varying wall positions, differing textures (FC cladding, glazing and concrete), colours and planters to avoid large expanses of unbroken wall.	Yes
5.2.4 Facades are to be composed with an appropriate scale, rhythm and proportion, which respond to the building's use and the desired character of a locality.		Façades similar in scale and proportion to approved and constructed apartment buildings on Taren Point Road.	Yes
5.2.7 The finished roof levels of basements are to be located at or near ground level.		The finished roof of the basement at RL31.4 is a balance between cut and fill on the site. The basement entry is approximately 1.05m above existing ground level to accommodate a medium rigid vehicle into the basement. This is similar or less than adjoining development. Existing ground levels will be maintained along all boundaries and landscape screening proposed.	Acceptable
5.2.8 Basement roofs and walls and vehicular entries must not dominate the overall design of the building or streetscape and are to be integrated into the finished building design and landscaped treatment of the site		The raised basement entry is recessed well into the site and will contain landscaping to the sides, and above in the form of planters. The basement slab contains landscaping which is set down into the slab at the edges, to transition to adjoining surrounds. The driveway walls are to be cement rendered to match and integrate with the dwelling.	Yes. The basement is well integrated into the site landscape response such that it will minimise the visual impact of the basement roof and walls when viewed from the street.
5.2.9 Min. 1m landscaped setback along the driveways to basement car parks.		1m indicated	Yes
5.2.10 Driveway walls adjacent to the entrance of a basement car park are to be treated so that the appearance is consistent with the external finish of the building. If basement car park entry points are to be located on the main street frontage of a development, these should be designed so as to reduce the visual impact.		Cement render and painted finish consistent with the finishes applied to the building	Yes
5.2.11 Lift overruns and service plants must be integrated with well-designed roof structures and architectural elements that are an integral part of the building design.		The lift is centralised to minimise its visual presence from the street and nearby vantage points. The overrun is integrated within the	Yes

	rooftop shading structure, sanitary facility and fire stair building that suitably reduces its vertical presence.	
5.2.12 The need for additional building services must be resolved at design stage, coordinated and integrated within the overall design	The applicant advises that the need for an electricity kiosk/ substation is not required, as the development is able to connect to an existing substation located on the adjacent property at 316-320 Taren Point Road. Amended plans have repositioned internal fire hydrants such that they are recessed and integrated within the built form. Service and meter rooms have been provided both within the basement, and upon each floor in suitable locations. The fire hydrant and sprinkler booster assembly is appropriately positioned in the south-western corner of the property to meet Fire NSW requirements, and minimise landscape disruption. The applicant has confirmed a radiant heat shield will not be necessary as the development will be internally sprinkler protected. The rainwater tank and on-site detention tank are appropriately positioned beneath the driveway to further reduce visual services disruption and maximise landscaped area on site.	Yes
5.2.13 Frontage works in accordance with Public Domain Design Manual (PDDM)	A condition of consent will be imposed requiring the development to be in accordance with council PDDM.	Yes
5.2.14 Subsurface replacement of existing local distribution power lines, and provide new street lighting as per PDDM	A condition will be imposed to comply.	Yes
6. Street Setbacks		
6.2.1 & 2 Primary/Secondary Street Setback 7.5m with a 1.5m articulation zone encroachment permitted for 1/3 the area of the facade and must improve the design quality and articulation of the development	7.5m with articulation elements less than 1/3 of the façade which assist to add visual interest and building articulation.	Yes
6.2.3 Basement underground car parks may be allowed within the articulation zone as long as the structure is considered in conjunction with the overall landscape design.	The basement is set down in this location to permit turf at the same level as the front deep soil courtyards.	Yes
6.2.4 Private courtyards within front setback: 3m min. from front boundary	3m setback from boundary	Yes
6.2.5 At grade car parking not located in setback to primary street	Parking is provided within the basement only.	Yes
7. Side and rear setbacks		
7.2.1 Side and rear setbacks must result in a development that: a. provides appropriate access and servicing facilities – vehicular parking, access, storage and waste management areas	Acceptable. See 'Assessment section of this report.	Yes

b. provides resident amenity- including privacy, solar access, ventilation, and landscaped setbacks; c. responds to the local context and provides streetscape amenity, including providing adequate separation from existing and future adjoining development; d. does not prevent a neighbouring site from achieving its full development potential e. has architectural merit.		
7.2.2 Walls are to be articulated to prevent continuous linear walls and promote variation and interest to setback areas and these walls	Varying depth of recesses, angled forms and variation in building material are employed to add variation and avoid continuous linear walls.	Yes
7.2.3 & 4 Basement construction that extends beyond the building footprint to be setback min. 3m from side and rear boundaries. Variations to basement construction side boundary setback control may be considered if: a. The basement construction does not protrude from the natural ground level, so potential overlooking of the neighbouring property is not increased by the development. b. Opportunities for the planting of trees are provided in the setback area.	1m from northern boundary. Basement supported as overlooking mitigated by fencing and appropriate landscaping provided.	**No**. See 'Assessment' section of this report Yes
8. Landscape Design		
8.2.2 Include indigenous canopy trees that will mature to be at least 8m tall within setback areas, planted 3m from adjoining structures.	A condition of consent will require appropriate tree planting.	Yes
8.2.3 & 4 A minimum street tree planting rate is set at one indigenous canopy tree that will attain a minimum mature height of 6m to be planted at maximum spacing of 5m, planted at least 1m from the kerb and/or footpath. Informal clumping of trees is encouraged. Street trees must be selected from the Native Plant Selector available on council's website. Turf must also be planted.	A condition of consent will require appropriate tree planting.	Yes
8.2.5 Minimum rear boundary indigenous tree planting rate is 2 for every 15m of linear boundary.	A condition of consent will require appropriate tree planting.	Yes
8.2.6 Achieve opportunities for deep soil landscape planting between buildings that provide a deep soil separation of more than 3m between trees and structures. Planting beds should be a minimum of 900mm wide to support shrubs and small trees	Opportunities are available for deep soil planting >3m wide along the front, rear and southern boundaries, and although there is less scope along the northern boundary, this is also to be well landscaped with vertical native shrubs, and screening foliage in 1m wide raised planters	Yes
8.2.7 Existing canopy trees in good health in the front and rear setback must be retained	All trees on site are to be removed	**No**. See 'Assessment' section of this report
8.2.8 Landscaping in the vicinity of a driveway entrance should not obstruct visibility for the safe ingress and egress of vehicles and pedestrians	Designed to comply	Yes
8.2.9 Ground floor courtyards must not extend into the 3m landscape strip along the frontage of development.	Complies	Yes
8.2.10 Landscaping and design should be employed to create privacy for residents	Designed to comply	Yes
8.2.11 Any privacy fencing must be appropriately landscaped with screen planting.	Designed to comply	Yes
8.2.12 & 13 Communal open space For FSR 2:1 or less: 100m^2	245m^2 at roof level with shelter, bathroom, seating tables and BBQ facilities	Yes

min, dimension of 3m. Must incorporate shelter, furniture and suitable facilities		
8.2.14 Planting is required on that part of a basement which extends beyond the building footprint. Planting in this area is to have sufficient soil depth to support the species selected and should constitute a minimum of 30% of the area of the exposed basement. This planting is intended: a. to offset the potential for excessive paved areas; b. to provide residents with attractive outlooks from dwellings, and c. to assist in the creation of privacy between dwellings, and between dwellings and common areas.	Planting occupies 66% of the basement that extends beyond the building footprint.	Yes
8.2.15 Where planting is proposed on that part of a basement which extends beyond the building footprint, roof tops or within planter boxes, the space to be planted must be designed and constructed to contain a minimum soil depth of: • 450mm for grass and ground covers • 600mm for shrubs • 900mm for small trees • 1200mm for large trees. Species selection must be suited to the future microclimate. Landscaping on basement roofs and planter boxes must be accessible for maintenance access.	Podium planters are set down into the slab (atrium set down is 900mm, 500mm set down at the south, eastern and western edges of the basement slab), and planter boxes upon the rooftop and on the podium are 1.1m deep.	Yes
8.2.16 Where trees are proposed on roofs or planter boxes an area of 3m x 3m per tree must be provided. Planter boxes in this case must be stepped, mounded or set down in the slab to reduce their apparent height on the surface to 450mm.	The atrium is set down into the basement slab, and will appropriately contain rainforest type species.	Yes
8.2.17 Where site levels allow, basement roof planting is to be integrated with surrounding deep soil landscaping and hard paved areas so the basement roof landscaping reads as an extension of the deep soil landscaping.	Achieved to the east, south and west.	Yes
8.2.18 Where planter boxes edge both sides of a pedestrian path or entrance, the vertical height of the planter shall not exceed a height greater than half the width of the pathway.	Designed to comply	Yes
8.2.19 Appropriate paving must be provided to driveways, walkways, entries, fire egress points, garbage bin enclosures, letterboxes and clotheslines and under pergolas.	Paved/ tiled treatment is indicated for pedestrian areas and concrete for the driveway.	Yes and conditioned
8.2.20 A communal rainwater tank and pump should be located underground in common open space. Common open space areas must be provided with a water efficient irrigation system and taps at a minimum 25m intervals connected to the rainwater tank. Each private open space must be provided with a tap connected to the rainwater tank.	A 6m3 rainwater tank is provided beneath the driveway for irrigation purposes. Provision of taps conditioned.	Yes
8.2.21 An external energy efficient lighting system is to be provided for pedestrian access and driveways located within communal open space.	A condition of consent is recommended for an energy efficient lighting system to be installed in all communal areas.	Yes
9. Building layout and POS		
9.1.1 Suitable clothes drying facilities shall be provided which are not visible from a public place and have access to sunlight.	A condition of consent will require clotheslines to be located on balconies at or below the balcony balustrade height.	Yes
9.5.2 Access to all levels of the development, including the basement, must be made available by a lift in order to facilitate access by people with disabilities.	A lift connects all levels	Yes
10. Solar Access		
10.2.1 and 2 Maximise direct sunlight and min. 70% of units: living rooms & POS >2 hours direct sunlight between 9 & 3 in midwinter	71.4% units receive a minimum of 2 hours direct solar access	Yes

10.2.3 Ensure direct daylight access to communal open space between March and September and provide appropriate shading in summer	Complies	Yes
10.2.4 Skylights and lightwells must not be used as the primary source of daylight in habitable rooms.	Skylights or lightwells are not utilised as the primary source of daylight in habitable rooms. All habitable rooms are provided with a window in an external wall.	Yes
10.2.5 Overshadowing Min. 2 hours between 9 & 3 in midwinter to north facing windows of habitable rooms and 10m2 usable POS	All apartments above the ground floor level will maintain >2 hours. Due to the site orientation, it is not possible to maintain 2 hours solar access to the ground floor units, however these apartments will achieve a minimum of 1 hour across the day.	Acceptable given the site orientation, the affected areas, which are difficult to protect. See 'assessment' section of this report.
11. Visual and Acoustic Privacy		
11.2.1 Locate, orientate and design new development to maximise the provision of visual privacy.	Containing the communal open space area to the central position on the rooftop and well away from the northern boundary will limit opportunities for overlooking and visual intrusion. Opportunities for such intrusion toward the site from the south are obscured by the fire stairs pergola and planting. 12m will be maintained between windows and balconies of habitable rooms consistent with the ADG, and boundary vegetation will assist to maintain privacy. Privacy would be further improved for both occupants and neighbours via an obscure treatment to balustrade glazing and a condition is recommended.	Acceptable
11.2.2 Use detailed site and building design elements to increase visual privacy without compromising access to light and air.	Blade walls utilised, eaves, and angled windows	Yes
11.2.4 Acoustically screen noise generating equipment	A condition of consent is recommended so all noise generating equipment complies with the relevant standards to protect the acoustic privacy of residents and neighbours.	Yes
11.2.5 Residential development adjacent to a rail corridor or a busy road as identified on the Road and Rail Noise Buffer Map should be sited and designed to include noise and vibration attenuation measures to minimise noise and vibration impacts	Acoustic report provided with suitable recommendations that are adopted in recommended conditions of consent.	Yes
12. Adaptable and Livable Housing		
12.2.1 Adaptable Units Developments of 6 or more dwellings – 20% (10 units) **12.3.1** Liveable Units Developments of 6 or more dwellings – 10% (5 units)	10 proposed 5 proposed	Yes Yes
13. Safety and Security		
13.2.1 The design of development is to incorporate Crime Prevention Through Environmental Design (CPTD) principles.	The building design allows for passive surveillance of the street. Access control is managed by the provision of security doors and	Yes

	gates to pedestrian and vehicular access points. Pedestrian entry path is direct and lighting will limit opportunities for concealment.	
14. Parking		
14.2.1 Car parking shall be provided in accordance with the following: For R4 A minimum of: 1 space per 1 bed (21 spaces), 1.5 spaces per 2 bed (34.5 spaces), 2 spaces per 3 bed (10 spaces), plus 1 visitor space per 4 units (12 spaces). 77.5 spaces	N/A. Rental Housing SEPP applies. 53 Spaces provided (including 10 visitor spaces).	N/A
14.2.6 10 dwellings + = 1 carwash bay with dimensions 3m x 7.6m Additional bays 1/20 dwellings for development 30+ dwellings	2 bays proposed	Yes
14.2.7 Where a development is on the lower side of the roadway or where basement car parking is proposed, the driveway is to be a maximum grade of 5% for 3 metres immediately inside the boundary to ensure driver visibility	Complies	Yes
14.2.8 The minimum vehicular crossing and driveway width for a combined vehicular crossing (entry/exit) is 5.5m and 4m for a separate vehicular crossing with a minimum spacing between driveways of 3m.	5.5m width provided	Yes
14.2.9 The design of all vehicle access ways shall enable all vehicles to enter and leave the site in a forward direction. Turning areas shall be provided to enable a maximum 3-point turn to achieve this egress.	Complies	Yes
14.2.10 Car parking areas must be designed to minimise headlight glare onto the windows of dwellings within the site or neighbouring properties.	Complies	Yes
15. Waste Management Requirements		
15.2.1 Provision must be made for waste management, including storage and collection, in accordance with Sutherland Shire Council's "Waste Collection Policy for Multi-Unit Dwellings and Residential Flat Buildings."	Waste management within the basement. Adequate area has been provided in the basement for waste storage. Waste will be collected by a private contractor as smaller truck is required to allow the collection of waste in the basement whilst ensuring vehicles enter and exit the site in a forward direction to satisfy the TfNSW requirements as the development addresses a classified road.	Acceptable

Report and Recommendations of the Design Review Forum Panel
Sutherland Shire Council 5 December 2019

Panel Members:	John Dimopoulos (Chair), Brendan Randles & Peter Brooker
Council Staff:	David Sheehan (ROFF) and Carine Elias (Team Leader)
Applicant Team:	David Waghorn, Planning Ingenuity – Planner Darren Yealland, MBD Developments – Applicant Jason Goggi, Manor House Design – Architect Sam Tardos, Manor House Design – Architect Bobby Kendrovski, MBD Developments - Applicant
DA No:	DA19/0756
Project Address:	310 Taren Point Road, Caringbah
Proposal:	Demolition of existing structures, construction of a residential flat building with basement levels, rooftop communal space, forty-nine (49) units with an affordable housing component and strata subdivision

PREAMBLE

A proposal for the site has not previously been reviewed by Council or the DRF.

The site was visited by the Panel members prior to the meeting.

The proposal has been considered in relation to the Design Quality Principles of SEPP 65. Detailed matters relating to Principle 5 (Landscape) are not covered by the Panel and will be separately reported by Council Officers.

Issues considered relevant to the proposal are noted below.

COMMENTS

1. The Panel query the removal of all trees from the site, especially as the Pre DA recommended keeping trees 21 and 10 at the rear of the site. While 21 is apparently damaged, tree no.10 is healthy and should be kept.

2. The basement eastern setback must be modified to allow for the retention of Tree 10. In addition, apart from allowing a 1m setback for the driveway, the basement northern setback must be a minimum of 3m under the access ramp.

3. The Panels advises that as the Atrium adds additional bulk to the scheme (pushing the building mass closer to all boundaries and increasing impacts on adjoining properties), If Council was to consider all floor space within the atrium as GFA (including "external" circulation), the proposal would not comply with the maximum permissible FSR. The Panel believe that the Atrium may have insufficient breeze to cool the space during summer and facilitate natural ventilation to north facing units. It is therefore recommended that the proposal is amended to allow natural airflow into the atrium on each level. This may be a way of solving density issue (see above), improve natural ventilation to units and enhance amenity of circulation spaces (see below).

4. The Panel questions the functionality of the two discrete lift arrangement, which is highly unusual. Generally, if two lifts are proposed, it is preferable to place them side by side facing a common space so as to optimise functionality and flexibility, while allowing for maintenance, relocation, etc. It is therefore recommended that the lifts are shifted to the south so as to allow for a lobby facing the atrium. This amendment may allow for ventilation right through the building to the south, as recommended above.

5. The Atrium is not a pleasant space as proposed. There will be acoustic issues, walkways are very bare, narrow, exposed to the sun and rain; do not circulate continuously through lobby and are liable to be over heated at times due to lack of breeze. Therefore, the Panel recommends that as part of an amended layout (to address concerns 3 – 7), more attention should be given to the physical and visual amenity of the walkways and atrium itself. The fine grain resolution and degree of design sophistication applied to this central element can make or break the success of the development as a whole.

6. To increase privacy and safety and to soften the atrium with landscape, the roof terrace should be modified so as to line the perimeter of the atrium void with landscaped planters.
7. The egress from fire stairs at ground floor does not comply with the 'deemed to satisfy' provisions of the BCA. If a fire engineered solution is proposed, it must be fully documented and supported by a qualified BCA consultant.

8. North facing terraces above level 3 do not comply with the ADG's separation requirements. Unscreened habitable spaces above 4 levels (including open space) must be 9m from the boundary.

9. Short elbow corridors to the internal apartments are to be discouraged as they limit and make furniture movement difficult and as currently configured virtually impossible.

10. The building expression generally is supported.

11. Although floor to floor heights are less than 3.1m recommended by the ADG and ground level east facing units are substantially below natural ground level, the building is substantially higher than the LEP's height requirements. This indicates that the building may be too high for the site. Stepping the floor plates may help address this non-compliance.

12. Given the added bulk created by the central atrium and the many amenity issues identified throughout, it would appear that the proposal is too large for the site. The reduction of one unit/ floor may allow for additional ventilation into the atrium, as well as a substantial improvement to the project's amenity and compliance.

RECOMMENDATIONS

The Panel is broadly supportive of the proposal, however further design development is recommended to respond to the issues noted above.

John Dimopoulos
(DRF Chair)

PLANNING INGENUITY

AMENDED CLAUSE 4.6 VARIATION STATEMENT

MAXIMUM BUILDING HEIGHT – CLAUSE 4.3, SSLEP 2015

Demolition of existing structures and the construction of an affordable rental housing development with basement parking

310-314 Taren Point Road
Caringbah NSW 2229

Prepared for: MBD Developments

Ref. M180014
14 May 2020



Clause 4.6 variation statement – maximum height (clause 4.3)

1. INTRODUCTION

This Variation Statement has been prepared in accordance with Clause 4.6 of Sutherland Shire Local Environmental Plan 2015 to accompany an amended application for a five storey residential flat building at Nos. 310-314 Taren Point Road, Caringbah ('the site').

2. PROPOSED VARIATION

Clause 4.3(2) of Sutherland Shire LEP 2015 relates to the maximum height requirements and refers to the *Height of Buildings Map.* The relevant map identifies the subject site as having a maximum permitted height of 16m. Building height is defined as follows:

> " *building height (or height of building) means the vertical distance between ground level (existing) and the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like."*

When measured in accordance with the above definition, the proposed lift overrun, rooftop plant room, planter box edge and parts of the rooftop communal open space are over the maximum 16m height limit reaching a maximum height of 19.14m (a reduction in 500mm from the original proposal). The largest extent of non-compliance is measured to the lift overrun, which is centrally located within the building and not visible from the public domain. Lift access to the communal roof space is required for equitable use by all residents.

The extent of non-compliance is indicated in the height blanket diagram at Figure 1. The amended plans have reduced the size of the rooftop common open space and therefore reduced the amount of building that is above the height limit. Nonetheless, it remains that, due to the centralised location of the primary non-compliance, and minor extent of non-compliance created by the planter box edge and communal open space, the proposal will appear to have compliant height to the casual observer. The difference between the original and amended proposal height non-compliance is visually described in Figures 1 and 2, respectively.

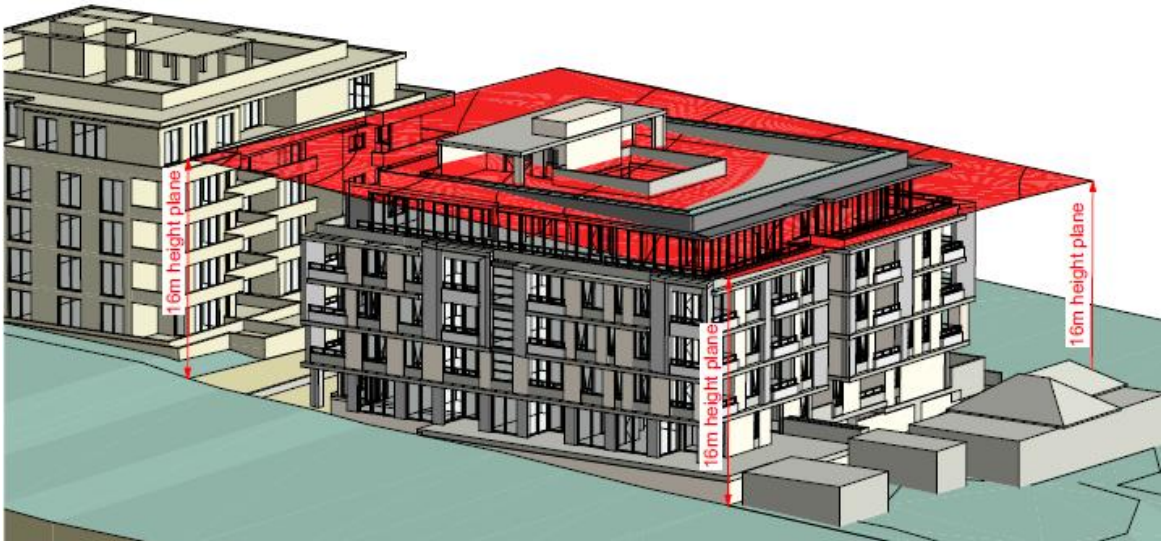


Figure 1 Original Height Blanket Diagram

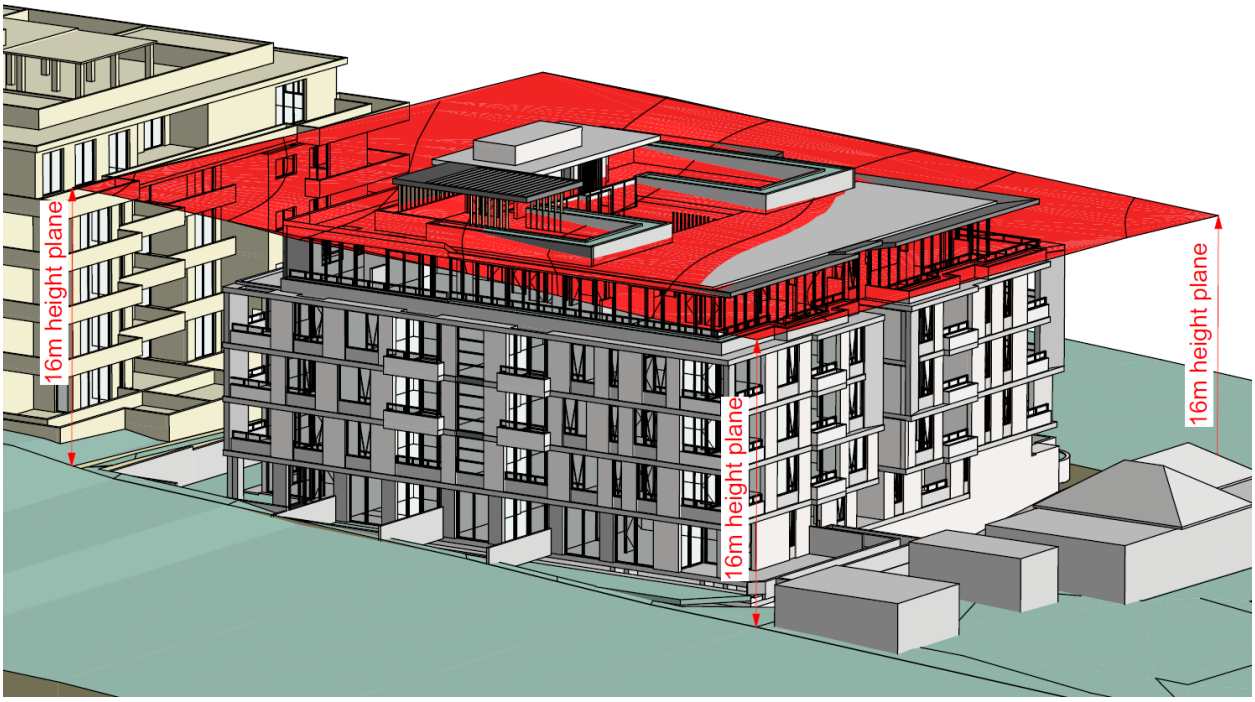


Figure 2 Amended Height Blanket Diagram

Within the street, the building will also appear to have comparable scale to the development that was recently constructed for the neighbouring site to the south (No.316 Taren Point Road), and for which development consent is anticipated for Nos. 306-308 Taren Point Road.

The maximum building height control is a "development standard" to which exceptions can be granted pursuant to clause 4.6 of the LEP.

3. OBJECTIVES AND PROVISIONS OF CLAUSE 4.6

The objectives and provisions of clause 4.6 are as follows:

" *(1) The objectives of this clause are as follows:*

(a) to provide an appropriate degree of flexibility in applying certain development standards to particular development,

(b) to achieve better outcomes for and from development by allowing flexibility in particular circumstances.

(2) Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument. However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.

(3) Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:

(a) that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and

(b) that there are sufficient environmental planning grounds to justify contravening the development standard.

(4) Development consent must not be granted for development that contravenes a development standard unless:

(a) the consent authority is satisfied that:

(i) the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and

(ii) the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and

(b) the concurrence of the Secretary has been obtained.

(5) In deciding whether to grant concurrence, the Secretary must consider:

(a) whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining the development standard, and

(c) any other matters required to be taken into consideration by the Secretary before granting concurrence.

(6) Development consent must not be granted under this clause for a subdivision of land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6 Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living if:

(a) the subdivision will result in 2 or more lots of less than the minimum area specified for such lots by a development standard, or

(b) the subdivision will result in at least one lot that is less than 90% of the minimum area specified for such a lot by a development standard.

Note. When this Plan was made it did not include all of these zones.

(7) After determining a development application made pursuant to this clause, the consent authority must keep a record of its assessment of the factors required to be addressed in the applicant's written request referred to in subclause (3).

(8) This clause does not allow development consent to be granted for development that would contravene any of the following:

(a) a development standard for complying development,

(b) a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,

(c) clause 5.4."

The development standard in clause 4.3 is not "expressly excluded" from the operation of clause 4.6.

Objective 1(a) of clause 4.6 is satisfied by the discretion granted to a consent authority by virtue of subclause 4.6(2) and the limitations to that discretion contained in subclauses (3) to (8). This submission will address the requirements of subclauses 4.6(3) & (4) in order to demonstrate to Council that the exception sought is consistent with the exercise of "an appropriate degree of flexibility" in applying the development standard, and is therefore consistent with objective 1(a). In this regard, the extent of the discretion afforded by subclause 4.6(2) is not numerically limited, in contrast with the development standards referred to in subclause 4.6(6).

4. THAT COMPLIANCE WITH THE DEVELOPMENT STANDARD IS UNREASONABLE OR UNNECESSARY IN THE CIRCUMSTANCES OF THE CASE (CLAUSE 4.6(3)(a))

In Wehbe V Pittwater Council (2007) NSW LEC 827 Preston CJ sets out ways of establishing that compliance with a development standard is unreasonable or unnecessary. This list is not exhaustive. It states, inter alia:

> *An objection under SEPP 1 may be well founded and be consistent with the aims set out in clause 3 of the Policy in a variety of ways. The most commonly invoked way is to establish that compliance with the development standard is unreasonable or unnecessary because the objectives of the development standard are achieved notwithstanding non-compliance with the standard.*

The judgement goes on to state that:

The rationale is that development standards are not ends in themselves but means of achieving ends. The ends are environmental or planning objectives. Compliance with a development standard is fixed as the usual means by which the relevant environmental or planning objective is able to be achieved. However, if the proposed development proffers an alternative means of achieving the objective strict compliance with the standard would be unnecessary (it is achieved anyway) and unreasonable (no purpose would be served).

Preston CJ in the judgement then expressed the view that there are 5 different ways in which an objection may be well founded and that approval of the objection may be consistent with the aims of the policy, as follows (with emphasis placed on number 1 for the purposes of this Clause 4.6 variation [our underline]):

- *The objectives of the standard are achieved notwithstanding non-compliance with the standard;*
- *The underlying objective or purpose of the standard is not relevant to the development and therefore compliance is unnecessary;*
- *The underlying object of purpose would be defeated or thwarted if compliance was required and therefore compliance is unreasonable;*
- *The development standard has been virtually abandoned or destroyed by the Council's own actions in granting consents departing from the standard and hence compliance with the standard is unnecessary and unreasonable;*
- *The zoning of the particular land is unreasonable or inappropriate so that a development standard appropriate for that zoning is also unreasonable and unnecessary as it applies to the land and compliance with the standard that would be unreasonable or unnecessary. That is, the particular parcel of land should not have been included in the particular zone.*

Relevantly, in *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118* (paragraph 16), Preston CJ makes reference to *Wehbe* and states:

"…Although that was said in the context of an objection under State Environmental Planning Policy No 1 – Development Standards to compliance with a development standard, the discussion is equally applicable to a written request under cl 4.6 demonstrating that compliance with a development standard is unreasonable or unnecessary."

Compliance with the maximum building height development standard is considered to be unreasonable and unnecessary as the objectives of that standard are achieved for the reasons set out in this statement. For the same reasons, the objection is considered to be well-founded as per the first method underlined above.

Notably, under Clause 4.6(4)(a)(ii) a consent authority must now be satisfied that the contravention of a development standard will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out. Clause 4.6(4)(a)(ii) is addressed in Section 6 below.

5. SUFFICIENT ENVIRONMENTAL PLANNING GROUNDS (CLAUSE 4.6(3)(b))

Having regard to Clause 4.6(3)(b) and the need to demonstrate that there are sufficient environmental planning grounds to justify contravening the development standard, it is considered that there is an absence of significant impacts of the proposed non-compliance on the amenity of future building occupants, on area character and on neighbouring properties. The non-compliance will not be readily visible from the public domain or surrounding sites, does not contribute significantly to overshadowing and does not impact any significant views. To require strict compliance would mean removing parts of the building without resulting in a real planning benefit to neighbourhood character or amenity. In fact, removal of units would be counterproductive as it would result in the loss of affordable rental accommodation within the locality.

To insist on strict compliance would thwart and preclude the redevelopment of the land to a reasonable standard, and not allow the site to reach its full development potential. There is no planning purpose to be served by limiting the height strictly to the maximum height allowable given the absence of amenity related impacts and the provision of a lift which enables equitable access to the communal roof space.

On “planning grounds” the proposal provides rooftop communal open space that will increase the amenity of the development for future residents. The lift continues to this level to give disabled access. The communal open space is setback from elevations below to ensure no overlooking will occur.

The variation to building height does not adversely impact on solar access, views or outlook and the streetscape appearance is not impacted by the variation. As indicated, the proposal provides for a floor space ratio which complies with the maximum permitted and accordingly, the height breach is not associated with additional density beyond what is expected by the controls or planned for the locality.

It is noted that in *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118,* Preston CJ clarified what items a Clause 4.6 does and does not need to satisfy. Importantly, there does not need to be a "better" planning outcome:

> *86. The second way is in an error because it finds no basis in cl 4.6. Clause 4.6 does not directly or indirectly establish a test that the non-compliant development should have a neutral or beneficial effect relative to a compliant development. This test is also inconsistent with objective (d) of the height development standard in cl 4.3(1) of minimising the impacts of new development on adjoining or nearby properties from disruption of views or visual intrusion. Compliance with the height development standard might be unreasonable or unnecessary if the non-compliant development achieves this objective of minimising view loss or visual intrusion. It is not necessary, contrary to what the Commissioner held, that the non-compliant development have no view loss or less view loss than a compliant development.*
>
> *87. The second matter was in cl 4.6(3)(b). I find that the Commissioner applied the wrong test in considering this matter by requiring that the development, which contravened the height development standard, result in a "better environmental planning outcome for the site" relative to a development that complies with the height development standard (in [141] and [142] of the judgment). Clause 4.6 does not directly or indirectly establish this test. The requirement in cl 4.6(3)(b) is that there are sufficient environmental planning grounds to justify contravening the development standard, not that the development that contravenes the development standard have a better environmental planning outcome than a development that complies with the development standard.*

As outlined above, it is in any case considered that the proposal will provide for a better planning outcome than a strictly compliant development due to the enhanced occupant amenity and equitable access provided for. At the very least, there are sufficient environmental planning grounds to justify contravening the development standard.

6. Clause 4.6(4)(a)

Preston CJ in *Initial Action Pty Ltd v Woollahra Municipal Council* details how Clause 4.6(4)(a) needs to be addressed (paragraphs 15 and 26 are rephrased below):

The first opinion of satisfaction, in clause 4.6(4)(a)(i), is that a written request seeking to justify the contravention of the development standard has adequately addressed the matters required to be demonstrated by clause 4.6(3). These matters are twofold: first, that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case (clause 4.6(3)(a)) and, secondly, that there are sufficient environmental planning grounds to justify contravening the development standard (clause 4.6(3)(b)). This written request has addressed Clause 4.6(3)(a) in Section 4 above (and furthermore in terms of meeting the objectives of the development standard, this is addressed in 7a below). Clause 4.6(3)(b) is addressed in Section 5 above.

The second opinion of satisfaction, in clause 4.6(4)(a)(ii), is that the proposed development will be in the public interest because it is consistent with the objectives of the particular development standard that is contravened and the objectives for development for the zone in which the development is proposed to be carried out. The second opinion of satisfaction under cl 4.6(4)(a)(ii) differs from the first opinion of satisfaction under clause 4.6(4)(a)(i) in that the consent authority, or the Court on appeal, must be directly satisfied about the matter in clause 4.6(4)(a)(ii), not indirectly satisfied that the applicant's written request has adequately addressed the matter in clause 4.6(4)(a)(ii). The matters in Clause 4.6(4)(a)(ii) are addressed in Section 7 below.

7. THE PROPOSED DEVELOPMENT WILL BE IN THE PUBLIC INTEREST BECAUSE IT IS CONSISTENT WITH THE OBJECTIVES OF THE PARTICULAR STANDARD AND THE OBJECTIVES FOR DEVELOPMENT WITHIN THE ZONE IN WHICH THE DEVELOPMENT IS PROPOSED TO BE CARRIED OUT (CLAUSE 4.6(4((a)(ii))

7a. Objectives of Development Standard

The objectives and relevant provisions of clause 4.3 are as follows, inter alia:

" *(a) to ensure that the scale of buildings:*

(i) is compatible with adjoining development, and

(ii) is consistent with the desired scale and character of the street and locality in which the buildings are located or the desired future scale and character, and

(iii) complements any natural landscape setting of the buildings,

(b) to allow reasonable daylight access to all buildings and the public domain,

(c) to minimise the impacts of new buildings on adjoining or nearby properties from loss of views, loss of privacy, overshadowing or visual intrusion,

(d) to ensure that the visual impact of buildings is minimised when viewed from adjoining properties, the street, waterways and public reserves,

(e) to ensure, where possible, that the height of non-residential buildings in residential zones is compatible with the scale of residential buildings in those zones,

(f) to achieve transitions in building scale from higher intensity employment and retail centres to surrounding residential areas."

The *Height of Buildings Map* nominates a maximum height of 16m for the site. It is hereby requested that an exception to this development standard be granted pursuant to clause 4.6 so as to permit a maximum height of 19.14m for the lift overrun.

Objectives (e) and (f) are not applicable to the proposal. In order to address the requirements of subclause 4.6(4)(a)(ii), each of the relevant objectives of clause 4.3 are addressed in turn below.

Objective (a)

Objective (a) refers to being "compatible" with adjoining development. It is considered that "compatible" does not promote "sameness" in built form but rather requires that development fits comfortably with its urban context. Of relevance to this assessment are the comments of Roseth SC in Project Venture Developments Pty Ltd v Pittwater Council [2005] NSWLEC 191:

> *"22 There are many dictionary definitions of compatible. The most apposite meaning in an urban design context is capable of existing together in harmony. Compatibility is thus different from sameness. It is*

generally accepted that buildings can exist together in harmony without having the same density, scale or appearance, though as the difference in these attributes increases, harmony is harder to achieve."

The proposed encroachments into the maximum building height applies mainly to the lift overrun with other minor building components that sit within the footprint of the proposed roof space. The majority of the building is below the maximum building height. The siting and scale of the proposed development has been designed to distribute building mass in a manner that best minimises impact on adjoining development and achieves appropriate separation from neighbouring dwellings. To the casual observer, the building will visually appear to have compliant height and will therefore be compatible with future nearby development. The proposed height non-compliance will not impact on any natural features of the site.

Accordingly, it is considered that the scale of the buildings is compatible with the desired future character of the locality and the site context. The minor height breach does not offend this compatibility in any noticeable way. The proposal therefore satisfies Objective (a).

Objectives (b) & (c)

In terms of daylight access to buildings and the public domain, the proposed height non-compliance does not contribute towards any unreasonable overshadowing of the adjoining public domain or adjoining development and the shadow diagrams provided with the amended plans demonstrate reasonable solar access to southern adjoining units, given the allotment pattern and orientation in the locality. It is noted that the portion of the building casting the greatest shadow (being the parapet of the roof at the southern elevation) has a compliant height and setback, and is therefore not contributing to unreasonable overshadowing not anticipated by the controls. The shadow impacts are a result of the east-west lot pattern in the locality.

In terms of views, the height of the building will not result in any significant additional view loss compared with a compliant building. There are no significant views from adjoining properties as a result of the topography of the area.

In terms of privacy, the non-compliance will not have any additional impacts on adjoining properties, as described in Section 4.1.4.1 of the submitted Statement of Environmental Effects. The proposed non-compliance will not compromise the use or enjoyment of neighbouring properties.

The proposal is therefore consistent with objectives (b) and (c).

Objective (d):

Matters of visual bulk have largely been addressed in relation to Objective (a). In essence, it is considered that given the location of the proposed non-compliance, architectural treatment of the building in terms of setbacks, materials and viewing points from which the non-compliances would be seen, visual impacts will be minimal. The proposed development provides for a floor space ratio that complies with the maximum allowed for an affordable rental housing development. Accordingly, the proposal satisfies Objective (d).

The proposed development is therefore consistent with the objectives for maximum height, despite the numeric non-compliance.

7b. Objectives of the Zone

Clause 4.6 (4) also requires consideration of the relevant zone objectives. The objectives of the Zone R4 High Density Residential are as follows:

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

-To encourage the supply of housing that meets the needs of the Sutherland Shire's population, particularly housing for older people and people with a disability.
-To promote a high standard of urban design and residential amenity in a high quality landscape setting that is compatible with natural features.
-To minimise the fragmentation of land that would prevent the achievement of high density residential development."

The zone objectives overlap to a large extent with the objectives of the height control and have been addressed above. In addition, it is noted that Council regularly support height variations to access to rooftop common open space, providing housing options with high amenity for future occupants. Further to that, it is considered that the proposal directly responds to the housing needs of the community by providing a high quality residential flat development, which includes 50% dedication as affordable rental housing for a 10 year period. The proposal includes a variety of apartment sizes, and adaptable and 'livable' apartments. The proposal will not fragment land for redevelopment, as outlined in the submitted Statement of Environmental Effects.

The height variation does not contravene any objectives for the zone and for that reason the proposed variation is acceptable.

8. THE CONCURRENCE OF THE SECRETARY HAS BEEN OBTAINED (CLAUSE 4.6(4)(b))

The second precondition in cl 4.6(4) that must be satisfied before the consent authority can exercise the power to grant development consent for development that contravenes the development standard is that the concurrence of the Secretary (of the Department of Planning and the Environment) has been obtained (cl 4.6(4)(b)). Under cl 64 of the Environmental Planning and Assessment Regulation 2000, the Secretary has given written notice to each consent authority, that it may assume the Secretary's concurrence for exceptions to development standards in respect of applications made under cl 4.6, subject to the conditions in the table in the notice.

9. WETHER CONTRAVENTION OF THE DEVELOPMENT STANDARD RAISES ANY MATTER OF SIGNIFICANCE FOR STATE OR REGIONAL ENVIRONMENTAL PLANNING (CLAUSE 4.6 (5)(a))

Contravention of the maximum height development standard proposed by this application does not raise any matter of significance for State or regional environmental planning.

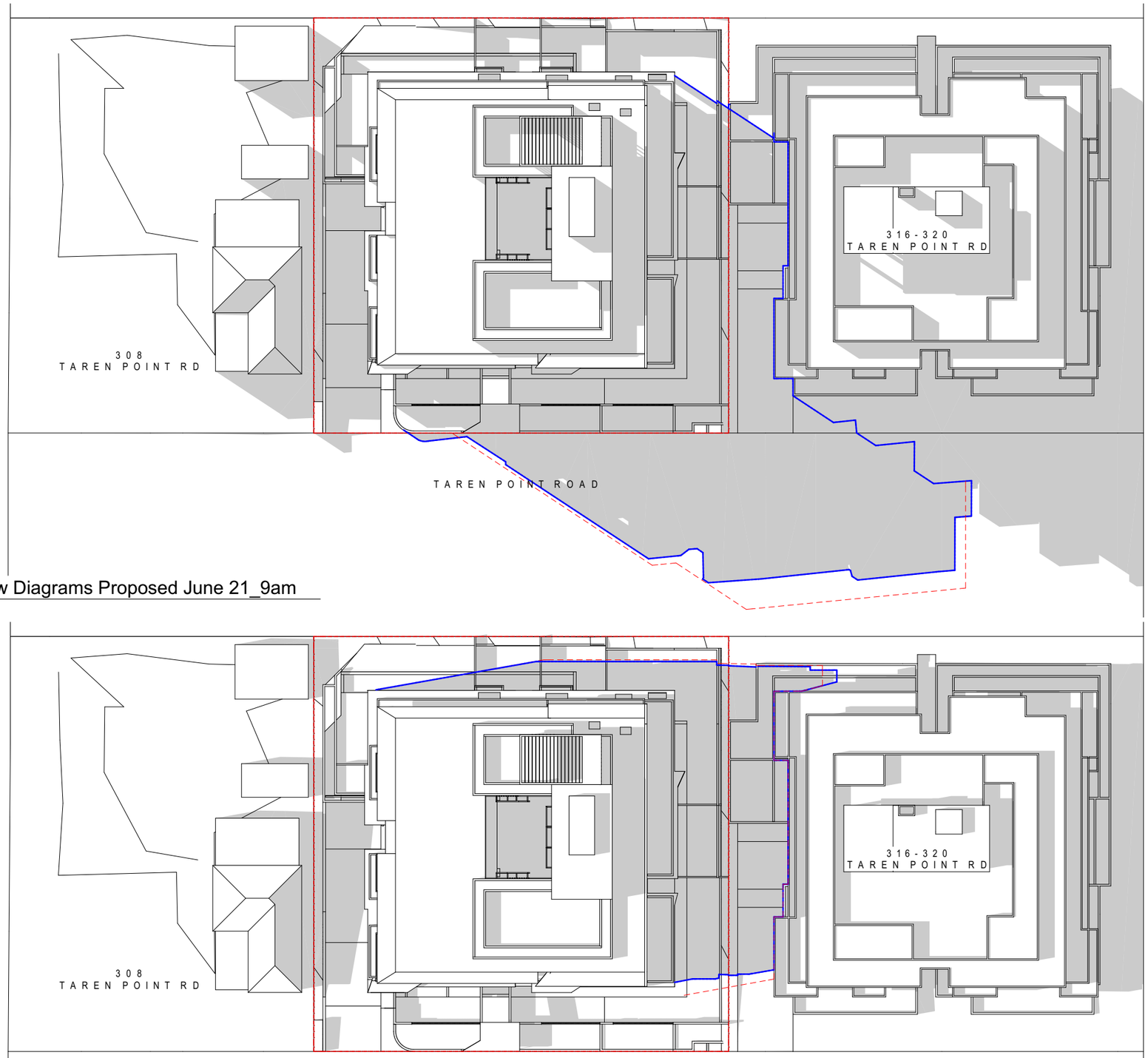
10. THE PUBLIC BENEFIT OF MAINTAINING THE DEVELOPMENT STANDARD (CLAUSE 4.6(5)(b))

As detailed in this submission there are no unreasonable impacts that will result from the proposed variation to the maximum building height. As such there is no public benefit in maintaining strict compliance with the development standard. Whilst the proposed building height exceeds the maximum permitted on the site by 3.14m (19.63%), the proposed development is consistent with the objectives of the development standard and the objectives for development of the zone in which the development is proposed to be carried out. It is the proposed development's consistency with the objectives of the development standard and the objectives of the zone that make the proposed development in the public interest.

11. CONCLUSION

Having regard to all of the above, it is our opinion that compliance with the maximum height development standard is unreasonable and unnecessary in the circumstances of this case as the development meets the objectives of that standard and the zone objectives. The proposal has also demonstrated sufficient environmental planning grounds to support the breach.

Therefore, insistence upon strict compliance with that standard would be unreasonable. On this basis, the requirements of Clause 4.6(3) are satisfied and the variation supported.



Shadow Diagrams Proposed June 21_9am

Shadow Diagrams Proposed June 21_12pm

Shadows cast by compliant massing envelope

Shadows cast by proposal

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

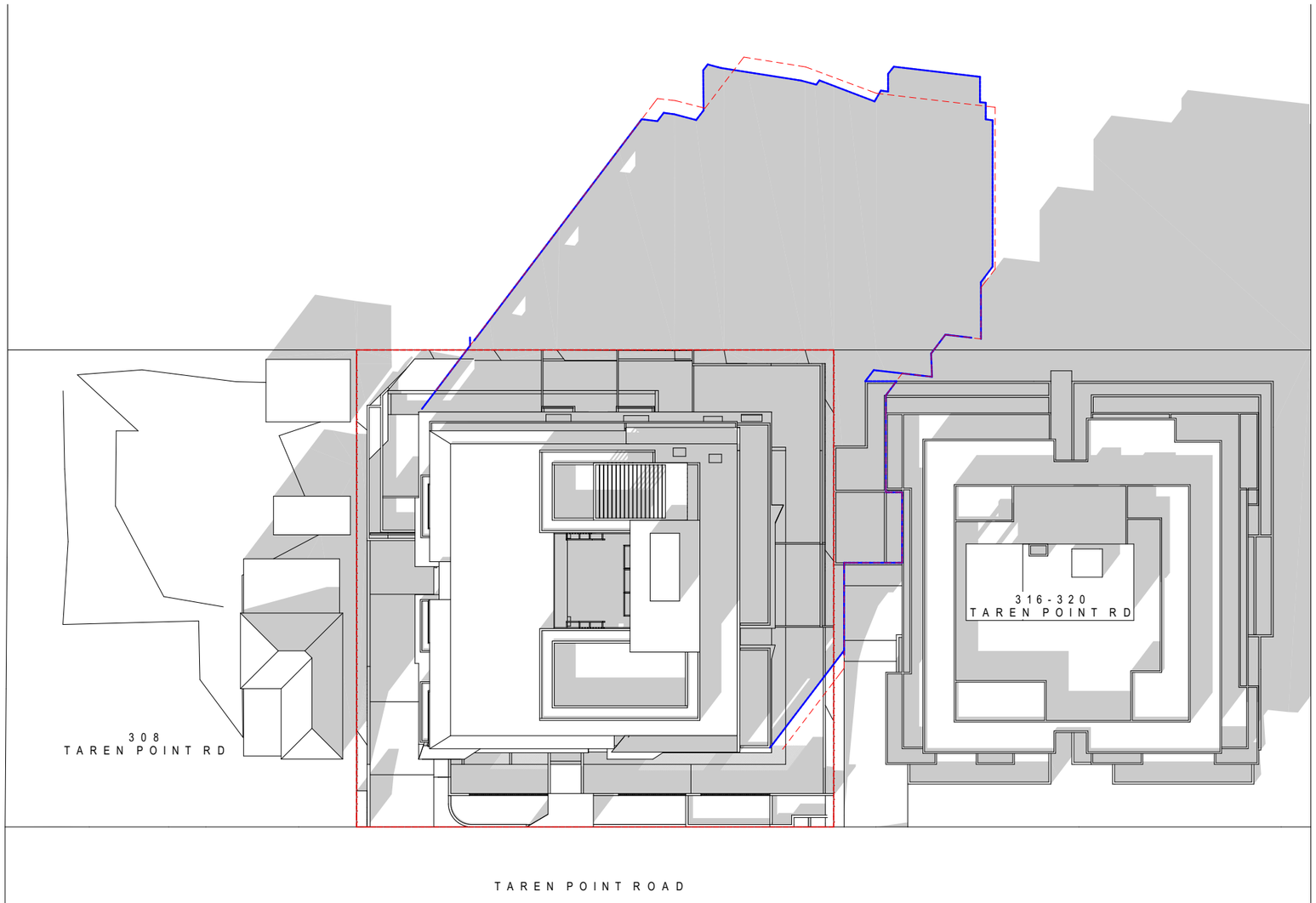
H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA503
SHADOW DIAGRAMS JUNE 21

Job: 1725
May 2020
Rev: K

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Nominated Architect Sam Tadros
NSW Registration 7091

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Shadow Diagrams Proposed June 21_3pm

— — — Shadows cast by compliant massing envelope

-------- Shadows cast by proposal

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

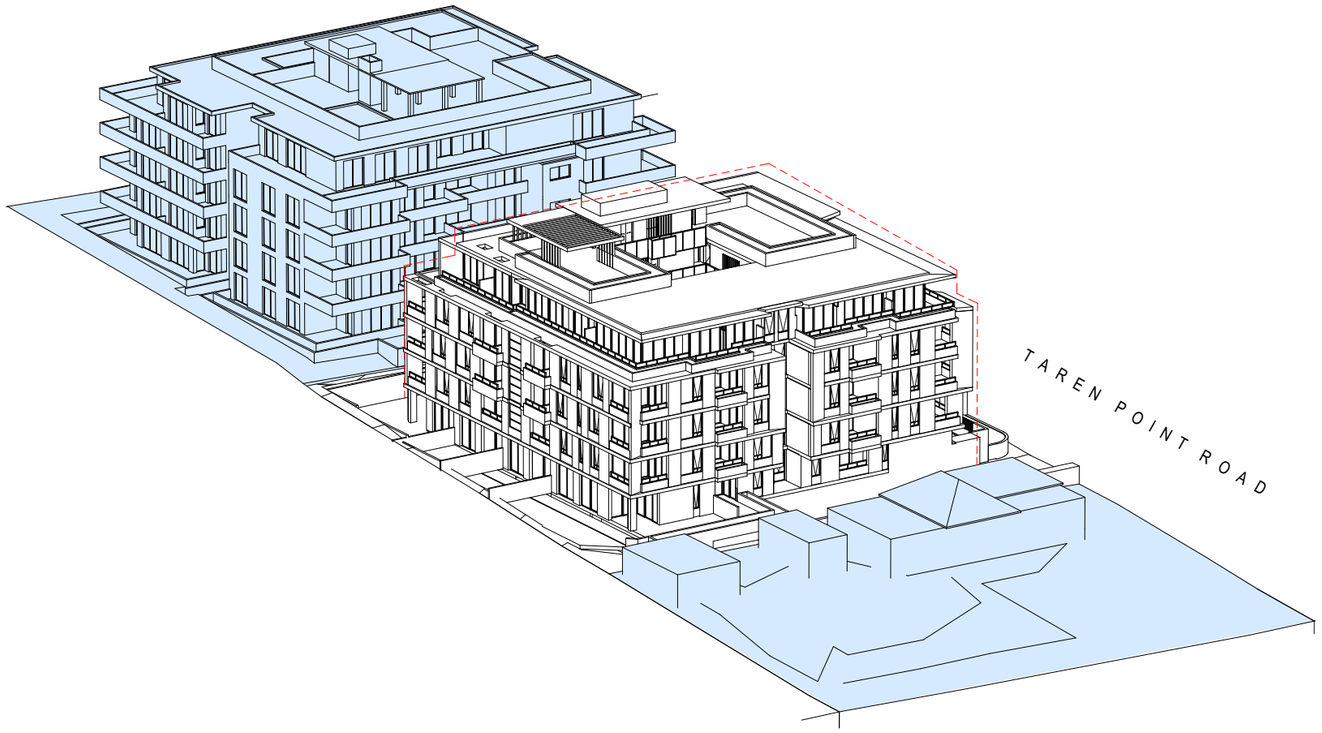
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J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA504
SHADOW DIAGRAMS JUNE 21

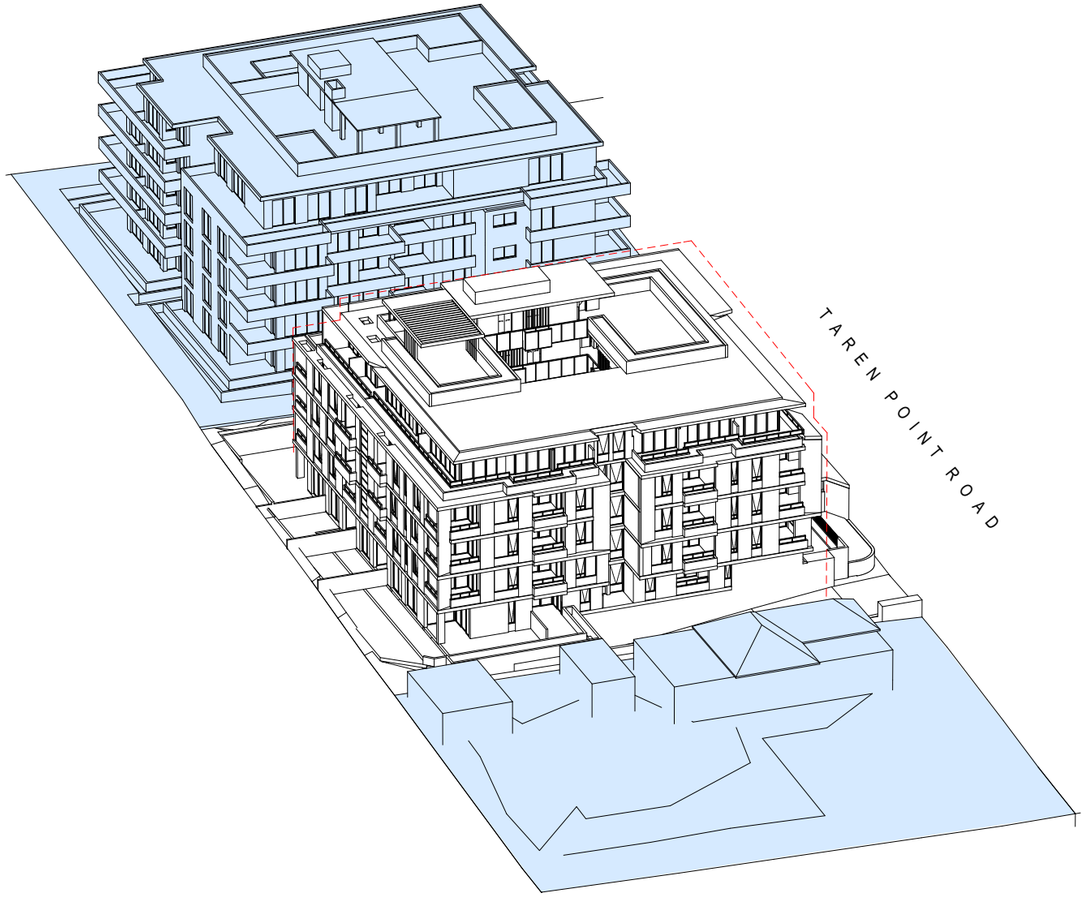
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Sun Eye Diagram June21_9am



Sun Eye Diagram June21_10am

— — — Outline of compliant massing envelope

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

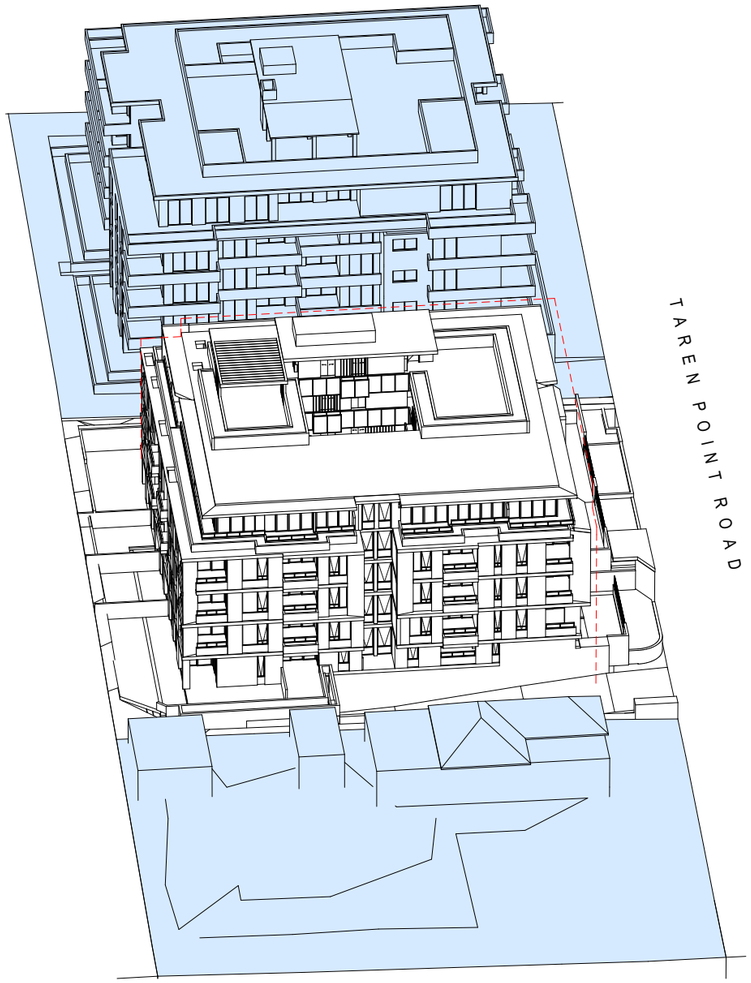
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA511
SUN EYE DIAGRAMS JUNE 21

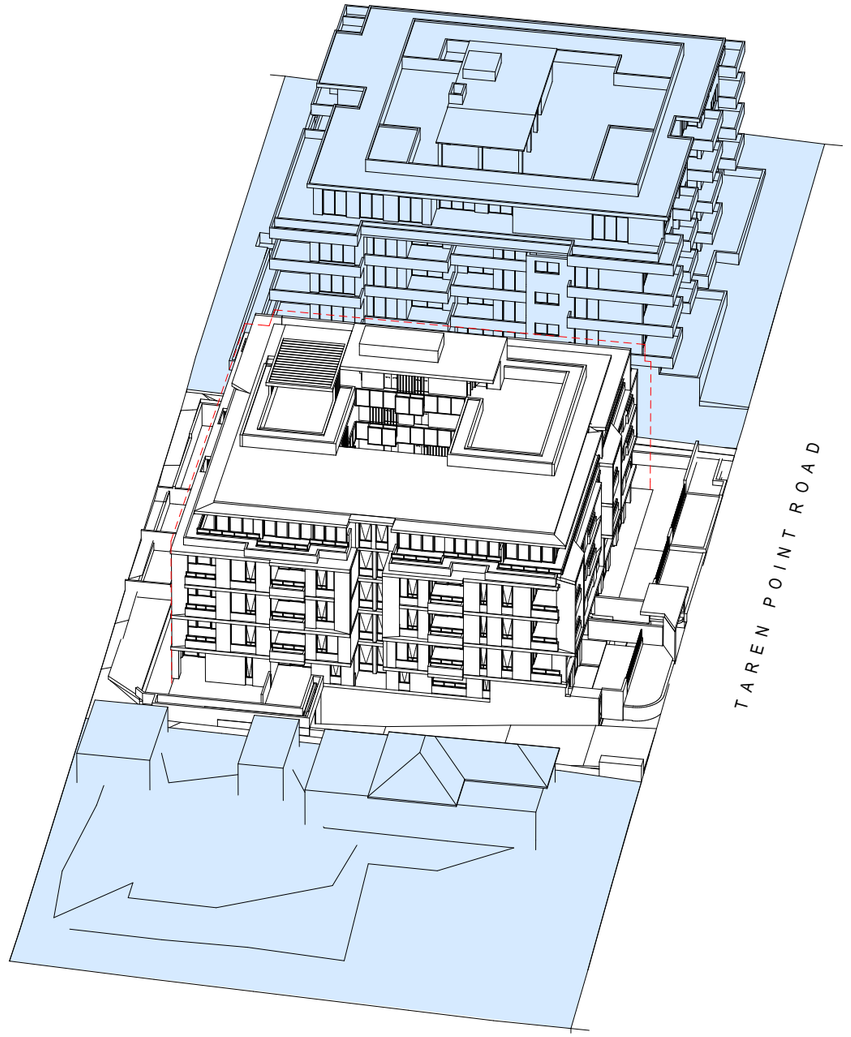
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May 2020
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Sun Eye Diagram June 21_11am



Sun Eye Diagram June 21_12pm

Outline of compliant massing envelope

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

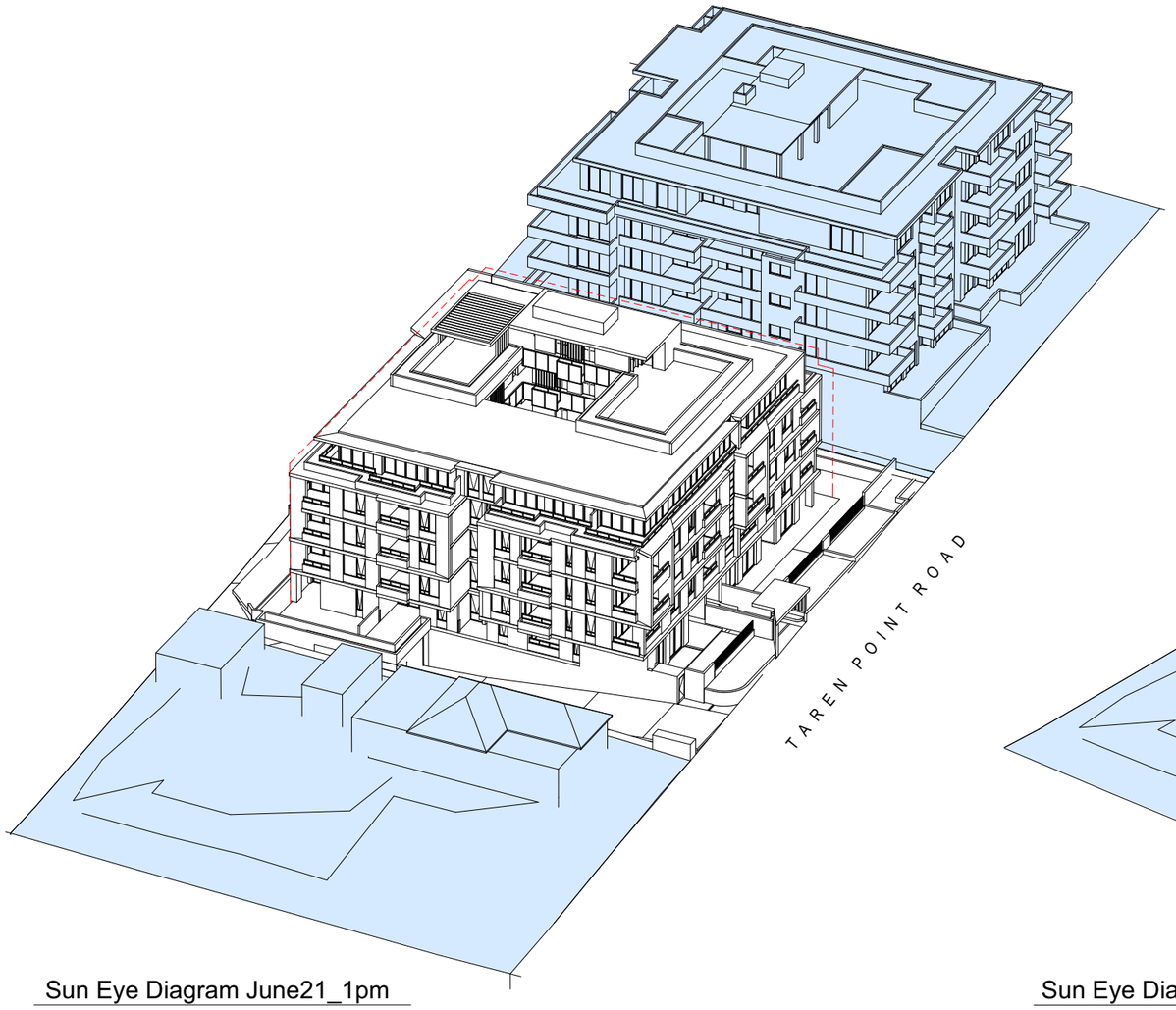
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA512
SUN EYE DIAGRAMS JUNE 21

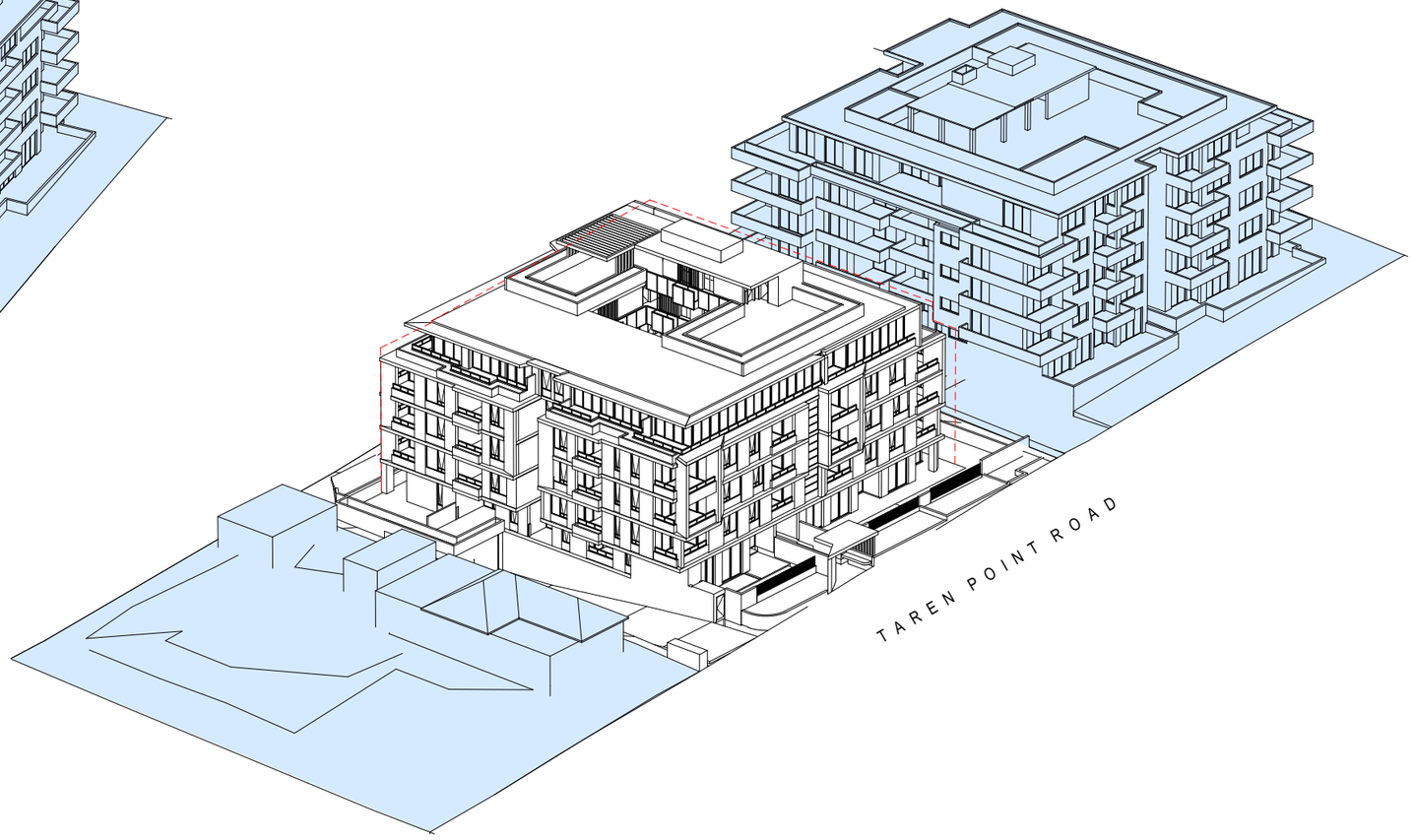
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Sun Eye Diagram June21_1pm



Sun Eye Diagram June 21_2pm

— — — Outline of compliant massing envelope

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

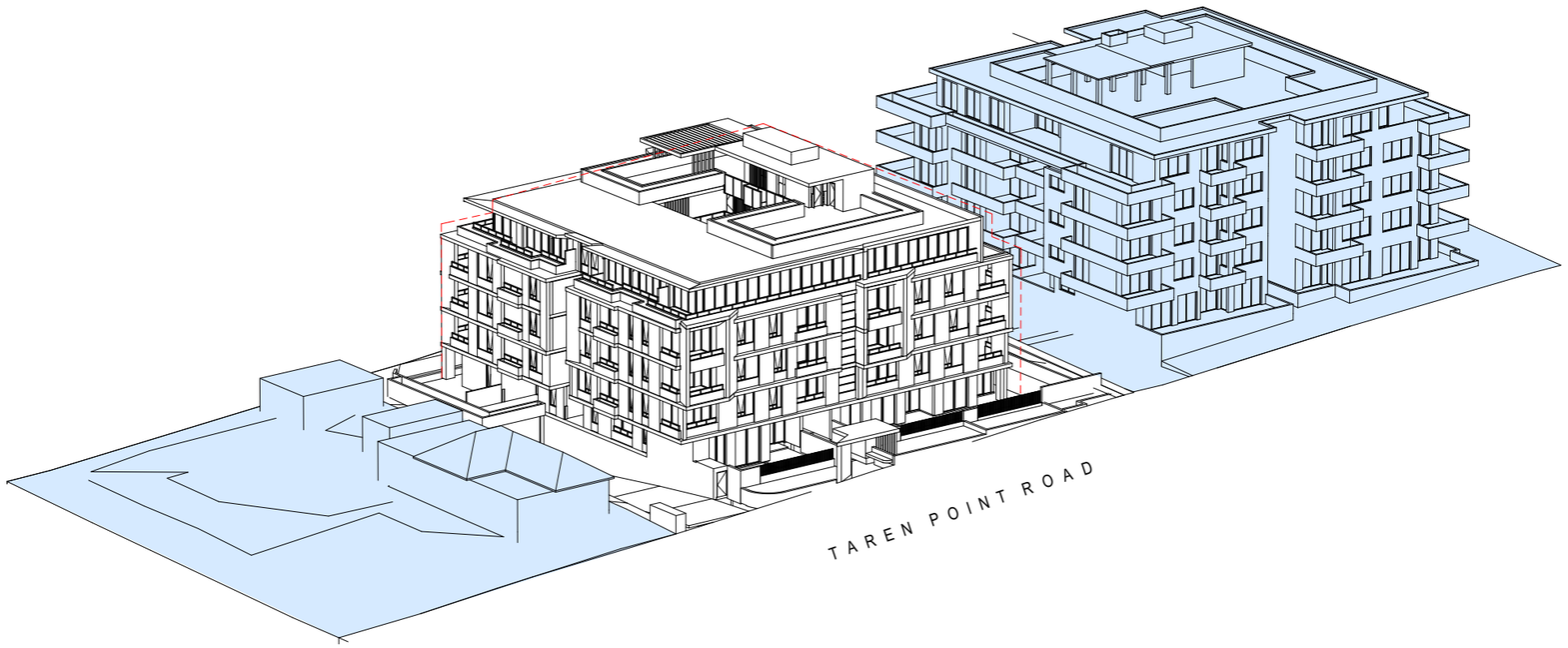
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA513
SUN EYE DIAGRAMS JUNE 21

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Sun Eye Diagram June 21_3pm

Proposed Residential Development

at 310-314 Taren Point Road
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for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA514
SUN EYE DIAGRAMS JUNE 21

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June 21_9AM



June 21_10AM



June 21_11AM



June 21_12PM

Existing Shadows

Shadows cast by compliant massing envelope

Shadows cast by proposed development

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

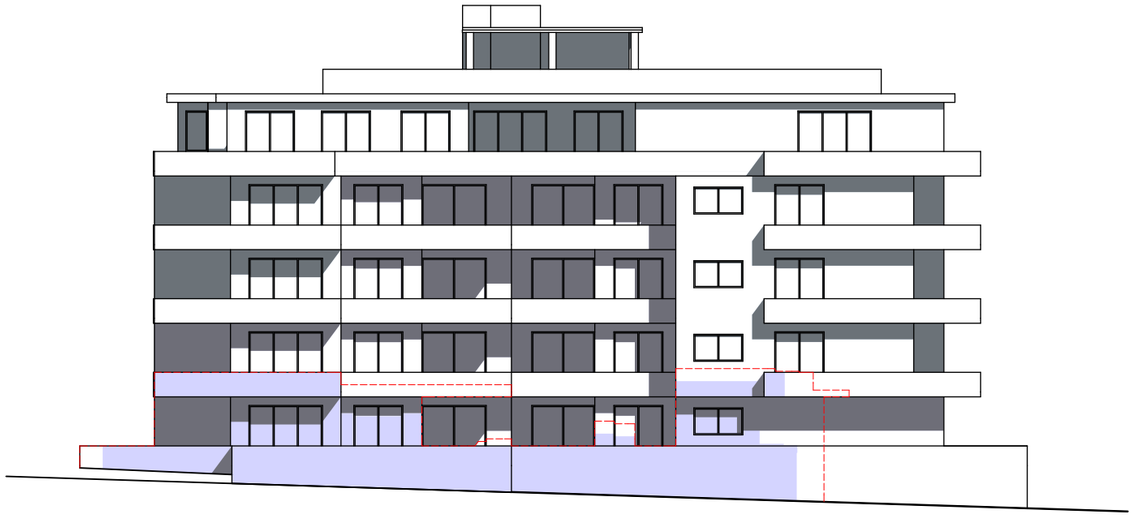
H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA515
ADJOINING DEVELOPMENT SHADOW DIAGRAMS

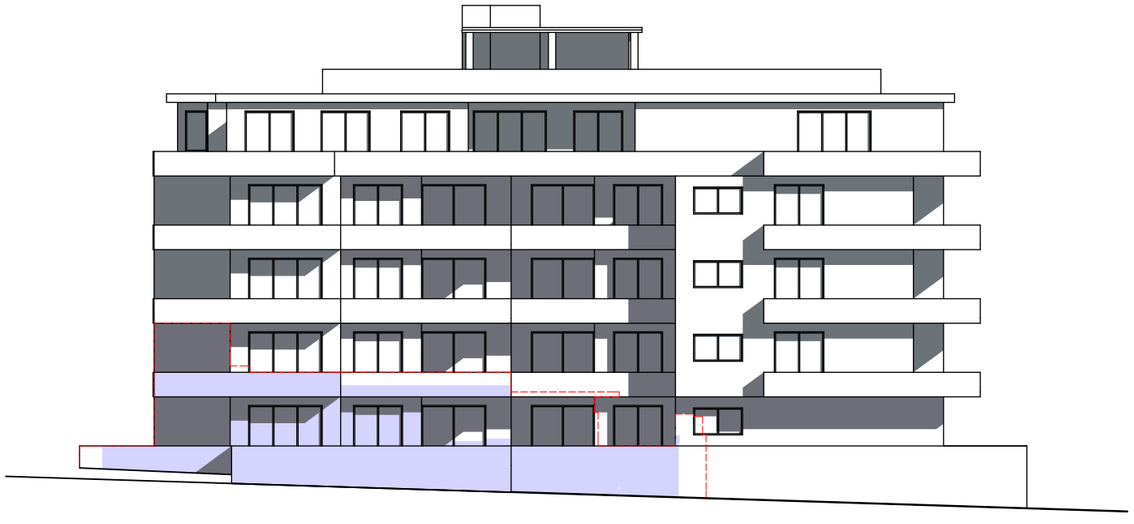
Job: 1725
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June 21_1PM



June 21_2PM



June 21_3PM



Summary
2 neighbouring apartments achieve <2hr solar access

Existing Shadows

Shadows cast by compliant massing envelope

Shadows cast by proposed development

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

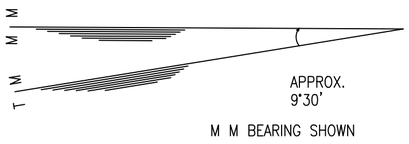
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA516
ADJOINING DEVELOPMENT
SHADOW DIAGRAMS
Job: 1725
May 2020
Rev: K

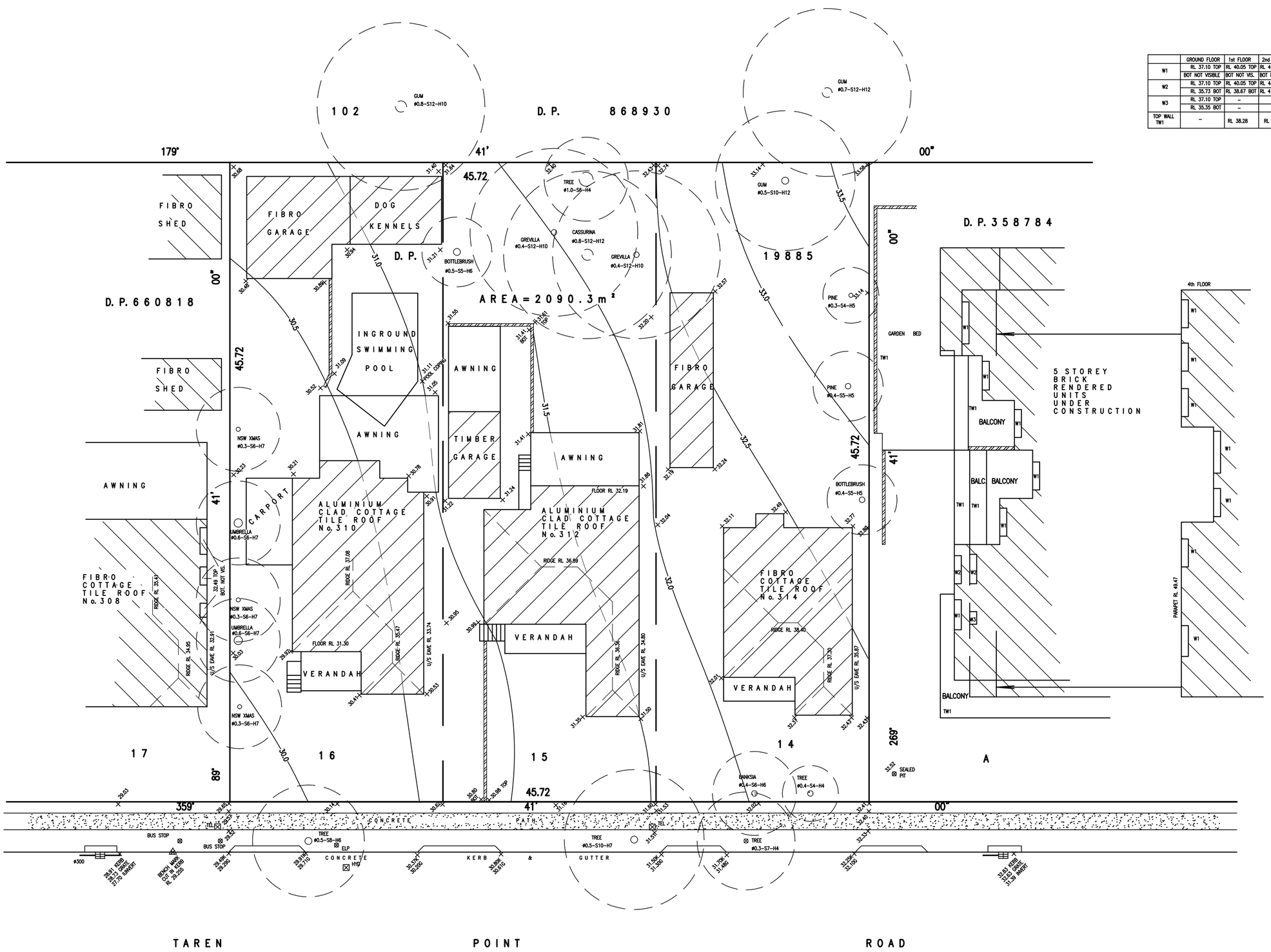
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APPENDIX I



M M BEARING SHOWN



	GROUND FLOOR	1st FLOOR	2nd FLOOR	3rd FLOOR	4th FLOOR
W1	RL 37.10 TOP	RL 40.05 TOP	RL 43.05 TOP	RL 46.05 TOP	RL 49.05 TOP
	BOT NOT VISIBLE	BOT NOT VIS.	BOT NOT VIS.	BOT NOT VIS.	BOT NOT VIS.
W2	RL 37.10 TOP	RL 40.05 TOP	RL 43.05 TOP	RL 46.05 TOP	RL 49.05 TOP
	RL 35.73 BOT	RL 38.67 BOT	RL 41.67 BOT	RL 44.67 BOT	BOT NOT VIS.
W3	RL 37.10 TOP	–	–	–	–
	RL 35.35 BOT	–	–	–	–
TOP WALL TW1	–	RL 38.28	RL 41.30	RL 44.30	RL 47.30

LEGEND

FL–FLOOR LEVEL
VER–VERANDAH
HYD – HYDRANT
PP – POWER POLE
TEL – TELECOM PIT
GAS – GAS MAIN
LP – LIGHT POLE
SV – STOP VALVE
INV – PIPE INVERT
K – KERB
G – GUTTER
ELP – POWER POLE WITH LIGHT

Registered surveyors:

V.J. Mansell Reg. No.1566 .....

D.J. Carey Reg. No.53 .....

NOTE: No underground services search has been carried out. You are advised to "Dial 1100 Before You Dig" before carrying out any building work.

PLAN OF LEVELS AND DETAILS AT
310–314 TAREN POINT ROAD, CARINGBAH
FOR MICHAEL NASSER

Boundaries have not been surveyed. Dimensions and areas compiled from information obtained from the L.T.O. Improvements shown are diagrammatic only and shown for plotting purposes only.

Contours if shown are approximate and preference should be given to spot levels. No services search has been made and only those visible at time of survey have been located. Levels under buildings unknown. Adjoining building details shown are approx. only due to restricted access.

DATUM	A.H.D.
REDUCTION RATIO	1:200
REFERENCE NO.	205016
DATE OF SURVEY	17/4/2018
SURVEYED BY	L.S/S.S
DRAWN BY	VAL

W. BUXTON PTY LTD
A.C.N. 002 678 819
REGISTERED SURVEYORS
76 WILLISON ROAD
CARLTON 2218
TEL. (02) 9553 9800
FAX (02) 9588 5793



PROPOSED RESIDENTIAL DEVELOPMENT

310-314 Taren Point Road, Caringbah
MBD Developments

AMENDED DA PACKAGE #2

29 September 2020

DA001	COVER SHEET
DA002	YIELD SUMMARY
DA010	SITE PLAN
DA101	BASEMENT 2 PLAN
DA102	BASEMENT 1 PLAN
DA103	GROUND LEVEL PLAN
DA104	LEVEL 1 PLAN
DA105	LEVEL 2 PLAN
DA106	LEVEL 3 PLAN
DA107	LEVEL 4 PLAN
DA108	ROOF PLAN
DA201	WEST ELEVATION
DA202	SOUTH ELEVATION
DA203	EAST ELEVATION
DA204	NORTH ELEVATION
DA301	SECTION AA
DA302	SECTION BB
DA303	SECTION CC
DA405	FACADE STUDY
DA501	ADAPTABLE APARTMENT PLANS
DA502	GFA DIAGRAMS
DA503	SHADOW DIAGRAMS JUNE 21
DA504	SHADOW DIAGRAMS JUNE 21
DA505	SHADOW DIAGRAMS DEC 21
DA506	SHADOW DIAGRAMS DEC 21
DA507	SHADOW DIAGRAMS MAR 21
DA508	SHADOW DIAGRAMS MAR 21
DA509	SHADOW DIAGRAMS SEPT 21
DA510	SHADOW DIAGRAMS SEPT 21
DA511	SUN EYE DIAGRAMS JUNE 21
DA512	SUN EYE DIAGRAMS JUNE 21
DA513	SUN EYE DIAGRAMS JUNE 21
DA514	SUN EYE DIAGRAMS JUNE 21
DA515	ADJOINING DEVELOPMENT SHADOW DIAGRAMS
DA516	ADJOINING DEVELOPMENT SHADOW DIAGRAMS
DA517	HEIGHT PLANE DIAGRAMS
DA518	COMMUNAL OPEN SPACE AREA DIAGRAM
DA519	DEEP SOIL DIAGRAM
DA520	ADG SOLAR DIAGRAMS
DA521	ADG SOLAR ACCESS SUMMARY
DA521B	ADG SOLAR ACCESS SUMMARY
DA522	ADG CROSS VENT DIAGRAMS
DA523	ADG STORAGE DIAGRAMS
DA524	ADG STORAGE DIAGRAMS
DA525	ADG STORAGE DIAGRAMS
DA526	ADG STORAGE DIAGRAMS
DA527	G.09 APARTMENT SECTIONS
DA527B	G.05/G.06 APARTMENT SECTION
DA528	MATERIALS AND FINISHES
DA529	FACADE COMPOSITION
DA530	FACADE SECTIONS
DA531	PHOTOMONTAGE
DA532	ADG SOLAR ACCESS DETAIL DIAGRAMS
DA533	ADG SOLAR ACCESS DETAIL DIAGRAMS
DA534	WINDOW SCHEDULE



Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue
L	29.09.2020	DA Additional Information

DA001
COVER SHEET

Job: 1725
September 2020
Rev: L

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YIELD SUMMARY

LEVEL	APT#	MIX	TENURE	ADAPT/LIVABLE
GROUND	G.01	2BD	MARKET	
	G.02	2BD	AFFORD.	
	G.03	2BD	AFFORD.	
	G.04	2BD	AFFORD.	
	G.05	2BD	AFFORD.	
	G.06	2BD	MARKET	
	G.07	1BD	AFFORD.	ADAPT
	G.08	1BD	AFFORD.	LIV
	G.09	2BD	MARKET	
	G.10	1BD	AFFORD.	LIV
LEVEL 1	1.01	1BD	MARKET	
	1.02	1BD	AFFORD.	ADAPT
	1.03	1BD	AFFORD.	ADAPT
	1.04	2BD	MARKET	
	1.05	2BD	AFFORD.	
	1.06	2BD	AFFORD.	
	1.07	2BD	MARKET	
	1.08	1BD	AFFORD.	ADAPT
	1.09	1BD	AFFORD.	LIV
	1.10	2BD	MARKET	
	1.11	1BD	AFFORD.	
LEVEL 2	2.01	1BD	MARKET	
	2.02	1BD	AFFORD.	ADAPT
	2.03	1BD	AFFORD.	ADAPT
	2.04	2BD	MARKET	
	2.05	2BD	AFFORD.	
	2.06	2BD	AFFORD.	
	2.07	2BD	MARKET	
	2.08	1BD	AFFORD.	ADAPT
	2.09	1BD	AFFORD.	LIV
	2.10	2BD	MARKET	
	2.11	1BD	AFFORD.	
LEVEL 3	3.01	1BD	MARKET	
	3.02	1BD	AFFORD.	ADAPT
	3.03	1BD	AFFORD.	ADAPT
	3.04	2BD	MARKET	
	3.05	2BD	AFFORD.	
	3.06	2BD	AFFORD.	
	3.07	2BD	MARKET	
	3.08	1BD	AFFORD.	ADAPT
	3.09	1BD	AFFORD.	LIV
	3.10	2BD	MARKET	
	3.11	1BD	AFFORD.	
LEVEL 4	4.01	3BD	MARKET	
	4.02	3BD	MARKET	
	4.03	3BD	MARKET	
	4.04	3BD	MARKET	
	4.05	3BD	MARKET	
	4.06	2BD	MARKET	
TOTAL			**49**	
MIX	21 x 1BD		43%	
	23 x 2BD		47%	
	5 x 3BD		10%	
AFFORDABLE	x 1BD		**18**	
	x 2BD		10	
ADAPTABLE			**10**	20.4%
LIVABLE			**5**	10.2%

PARKING SUMMARY

PARKING

	MIX	RATE	REQ'D
1 BED	21	0.5	10.5
2 BED	23	1	23
3 BED	5	1.5	7.5
VISITOR		0.2	9.8
TOTAL			**50.8**
			53 PROVIDED



NatHERS - THERMAL COMFORT SUMMARY

Address: *310-314 Taren Point Road, Caringbah NSW 2229*		
Building Elements	**Material**	**Detail**
External walls	Brick Veneer	R2.0 insulation – Product R-Value
Walls Within Units	Plasterboard on studs	-
Walls between Units	Hebel + Stud + Insulation + Gyprock	-
Walls between Units & Ventilated Corridor	Brick Veneer	R2.0 insulation – Product R-Value
Walls between units & Firestairs/LiftShaft	200mm Concrete + Stud + Insulation + Gyprock	R1.5 insulation – Product R-Value
Floors	Concrete – tiles everywhere except bedrooms which are carpet	R1.0 insulation – Product R-Value to units: • 1.02 / 1.03 – suspended to external environment
Ceilings	Plasterboard	-
Roof – Ground	Concrete – Insulation to concrete exposed to external environment	R1.0 insulation – Product R-Value
Roof – Level 3	Concrete – Insulation to concrete exposed to external environment	R2.5 insulation – Product R-Value
Top Floor Roof	Concrete	R3.5 insulation – Product R-Value
Skylights	Double Glazed Clear	-
Doors / Windows – Single Glazed Clear to all Units except as stated below:		
Awning windows	U value 6.70 or less and SHGC 0.57 +/- 10%	
Sliding Doors & Fixed Windows	U value 6.70 or less and SHGC 0.70 +/- 10%	
Doors / Windows – Double Glazed High Solar Gain Low E or Similar to Doors/ Fixed Glazing & HSG Low E Clear or similar to Awning windows to <u>whole of Units (excluding Wet areas)</u> : Units G.10, 1.01, 1.07, 1.11, 2.01, 2.07, 2.11, 3.01, 3.07, 3.11, 4.01 & 4.06		
Awning windows	U value 5.40 or less and SHGC 0.49 +/- 10%	
Sliding Doors & Fixed Windows	U value 4.30 or less and SHGC 0.53 +/- 10%	
<u>Lighting</u>: Units have been rated with non-ventilated LED downlights as per NatHERS Certificate.		
<u>Note</u>: Self-closing damper to all exhaust fans.		
Insulation should be installed with due consideration of condensation & associated interaction with adjoining building materials		
Additional insulation may be required to meet acoustic requirements		
This Development must comply with Section J of the BCA		
Building & Energy Consultants Australia dissolves itself from any responsibility associated with the selection of insulation, sarking type materials, thermal breaks and other componentry which fail to comply with the fire safety requirement provisions under Part C of the BCA		

<u>Note: If any of the elements nominated above change after the DA (Development Application) has been issued, a revised assessment should be undertaken prior to the Construction Certificate being issued with Construction drawings and specifications</u>

BASIX COMMITMENTS NOTES

*** TO BE READ IN CONJUNCTION WITH APPROVED BASIX REPORT***

WATER				
Fixtures	**All Shower Heads**	**All toilet flushing systems**	**All kitchen taps**	**All bathroom taps**
	3 star(>4.5 but<=6L/min)	**4 star**	**5 star**	**5 star**
Fire Sprinkler	**Must be configured so that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed**			
Appliances:	**Dishwashers - 4.5 star water rating**			
ENERGY	***Hot water system*: Central Gas Instantaneous – Refer to approved BASIX**			
	***Bathroom ventilation system*: Individual fan, ducted to façade or roof manual switch on/off**			
<u>REFER TO APPROVED BASIX</u>	***Kitchen ventilation system*: Individual fan, ducted to façade or roof manual switch on/off**			
	***Laundry ventilation system*: Individual fan, ducted to façade or roof manual switch on/off**			
	***Cooling system*: air-conditioning 1 Phase – EER 3.0-3.5 - zoned**			
	***Heating system*: air-conditioning 1Phase – EER 3.0-3.5 - zoned**			
	***Artificial lighting:* As per BASIX** ***Natural lighting:* As per BASIX**			
	Appliances: **Gas cooktop & electric oven** **Dishwashers: 3.5 star energy rating** **Refrigerator: 3 Stars** **Clothes Dryer: 2 Stars**			
	Indoor or Sheltered clothes drying line to be provided as per BASIX			
COMMON AREAS	**<u>Refer to approved BASIX cert</u>**			

Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue
L	29.09.2020	DA Additional Information

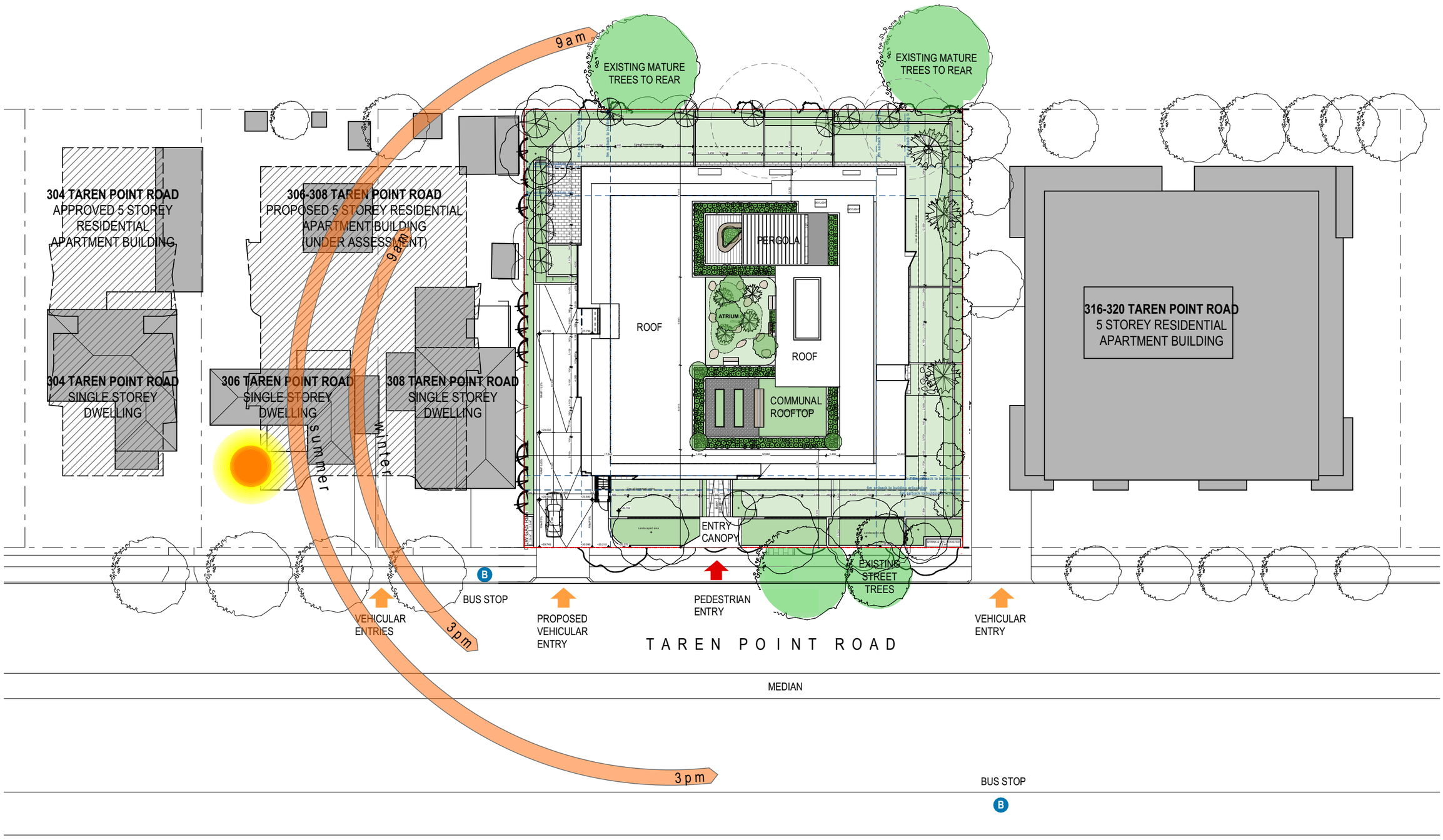
DA002
YIELD SUMMARY

Job: 1725
September 2020
Rev: L

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85 WILLARONG ROAD
CARINGBAH HIGH SCHOOL SITE



Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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DA010
SITE PLAN

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Certificate no.: 0005270340
Assessor Name: Thomas Ruck
Accreditation no.: VIC/BDAV/12/1456
Certificate date: 06 Oct 2020
Dwelling Address:
310 - 314 Taren Point Road
Caringbah, NSW
2229

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Proposed Residential Development

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CARINGBAH

for MBD Developments

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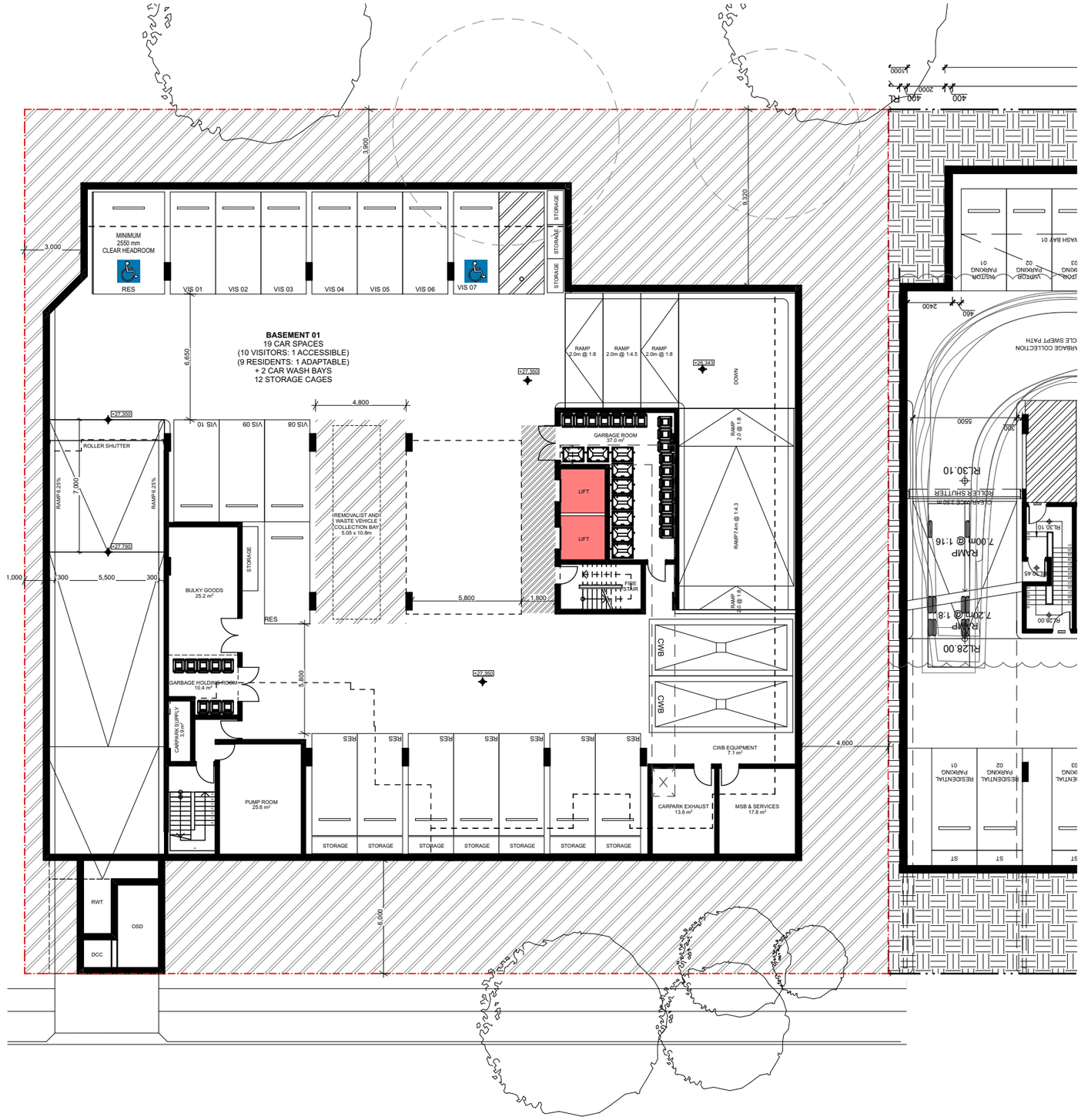
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DA101
BASEMENT 2 PLAN

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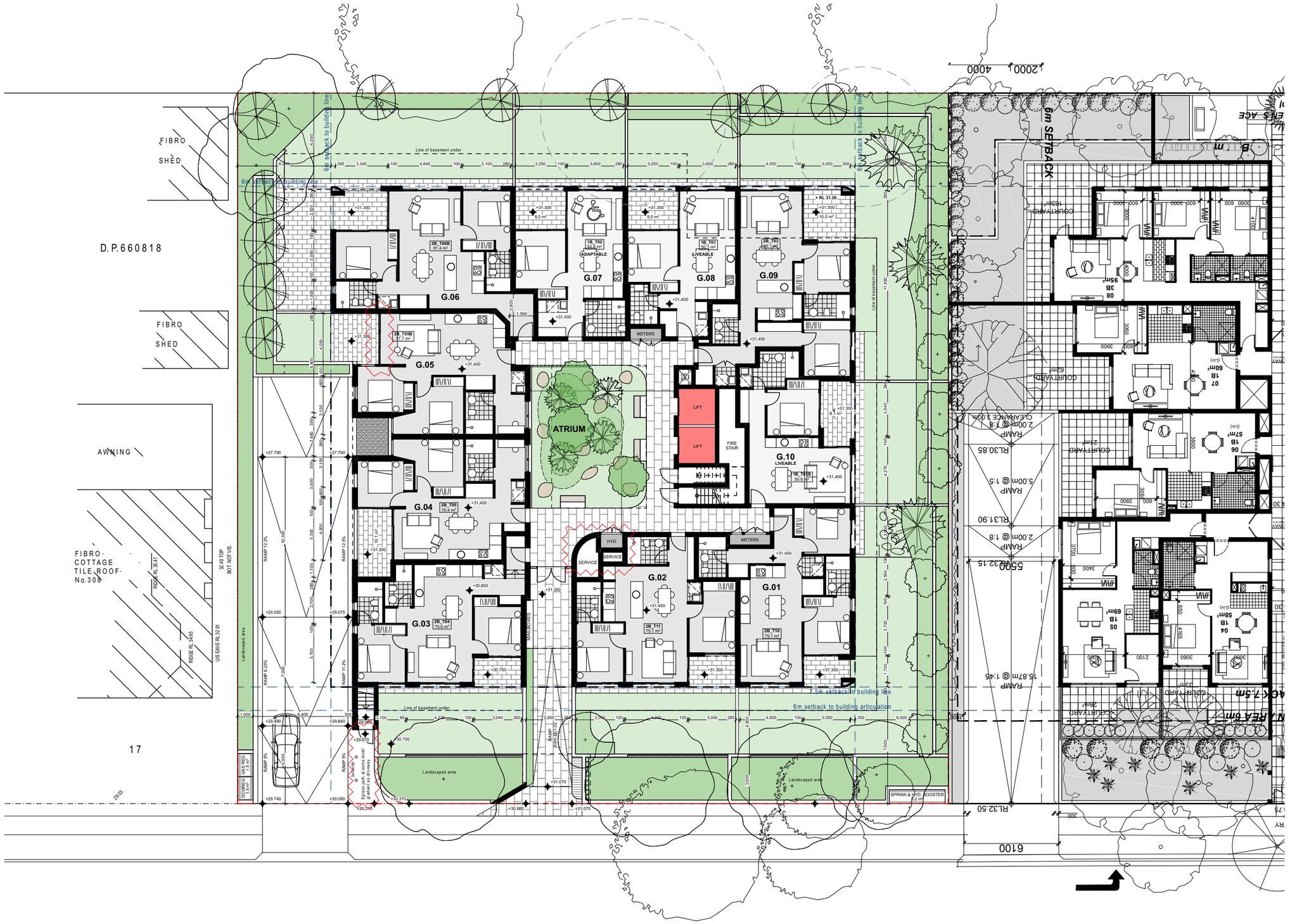
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DA102
BASEMENT 1 PLAN

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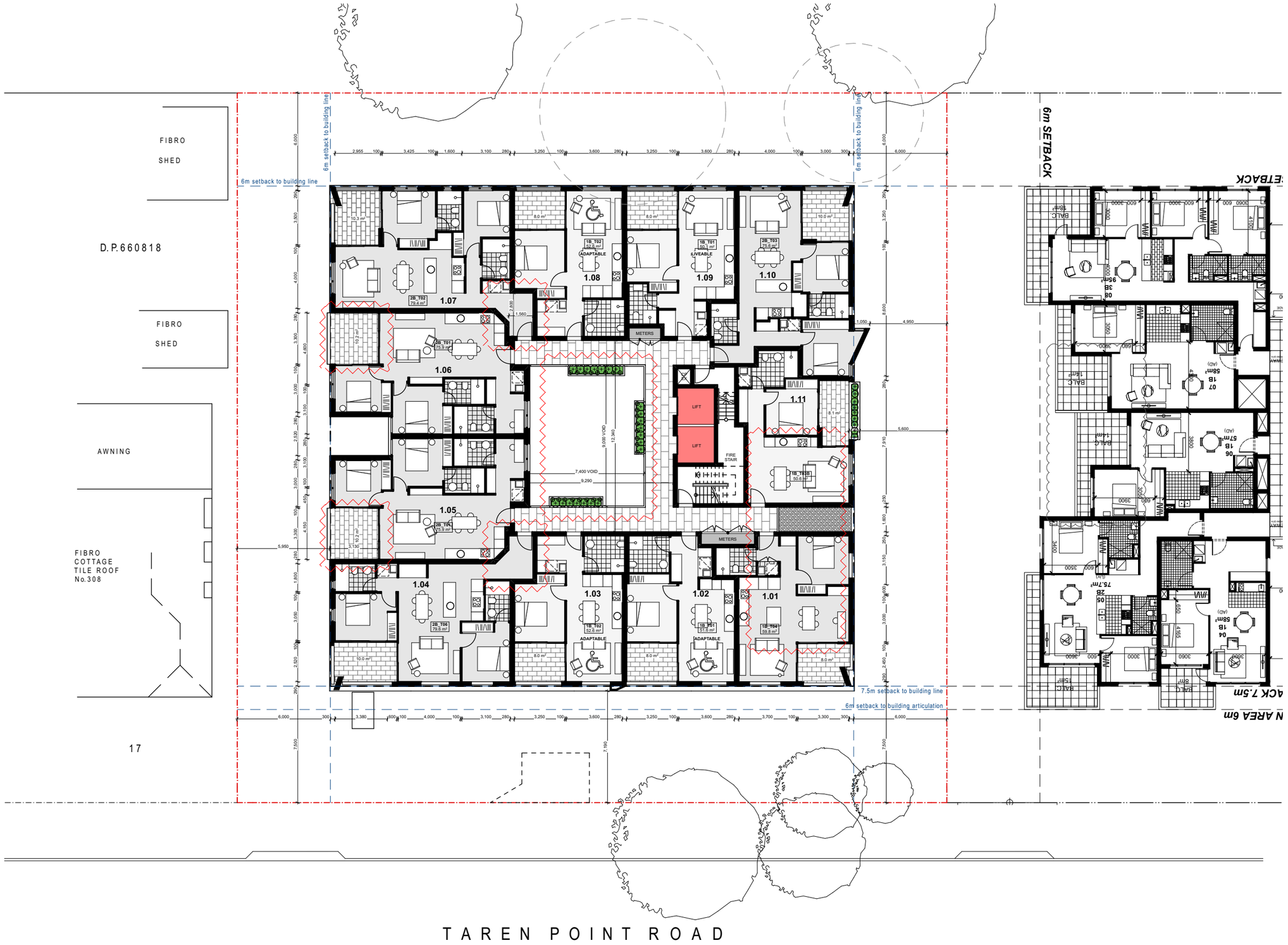
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DA103
GROUND LEVEL PLAN

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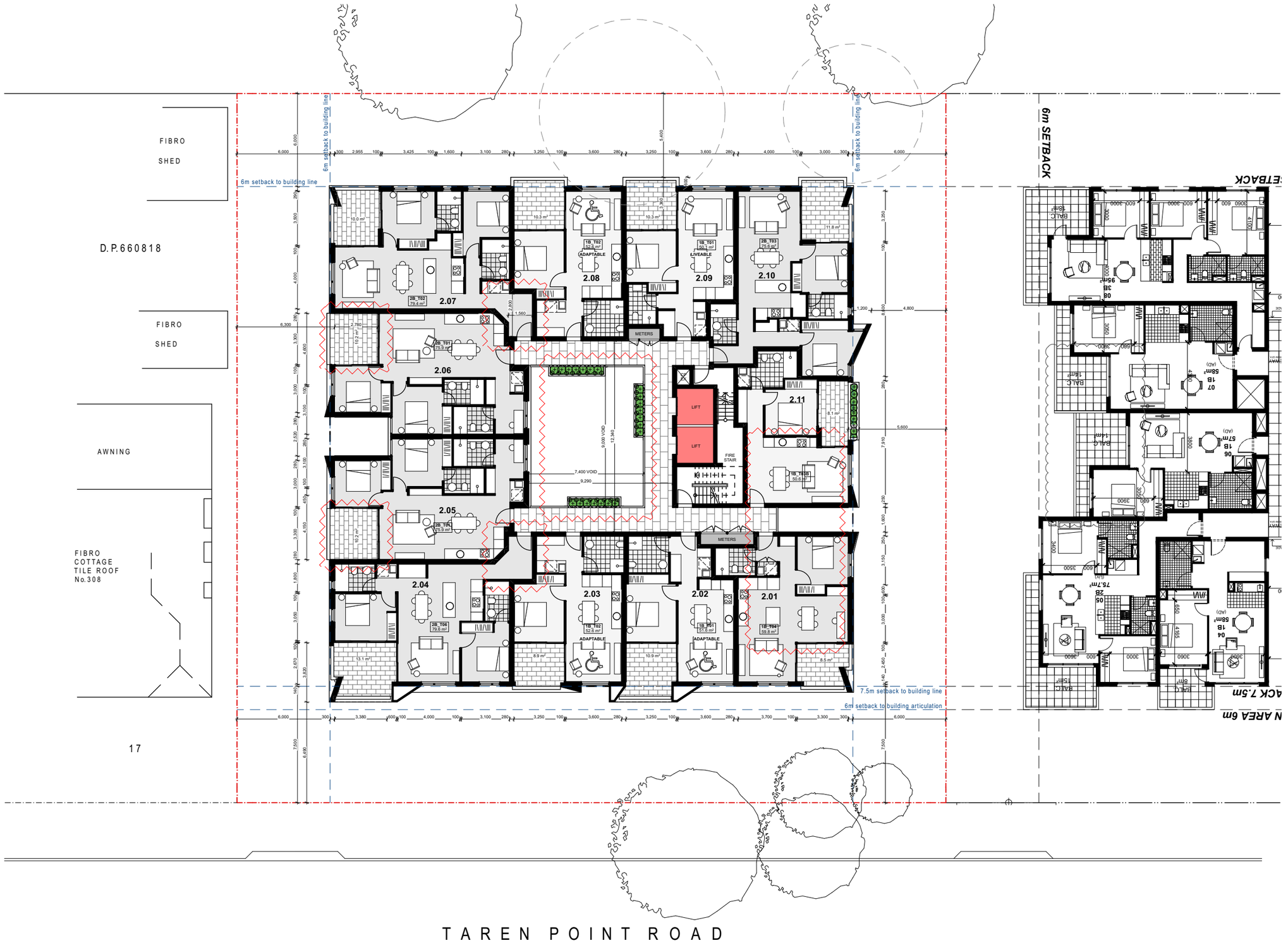
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DA104
LEVEL 1 PLAN

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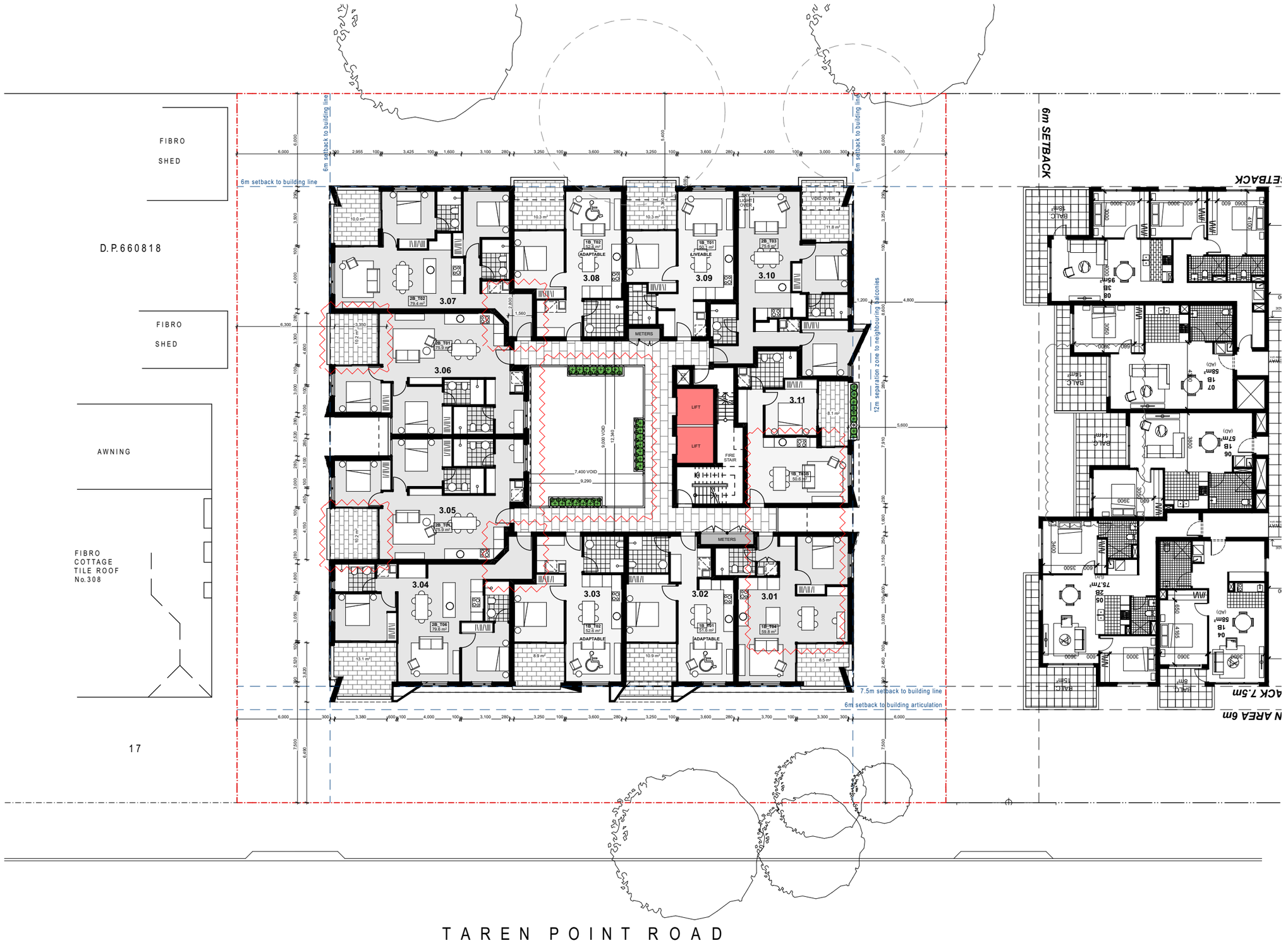
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DA105
LEVEL 2 PLAN

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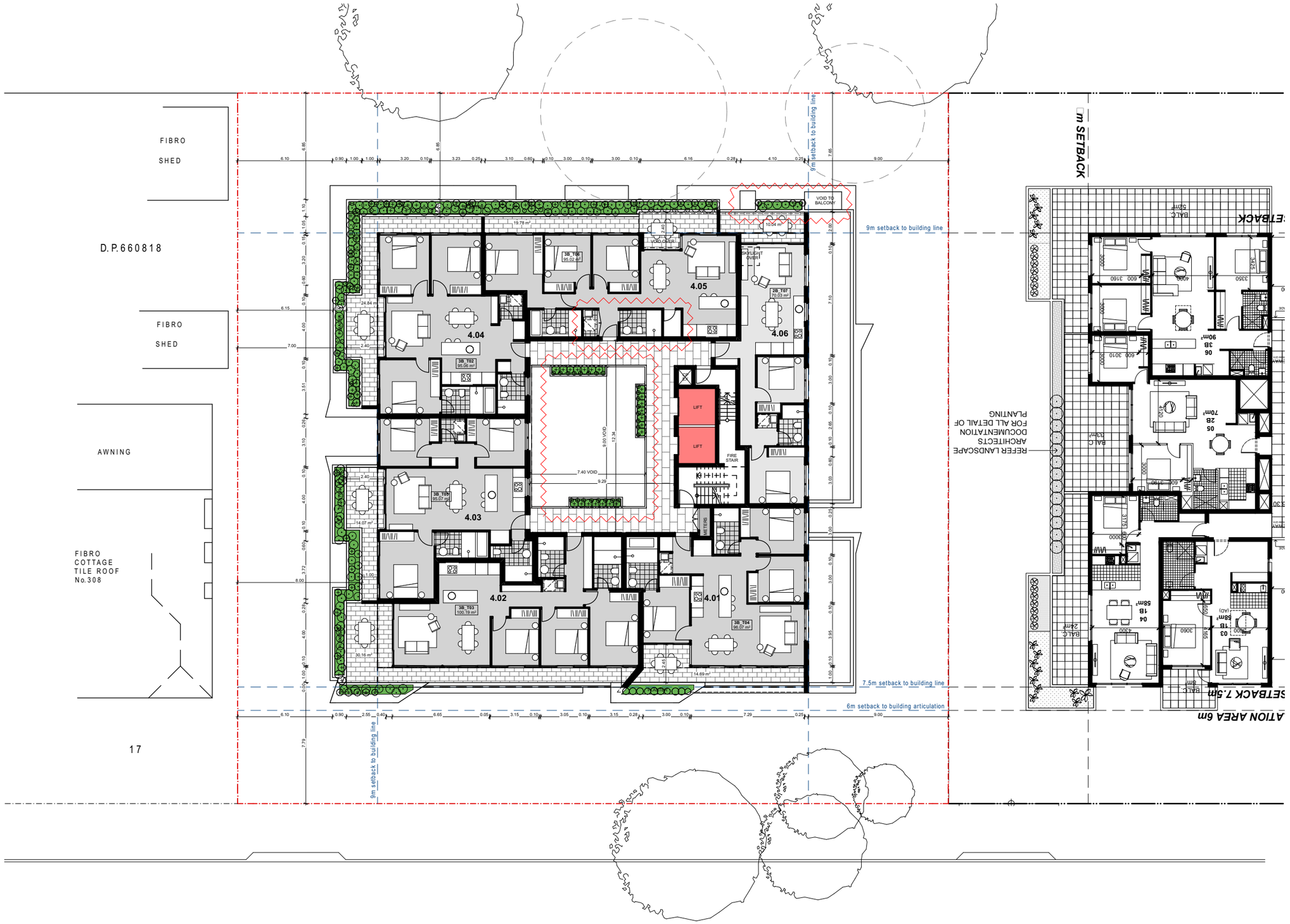
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DA106
LEVEL 3 PLAN

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Proposed Residential Development

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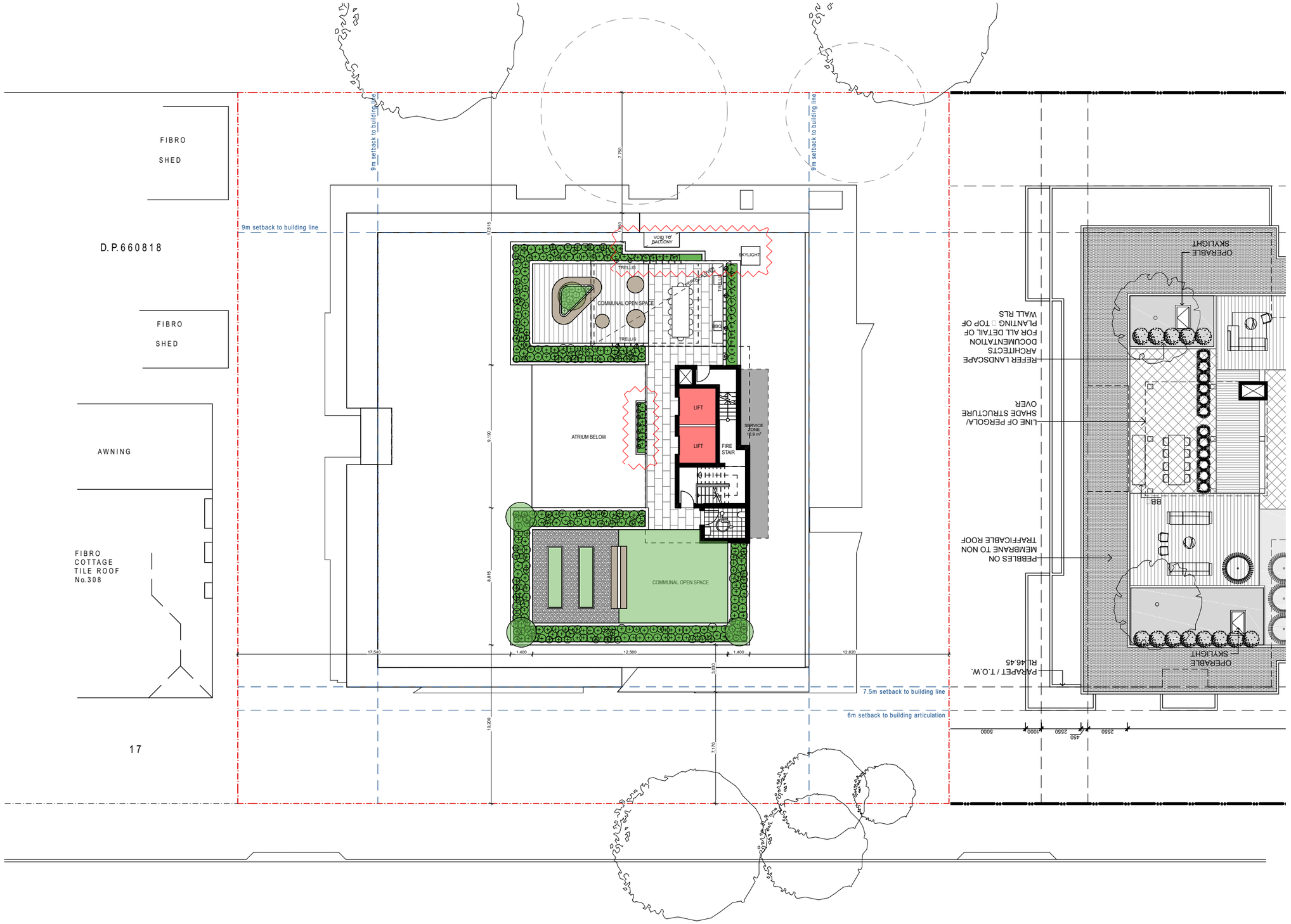
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DA107
LEVEL 4 PLAN

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Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

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1:250 @A3

DA108
ROOF PLAN

Job: 1725
September 2020
Rev: L

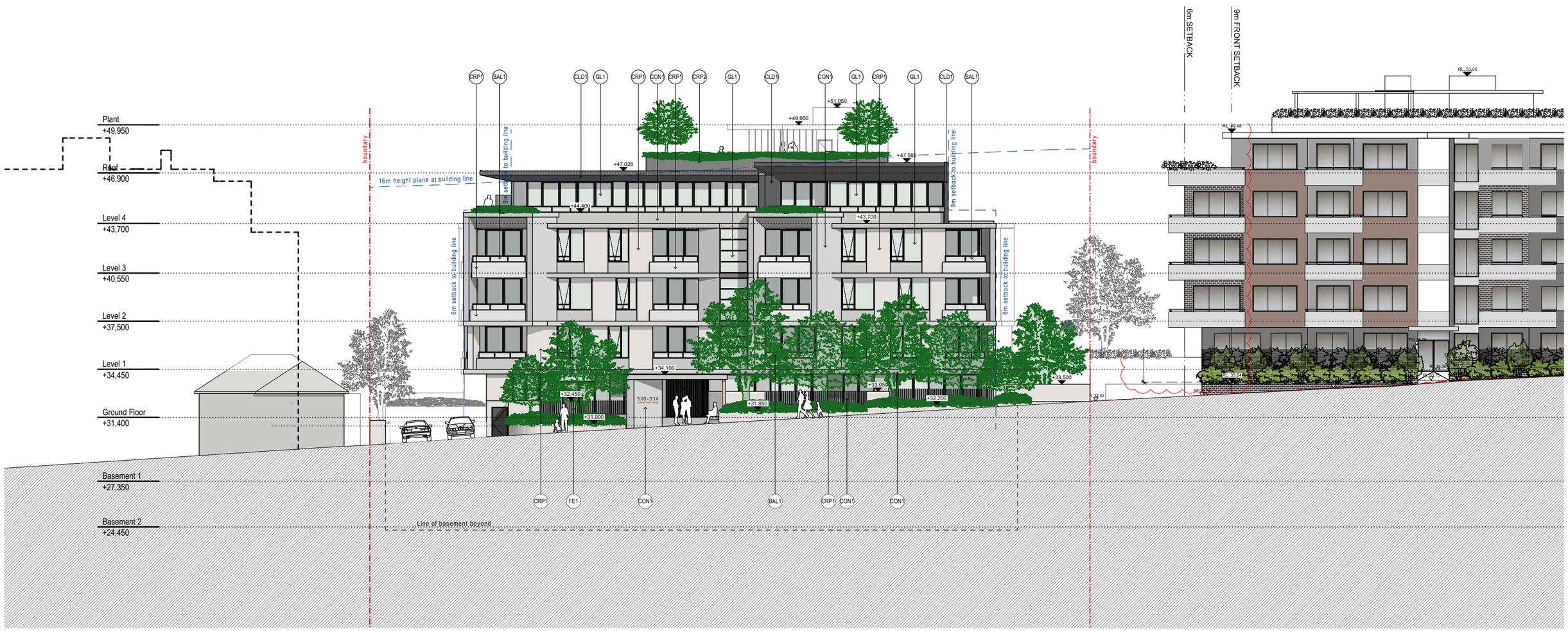
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EXTERNAL MATERIALS AND FINISHES LEGEND

- BAL1 **Balustrade, Type 1** Balustrade fixed to rear of low level solid wall. Clear glass in aluminium frame. Powdercoat Charcoal colour
- BAL2 **Balustrade, Type 2** Balustrade system fixed to face of slab. Perforated screen in aluminium frame. Powdercoat finish White colour
- CLD1 **Cladding, Type 1** FC cladding with expressed joint or similar. Paint finish, Dark grey colour
- CON1 **Concrete, Type 1** In-situ concrete with skim coat or similar. Natural finish, Light grey colour
- CRP1 **Cement render and paint finish, Type 1** Render finish to masonry or similar. Paint finish, White colour
- CRP2 **Cement render and paint finish, Type 2** Render finish to masonry or similar. Paint finish, Dark grey colour
- FE1 **Fence and gate** Vertical aluminium battens or similar. Prefinished, Charcoal colour
- GL1 **Glazing, Type 1** Clear Glass in aluminium frame. Powdercoat Charcoal colour
- SCR1 **Screen, Type 1** Vertical aluminium louvres or similar. Prefinished, Dark grey colour
- PLT1 **Planter, Type 1** Planter integrated into balustrade system. Perforated screen in aluminium frame with trellis. Powdercoat finish White colour

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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1:250 @A3

DA201
WEST ELEVATION

Job: 1725
May 2020
Rev: K

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EXTERNAL MATERIALS AND FINISHES LEGEND

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Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

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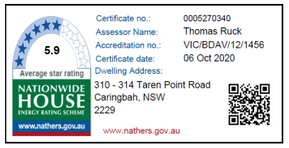
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DA202 SOUTH ELEVATION

Job: 1725
May 2020
Rev: K

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EXTERNAL MATERIALS AND FINISHES LEGEND

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Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

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L	29.09.2020	DA Additional Information

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1:250 @A3

DA203
EAST ELEVATION

Job: 1725
September 2020
Rev: L

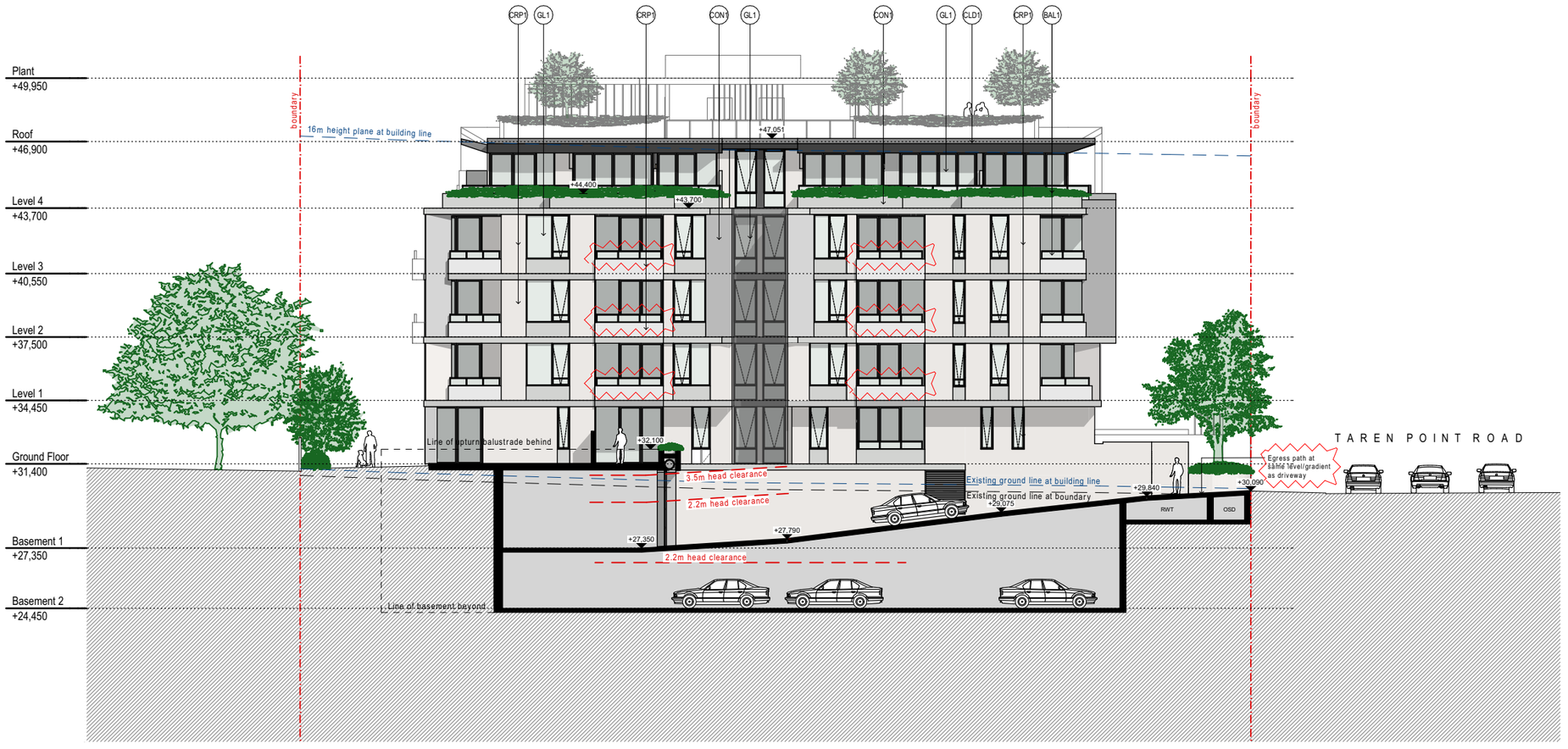
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5.9
Average star rating
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Certificate no.: 0005270340
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Accreditation no.: VIC/BDAV/12/1456
Certificate date: 06 Oct 2020
Dwelling Address:
310 - 314 Taren Point Road
Caringbah, NSW
2229

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EXTERNAL MATERIALS AND FINISHES LEGEND

- BAL1 **Balustrade, Type 1** Balustrade fixed to rear of low level solid wall. Clear glass in aluminium frame. Powdercoat Charcoal colour
- BAL2 **Balustrade, Type 2** Balustrade system fixed to face of slab. Perforated screen in aluminium frame. Powdercoat finish White colour
- CLD1 **Cladding, Type 1** FC cladding with expressed joint or similar. Paint finish, Dark grey colour
- CON1 **Concrete, Type 1** In-situ concrete with skim coat or similar. Natural finish, Light grey colour
- CRP1 **Cement render and paint finish, Type 1** Render finish to masonry or similar. Paint finish, White colour
- CRP2 **Cement render and paint finish, Type 2** Render finish to masonry or similar. Paint finish, Dark grey colour
- FE1 **Fence and gate** Vertical aluminium battens or similar. Prefinished, Charcoal colour
- GL1 **Glazing, Type 1** Clear Glass in aluminium frame. Powdercoat Charcoal colour
- SCR1 **Screen, Type 1** Vertical aluminium louvres or similar. Prefinished, Dark grey colour
- PLT1 **Planter, Type 1** Planter integrated into balustrade system. Perforated screen in aluminium frame with trellis. Powdercoat finish White colour

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue
L	29.09.2020	DA Additional Information

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DA204
NORTH ELEVATION

Job: 1725
September 2020
Rev: L

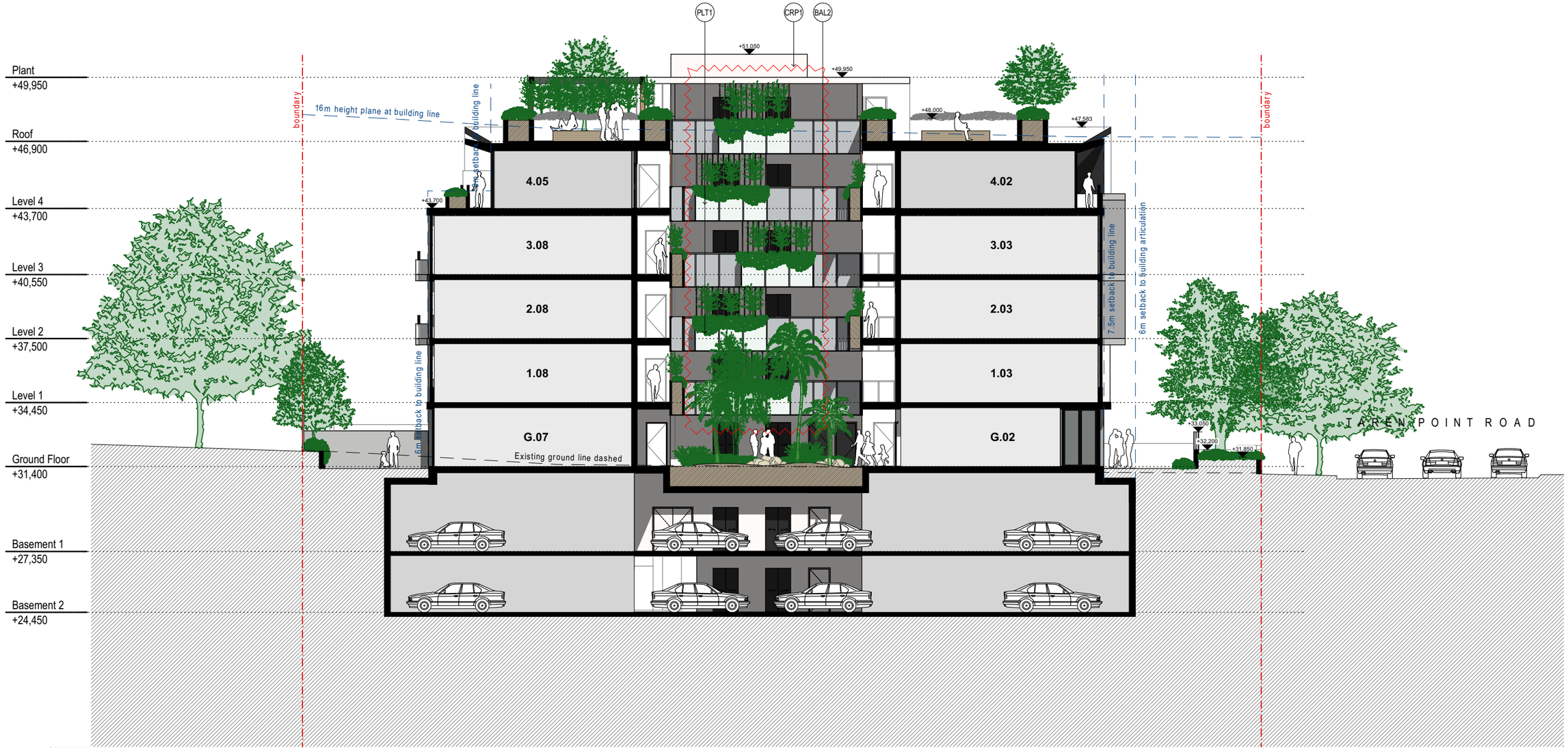
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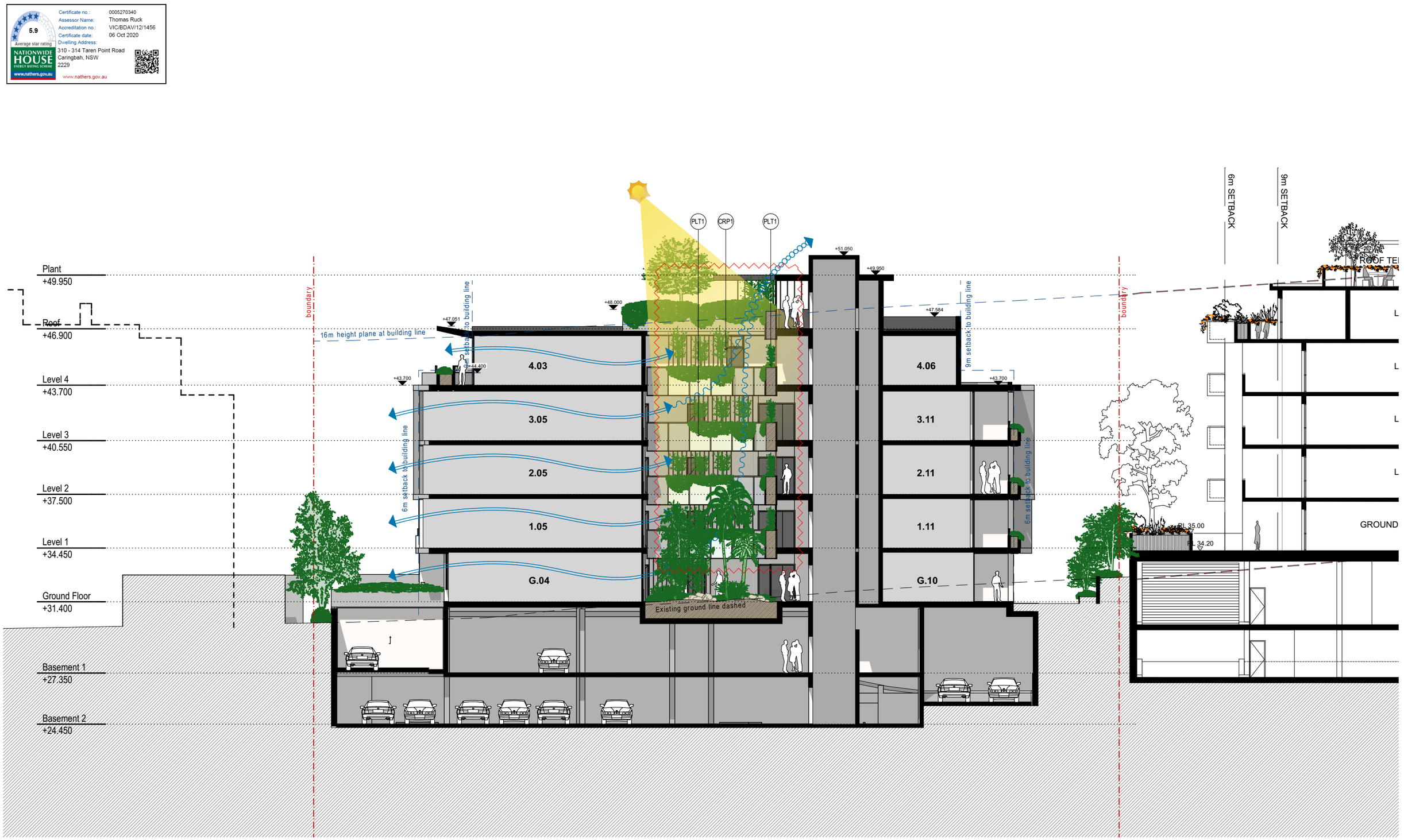
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DA301
SECTION AA

Job: 1725
September 2020
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Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

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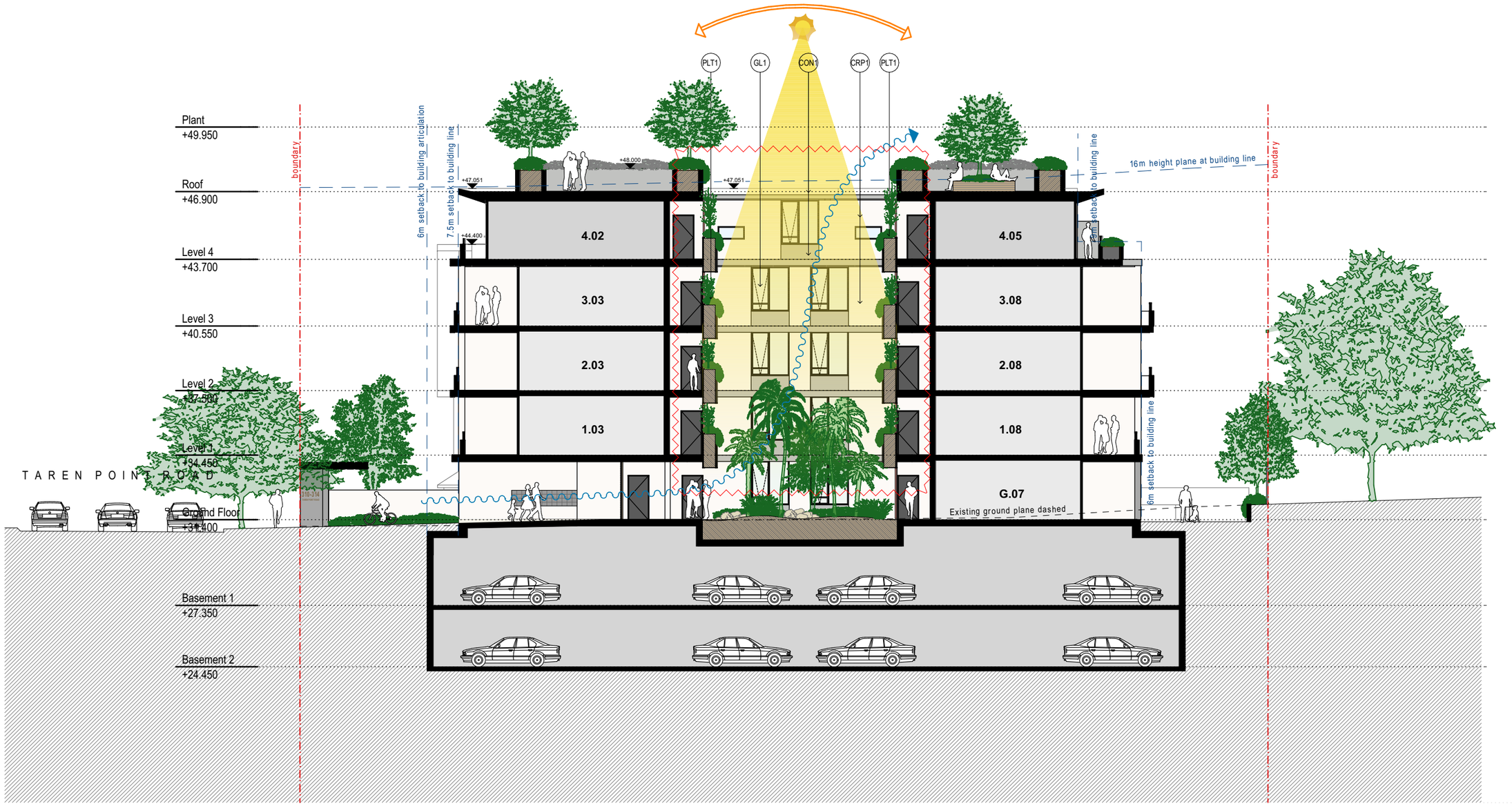
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DA302
SECTION BB

Job: 1725
September 2020
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Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue
L	29.09.2020	DA Additional Information

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1:250 @A3

DA303
SECTION CC

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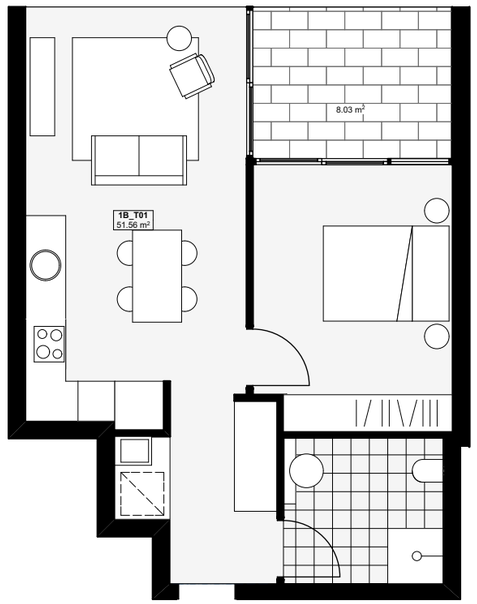
ADAPTABLE HOUSING DESIGN COMPLYING APARTMENTS

AS4299 Appendix A:
Defines the classification levels of apartments required as follows;

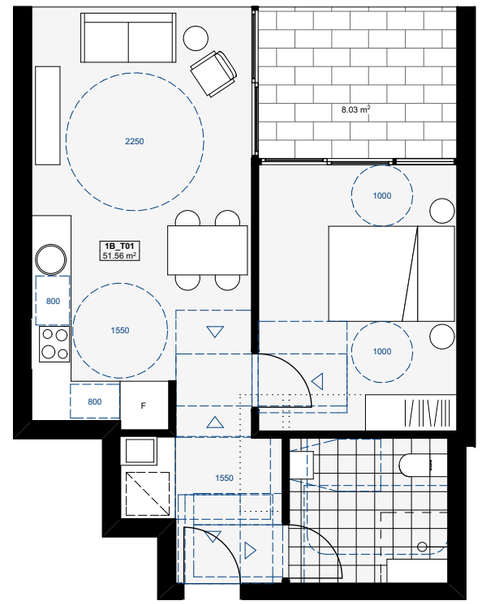
Adaptable Dwelling Class C - All essential features incorporated.

Essential Required Features:

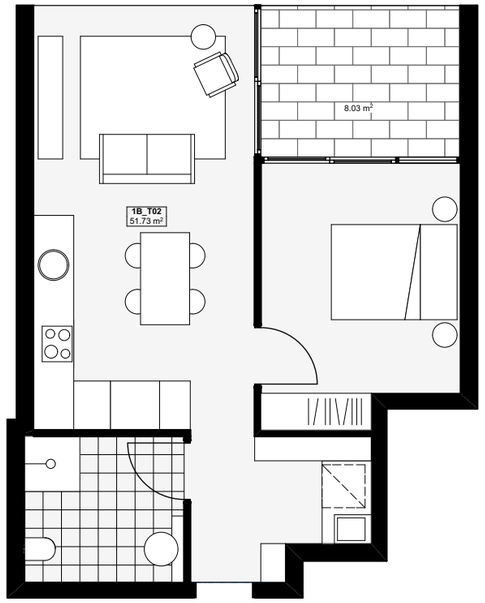
1. A safe continuous accessible path of travel from the street entrance and vehicle parking entry to comply with AS1428.1
2. Additional Paths and Walkways to be continuous and hard surfaced with gradients complying with AS 1428.1
3. Parking spaces min 6.0 x 3.8m
4. Accessible entry to be level (max 1:40 slope).
5. Threshold to be low level.
6. Landing to enable wheelchair manoueverability.
7. Accessible entrance door to have min 850 mm clearance.
8. Door lever handles and hardware to AS 1428.1
9. Internal doors to have 820 mm min clearance.
10. Internal corridors: 1000 mm min. clear width.
11. Provision for compliance with AS 1428.1 for door approaches.
12. Provision for circulation space of 2250 mm dia.
13. Living / Dining space: Telephone point adjacent to GPO.
14. Living / Dining space: Potential illumination level min 300 lux.
15. Kitchen: Minimum width 2.7 m (1550 mm clear between benches).
16. Kitchen: Provision for circulation at doors to comply with AS1428.1.
17. Kitchen: Provision for benches planned to include at least one worksurface of 800mm length, adjustable in height from 750 mm to 850 mm or replaceable.
18. Kitchen: Refrigerator adjacent to work surface.
19. Kitchen: Kitchen sink adjustable to heights from 750 mm to 850 mm or replaceable.
20. Kitchen sink bowl max. 150 mm deep.
21. Kitchen: Tap set capstan or lever handles or lever mixer.
22. Kitchen: Tap set located within 300mm of front of sink.
23. Cooktops to include either front or side controls with raised cross bars.
24. Cooktops to include isolating switch.
25. Kitchen: Work surface min. 800 mm length adjacent to cooktop at same height.
26. Kitchen: Oven located adjacent to an adjustable height or replaceable work surface.
27. Kitchen: GPOs to comply with AS 1428.1 At least one double GPO within 300 mm of front of work surface.
28. Kitchen: GPO for refrigerator to be easily reachable when refrigerator is in it's operating position.
29. Kitchen: Slip resistant floor surface.
30. Main Bedroom: At least one bedroom of area sufficient to accommodate queen size bed and wardrobe with circulation space to meet requirements of AS 1428.1
31. Bathroom: Provision for bathroom area to comply with AS 1428.1
32. Bathroom: Slip resistant floor surface.
33. Shower recess, with no hob.Min size 1160 x 1100 to comply with AS 1428.1
34. Shower area waterproofed to AS 3740 with floor fall to waste.
35. Recessed soap holder.
36. Shower taps positioned for easy reach to access side of shower sliding track.
37. Provision for adjustable, detatchable hand held shower rose mounted on a grab rail of fixed hook. (Plumbing and wall strengthening provision).
38. Provision of grab rail in the shower.
39. Tap sets to be capstan or lever handles with single outlet.



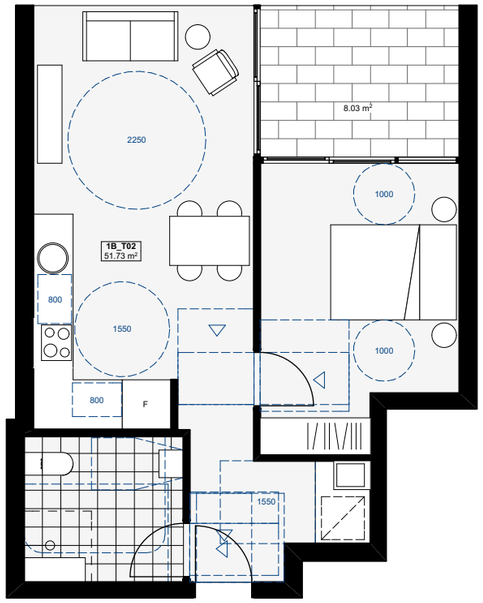
APARTMENT 1B_T01: **PRE**-ADAPTION



APARTMENT 1B_T01: **POST**-ADAPTION



APARTMENT 1B_T02: **PRE**-ADAPTION



APARTMENT 1B_T02: **POST**-ADAPTION

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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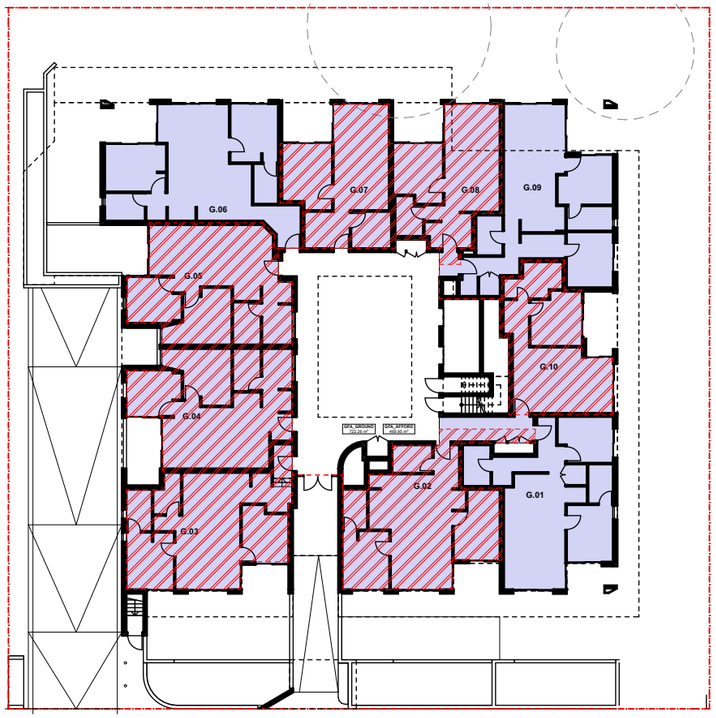
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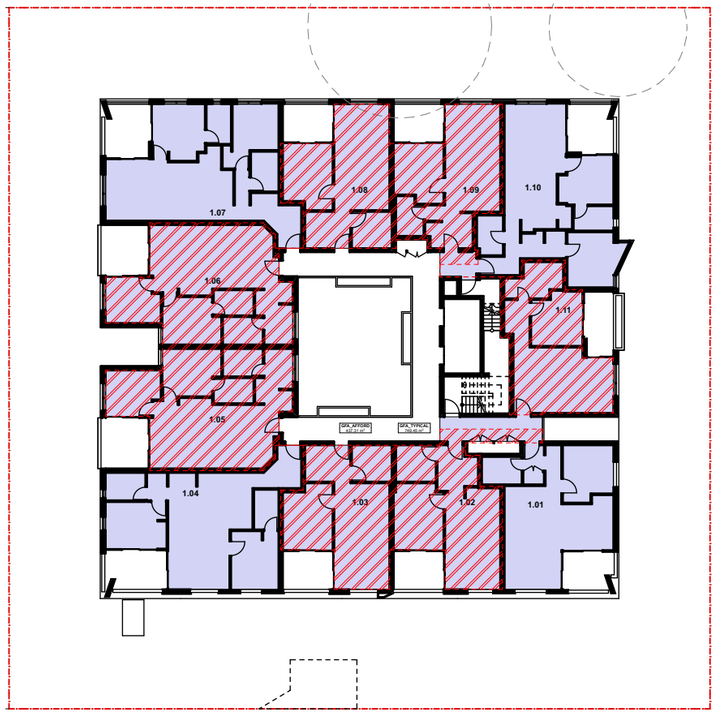
DA501
ADAPTABLE APARTMENT PLANS
Job: 1725
August 2019
Rev: H

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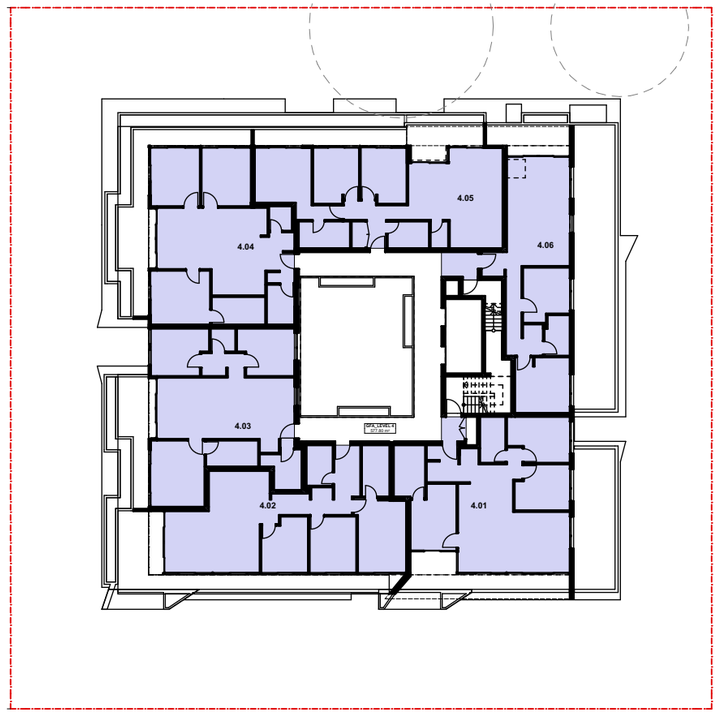
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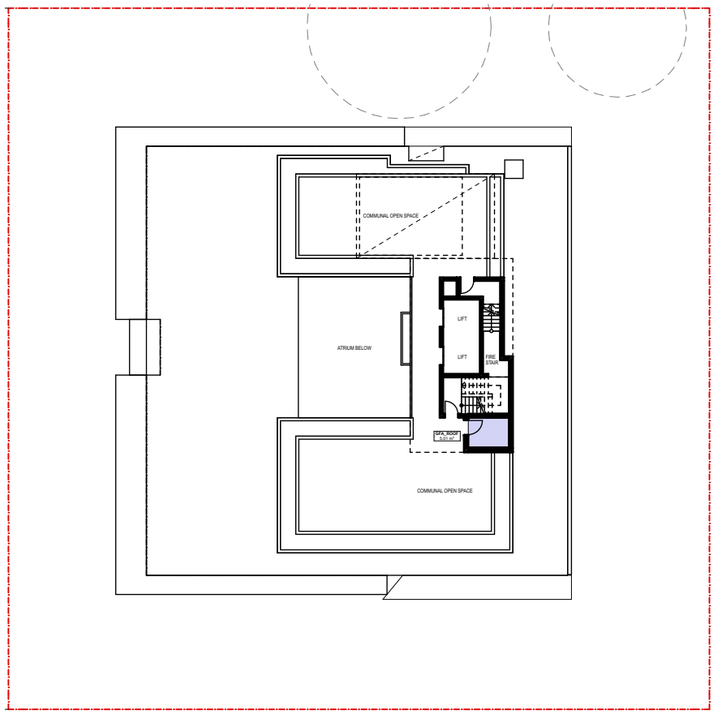
Ground Floor



Level 1 - Level 3



Level 4



Roof

Area included in GFA

GFA nominated under SEPP ARH

GFA Summary

OVERALL GFA

Ground Floor	722.26
Level 1	749.45
Level 2	749.45
Level 3	749.45
Level 4	577.80
Roof	5.01
Total GFA:	3,553.42 m²

AFFORDABLE GFA

Ground Floor	469.95
Level 1	437.31
Level 2	437.19
Level 3	437.59
Total Affordable:	1,782.04 m²

Affordable: **50% GFA**

Site Area: **2,090.3 m2**
FSR: **1.7:1**
(1.2 LEP + 0.5 SEPP ARH)

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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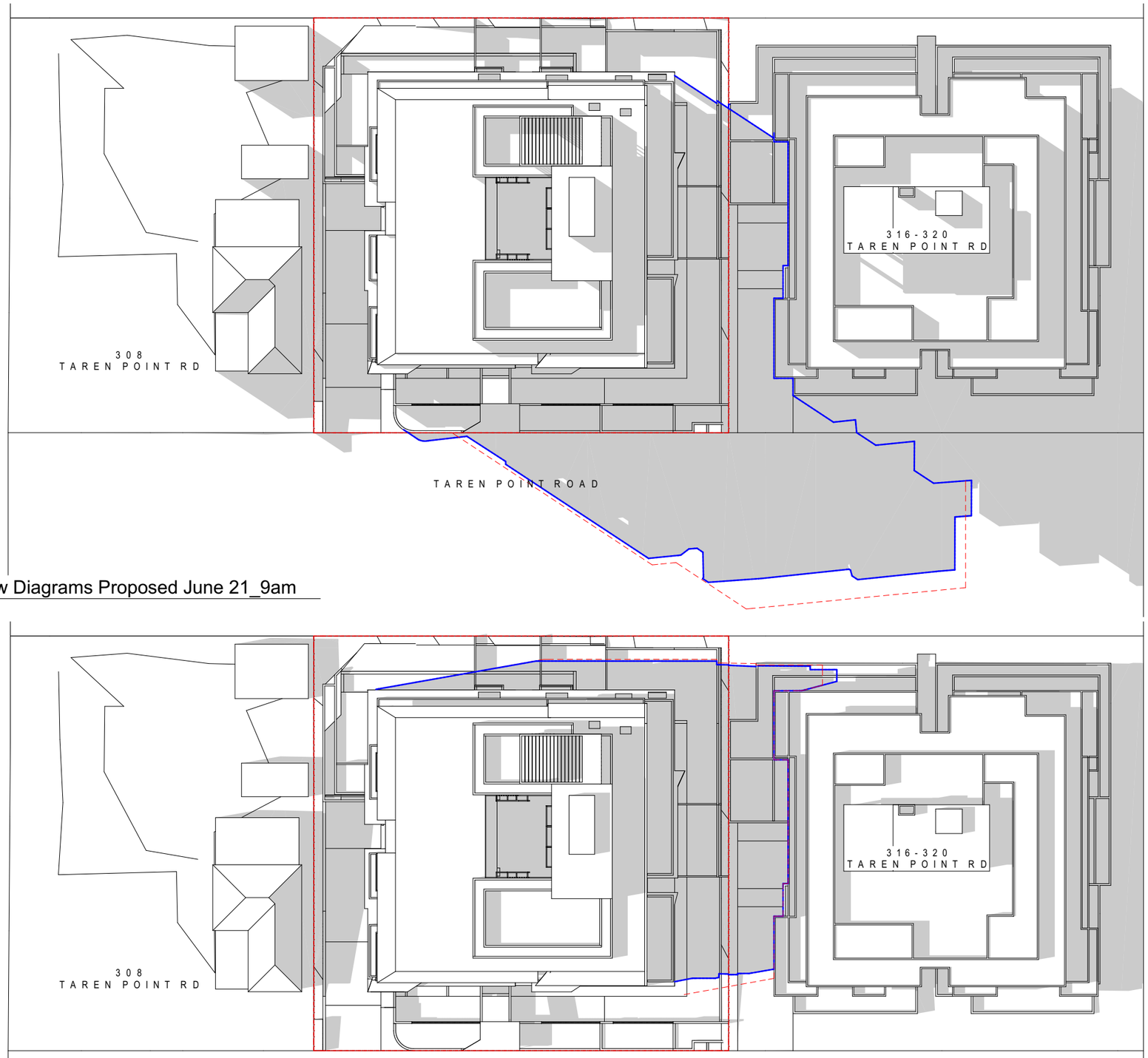
H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue
L	29.09.2020	DA Additional Information

DA502
GFA DIAGRAMS

Job: 1725
May 2020
Rev: L

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Shadow Diagrams Proposed June 21_9am

Shadow Diagrams Proposed June 21_12pm

Shadows cast by compliant massing envelope

Shadows cast by proposal

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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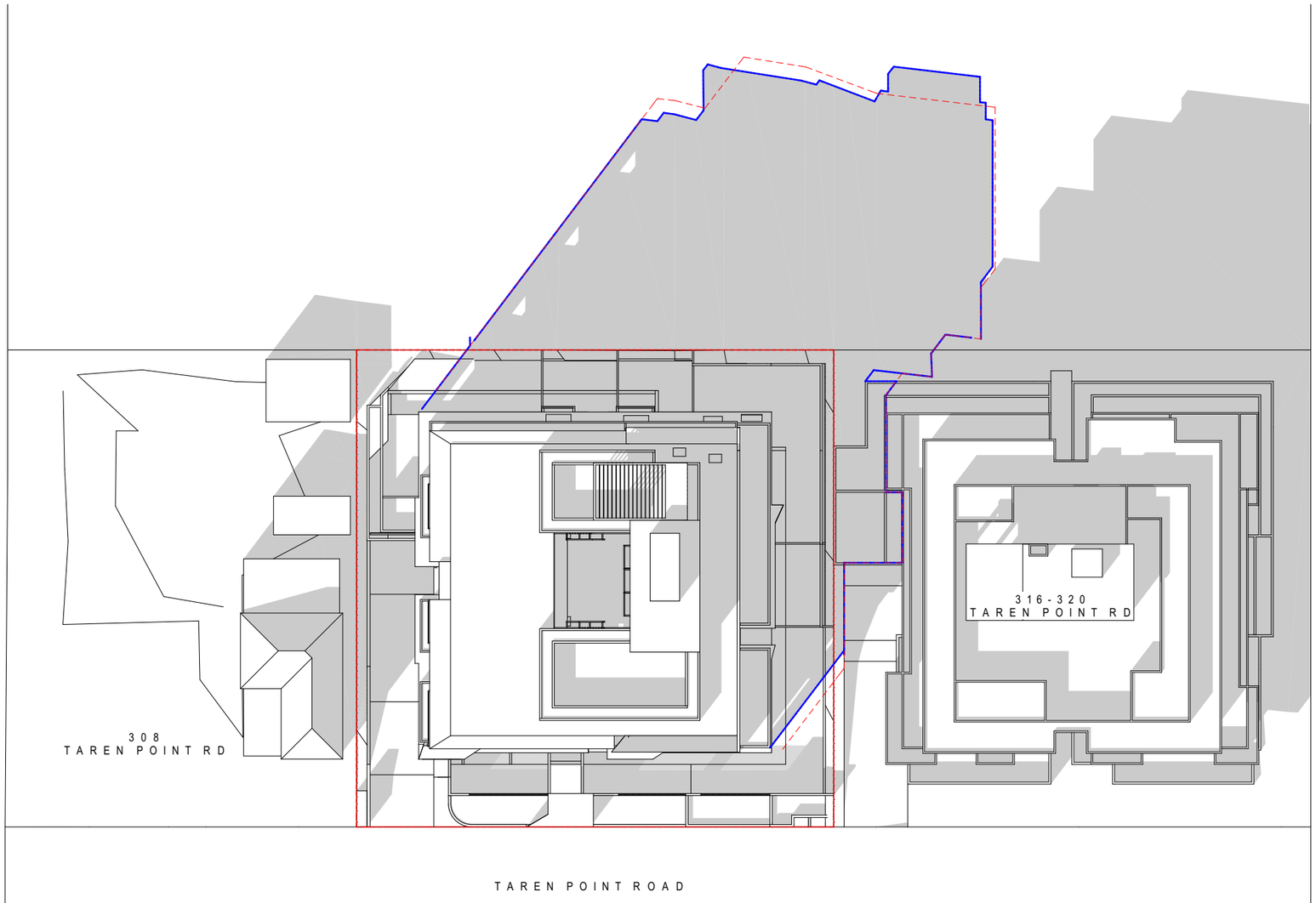
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA503
SHADOW DIAGRAMS JUNE 21

Job: 1725
May 2020
Rev: K

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Shadow Diagrams Proposed June 21_3pm

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-------- Shadows cast by proposal

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

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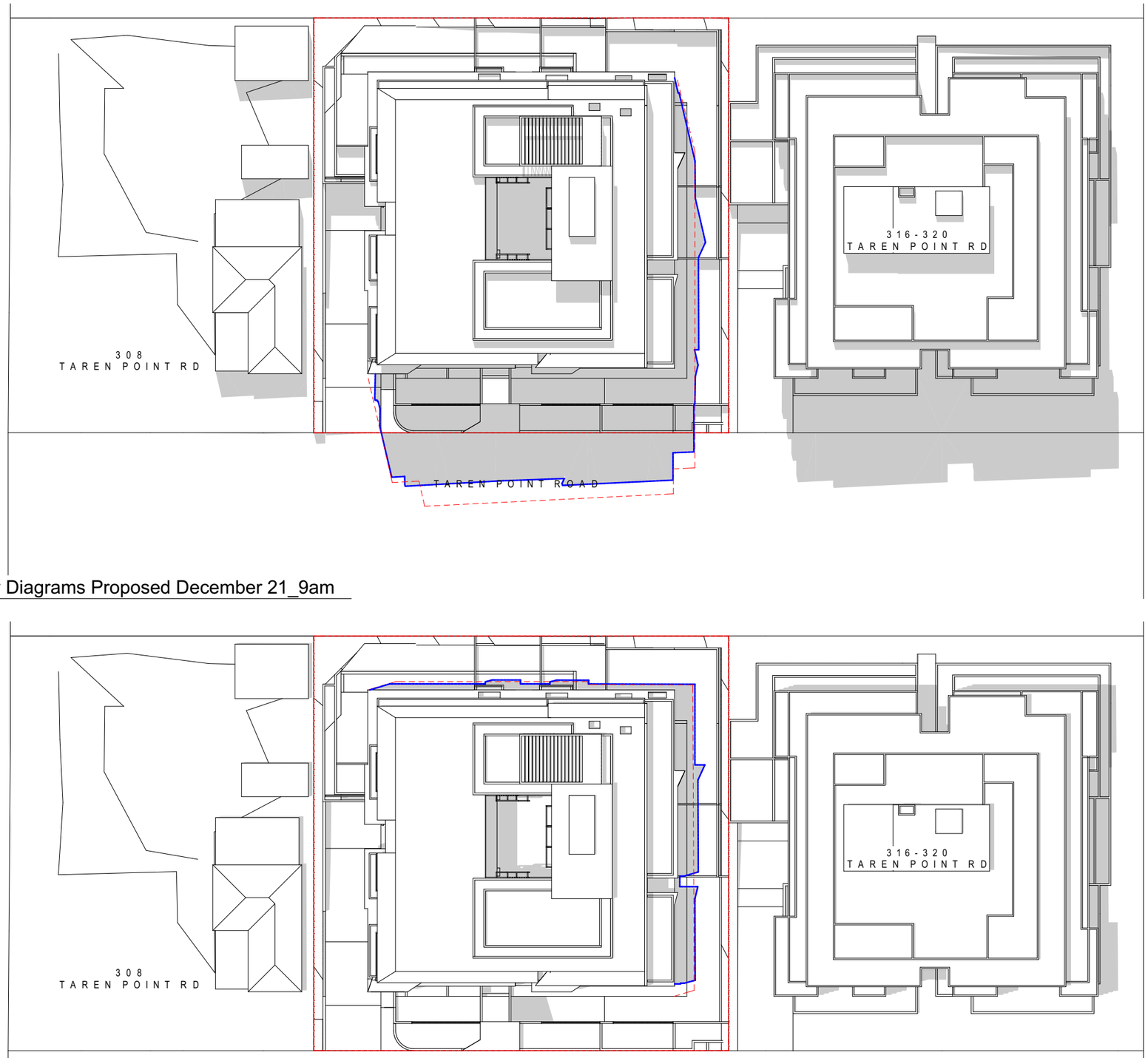
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DA504
SHADOW DIAGRAMS JUNE 21

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May 2020
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Shadow Diagrams Proposed December 21_9am

Shadow Diagrams Proposed December 21_12pm

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Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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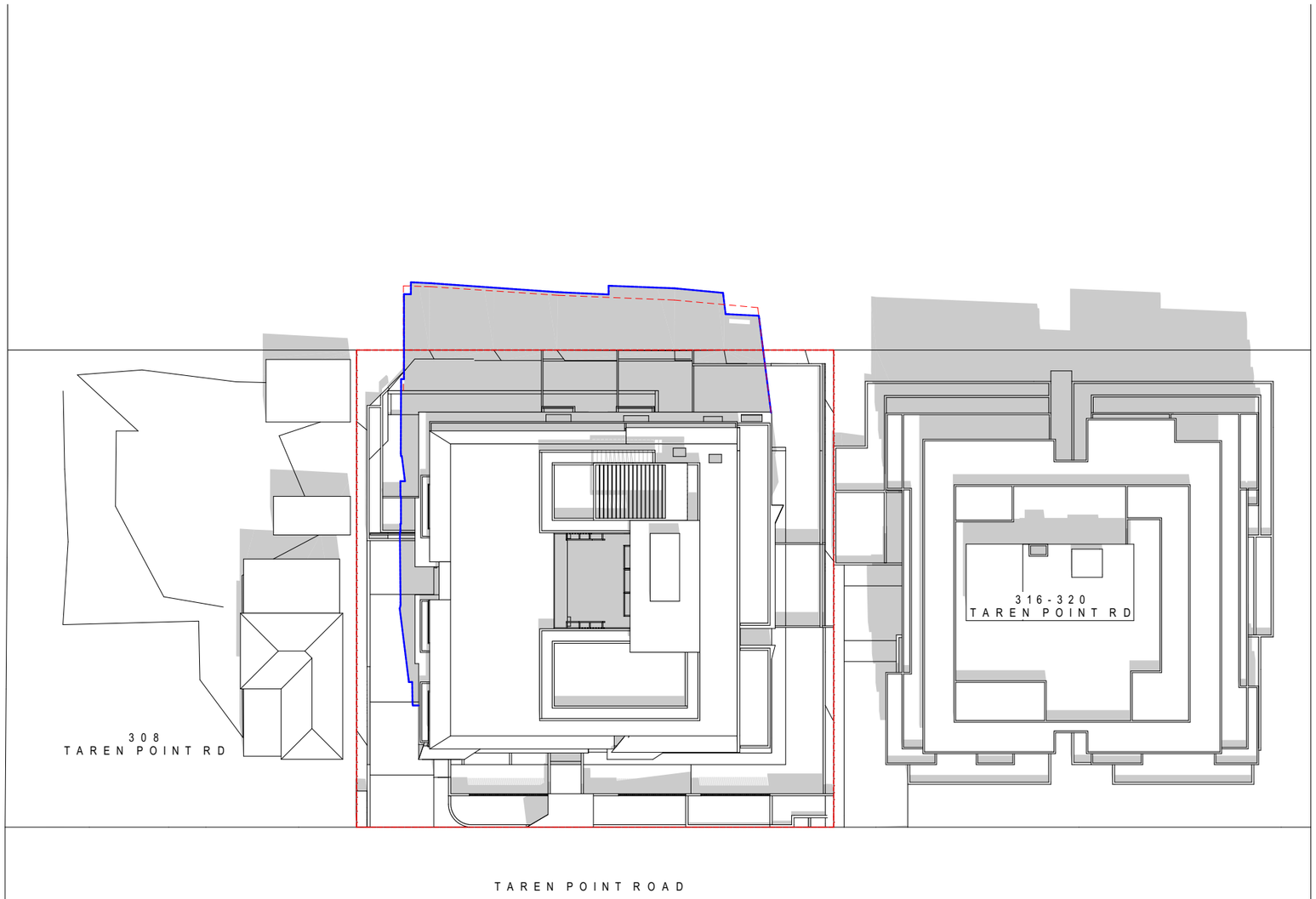
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I	16.03.2020	For Consultant Review
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DA505
SHADOW DIAGRAMS DEC 21

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May 2020
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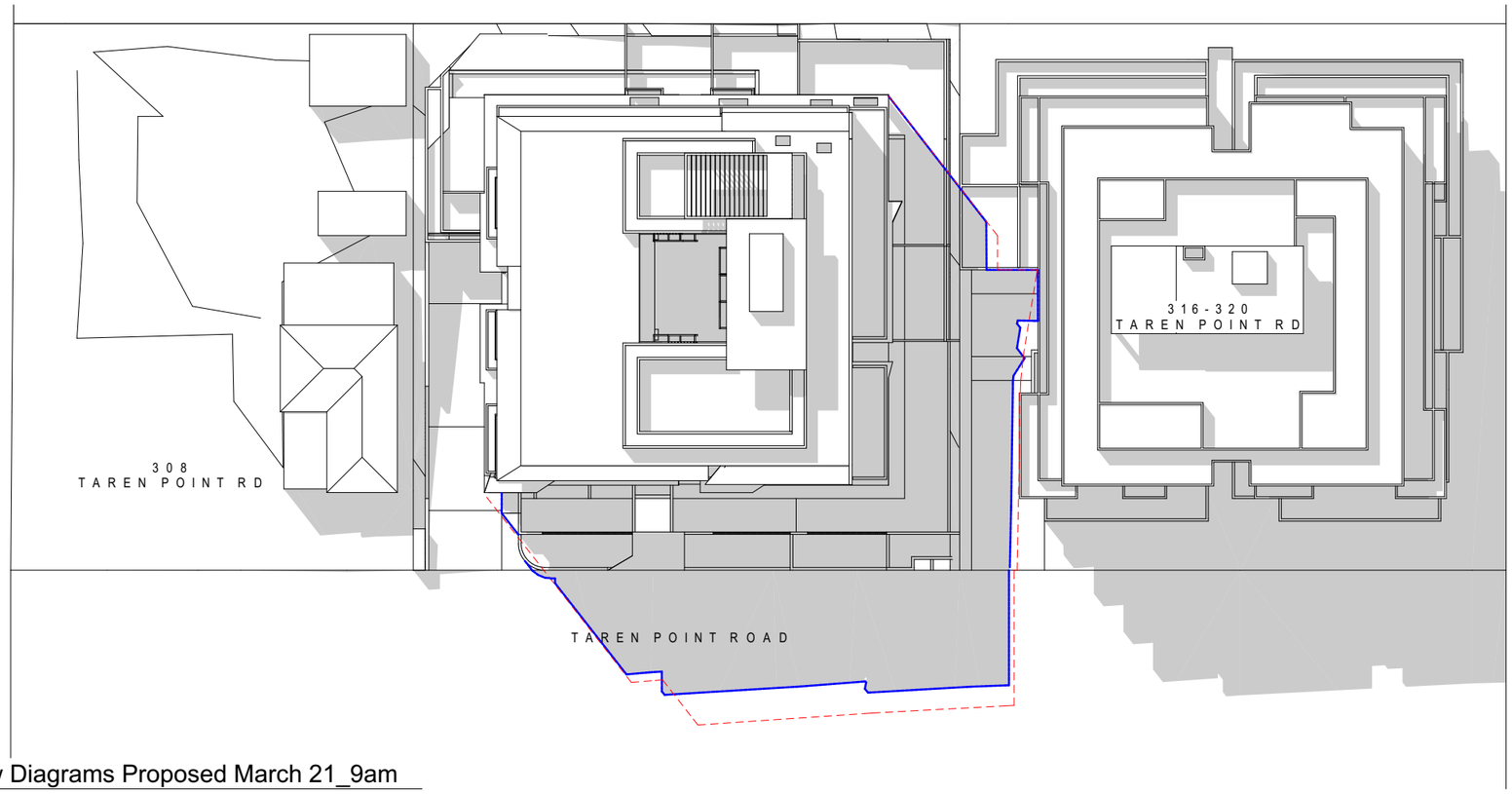
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DA506
SHADOW DIAGRAMS DEC 21

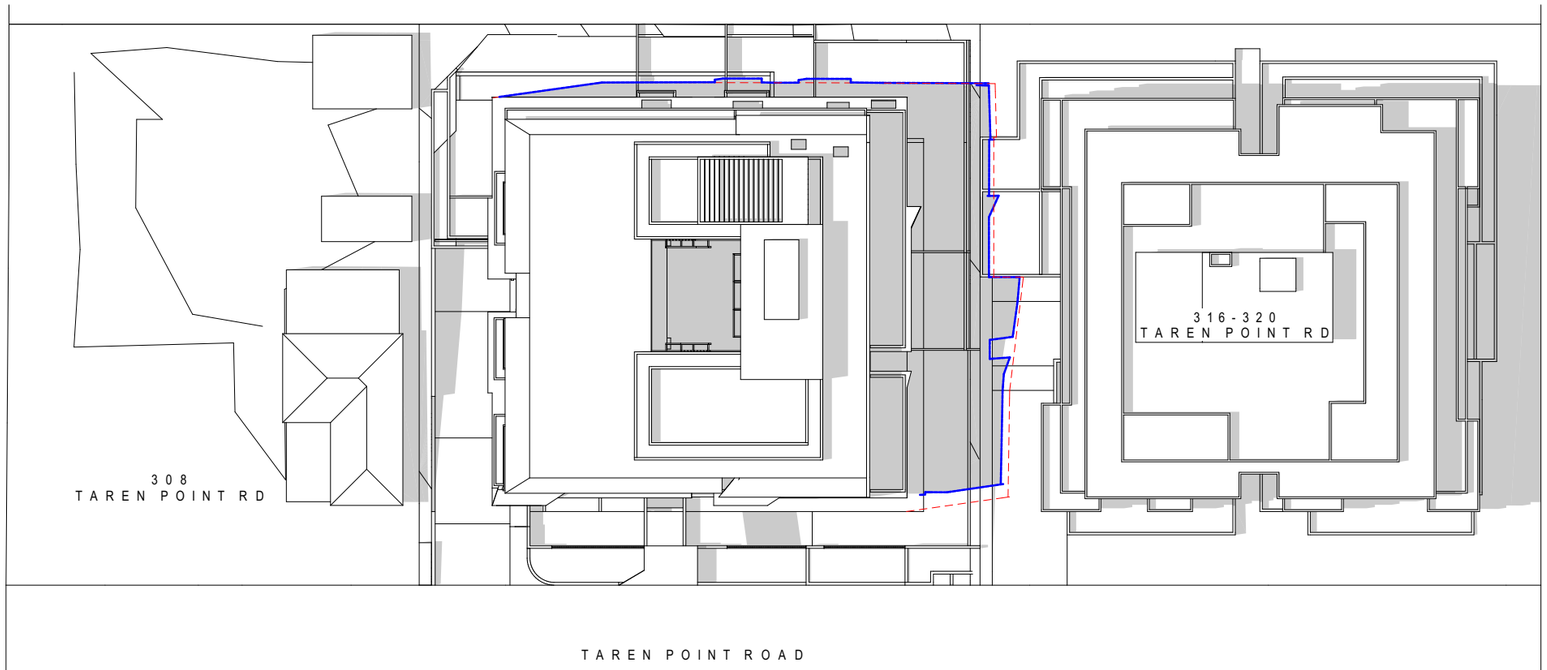
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May 2020
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Shadow Diagrams Proposed March 21_9am



Shadow Diagrams Proposed March 21_12pm

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Shadows cast by proposal

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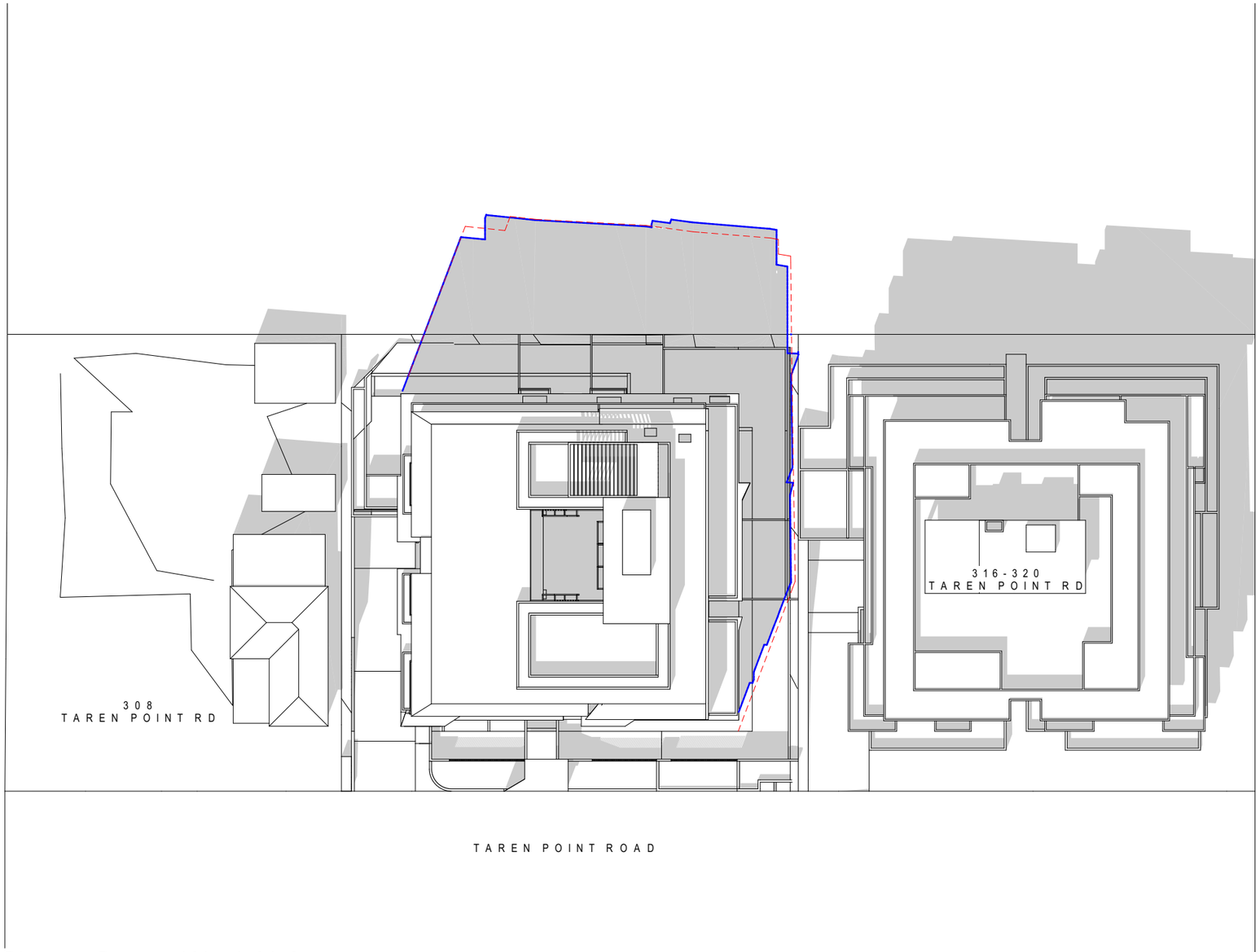
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DA507
SHADOW DIAGRAMS MAR 21

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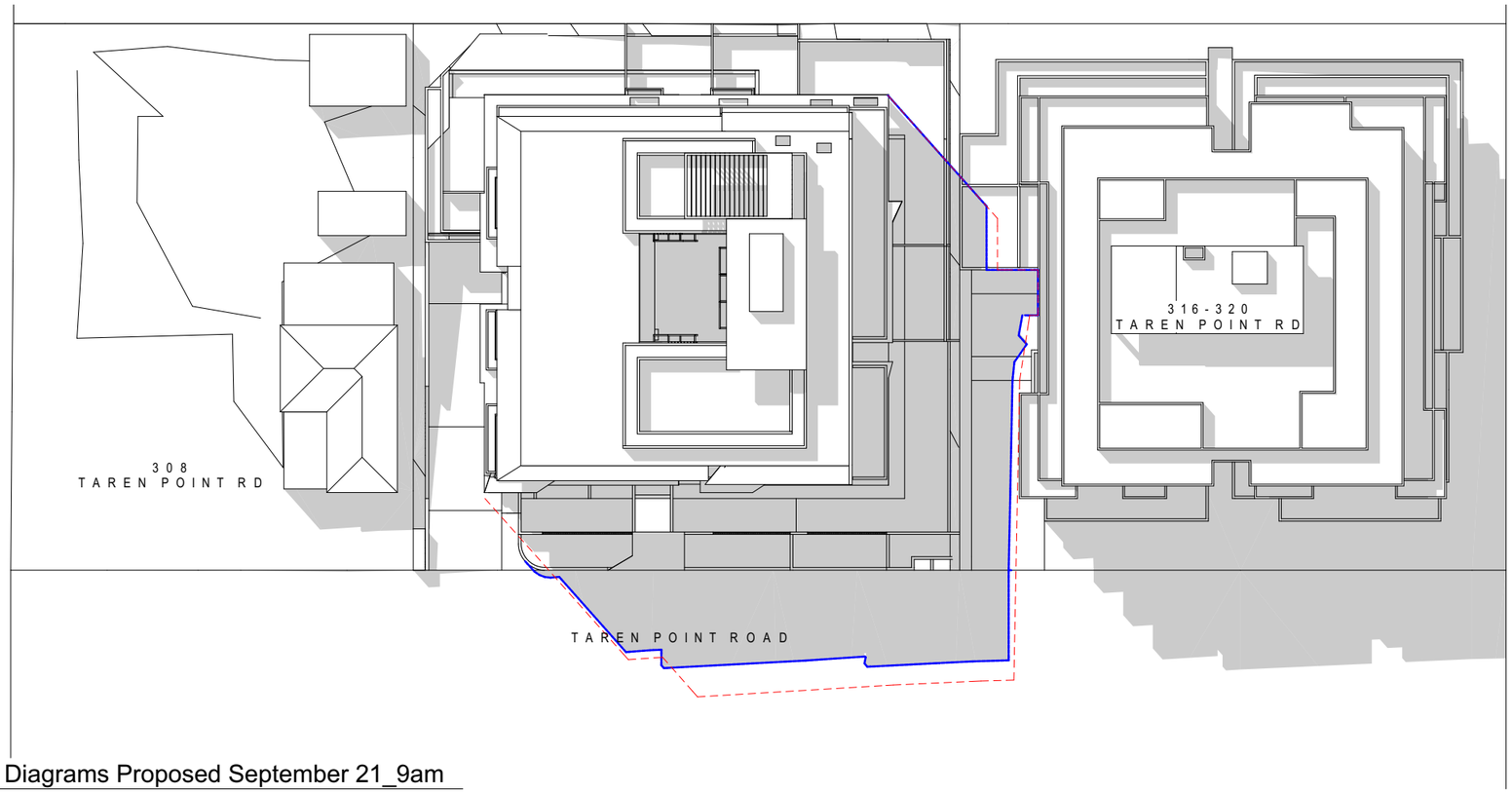
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DA508
SHADOW DIAGRAMS MAR 21

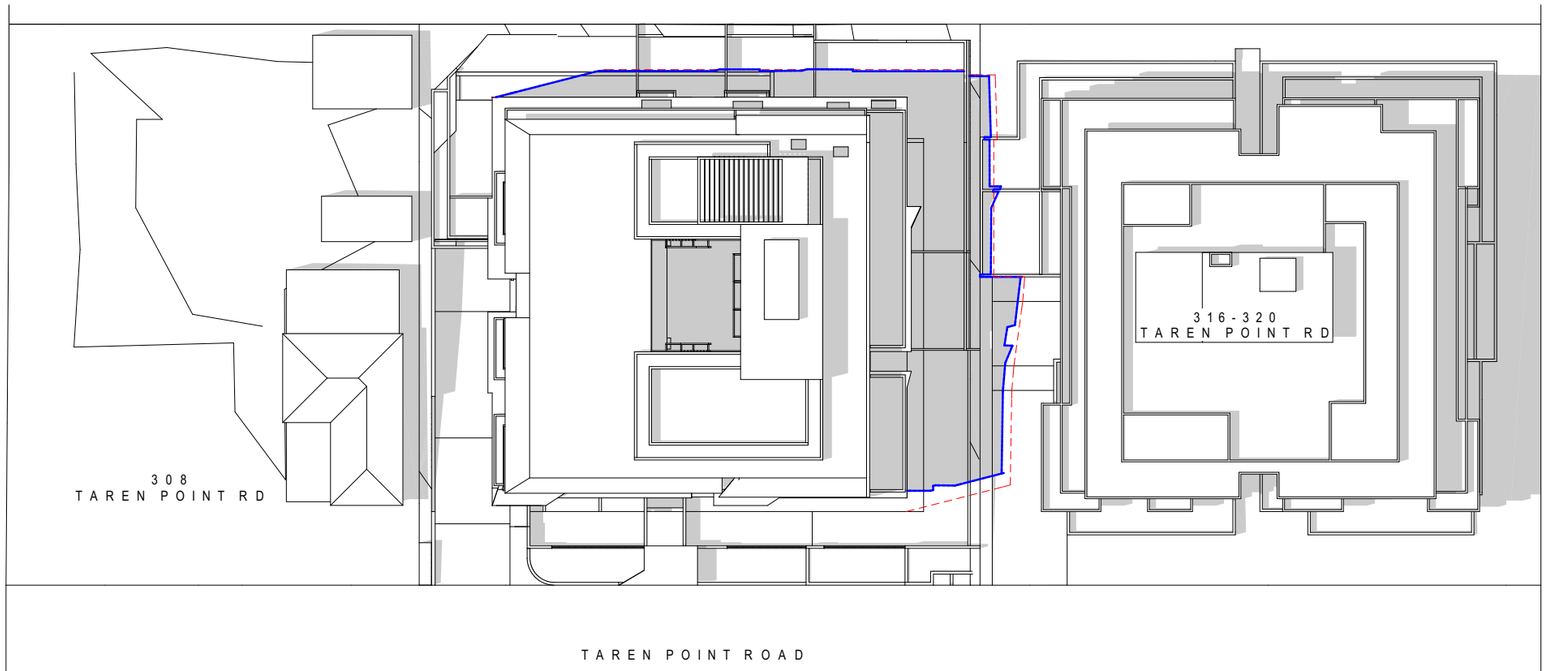
Job: 1725
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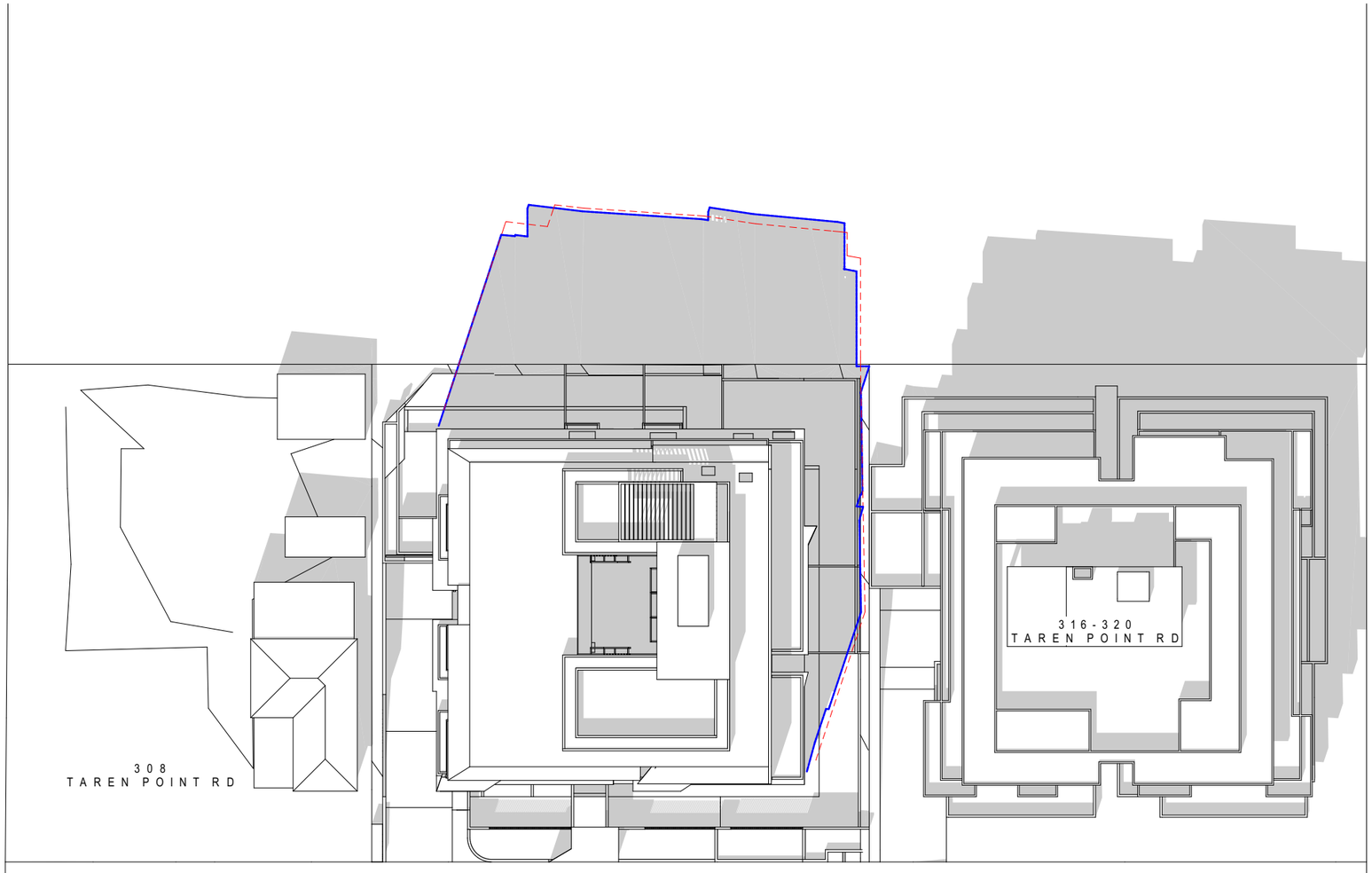
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K	01.05.2020	Amended DA Issue

DA509
SHADOW DIAGRAMS SEPT 21

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Shadow Diagrams Proposed September 21_3pm

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-------- Shadows cast by proposal

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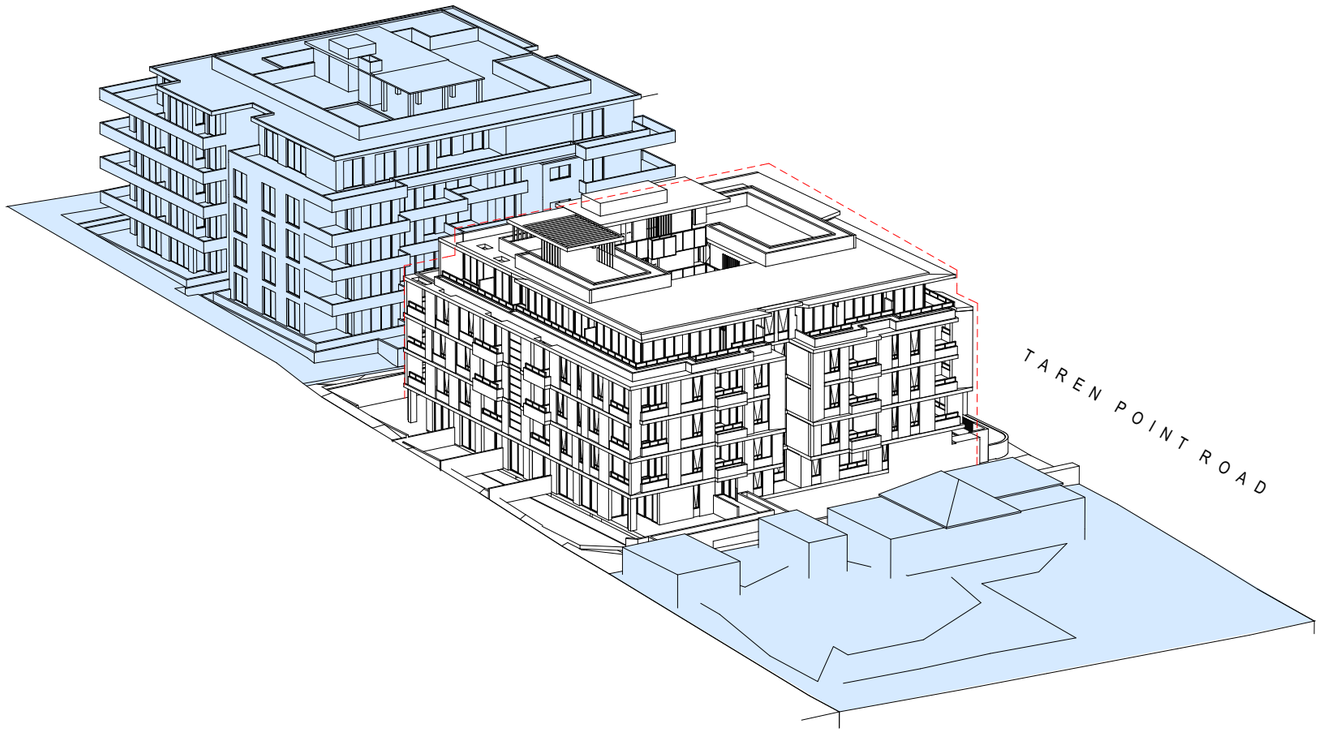
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DA510
SHADOW DIAGRAMS SEPT 21

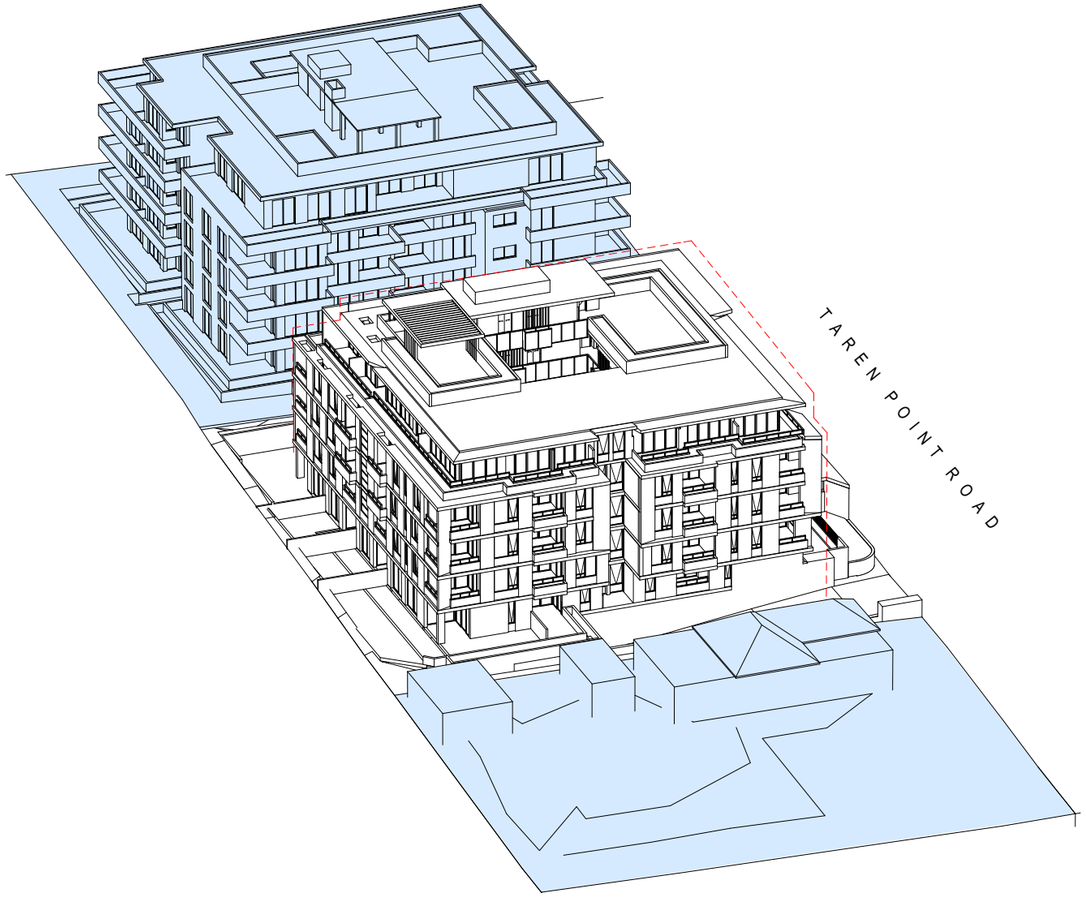
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Sun Eye Diagram June21_9am



Sun Eye Diagram June21_10am

— — — Outline of compliant massing envelope

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

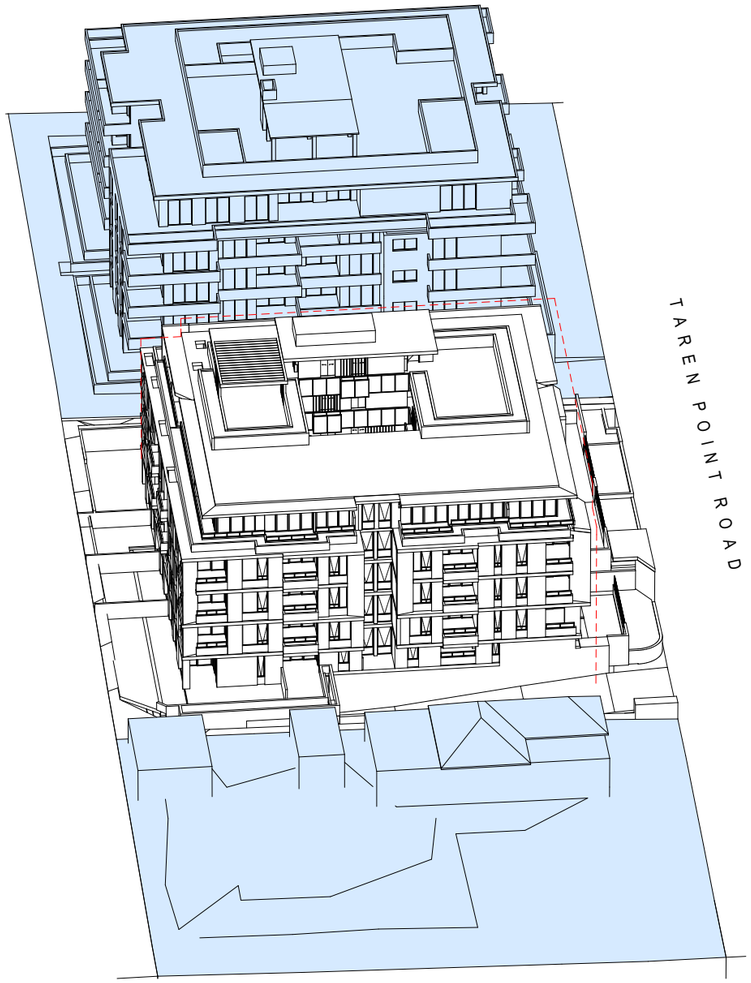
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA511
SUN EYE DIAGRAMS JUNE 21

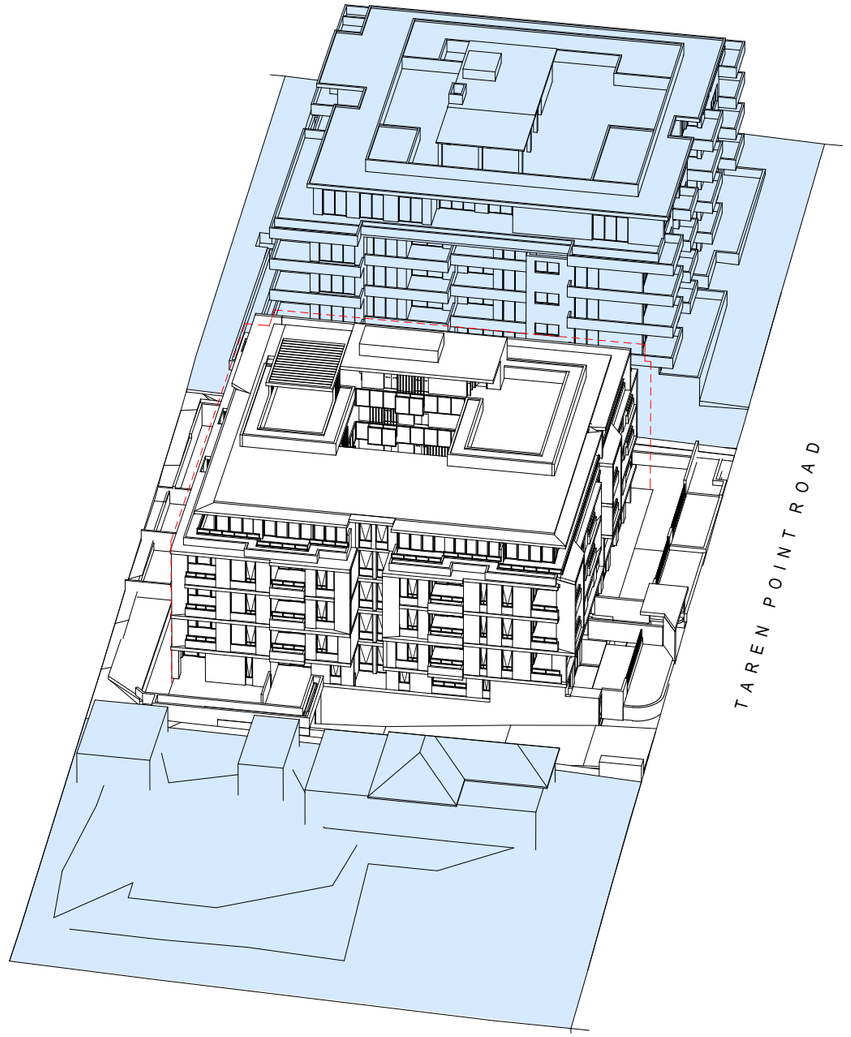
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Sun Eye Diagram June 21_11am



Sun Eye Diagram June 21_12pm

Outline of compliant massing envelope

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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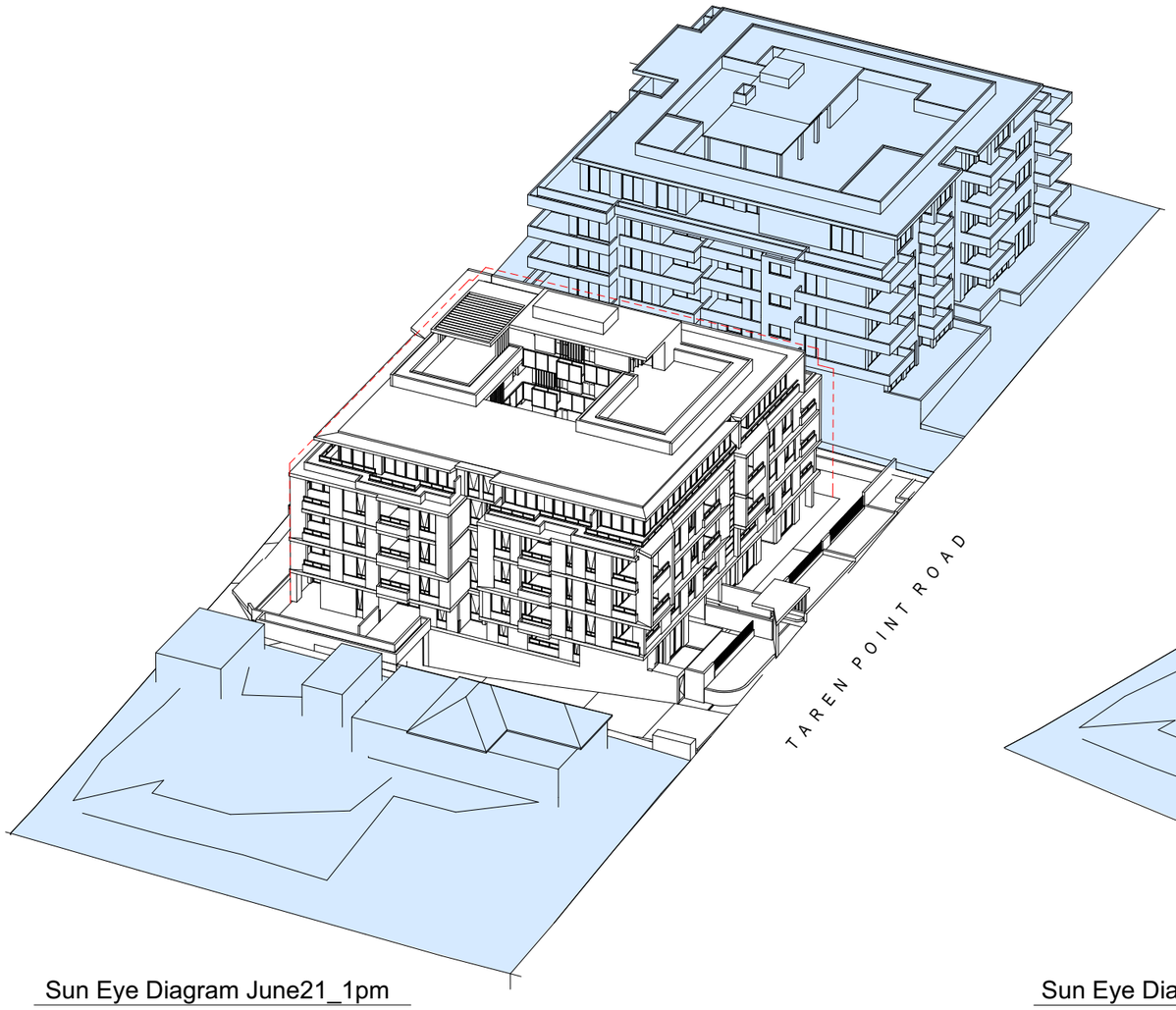
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA512
SUN EYE DIAGRAMS JUNE 21

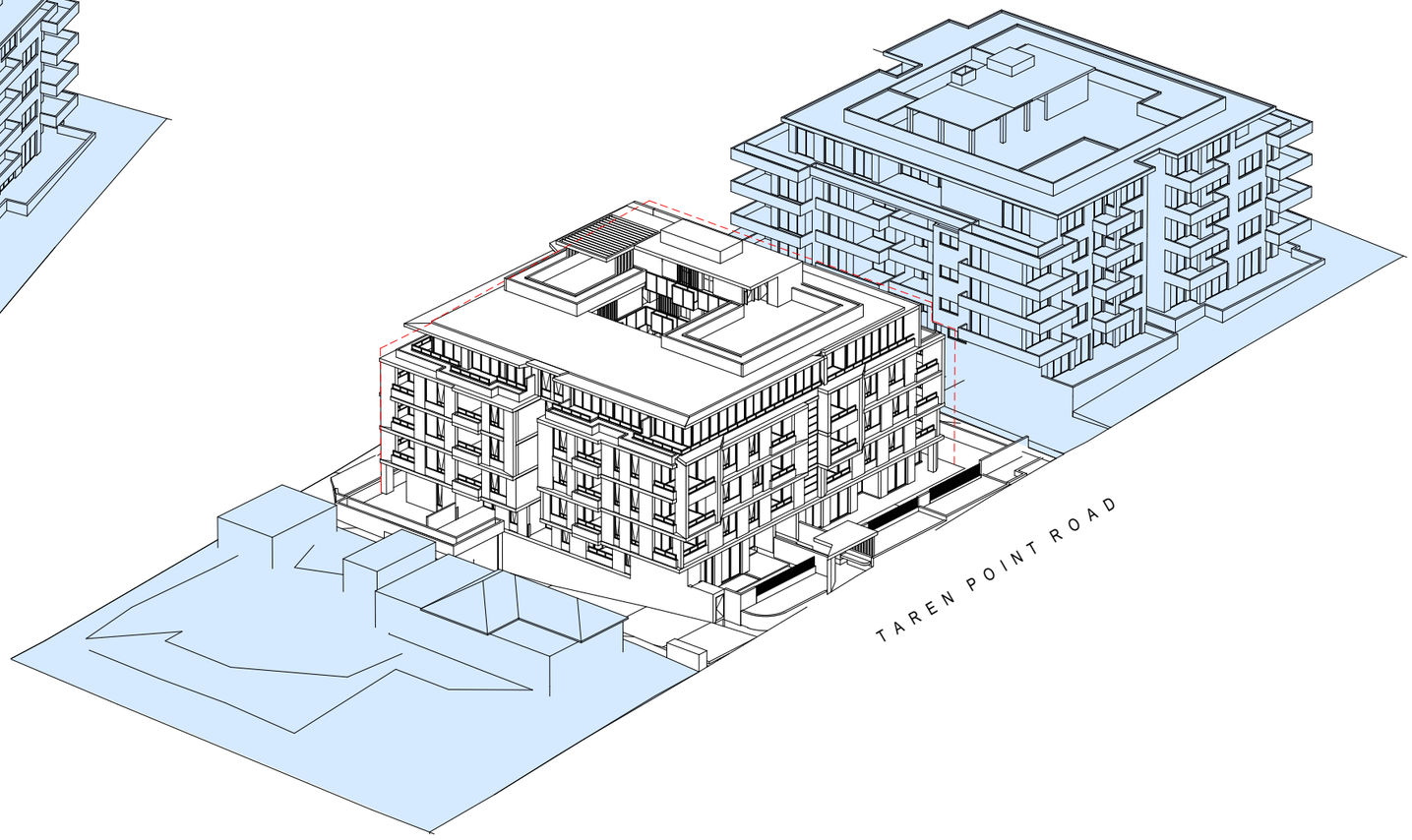
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Sun Eye Diagram June21_1pm



Sun Eye Diagram June 21_2pm

Outline of compliant massing envelope

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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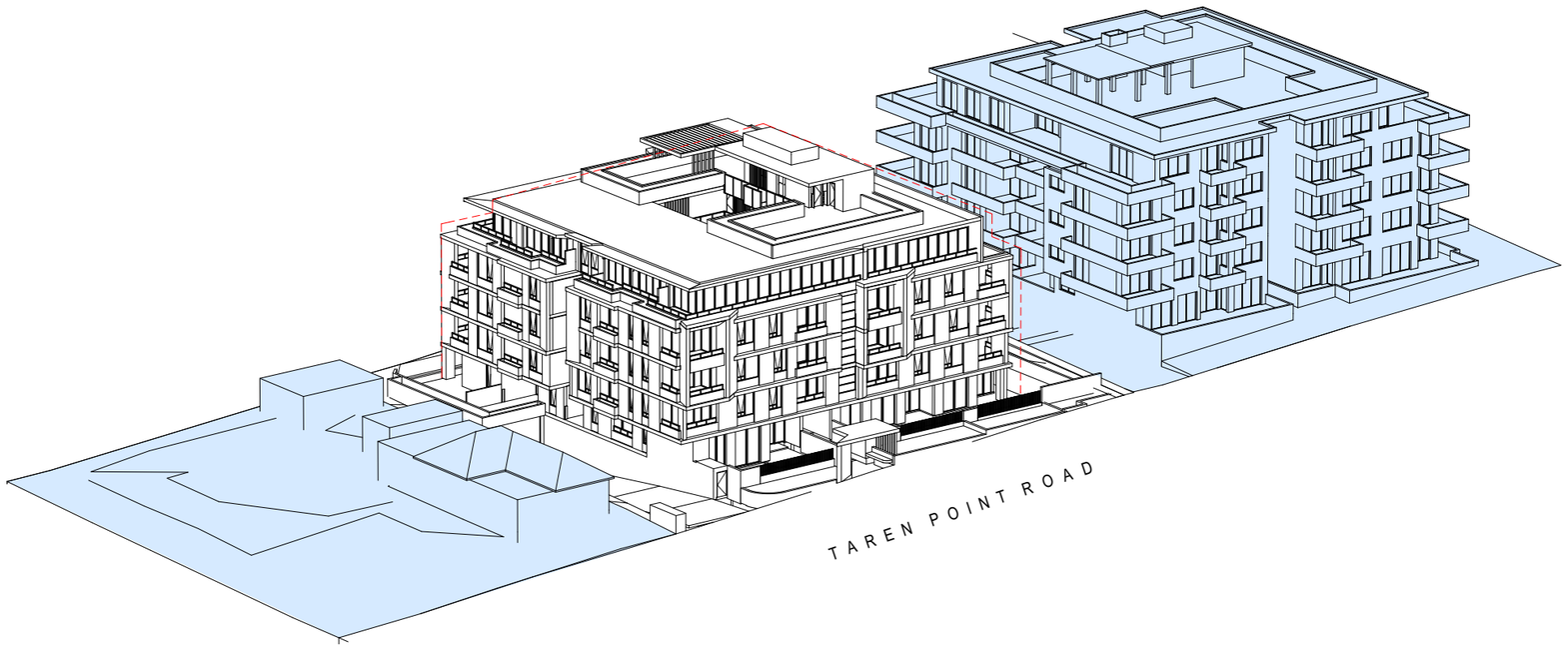
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA513
SUN EYE DIAGRAMS JUNE 21

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Sun Eye Diagram June 21_3pm

Proposed Residential Development

at 310-314 Taren Point Road
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for MBD Developments

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DA514
SUN EYE DIAGRAMS JUNE 21

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June 21_9AM



June 21_10AM



June 21_11AM



June 21_12PM

Existing Shadows

Shadows cast by compliant massing envelope

Shadows cast by proposed development

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

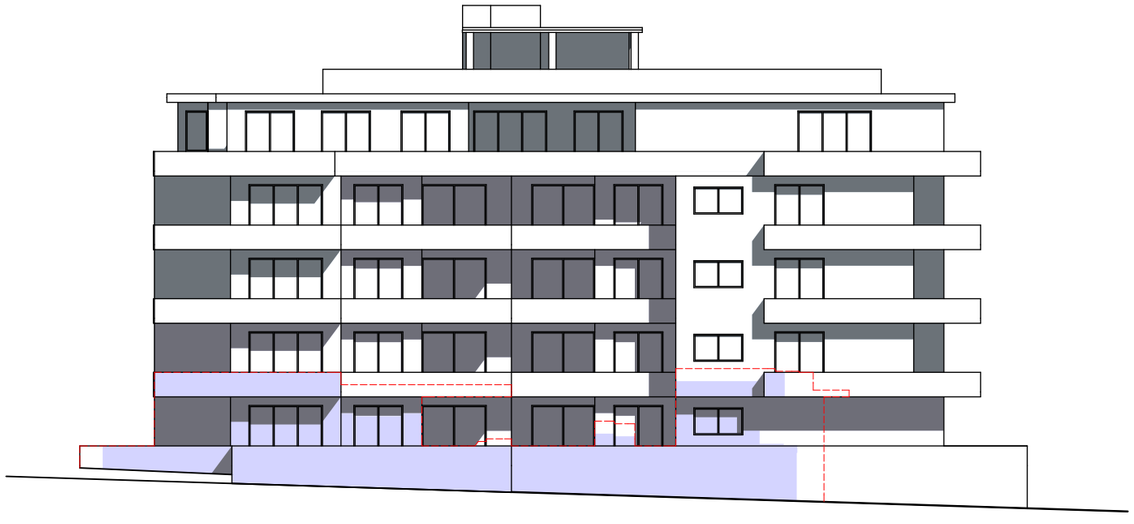
H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA515
ADJOINING DEVELOPMENT SHADOW DIAGRAMS

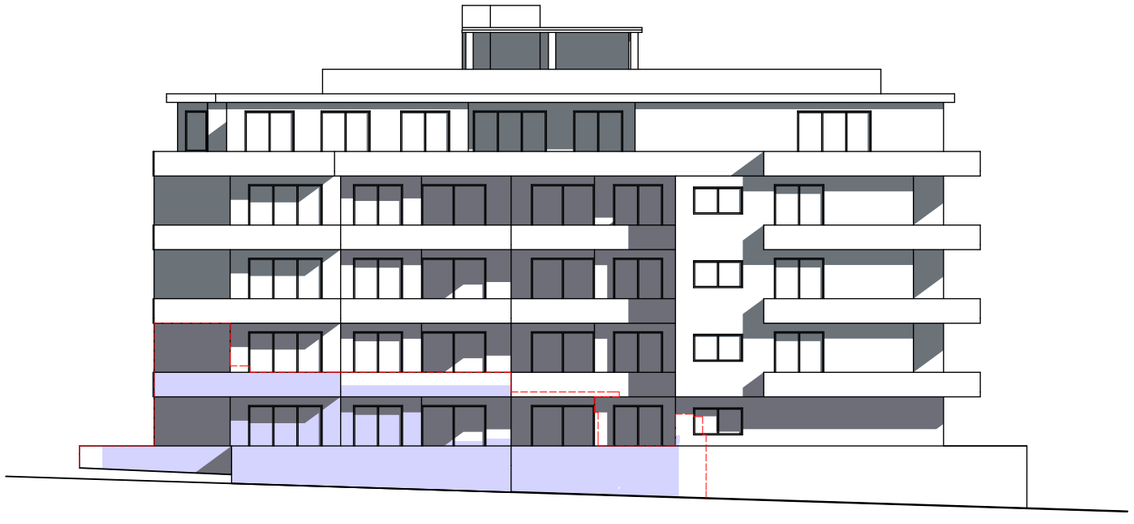
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June 21_1PM



June 21_2PM



June 21_3PM



Summary
2 neighbouring apartments achieve <2hr solar access

Existing Shadows

Shadows cast by compliant massing envelope

Shadows cast by proposed development

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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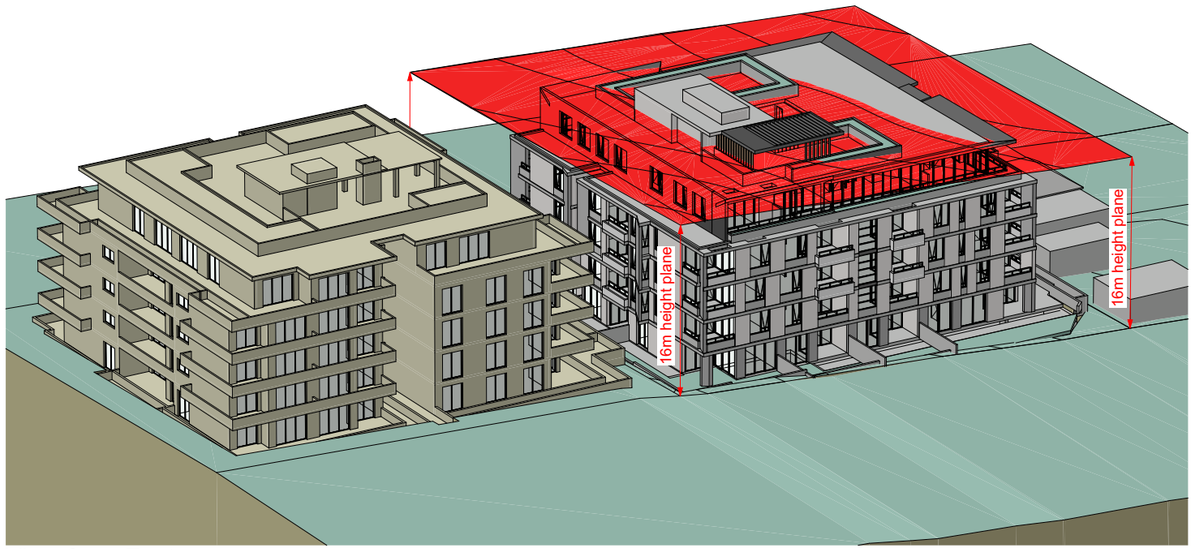
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA516
ADJOINING DEVELOPMENT SHADOW DIAGRAMS

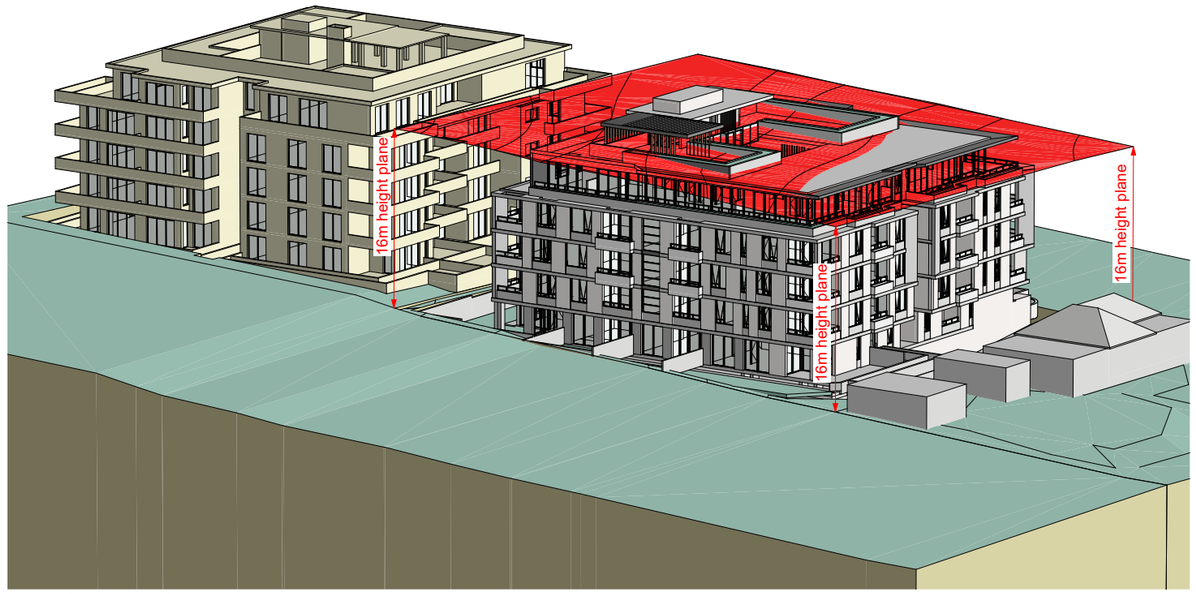
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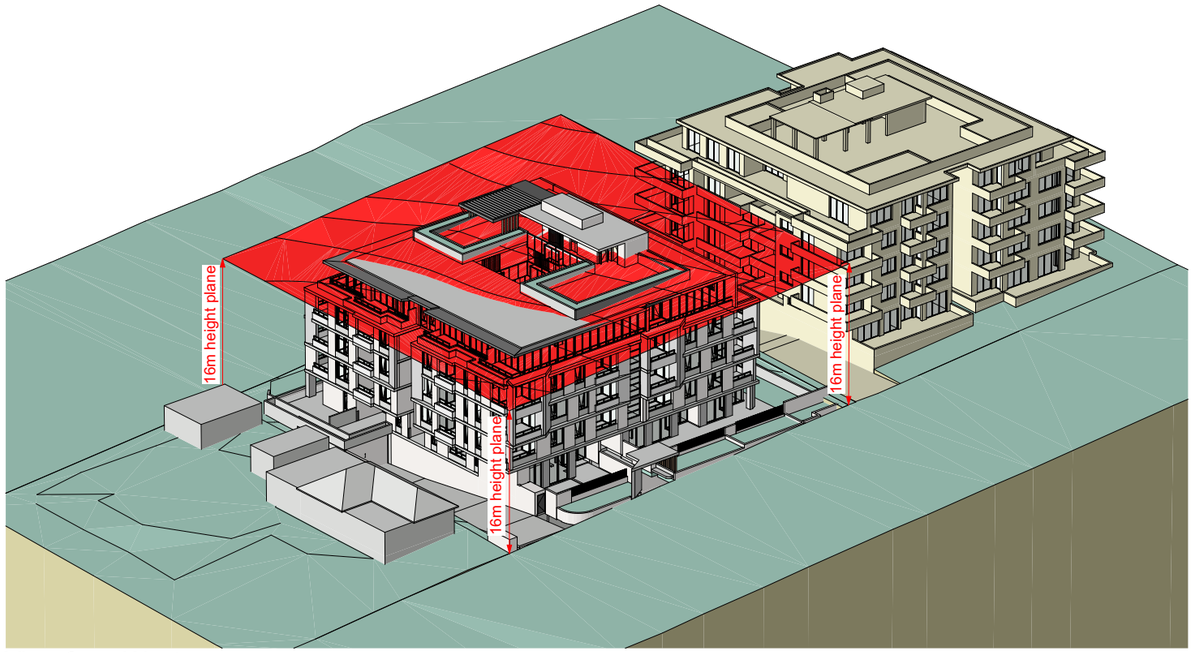
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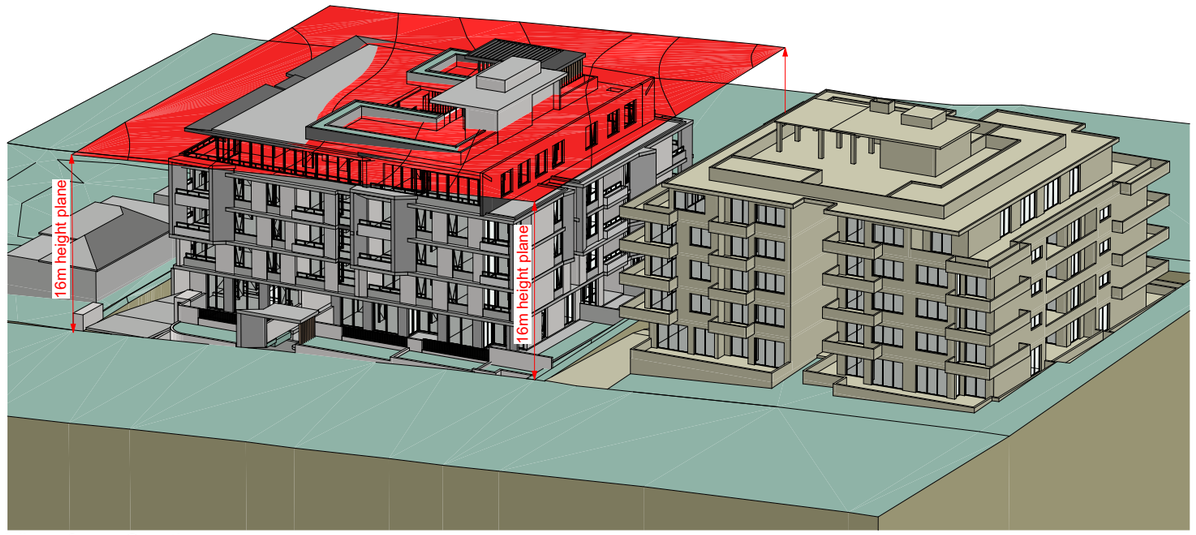
View from East



View from North



View from West



View from South

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

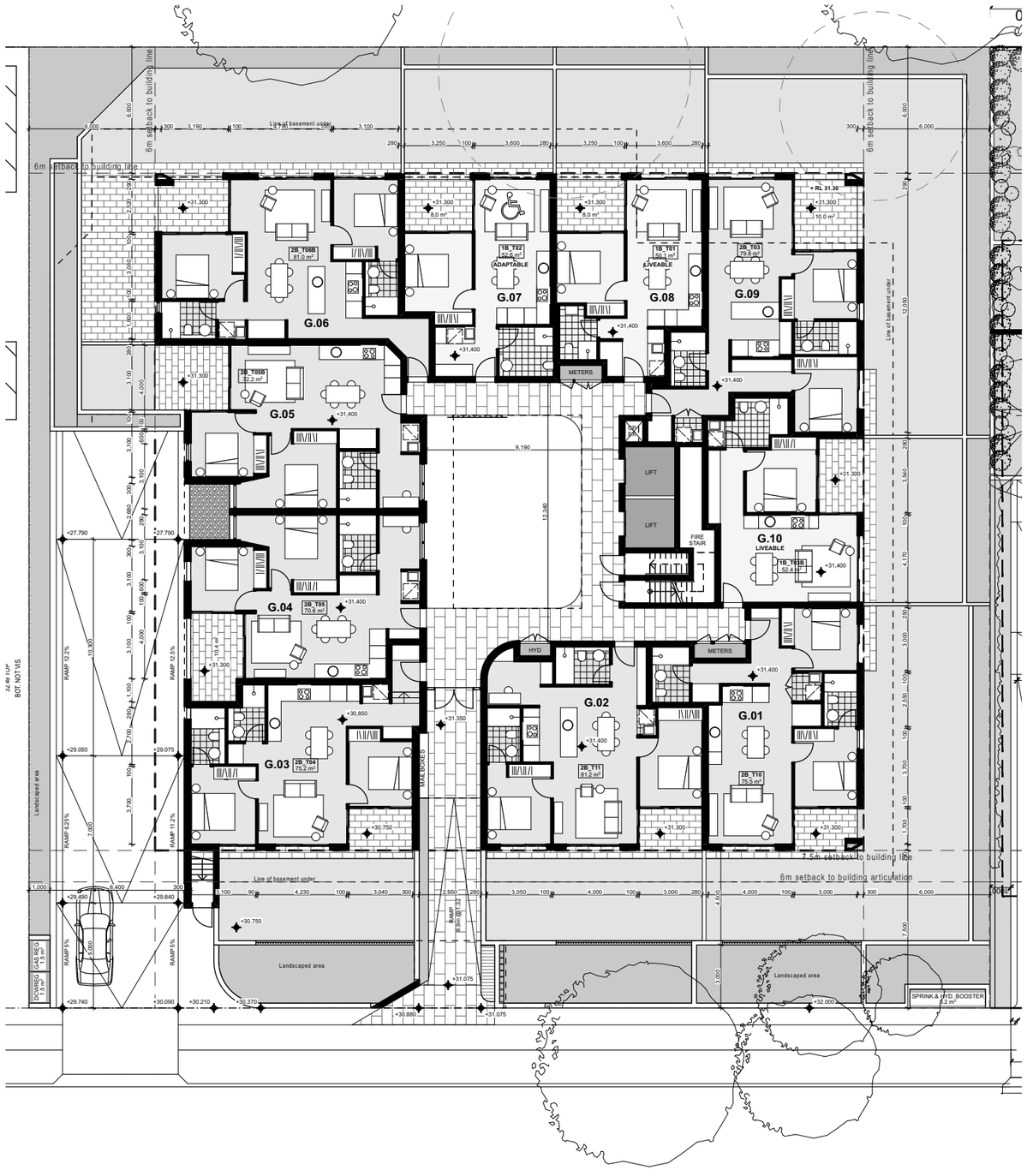
H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA517
HEIGHT PLANE DIAGRAMS

Job: 1725
May 2020
Rev: K

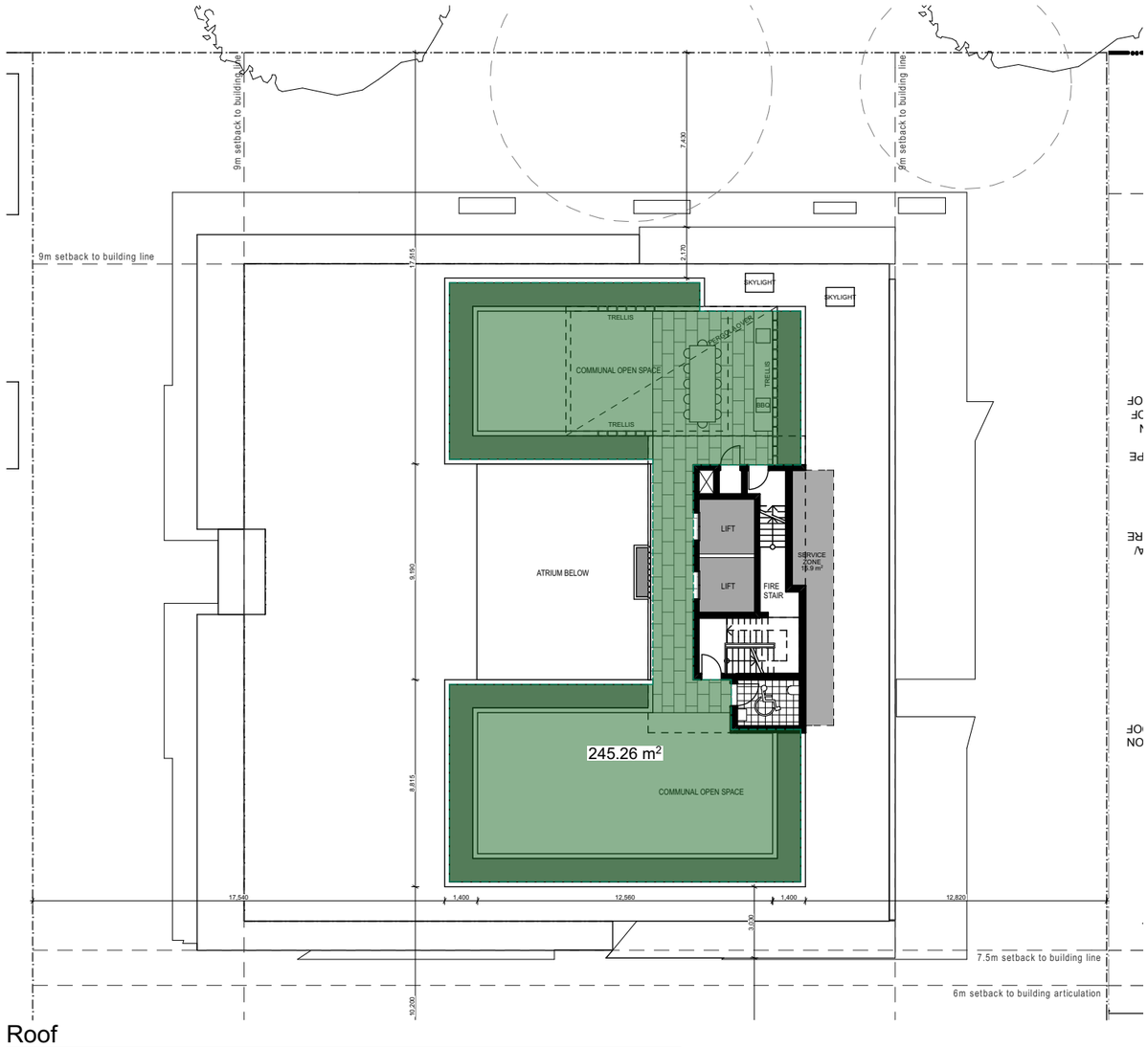
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T A R E N P O I N T R O A D

Ground Floor



Roof

Summary

Site Area:	2090.3 sqm
Communal Open Space Area Roof:	245 sqm
DCP Required:	Minimum 100 sqm (Complies)

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

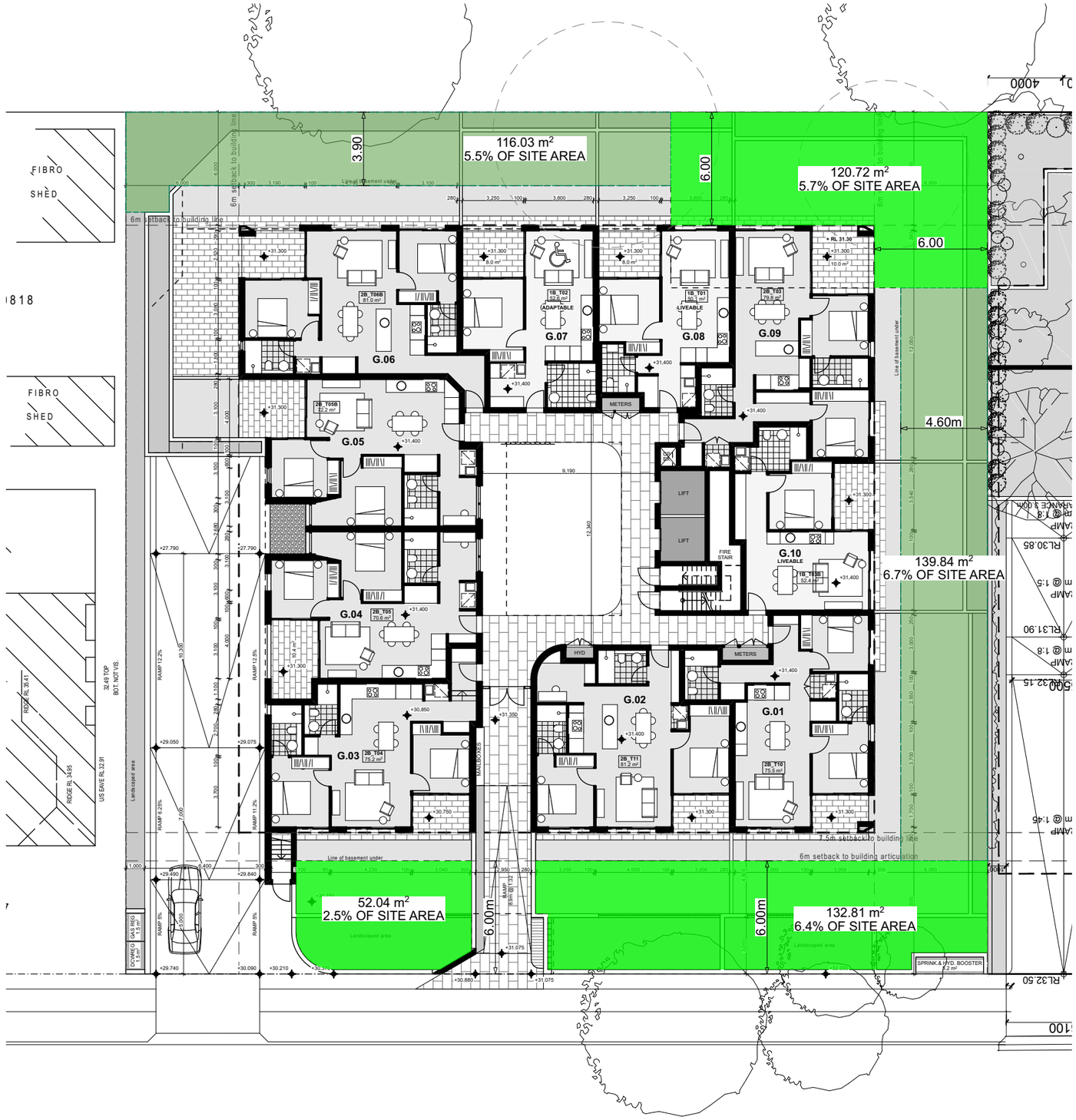
NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA518
COMMUNAL OPEN SPACE AREA DIAGRAM
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Summary

Site Area:	2090.3 sqm
Deep Soil Area (6m min. dimension):	305.5 sqm (14.6% site)
ADG min Deep Soil Area Required:	7.0% site (Complies)
Additional Deep Soil Area (below 6m width):	256 sqm (8.3% site)

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

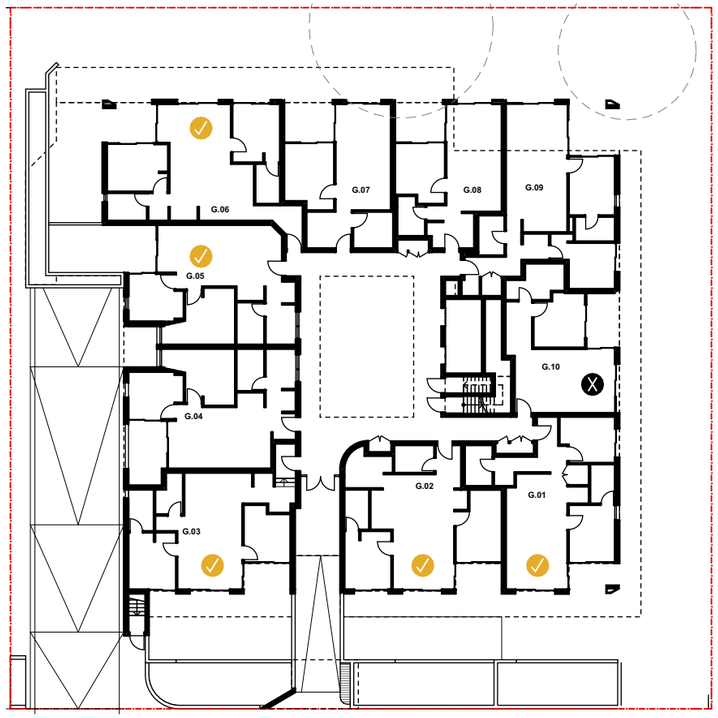
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1:250 @A3

DA519
DEEP SOIL DIAGRAM

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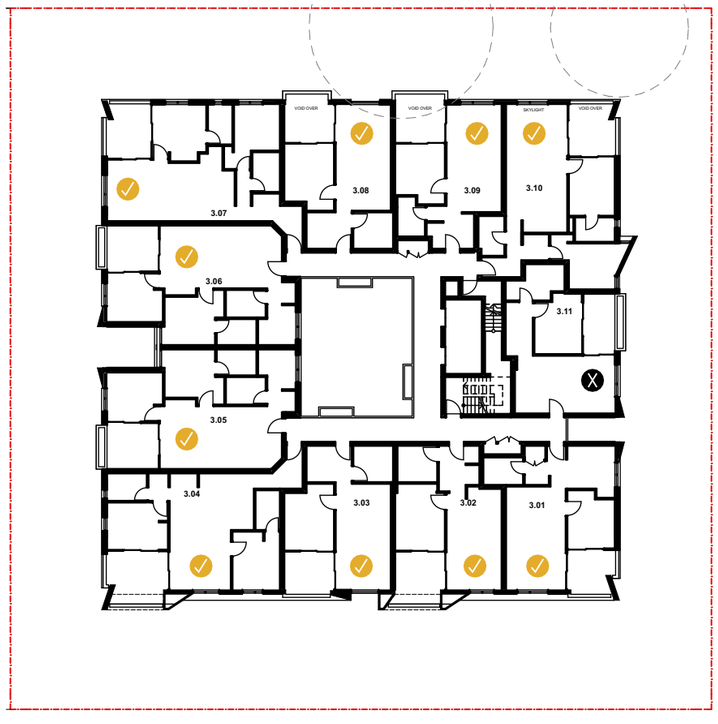
Ground Floor



Level 1



Level 2



Level 3



Level 4

Apartments receiving a minimum of 2 hrs of direct sunlight between 9am-3pm at mid winter

Apartments receiving no direct sunlight between 9am-3pm at mid winter

Summary

Total no. of Apartments:	49
Apartments achieving Solar Access:	35 (71.4%)
ADG Required:	70.0% (Complies)
Non Direct Sunlight:	4 (8.0%)
ADG maximum allowed:	15.0% (Complies)

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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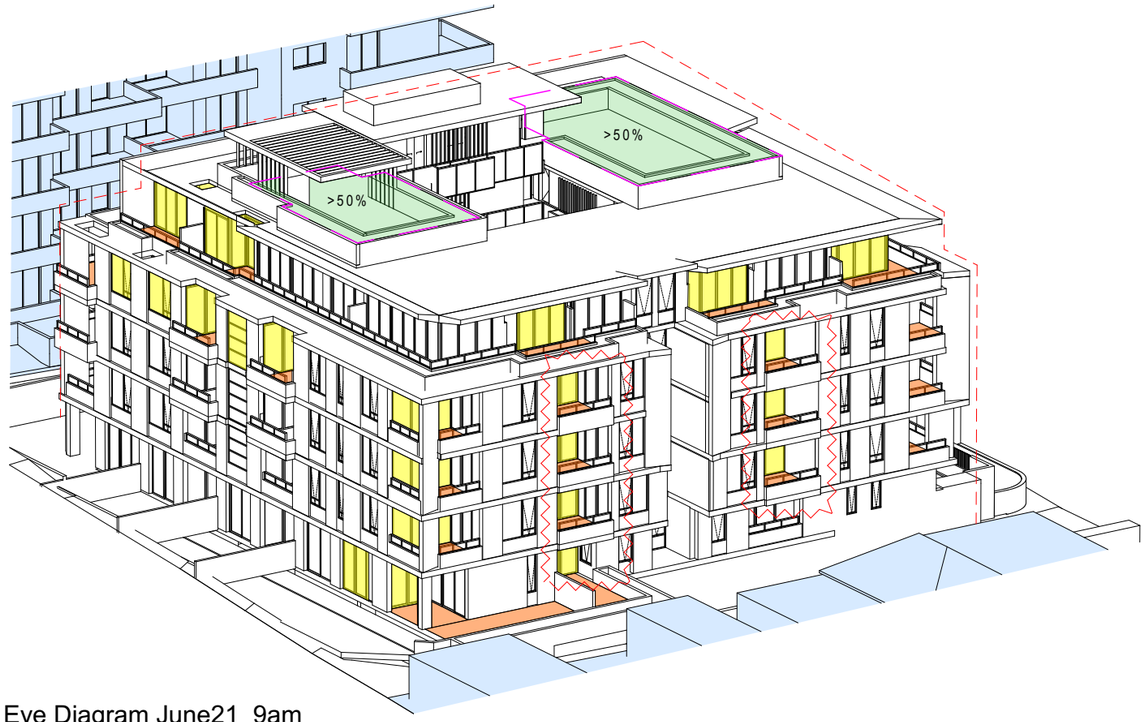
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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA520
ADG SOLAR DIAGRAMS

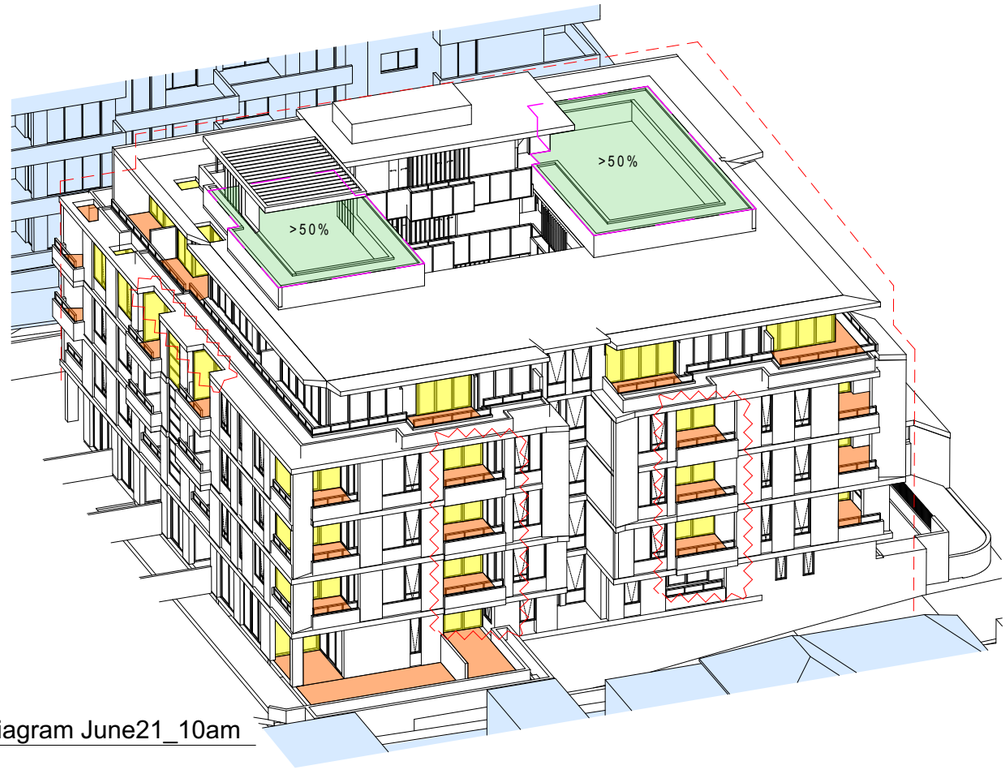
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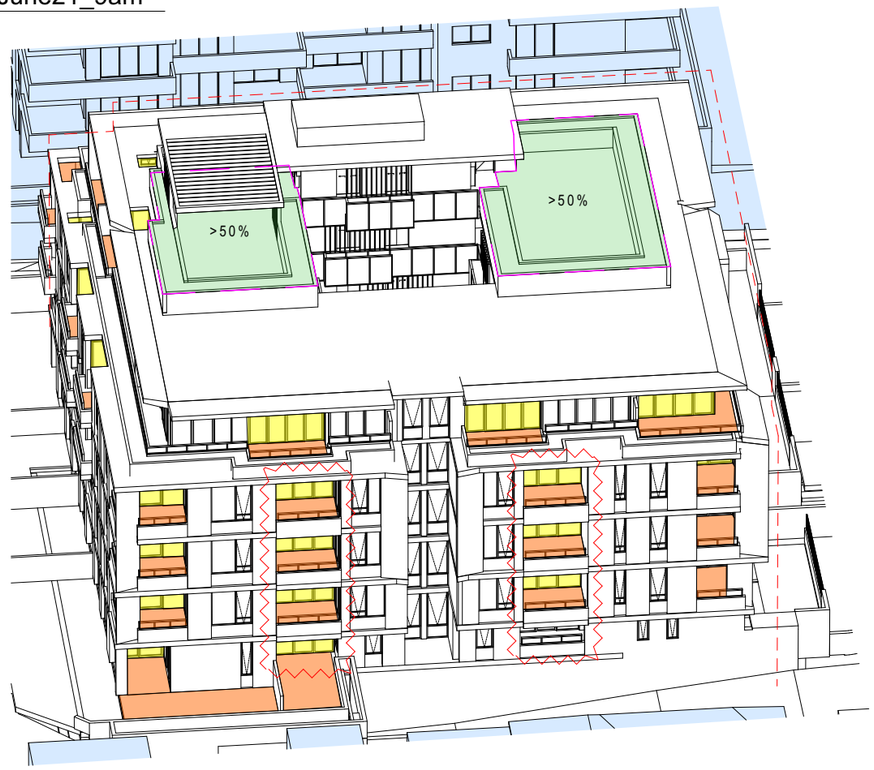
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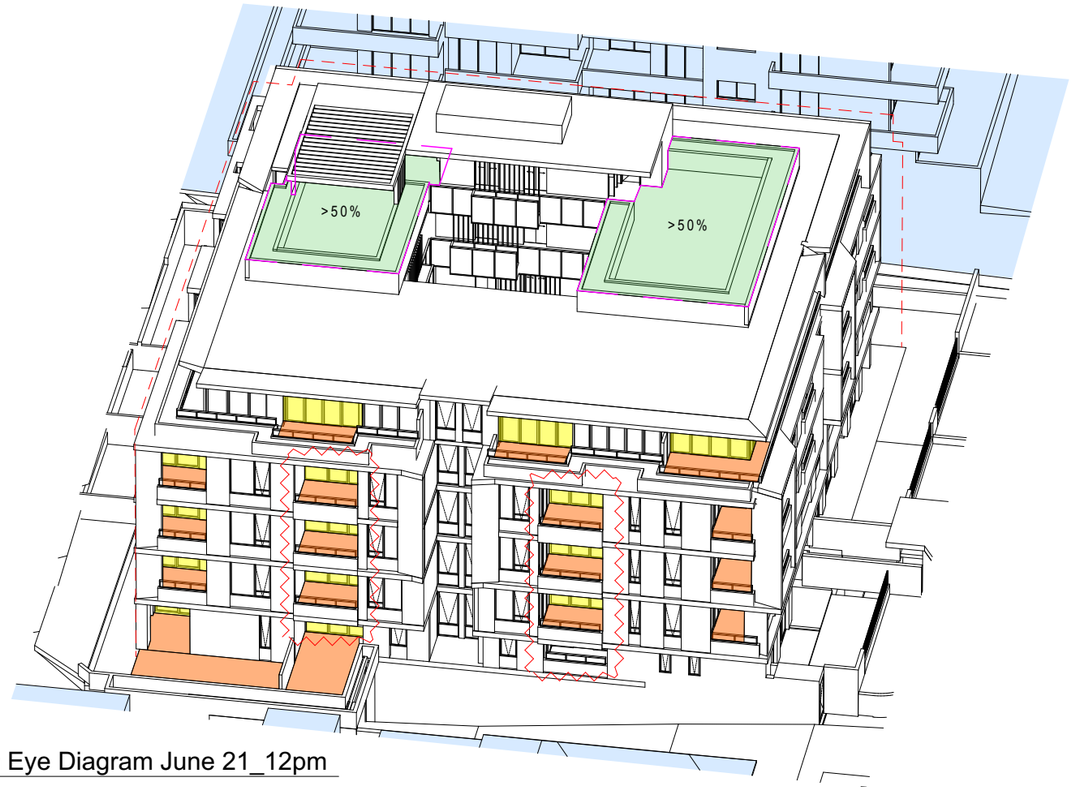
Sun Eye Diagram June21_9am



Sun Eye Diagram June21_10am



Sun Eye Diagram June 21_11am



Sun Eye Diagram June 21_12pm

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue
L	29.09.2020	DA Additional Information

Solar access to Living area

Solar access to Balcony/Open Space

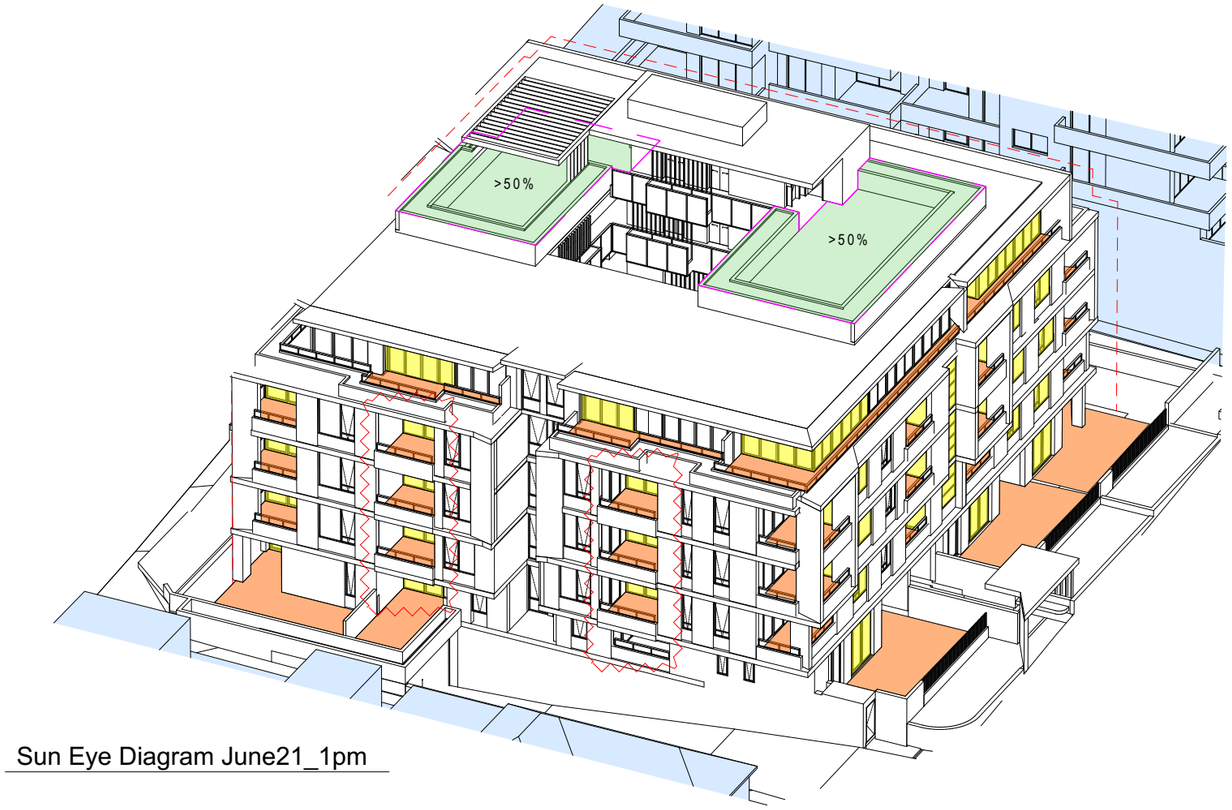
Communal Open Space footprint

Solar access to Communal Open Space

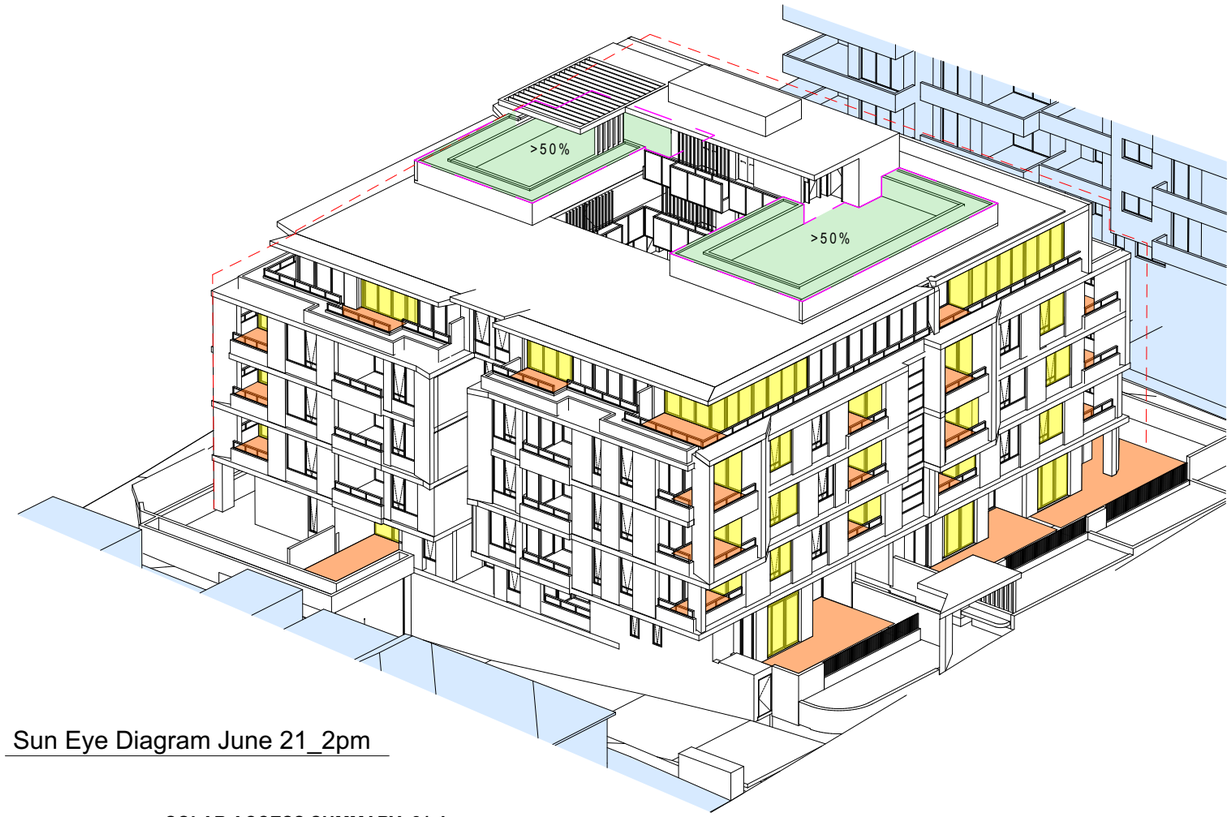
DA521
ADG SOLAR ACCESS SUMMARY
Job: 1725
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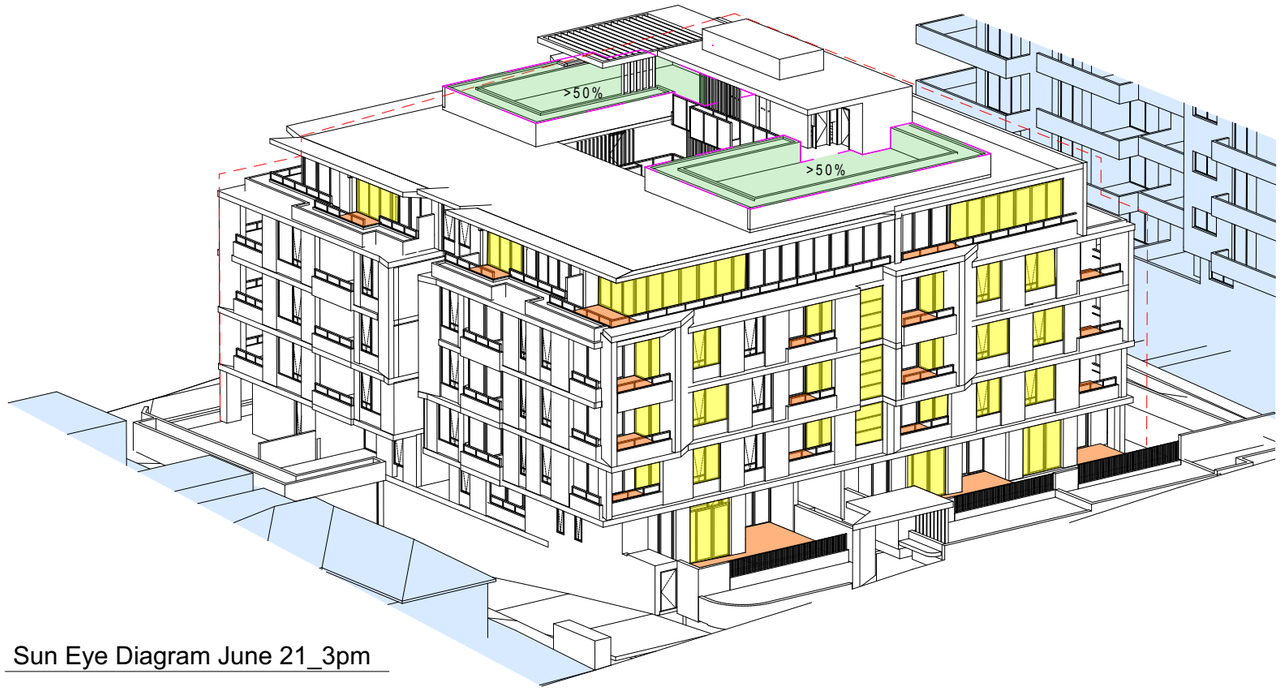
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Sun Eye Diagram June21_1pm



Sun Eye Diagram June 21_2pm



Sun Eye Diagram June 21_3pm

SOLAR ACCESS SUMMARY_21 June

	9am	10am	11am	12pm	1pm	2pm	3pm	Hours access
GROUND								
G.01	-	-	-	-	Y	Y	Y	2
G.02	-	-	-	-	Y	Y	Y	2
G.03	-	-	-	-	Y	Y	Y	2
G.04	Y	Y	-	-	-	-	-	1
G.05	Y	Y	Y	-	-	-	-	2
G.06	Y	Y	Y	-	-	-	-	2
G.07	Y	Y	-	-	-	-	-	1
G.08	Y	Y	-	-	-	-	-	1
G.09	Y	Y	-	-	-	-	-	1
G.10	-	-	-	-	-	-	-	0
LEVEL 1								
1.01	-	-	-	-	Y	Y	Y	2
1.02	-	-	-	-	Y	Y	Y	2
1.03	-	-	-	-	Y	Y	Y	2
1.04	-	-	-	-	Y	Y	Y	2
1.05	Y	Y	Y	Y	-	-	-	3
1.06	Y	Y	Y	Y	-	-	-	3
1.07	Y	Y	Y	Y	Y	-	-	4
1.08	Y	Y	-	-	-	-	-	1
1.09	Y	Y	-	-	-	-	-	1
1.10	Y	Y	-	-	-	-	-	1
1.11	-	-	-	-	-	-	-	
LEVEL 2								
2.01	-	-	-	-	Y	Y	Y	2
2.02	-	-	-	-	Y	Y	Y	2
2.03	-	-	-	-	Y	Y	Y	2
2.04	-	-	-	-	Y	Y	Y	2
2.05	Y	Y	Y	Y	-	-	-	3
2.06	Y	Y	Y	Y	-	-	-	3
2.07	Y	Y	Y	Y	Y	-	-	4
2.08	Y	Y	-	-	-	-	-	1
2.09	Y	Y	-	-	-	-	-	1
2.10	Y	Y	-	-	-	-	-	1
2.11	-	-	-	-	-	-	-	0
LEVEL 3								
3.01	-	-	-	-	Y	Y	Y	2
3.02	-	-	-	-	Y	Y	Y	2
3.03	-	-	-	-	Y	Y	Y	2
3.04	-	-	-	-	Y	Y	Y	2
3.05	Y	Y	Y	Y	-	-	-	3
3.06	Y	Y	Y	Y	-	-	-	3
3.07	Y	Y	Y	Y	Y	-	-	4
3.08	Y	Y	Y	-	-	-	-	2
3.09	Y	Y	Y	-	-	-	-	2
3.10	Y	Y	Y	-	-	-	-	2
3.11	-	-	-	-	-	-	-	0
LEVEL 4								
4.01	-	-	-	Y	Y	Y	Y	3
4.02	Y	Y	Y	Y	Y	Y	Y	6
4.03	Y	Y	Y	Y	Y	Y	Y	6
4.04	Y	Y	Y	Y	Y	Y	Y	6
4.05	Y	Y	Y	-	-	-	-	2
4.06	Y	Y	Y	-	-	-	-	2
TOTAL								35 *71.4%*

Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

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Solar access to Living area

Solar access to Balcony/Open Space

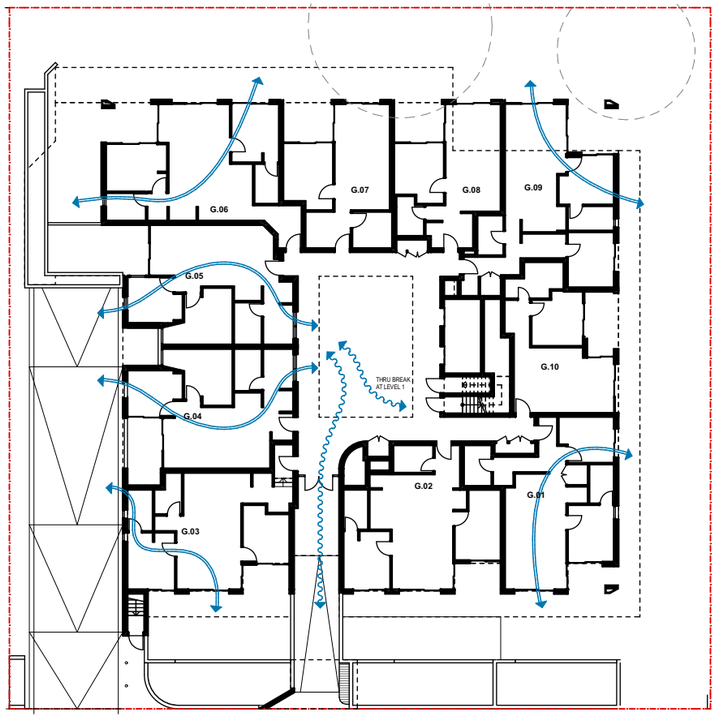
Communal Open Space footprint

Solar access to Communal Open Space

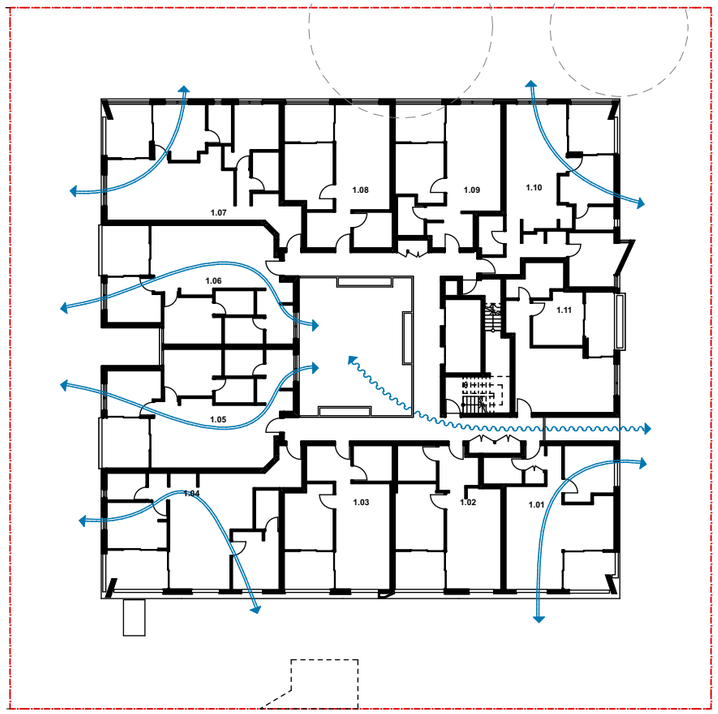
DA521B
ADG SOLAR ACCESS SUMMARY
Job: 1725
September 2020
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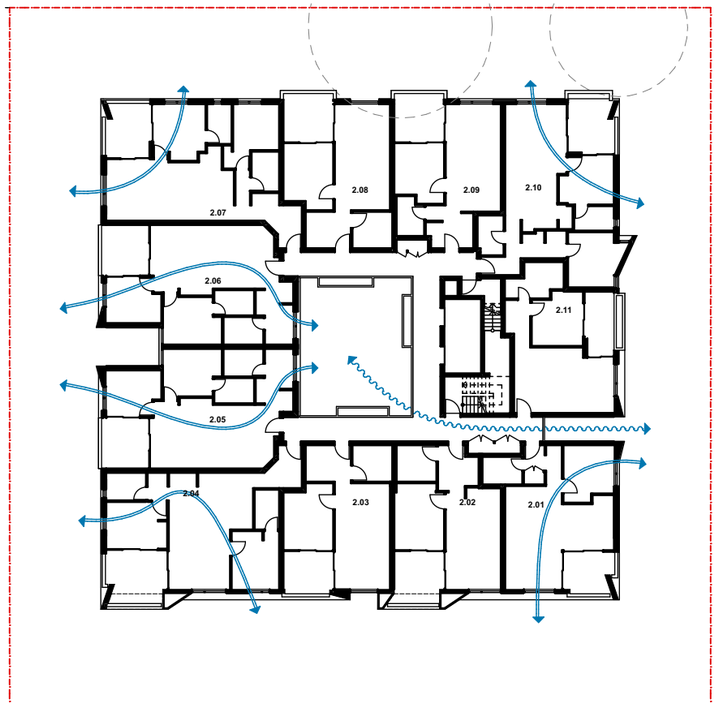
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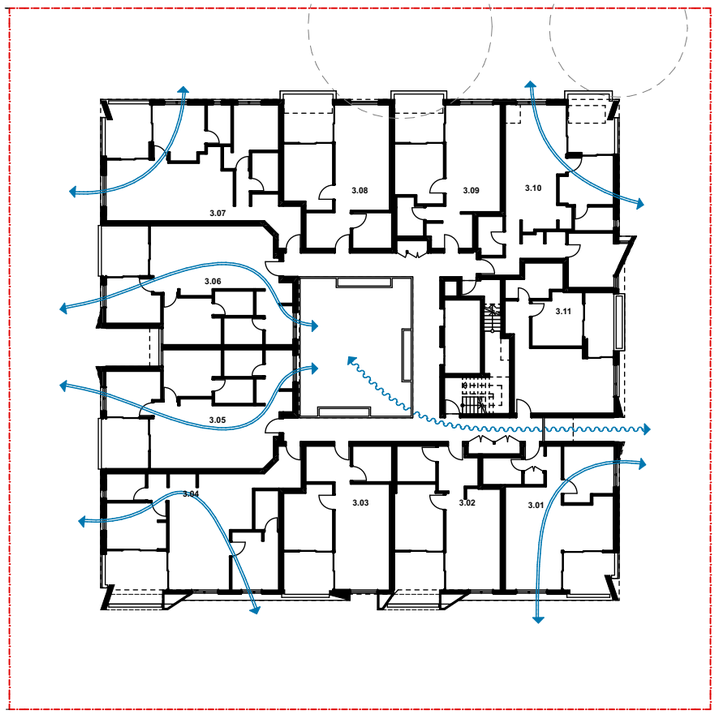
Ground Floor



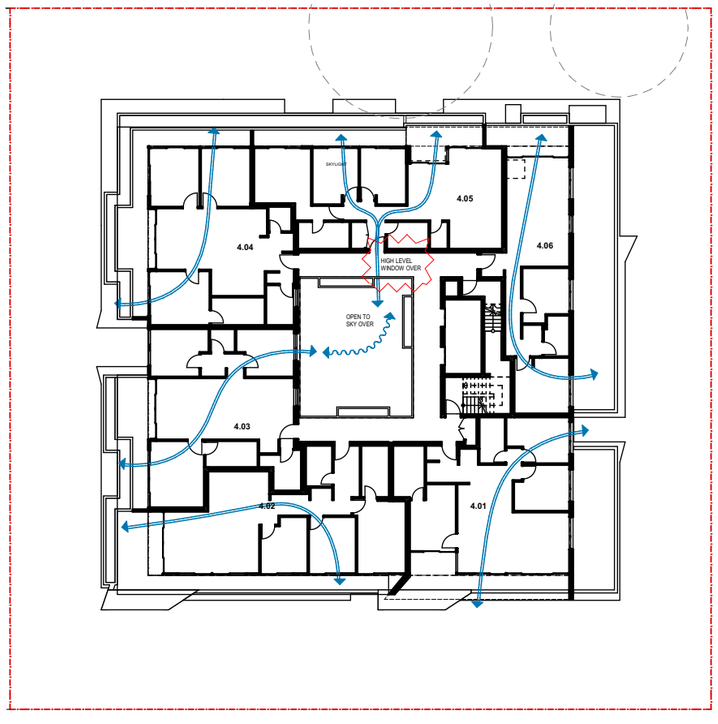
Level 1



Level 2



Level 3



Level 4

Apartments achieving cross ventilation

Summary

Total no. of Apartments:	49
No. of Apartments achieving Cross Ventilation:	30 (61.2%)
ADG Required:	60.0% (Complies)

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

H	26.08.2019	DA Issue
I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue
L	29.09.2020	DA Additional Information

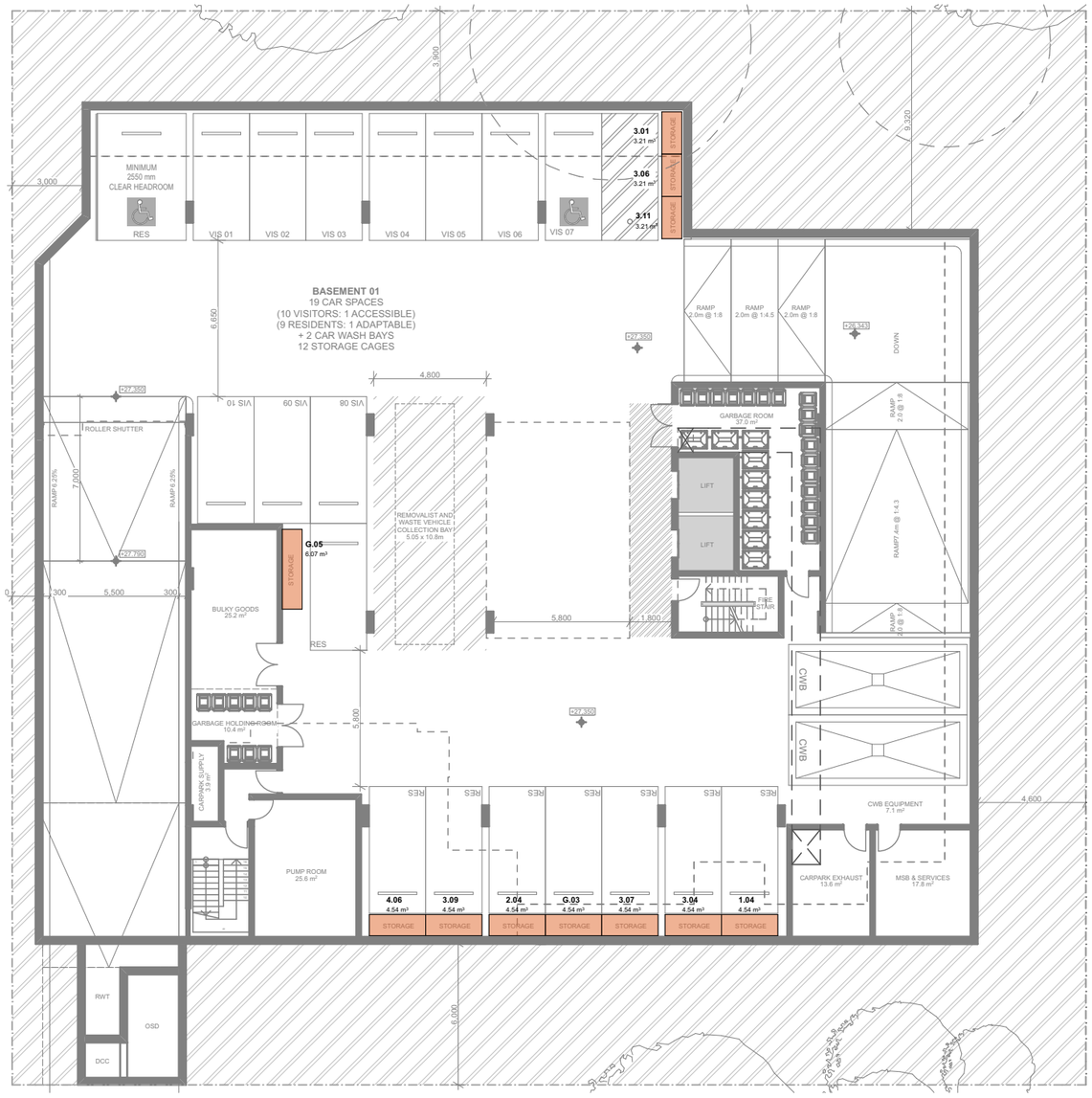
DA522
ADG CROSS VENT DIAGRAMS
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September 2020
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Basement 2



Basement 1

Proposed Residential Development

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DA523
ADG STORAGE DIAGRAMS

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Ground Floor



Level 1

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K	01.05.2020	Amended DA Issue

Proposed Residential Development

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DA524
ADG STORAGE DIAGRAMS

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Level 2



Level 3

Proposed Residential Development

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I	16.03.2020	For Consultant Review
J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

DA525
ADG STORAGE DIAGRAMS

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Level 4

Apt Number	Apt Type	Within Apt Storage (m3)	Basement Storage (m3)	Total Storage (m3)
1.01	1B_	4.18	2.89	7.07
1.02	1B_	5.70	2.89	8.59
1.03	1B_	4.78	3.40	8.18
1.04	2B_	4.06	4.54	8.60
1.05	2B_	4.83	3.40	8.23
1.06	2B_	4.83	3.40	8.23
1.07	2B_	4.25	4.54	8.79
1.08	1B_	4.78	3.40	8.18
1.09	1B_	5.33	2.77	8.10
1.10	2B_	6.12	3.02	9.14
1.11	1B_	6.39	2.77	9.16
2.01	1B_	4.18	3.12	7.30
2.02	1B_	5.70	3.40	9.10
2.03	1B_	4.78	3.40	8.18
2.04	2B_	4.06	4.54	8.60
2.05	2B_	4.83	3.40	8.23
2.06	2B_	4.83	3.40	8.23
2.07	2B_	4.25	4.54	8.79
2.08	1B_	4.78	7.18	11.96
2.09	1B_	5.33	2.79	8.12
2.10	2B_	6.12	3.21	9.33
2.11	1B_	6.54	2.89	9.43
3.01	1B_	4.18	3.21	7.39
3.02	1B_	5.70	7.18	12.88
3.03	1B_	4.78	7.18	11.96
3.04	2B_	4.06	4.54	8.60
3.05	2B_	4.83	3.40	8.23
3.06	2B_	4.83	3.21	8.04
3.07	2B_	4.25	4.54	8.79
3.08	1B_	4.78	7.18	11.96
3.09	1B_	5.33	4.54	9.87
3.10	2B_	6.12	3.40	9.52
3.11	1B_	6.54	3.21	9.75
4.01	3B_	5.21	5.14	10.35
4.02	3B_	8.47	3.40	11.87
4.03	3B_	5.04	5.10	10.14
4.04	3B_	5.29	4.84	10.13
4.05	3B_	5.25	5.14	10.39
4.06	2B_	4.36	4.54	8.90
G.01	2B_	8.40	2.77	11.17
G.02	1B_	5.91	3.40	9.31
G.03	2B_	6.69	4.54	11.23
G.04	2B_	6.07	3.40	9.47
G.05	2B_	4.27	6.07	10.34
G.06	2B_	4.06	4.54	8.60
G.07	1B_	4.78	7.21	11.99
G.08	1B_	5.35	2.89	8.24
G.09	2B_	7.78	3.40	11.18
G.10	2B_	5.27	5.08	10.35

1 bed (6m³ required)
2 bed (8m³ required)
3 bed (10m³ required)

Summary

Total no. of Apartments achieving 50% min. internal:	49 (100%)
No. of Apartments with basement storage cages:	49 (100%)
No. of Apartments satisfying ADG compliant storage volumes	49 (100%. Complies)

Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

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DA526
ADG STORAGE DIAGRAMS

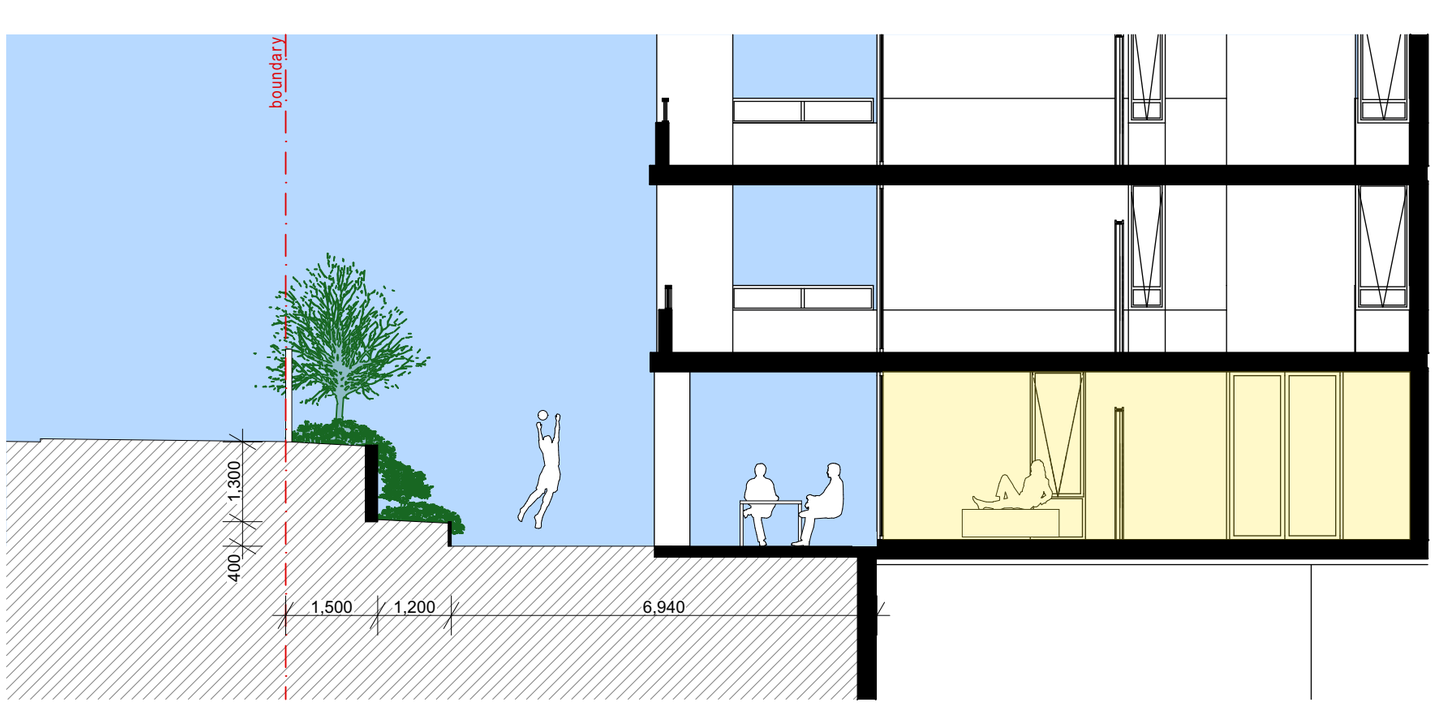
Job: 1725
May 2020
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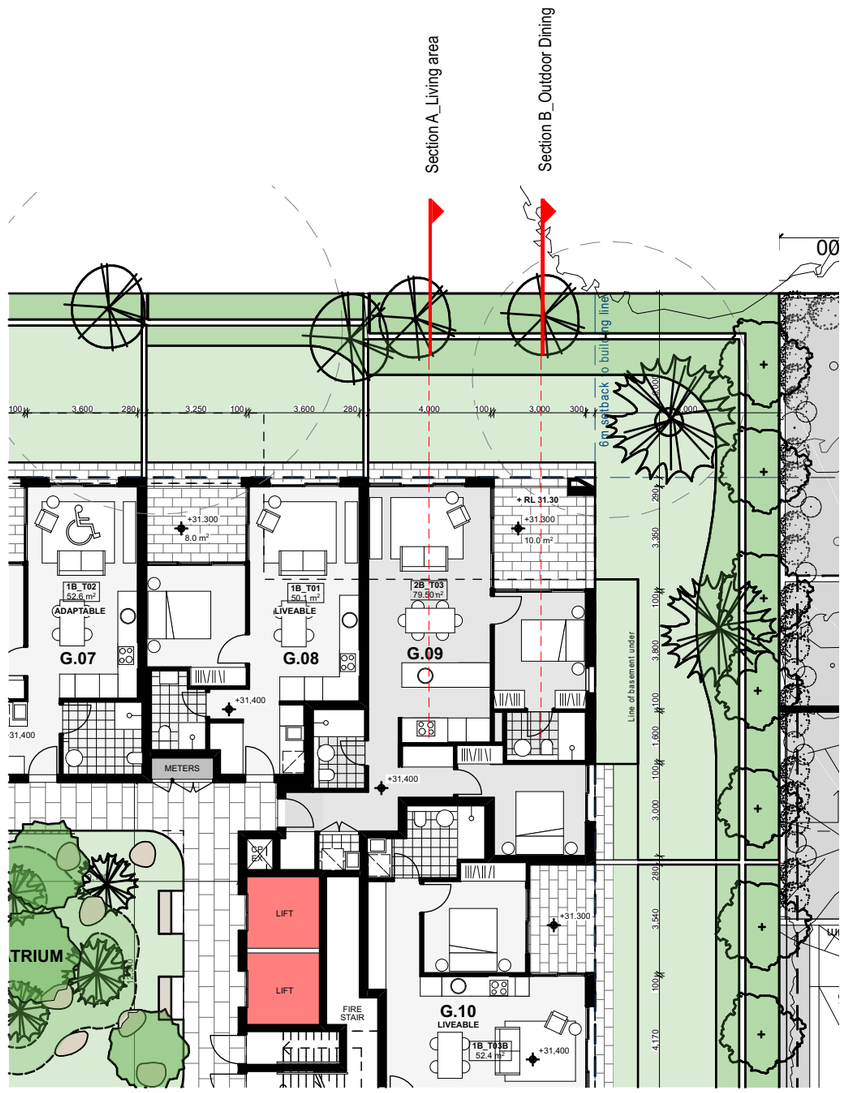
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Section A_Living area



Section B_Outdoor Dining



Key Plan

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

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0 2.5 5
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DA527
G.09 APARTMENT SECTIONS

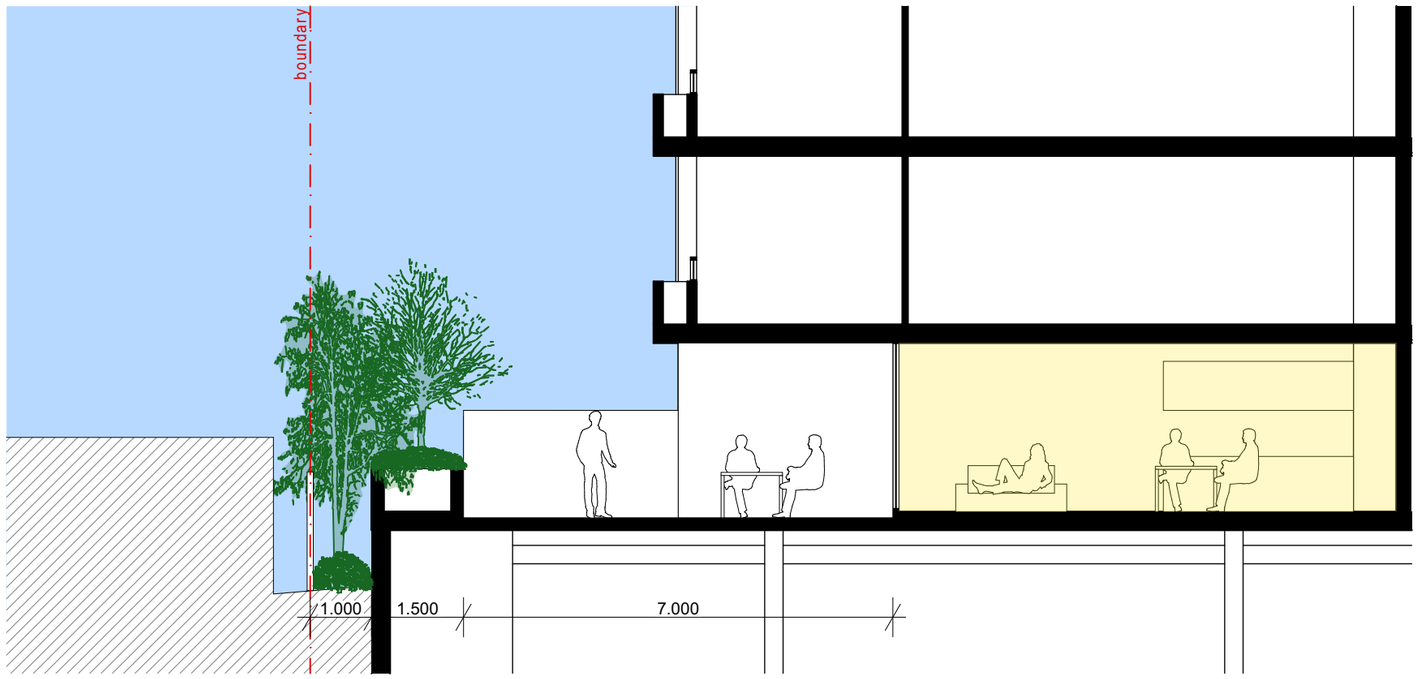
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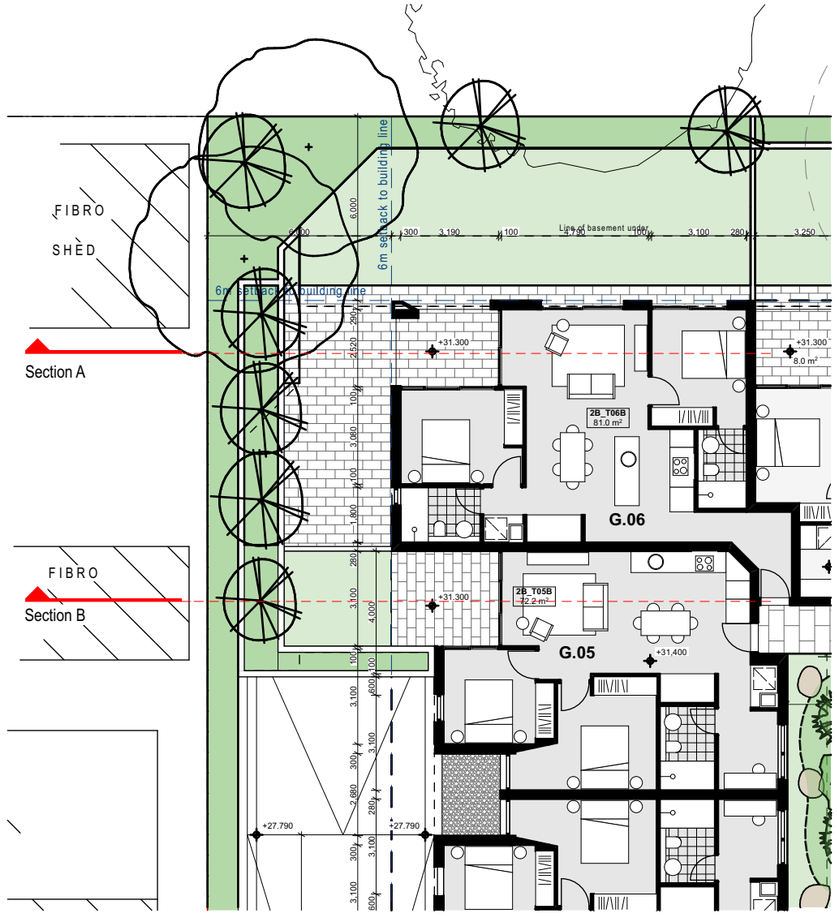
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Section A_Apartment G.06



Section B_Apartment G.05



Key Plan

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at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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J	24.04.2020	For Consultant Co-ordination
K	01.05.2020	Amended DA Issue

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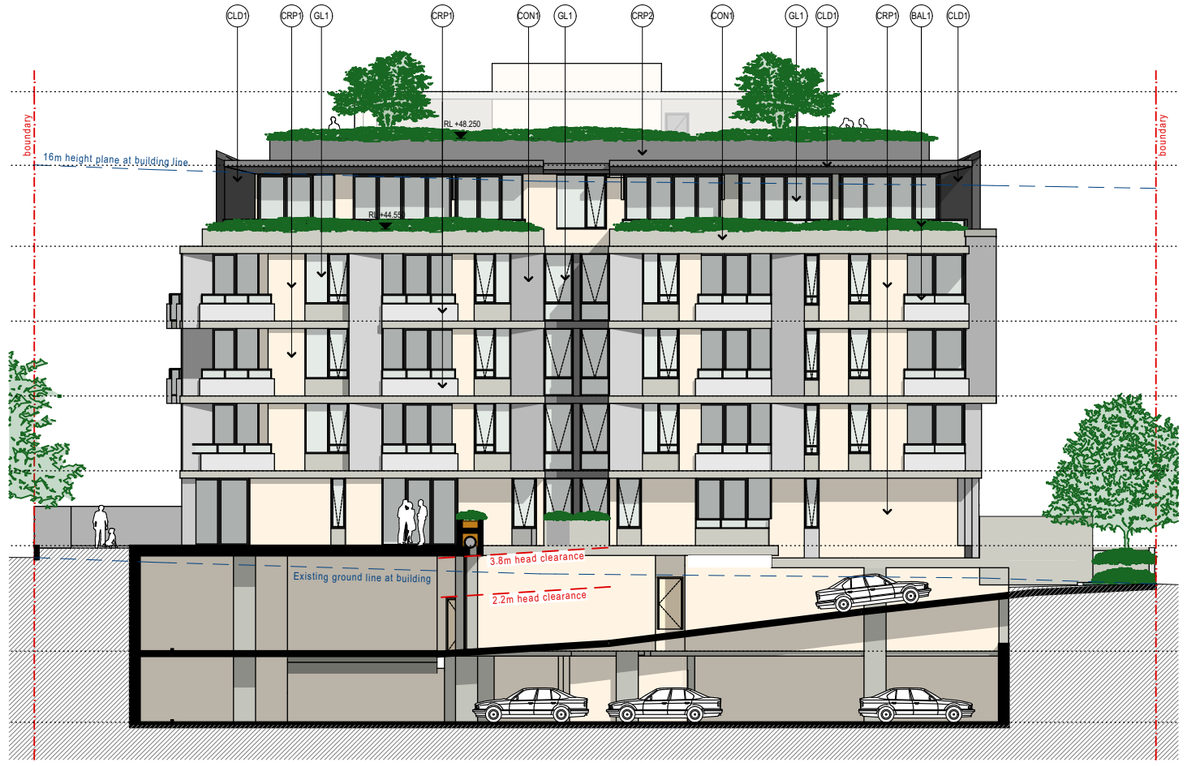
DA527B
G.05/G.06 APARTMENT SECTION
Job: 1725
May 2020
Rev: K

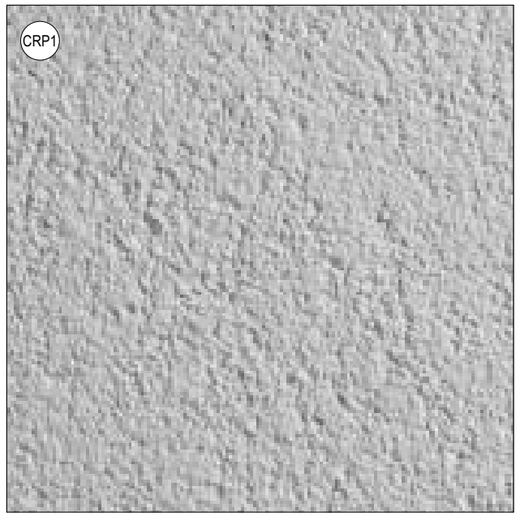
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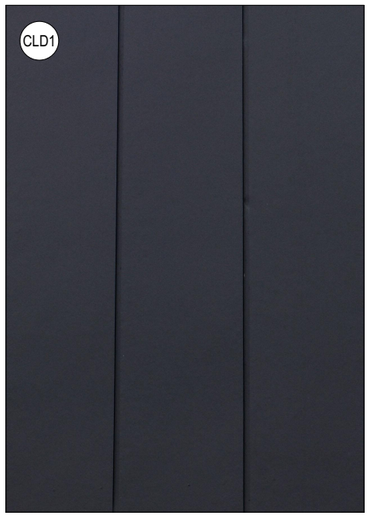
THIS DIAGRAM IS TO BE READ IN SO FAR AS IT DICTATES
MATERIALS AND FINISHES ONLY

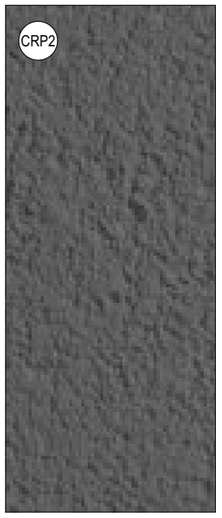


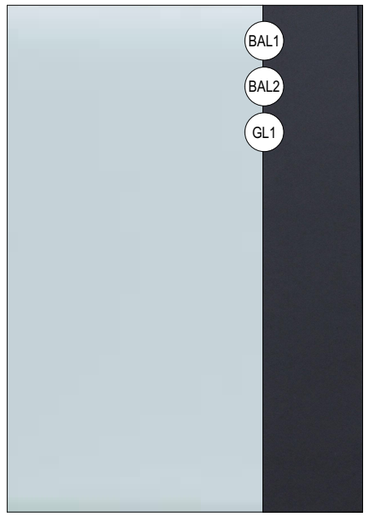


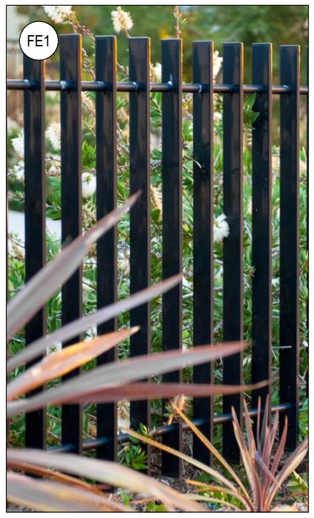












EXTERNAL MATERIALS AND FINISHES LEGEND

- BAL1 **Balustrade, Type 1** Balustrade fixed to rear of low level solid wall. Clear glass in aluminium frame. Powdercoat Charcoal colour
- BAL2 **Balustrade, Type 2** Full height balustrade system. Translucent glass in aluminium frame. Powdercoat Charcoal colour
- CLD1 **Cladding, Type 1** FC cladding with expressed joint or similar. Paint finish, Dark grey colour
- CON1 **Concrete, Type 1** In-situ concrete with skim coat or similar. Natural finish, Light grey colour
- CRP1 **Cement render and paint finish, Type 1** Render finish to masonry or similar. Paint finish, White colour
- CRP2 **Cement render and paint finish, Type 2** Render finish to masonry or similar. Paint finish, Dark grey colour
- FE1 **Fence and gate** Vertical aluminium battens or similar. Prefinished, Charcoal colour
- GL1 **Glazing, Type 1** Clear Glass in aluminium frame. Powdercoat Charcoal colour
- SCR1 **Screen, Type 1** Vertical aluminium louvres or similar. Prefinished, Dark grey colour

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

H	26.08.2019	DA Issue

DA528
MATERIALS AND FINISHES

Job: 1725
August 2019
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Horizontal stratafication



Vertical Modulation



Total (Street) Facade Area 530.3sqm



Articulated Facade Area 173.3sqm (32.7%)

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

H	26.08.2019	DA Issue

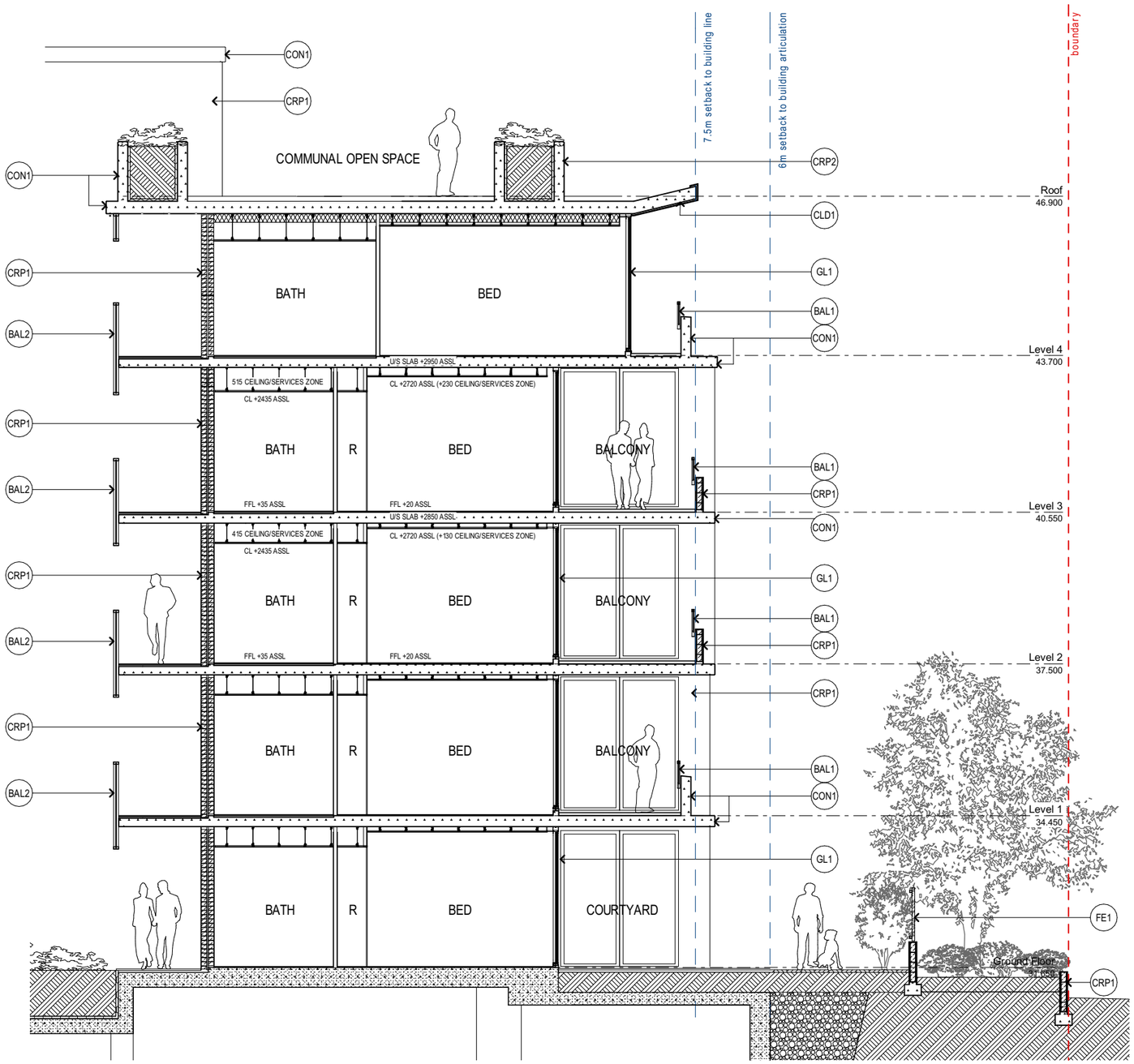
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DA529
FACADE COMPOSITION

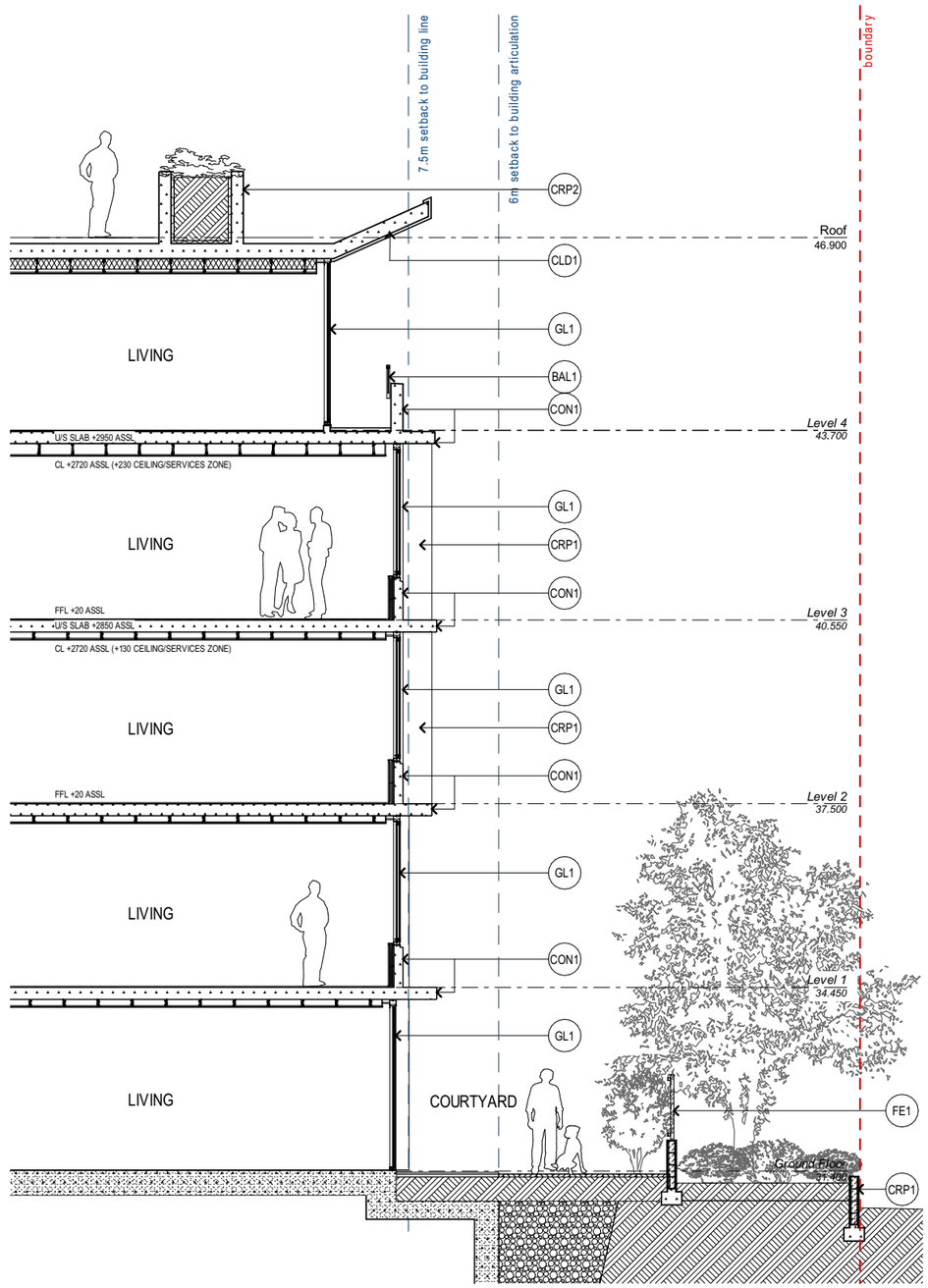
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TYPICAL FACADE SECTION THROUGH BALCONY



TYPICAL FACADE SECTION THROUGH WINDOW/WALL

Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

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DA530
FACADE SECTIONS

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Proposed Residential Development

at 310-314 Taren Point Road
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H	26.08.2019	DA Issue

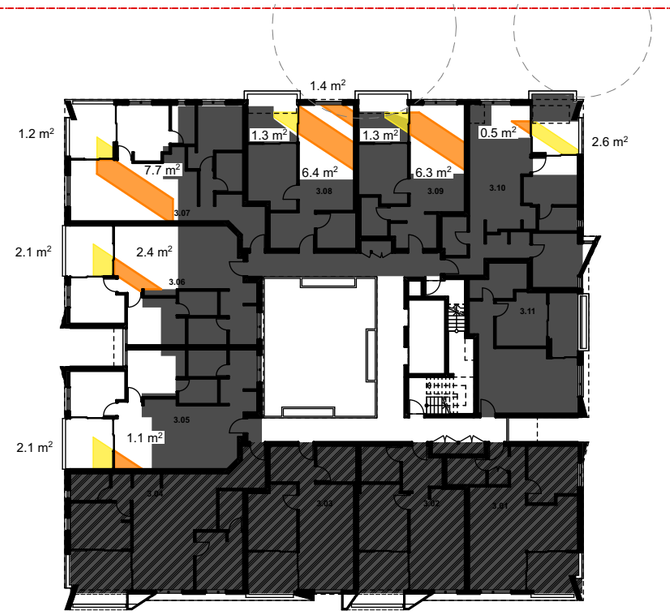
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DA531
PHOTOMONTAGE

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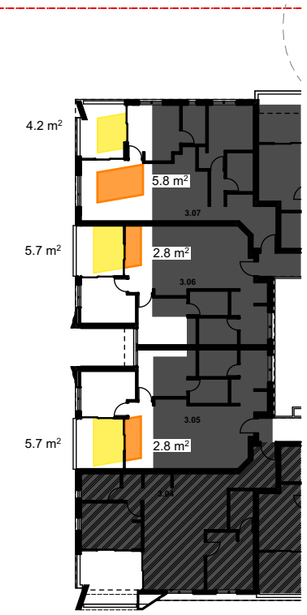
Level 3 June 21_9am



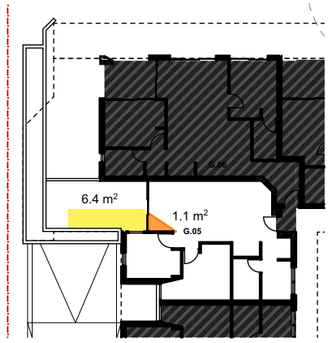
Level 3 June 21_10am



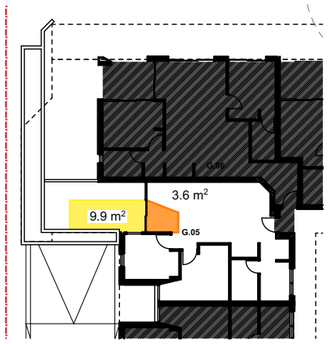
Level 3 June 21_11am



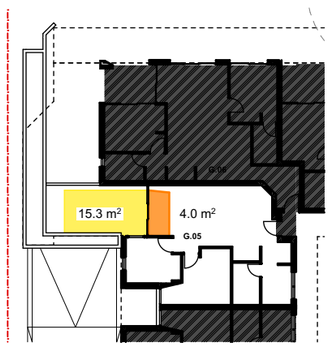
Level 3 June 21_12pm



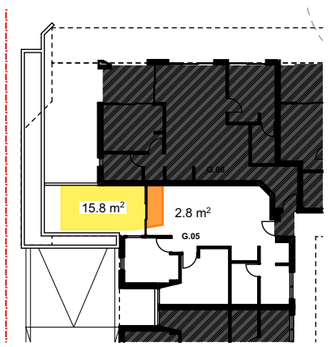
Ground Floor June 21_9am



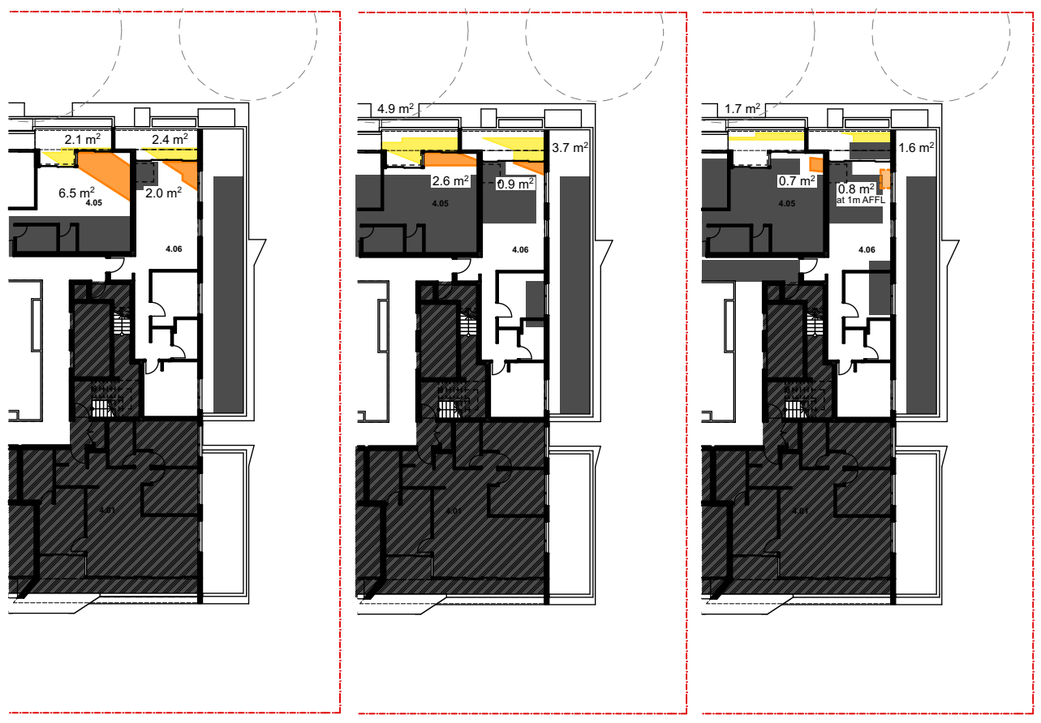
June 21_10am



Ground Floor June 21_11am



June 21_11am



Level 4 June 21_9am June 21_10am June 21_11am

3.75 m² Direct sunlight access to balcony floor

3.75 m² Direct sunlight access to living room floor

Area outside of detailed study

Note: Apartments 3.05/3.06 (shown) are stacked apartments and reflect the condition on Levels 1&2 also

Summary

This detailed study confirms the north and east facing apartments noted in the solar access diagrams achieve the objectives of the solar access provisions to balcony and living areas in mid-winter

Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

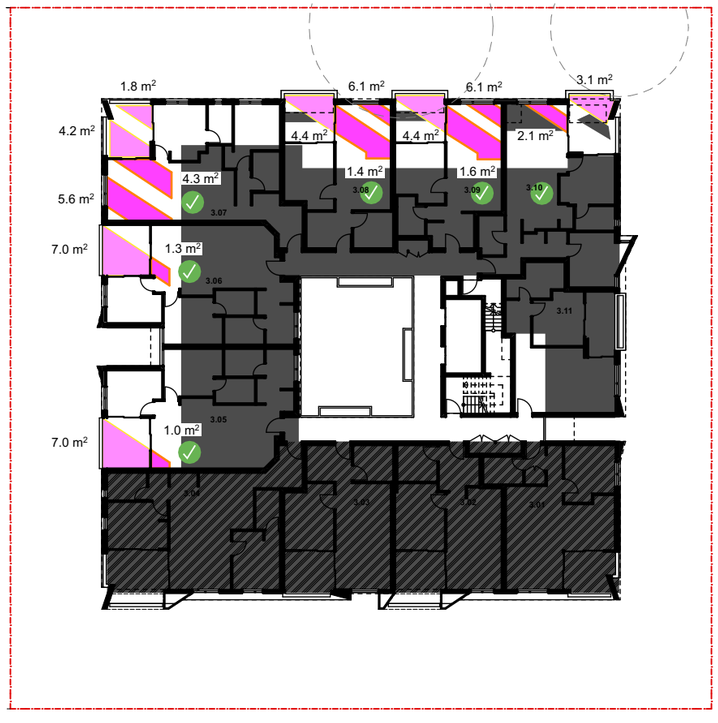
NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

A	29.09.2020	DA Additional Information

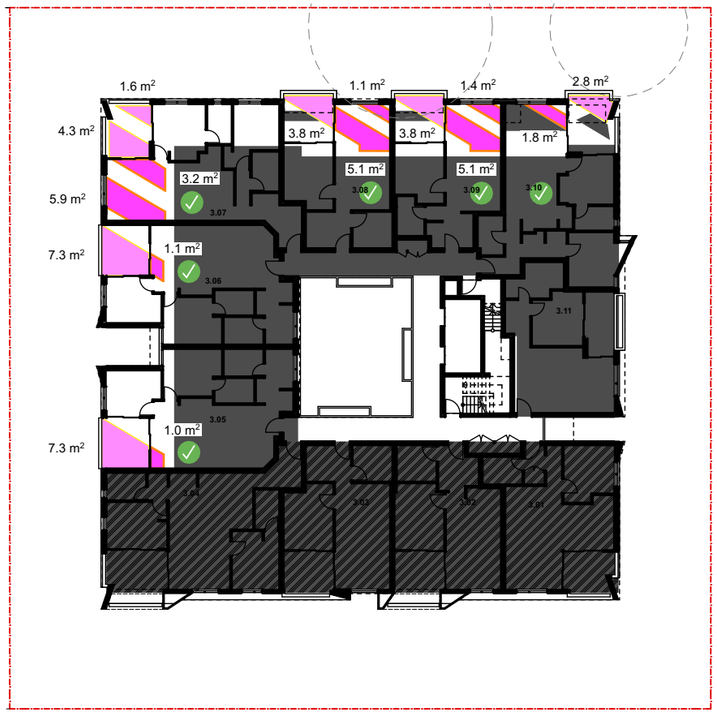
DA532
ADG SOLAR ACCESS DETAIL DIAGRAMS
Job: 1725
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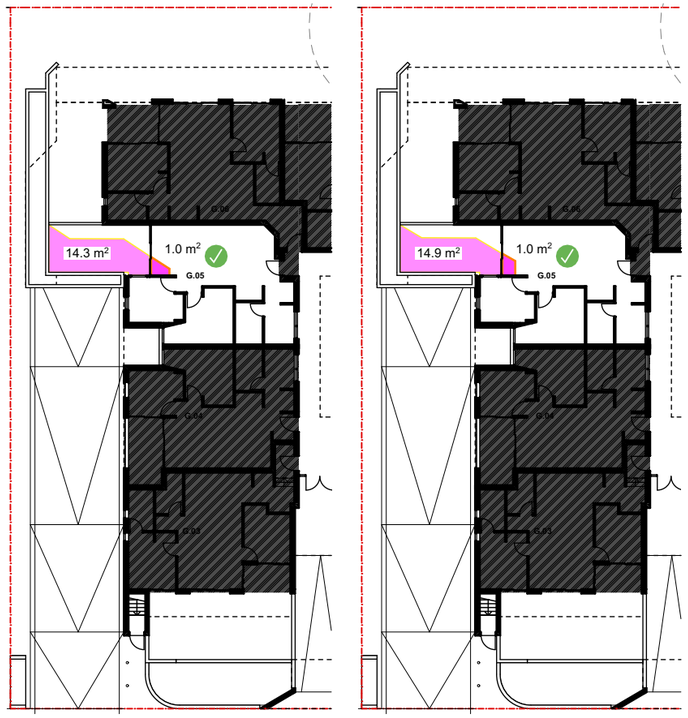
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Level 3 June 21_9.00am (1m AFFL)



Level 3 June 21_9.15am (1m AFFL)



Ground Floor June 21_9.00am (1m AFFL) 9.15am



Level 4 June 21_9.00am (1m AFFL) June 21_9.15am

3.75 m² Direct sunlight access to living room measured 1m above floor

Apartment receives minimum 1sqm solar access for 15 minutes between 9-3pm

Area outside of detailed study

Note: Apartments 3.05/3.06 (shown) are stacked apartments and reflect the condition on Levels 1&2 also

Summary

This detailed study confirms the north and east facing apartments noted in the solar access diagrams achieve a minimum of 1sqm of direct solar access at a plane measured 1m above floor level for both the balcony and living areas in mid-winter

Proposed Residential Development

at 310-314 Taren Point Road CARINGBAH

for MBD Developments

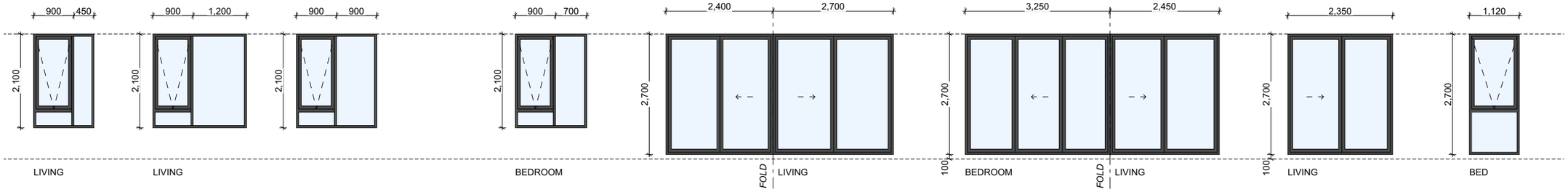
NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

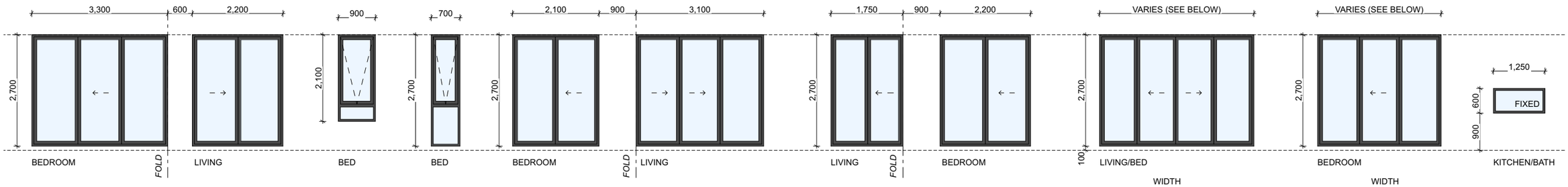
A	29.09.2020	DA Additional Information

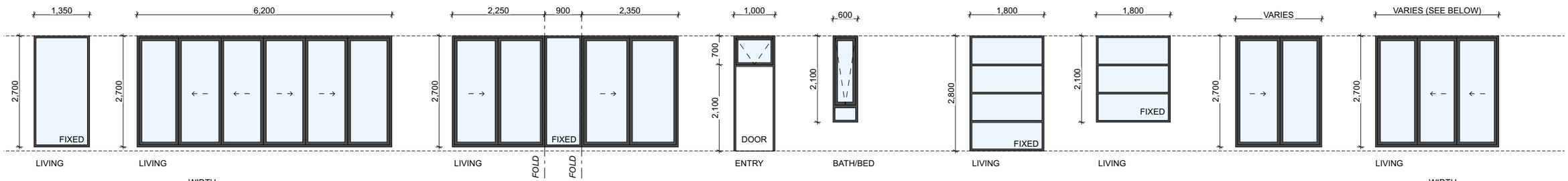
DA533
ADG SOLAR ACCESS DETAIL DIAGRAMS
Job: 1725
September 2020
Rev: A

MANOR HOUSE DESIGN
m. 0411 381 410
Nominated Architect Sam Tadros
NSW Registration 7091

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Proposed Residential Development

at 310-314 Taren Point Road
CARINGBAH

for MBD Developments

NOTE: All dimensions taken from existing documents. Any discrepancies to be referred to the Architect.

A	29.09.2020	DA Additional Information

DA534
WINDOW SCHEDULE

Job: 1725
September 2020
Rev: A

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L A N D S C A P E D A

310-314 TAREN POINT RD CARINGBAH

Drawing List

Sheet No.	Sheet Name	Sheet Size	Rev. No.	Rev. Date	Project No.
L-01	SITE PLANS/CALCULATIONS	A3	D	6/10/20	
L-02	DETAILED PLAN -GF	A3	D	6/10/20	
L-03	DETAILED PLAN - LEVEL 1 - 3	A3	D	6/10/20	
L-04	DETAILED PLAN - LEVEL 4	A3	D	6/10/20	
L-05	DETAILED PLAN-ROOF	A3	D	6/10/20	
L-06	SECTION -GF	A3	D	6/10/20	
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L-08	PLANTING DETAILS	A3	D	6/10/20	
L-09	EXISTING TREE	A3	D	6/10/20	
L-10	NOTES	A3	D	6/10/20	
L-11	SPECIFICATION	A3	D	6/10/20	

D 6/10/20 FOR DA
ISSUE DATE COMMENT
AMENDMENTS

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Address 310-314 TAREN POINT ROAD CARINGBAH Date 06/10/20
Drawing Title SITE PLANS/CALCULATIONS Scale
Drawing No.

Page
L-01 D

EXISTING LEVELS TO TREE TO REMAIN

MIX OF NATIVE TREE PLANTING TO CREATE BOUNDARY CORRIDOR AND SCREENING

LEVELS TO DROP FROM STEEL EDGE AND GRADE TO EXISTING

SETDOWN IN SLAB TO ALLOW FOR TURF PLANTING

RAISED PLANTER ON SLAB TO PROVIDE SPARS SCREENING FOLIAGE

SPILLING PLANTS TO SOFTEN ENTRY

MIX OF NATIVE VERTICAL SHRUBS TO PROVIDE GREEN LINE ALONG BOUNDARY, SPERATION OF PLANTING TO ALLOW TO STORMWATER CONSTRAINTS

WALLS OFF BOUNDARY TO STEP WITH EXISTING LEVELS

SMALL TREE PLANTINGS AND HEDGE SCREENING TO CREATE PRIVACY BUT STILL ALLOW MORNING SUN IN TO REAR OF UNITS AND POS

TREE FERNS AND SMALL RAINFOREST TREE AS FEATURE TO ATRIUM. THE SOFTER FERN AND TREE IS IN CONTEXT WITHIN THIS RESIDENTIAL SETTING.

MIX OF FERNS AND FOLIAGE PLANTS TO GROUND COVER

MOUNDING AND BOULDERS TO ATRIUM.

SET BACK SEATING OFF PATH TO CREATE CLEAR WALWAY

RETAINING WALL TO EXISTING HEIGHTS TO PRESERVE EXISTING TREE. SLIGHT INCURSION TO TPZ

FEATURE PALMS ALONG SOUTHERN BOUNDARY TO CREATE FEATURE CONTRASTING ELEMENT

NO WALLS BOUNDARY

SHRUB PLANTING WITH SPILLING AND CLIMBING PLANTS SUCH AS Ficus pumila TO SOFTEN WALL. WALL TO BE SAME COLOUR AS NEW BUILT FORM

RAISED STEEL GARDEN BED TO SOFTEN AGAINST BUILDING

LINEAR TREE PLANTING TO GARDEN FOR PRIVACY BETWEEN BALCONIES AND SOFTEN CORRIDOR

BLOCKWORK WALL OF BOUNDARY TO TAKE IN EXISTING LEVELS. WALL TO STEP WITH EXISTING

COURTYARD STEPPERS AND PLANTING TO PATIO

SHRUB PLANTING WITH SPILLING AND CLIMBING PLANTS SUCH AS Ficus pumila TO SOFTEN WALL. WALL TO BE SAME COLOUR AS NEW BUILT FORM

BLOCKWORK WALL OF BOUNDARY TO TAKE IN EXISTING LEVELS. WALL TO STEP WITH EXISTING

RAISED STEEL EDGE PROFILE TO ENABLE PLANTING IN FRONT OF WALL TO SOFTEN

RAISED STEEL GARDEN BED TO SOFTEN AGAINST BUILDING

HEDGE SCREENING ON OUTSIDE OF FENCE TO MAXIMISE POS

LOW STEPPED FEATURE WALL TO BOUNDARY TO ENABLE SIGNIFICANT SET BACK PLANTING. MIX OF NATIVE AND EXOTIC HARDY PLANTINGS

0 10 M

LEGEND

- DRIVEWAY
- TURF AREAS
- PODIUM GARDENS
- DEEP SOIL GARDENS
- PROPOSED RESIDENCE
- PAVED TYPE 1 SELECTED TILE ON PAVER ON CONCRETE
- PAVED TYPE 2 SELECTED STONE ON SLAB
- PAVED TYPE 3 COBBLE ON CONCRETE OR SIMILAR
- DECKED AREAS

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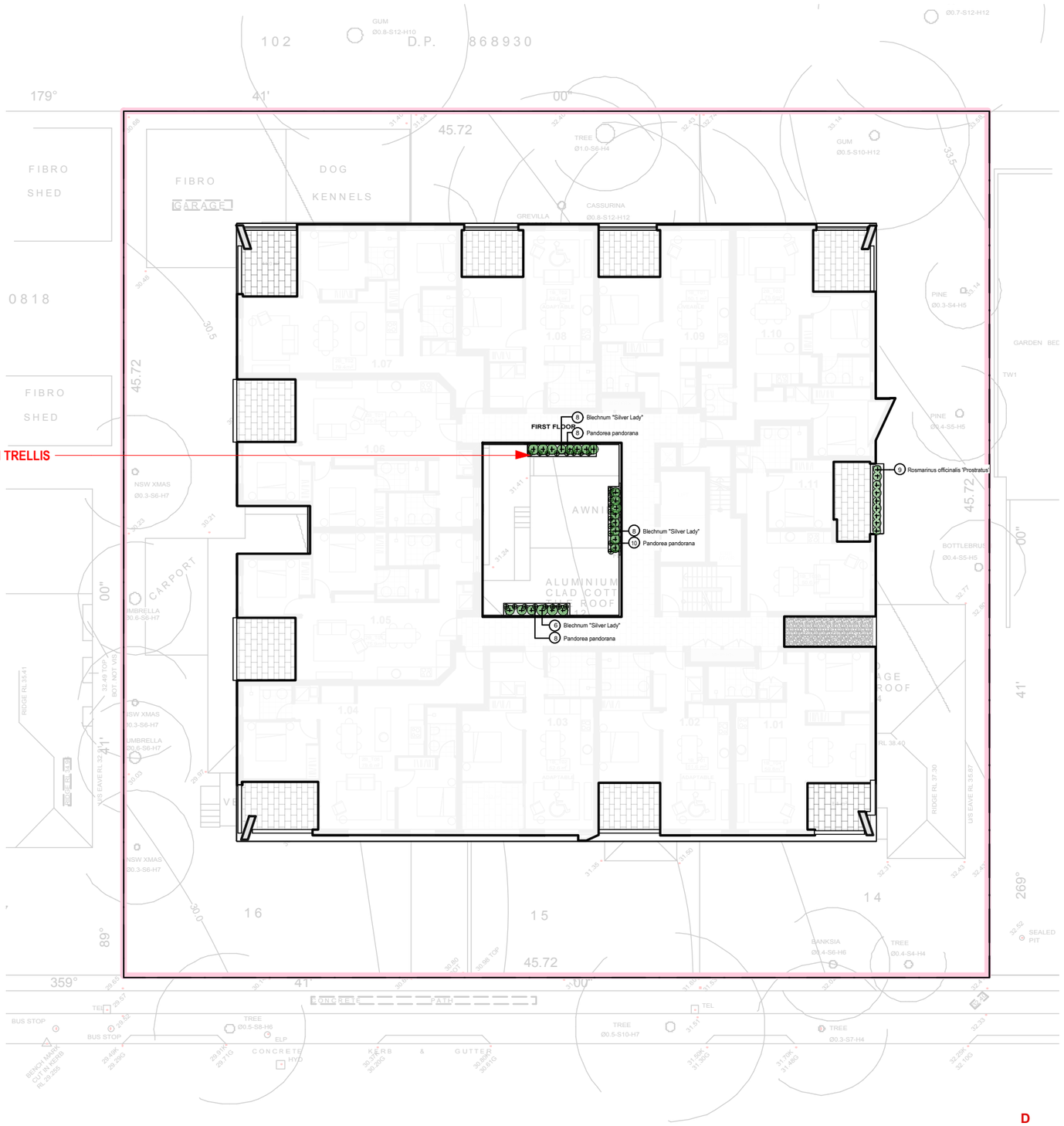
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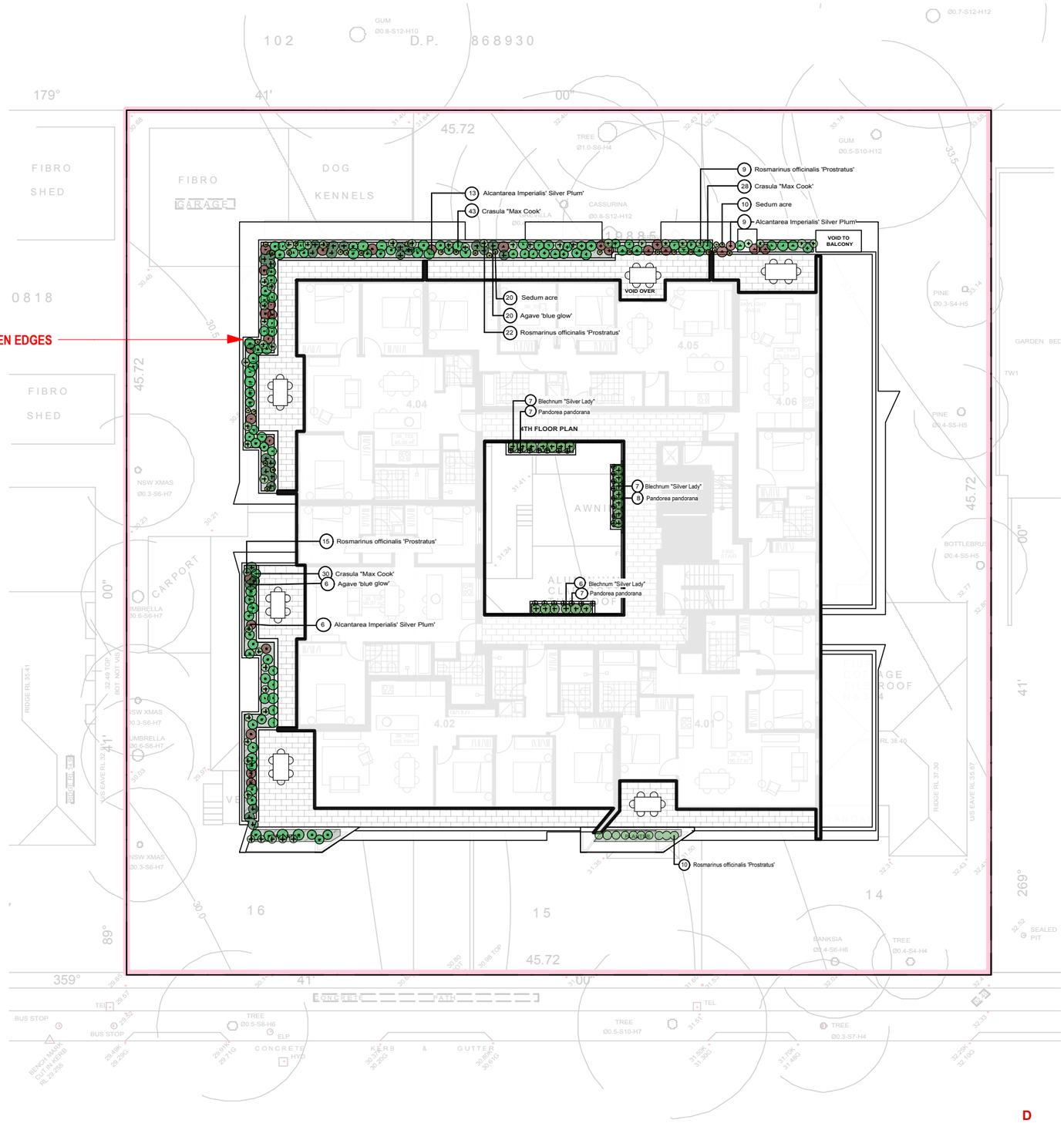
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Scale 1:250@A3
Drawing No.

Page
L-02 D

FERNS TO SPILL AND CLIMBERS ON TRELLIS



SPILLING PLANTS TO BALCONY GARDENS TO SOFTEN EDGES



0 10 M

LEGEND

- DRIVEWAY
- TURF AREAS
- PODIUM GARDENS
- DEEP SOIL GARDENS
- PROPOSED RESIDENCE
- PAVED TYPE 1 SELECTED TILE OR PAVER ON CONCRETE
- PAVED TYPE 2 SELECTED STONE ON SLAB
- PAVED TYPE 3 COBBLE ON CONCRETE OR SIMILAR
- DECKED AREAS

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AMENDMENTS

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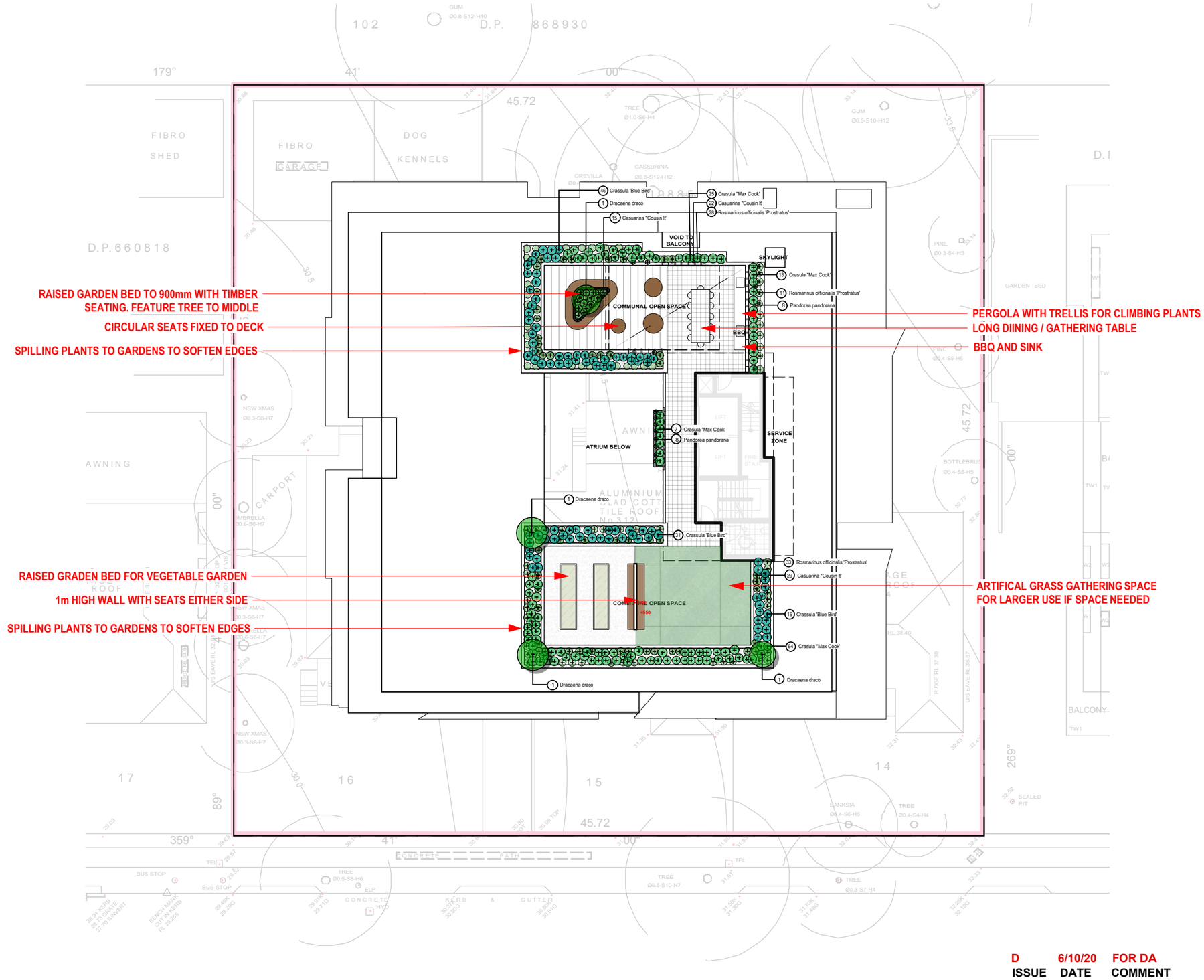
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LEGEND

- DRIVEWAY
- TURF AREAS
- PODIUM GARDENS
- DEEP SOIL GARDENS
- PROPOSED RESIDENCE
- PAVED TYPE 1 SELECTED TILE OR PAVER ON CONCRETE
- PAVED TYPE 2 SELECTED STONE ON SLAB
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ISSUE	DATE	COMMENT
D	6/10/20	FOR DA

AMENDMENTS

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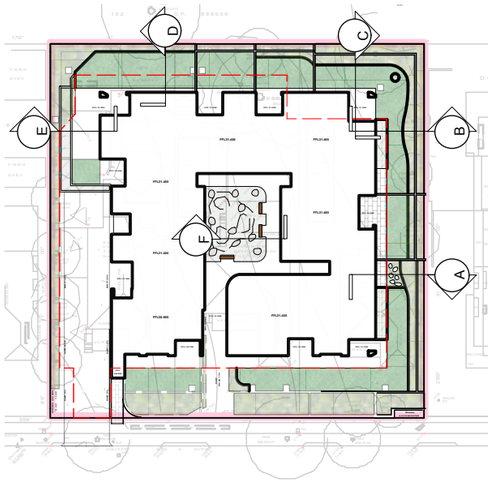
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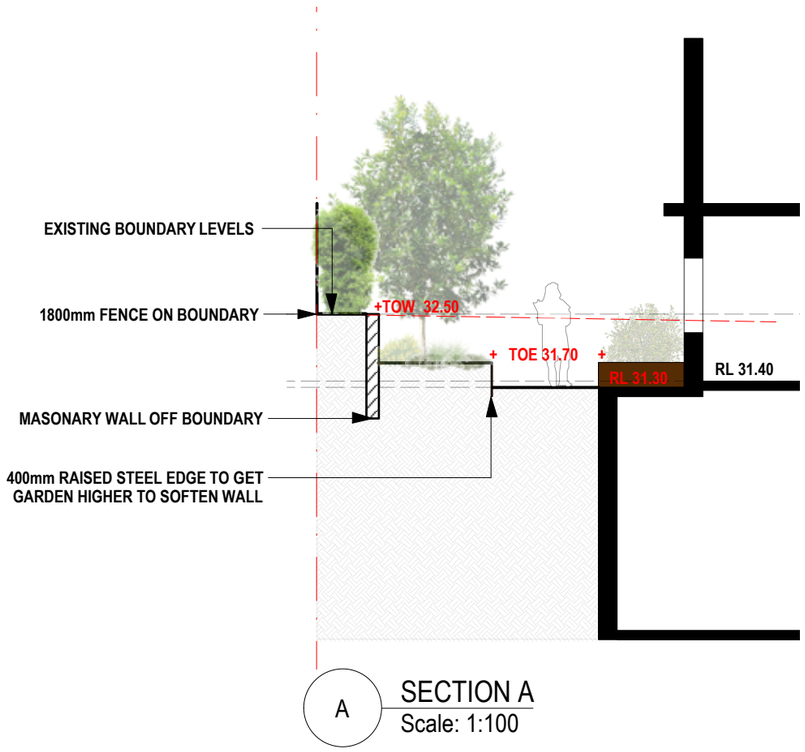
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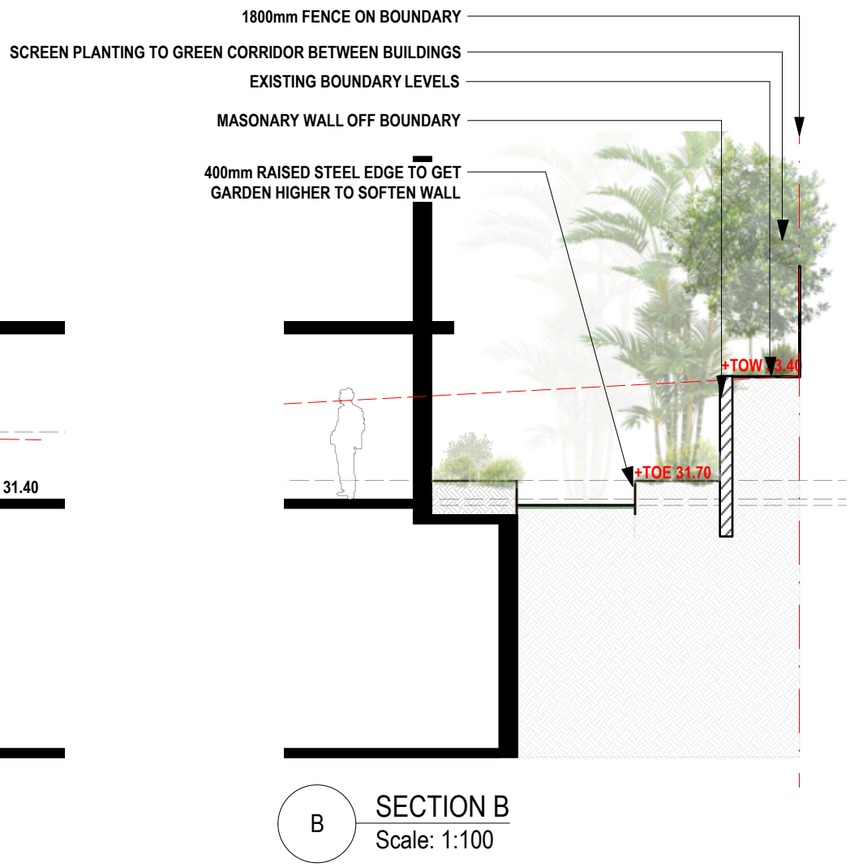
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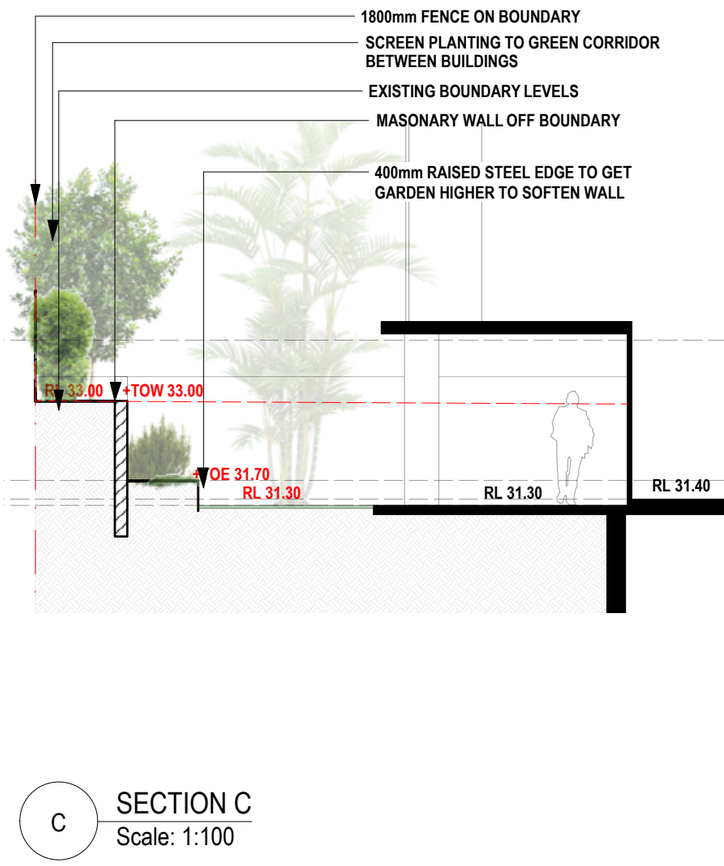




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B SECTION B
Scale: 1:100



C SECTION C
Scale: 1:100

D 6/10/20 FOR DA
ISSUE DATE COMMENT
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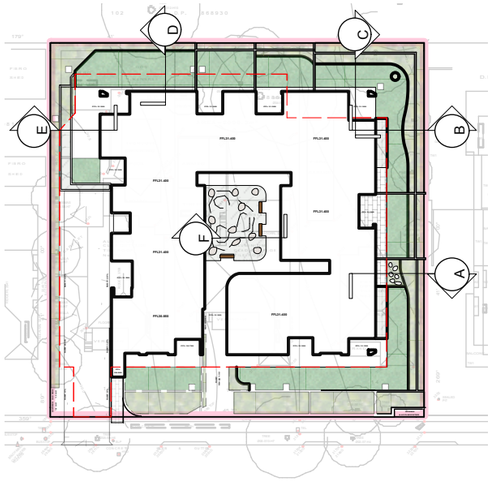
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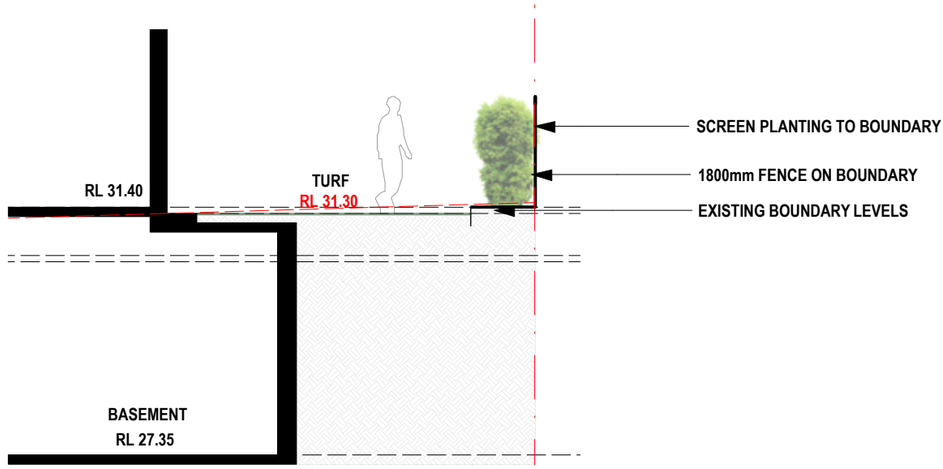
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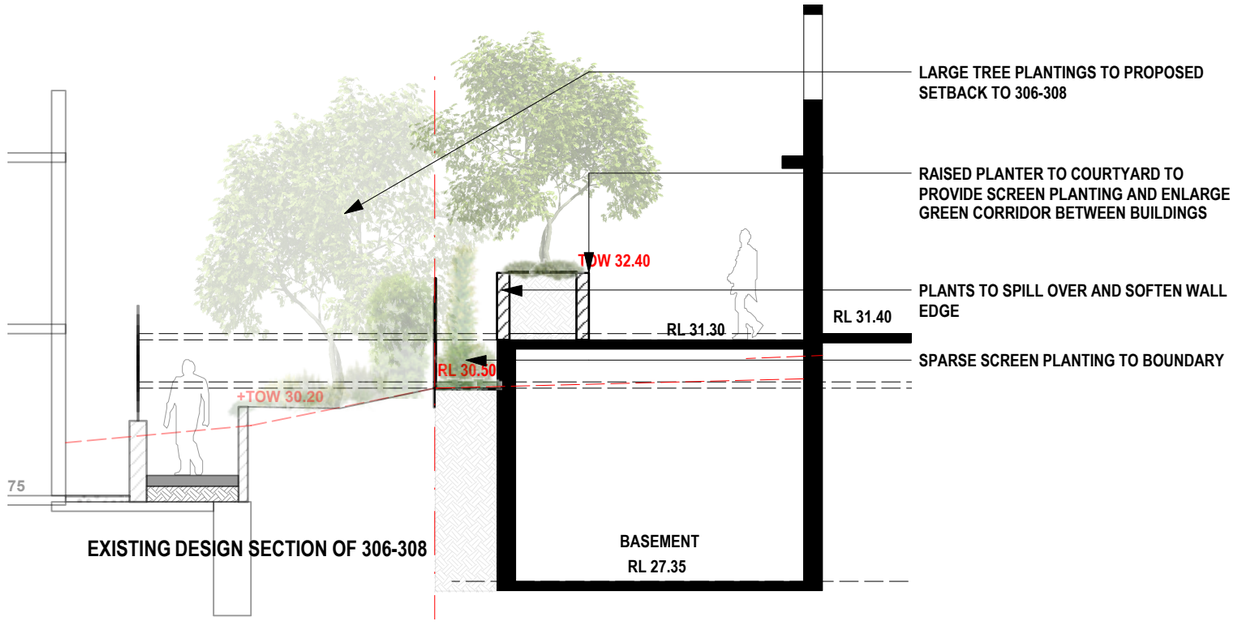
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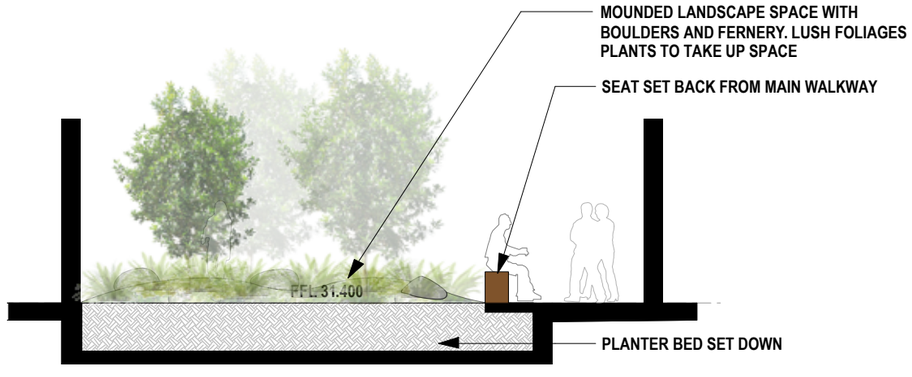




D SECTION D
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E SECTION E
Scale: 1:100



F ELEVATION F
Scale: 1:100

ISSUE	DATE	COMMENT
D	6/10/20	FOR DA

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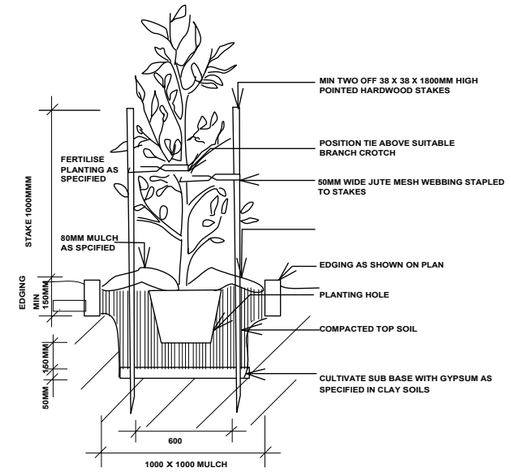
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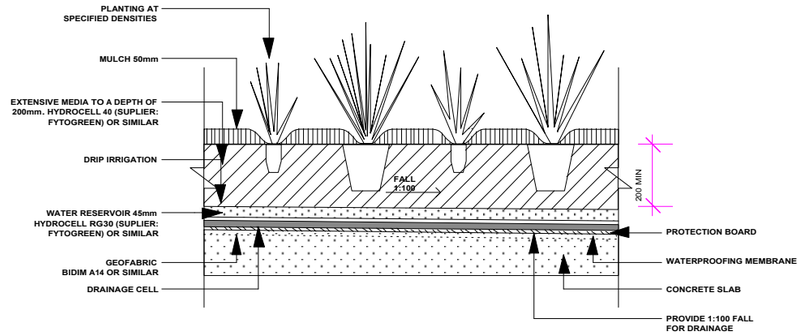
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Plant List

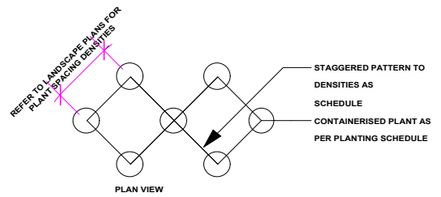
ID	Botanical Name	Common Name	Scheduled Size	Mature Height	Mature Spread
Trees					
ACost	Angophora costata	Sydney Red Gum, Smooth-barked Apple	45L	15 - 20m	6 - 10m
Ban-ser	Banksia serrata	Old Man Banksia	45L	3-4m	2-4m
dra-dra	Dracaena draco	Red edged dragon tree	45L	3 - 5m	1.2 - 2.0m
EE	Elaeocarpus eumundi	Smoothed leaved Quandong	45L	5 - 10m	2.0 - 3.5m
EH	Eucalyptus haemastoma	Scribbly Gum	75L	10 - 15m	6 - 10m
EU P	Eucalyptus pilularis	Blackbutt	75L	over 30m	6 - 10m
GS	Guioa semiglauca	Guioa	45L	8m	4m
HFost	Howea fosteriana	Kentia Palm	45L	5 - 10m	3.5 - 6m
TLaur-lus	Tristaniopsis laurina 'luscious'	Kanooka, Water Gum	45L	5 - 10m	3.5 - 6m
Shrubs					
Acm-smi	Acmena smithii 'Minor'	Lillypilly	200mm	2-3m	2m
Ag- bg	Agave 'blue glow'		200mm	0.6m	0.9m
dod-tri	Dodonaea triquetra	Common Hop Bush	200mm	1.5 - 3m	1.2 - 2.0m
rap-exc	Raphis excelsa	Lady Palm	300mm	3 - 5m	2.0 - 3.5m
wes-gb	Westringia 'Grey Box'	Grey Box' Westringia	200mm	0.9m	0.6m
Wes-mun	Westringia 'Mundi'	Dwarf Coastal Rosemary	200mm	0.6m	0.9m
Ground Covers					
alc-imp-1	Alcantarea Imperialis' Silver Plum'	Silver plum	150mm	0.5-1m	0.5-1m
Ble-sl	Blechnum "Silver Lady"	Fishbone Water Fern	150mm	0.75 - 0.9m	0.3 - 0.6m
cas'ci'	Casuarina "Cousin It'	Casuarina "Cousin It'	150mm	0.0 - 0.3m	1.2 - 2.0m
Cra bl 'jp'-1	Crassula 'Blue Bird'	mini jade	150mm	0.0 - 0.3m	0.3 - 0.6m
Cra-mc	Crasula "Max Cook'		150mm	0.0 - 0.3m	0.3 - 0.6m
Fic-pum	Ficus pumila	Creeping Fig	150mm	variable	variable
Pan-pan	Pandorea pandorana	Wonga Wonga Vine	150mm	3m	2m
Ro-off'Pro	Rosmarinus officinalis 'Prostratus'	Trailing rosemary;Creeping Rosemary	200mm	0.5 m	1.2 - 2.0m
San-tri	Sansevieria trifasciata	snake plant	150mm	0.45 - 0.6m	0.0 - 0.3m
sed-acr	Sedum acre	Goldmoss	150mm	0.0 - 0.3m	0.3 - 0.6m
zam-fu	Zamia furfuracea	Cardboard Plant	150mm	0.5m	0.6 m
Grasses					
cag-ap	Carex appressa	Tall Sedge	150mm	0.8m	1m
asp-aus	Asplenium australasicum	Birds Nest Fern	150mm	1m	1.2m
doo-cau	Doodia caudata	Small Rasp Fern	150mm	0.6 - 0.75m	0.0 - 0.3m

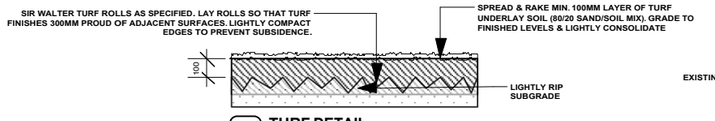


TYPICAL TREE PLANTING DETAIL
NTS

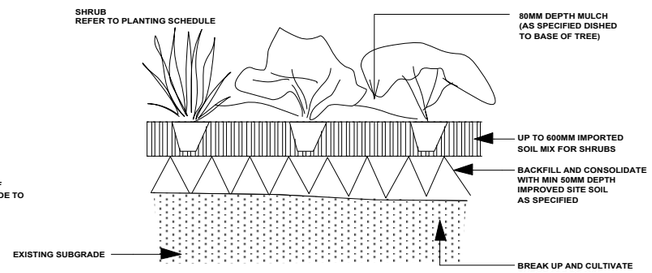


TYPICAL PLANTING/ PODIUM DETAIL
NTS





TURF DETAIL
NTS



TYPICAL SHRUB PLANTING DETAIL
NTS

ISSUE	DATE	COMMENT
D	6/10/20	FOR DA

AMENDMENTS

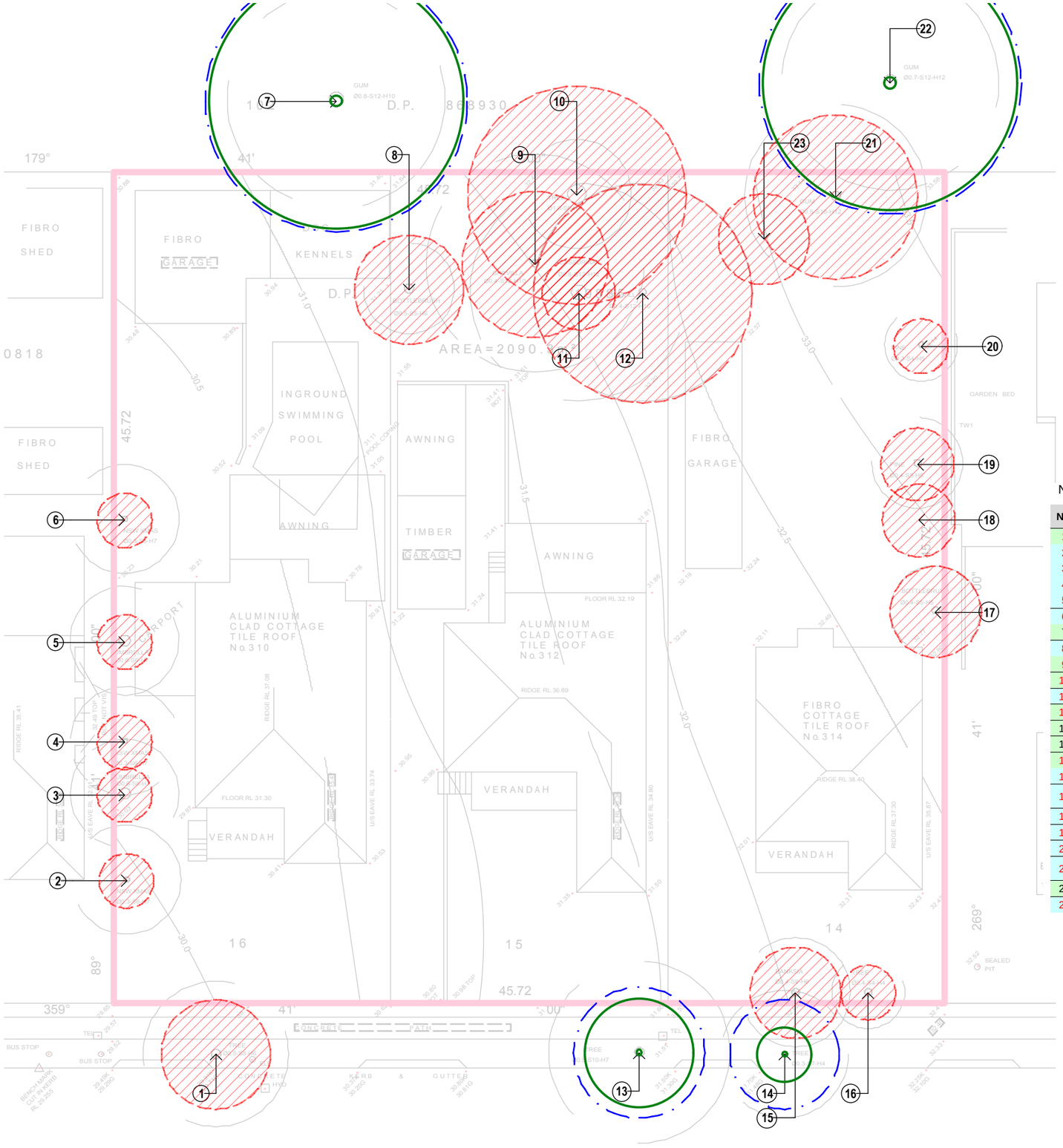
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EXISTING TREE LEGEND

- EXISTING TREES TO BE RETAINED
- TREES TO BE REMOVED
- TPZ - OF TREES RETAINED
- SRZ - OF TREES RETAINED
- INCURSION AREA

NOTE: Colour annotation is AA & A trees with green background; Z & ZZ trees with blue background; trees to be removed in red text.

No.	Genus species	Height	Spread	DBH	TPZ	Foliage %	Age class	Defects/Comment	Location	Services	Significance	Tree AZ
1	*Tristaniopsis laurina*	6	6	300	**3.6**	80%	M	Nil	Grass	LV wires	M	**A2**
2	*Ceratopetalum gummiferum*	5	3	150	**2.0**	70%	M	Nil	Garden	Nil	L	**Z1**
3	*Schefflera actinophylla*	5	3	150	**2.0**	80%	M	Nil	Garden	Nil	L	**Z3**
4	*Ceratopetalum gummiferum*	5	3	200	**2.4**	60%	M	Covered in ivy	Garden	Nil	L	**Z1**
5	*Schefflera actinophylla*	5	3	150	**2.0**	80%	M	Nil	Garden	Nil	L	**Z3**
6	*Ceratopetalum gummiferum*	3	3	80	**2.0**	60%	S	Lopped, Epicormic	Garden	Nil	L	**ZZ4**
7	*Eucalyptus nicholii*	16	14	600	**7.2**	70%	M	Nil	Grass	Nil	H	**A2**
8	*Callistemon sp.*	7	6	200	**2.4**	80%	M	Co-dominant	Garden	Nil	M	**Z12**
9	*Casuarina cunninghamiana*	14	8	300	**3.6**	80%	M	Nil	Garden	Nil	M	**A1**
10	*Casuarina cunninghamiana*	18	12	600	**7.2**	80%	M	Nil	Garden	Nil	H	**A1**
11	*Phoenix canariensis*	5	4	300	**3.6**	90%	S	Nil	Garden	Nil	L	**Z3**
12	*Casuarina cunninghamiana*	18	12	700	**8.4**	80%	M	Nil	Garden	Nil	H	**A1**
13	*Tristaniopsis laurina*	6	6	300	**3.6**	80%	M	Nil	Grass	LV wires	M	**A2**
14	*Tristaniopsis laurina*	4	3	250	**3.0**	70%	M	Nil	Grass	LV wires	M	**A2**
15	*Banksia integrifolia*	7	5	300	**3.6**	80%	M	Nil	Garden	Adjacent structure	M	**A1**
16	*Tibouchina sp.*	4	3	100	**2.0**	60%	M	Nil	Garden	Adjacent structure	L	**Z1**
17	*Callistemon sp.*	7	5	250	**3.0**	50%	O	Dieback, Branch failures	Garden	Adjacent building	L	**ZZ4**
18	*Murraya paniculata*	4	4	100	**2.0**	80%	M	Nil	Garden	Nil	L	**Z1**
19	*Chamaecyparis sp.*	6	4	150	**2.0**	0%	O	Nil	Garden	Nil	L	**ZZ4**
20	*Chamaecyparis sp.*	5	3	150	**2.0**	40%	S	Nil	Garden	Nil	L	**ZZ4**
21	*Eucalyptus saligna*	12	9	450	**5.4**	60%	O	Cavity, Dieback, Lacks vigour	Grass	Adjacent building	M	**Z9**
22	*Eucalyptus nicholii*	16	14	600	**7.2**	70%	M	Nil	Grass	Nil	H	**A2**
23	*Ligustrum sp.*	6	5	250	**3.0**	70%	M	Nil	Garden	Adjacent building	M	**ZZ3**

THE PROPOSED DEVELOPMENT WILL NECESSITATE THE REMOVAL OF FIVE HIGH CATEGORY TREES (TREES 1, 9, 10, 12 AND 15).
THESE TREES WILL BE DIRECTLY IMPACTED BY THE PROPOSED DEVELOPMENT AND ARE CONSIDERED MODERATE TO HIGH SIGNIFICANCE, DISPLAYING GOOD HEALTH AND CONDITION.
IN ORDER TO COMPENSATE FOR LOSS OF AMENITY, CONSIDERATION SHOULD BE GIVEN TO REPLACEMENT PLANTING WITHIN THE SITE.

ISSUE	DATE	COMMENT
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AMENDMENTS

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EXEMPT TREE REMOVAL

Any declared noxious plant. The applicant is to ensure that all noxious plants are properly identified and controlled/removed.
iv) Any tree species exempted by the Sutherland Shire Local Environmental Plan 2015.

PLAN NOTES

This plan should be read in conjunction with the architectural and hydraulics plans. Work specific to these plans should be prepared in accordance to these plans, including specification and details prior to the installation of landscaping, and should not be altered or compromised during landscape construction.

Retaining wall details to engineers design.

Elements such as drainage swales may be incorporated in garden bed areas (using non-floatable mulch) without compromising the capacity or form.

The Design & location of new letter boxes shall be in accordance with Australia Post's "Requirements for Delivery of Mail to Residential Premises" published Feb '97. All noxious weeds listed in Councils weed lists & located on the site shall be continually removed & suppressed. Reinstate all boundary fencing in poor condition with Council approved 1.8m fencing to rear of building line, rake to 1m forward of BL. Pollution, sediment & erosion control devices as specified shall be in place, and maintained for the duration of the construction period. Proposed excavation near existing established trees to be supervised by arborist.

This plan has been prepared for DA approval only, not for construction.

Planting proposed using commercially available plant species selected from local planting lists and the BASIX local plant list

D.A approved landscape plan's are required to be constructed as approved to obtain occupancy certificate.

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LANDSCAPE MAINTENANCE NOTES

MONTH	MOWING EDGING BLOWING	FERTILISING (SEASOL)	CHECK IRRIGATION	HAND WEED REMOVAL	PRUNING	WEED SPARAYING	WATERING/ IRRIGATION	PLANT REPLACEMENT IF REQUIRED
DEC	W	M	M	W	F	M	D	W
JAN	W	M	M	W	F	M	D	W
FEB	W	M	M	W	F	M	D	W
MAR	F	M	M	F	M	M	D	W
APR	F	N/A	M	F	M	M	D	W
MAY	F	N/A	M	M	M	M	D	W
JUNE	M	N/A	M	M	N/A	N/A	2ND D	W
JULY	M	N/A	M	M	N/A	N/A	2ND D	W
AUG	M	N/A	M	M	N/A	N/A	2ND D	W
SEP	M	M	M	M	N/A	N/A	2ND D	W
OCT	F	F	M	F	M	M	D	W
NOV	F	F	M	F	M	M	D	W

PLANTING ESTABLISHMENT PERIOD - 12 MONTHS
LANDSCAPE MATERIAL ESTABLISHMENT - 12 MONTHS
KEY D-DAILY, W-WEEKLY, F-FORTNIGHT, M-MONTHLY, 2ND DAY,

EXTERNAL LIGHTING - (AMENITY)

To ensure that any lighting on the site does not cause a nuisance to neighbours or motorists on nearby roads:

Design

All lighting must be designed in accordance with Australian Standard AS4282 - Control of the Obtrusive Effects of Outdoor Lighting.

Ongoing

All lighting must be operated and maintained in accordance with the Standard above.

IRRIGATION NOTE

NOTE
ALL GARDENS TO HAVE INSTALLED A DRIP IRRIGATION SYSTEM CONTROLLED FROM WITHIN THE STORE AND RUN OF TANK WATER (POSSIBLE TOWN WATER TOP UP). IRRIGATION SYSTEM CAN BE DESIGNED AND INSTALLED BY
SITEDESIGN + IRRIGATION
CALL DAVID JAMES +61 488 358 180

MAINTENANCE GENERAL NOTES

SECTION C: LANDSCAPE MAINTENANCE SPECIFICATION 1.0 SCOPE

1.1 PERIOD

The 52 week Planting Establishment Period commences at the date of registration of the repective plan.
The contractor is to also allow for maintenance from the date of Practical Completion to the start date of the 52 week Planting Establishment Period. The allowance shall be for a weekly rate which will then be implemented until the formal maintenance period commences.

1.2 PROGRAM

Furnish a proposed planting maintenance program with the tender.

1.3 MAINTENANCE LOGBOOK

Contractor to keep a maintenance record of works carried out on a monthly basis. Log should include but not limited to: - Activities carried out during each attendance;
- Irregularities encountered and actions taken;
NB: Maintenance payments will be evaluated on submission of monthly logbooks.

1.4 RECURRENT WORKS

Throughout the Planting Establishment Period, continue to carry out recurrent works of a maintenance nature including, but not limited to, watering, mowing, weeding, rubbish removal, fertilising, pest and disease control, staking and tying, replanting, cultivating, pruning and keeping the site neat and tidy. All rubbish related to landscape works shall be removed by the landscape contractor before it is allowed to accumulate.

1.5 PLANTING

Commence recurrent planting maintenance works at the completion of planting. Ensure the stock arriving on site is protected and maintained for healthy growth.

1.6 REPLACEMENTS

Continue to replace failed, damaged or stolen plants for the extent of the Planting Establishment Period.

1.7 MULCHED SURFACES

Maintain the surface in a clean and tidy condition and reinstate the mulch as necessary.

1.8 GRASSED AREAS

Commence grass maintenance works at the completion of turfing, and continue to carry out grass maintenance throughout the contract and Planting Establishment Period, maintaining healthy weed free growth.

1.9 STAKES AND TIES

Adjust or replace as required. Remove those not required at the end of the Planting Establishment Period.

1.10 WATERING/ IRRIGATION

An irrigation system is to be installed to all mass planted beds and new tree planting, conntected to a pump and the rainwater tank /OSD tank. Install one tap near the front boundary (Wurrook Circuit) and one tap on the rear (eastern) boundary. This system shall be installed and maintained for the duration of the maintenance period (52 weeks) and in perpetuity of the development. All irrigation works shall be performed by a licensed irrigation contractor. Materials to be used are to be submitted to the site superintendent for approval. The contractor shall provide design drawings and material specifications/samples prior to commencing work. All works are to be conducted to all current and relevant Australian Standards.
The contractor is to be completely responsible for the coordination of the installation of the irrigation system with other services throughout the site. Recommended flow rates: The system shall be set up on a trial basis and them adjusted to suit the local requirements and conditions. Once the system is satisfactorily adjusted the contractor shall make fortnightly visits within the establishment period to ensure satisfactory performance of the system and to adjust the watering periods as required. A minimum even coverage of 25mm of water per week is recommended.

2.0 REPORTS

2.1 LANDSCAPE MAINTENANCE REPORT

'Landscape Maintenance Reports' shall be submitted to the Principle Certifying Authority by the contractor verifying that satisfactory maintenance of the landscape works has been undertaken and that any necessary rectification measures have been carried out to a high professional standard. This documentation is to be submitted through the plant establishment period.

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LANDSCAPE WORK SPECIFICATION

PRELIMINARIES

1.01 GENERAL

The following general conditions should be considered prior to the commencement of landscape works:

The landscape plans should be read in conjunction with the architectural plans, hydraulic plans, service plans and survey prepared for the proposed development.

All services including existing drainage should be accurately located prior to the commencement of landscape installation. Any proposed tree planting which falls close to services will be relocated on site under the instruction of the landscape architect.

Installation of conduit for required irrigation, electrical and other services shall be completed prior to the commencement of hardscape works and hardstand pours.

All outdoor lighting specified by architect or client to be installed by qualified electrician

Anomalies that occur in these plans should be brought to our immediate attention.

Where an Australian Standard applies for any landscape material testing or installation technique, that standard shall be followed.

1.02 PROTECTION OF ADJACENT FINISHES

The Contractor shall take all precautions to prevent damage to all or any adjacent finishes by providing adequate protection to these areas / surfaces prior to the commencement of the Works

1.03 PROTECTION OF EXISTING TREES

Existing trees identified to be retained shall be done so in accordance with NATSPEC Guide 2 "A Guide to Assessing Tree Quality". Where general works are occurring around such trees, or pruning is required, a qualified Arborist shall be engaged to oversee such works and manage tree health.

Existing trees designated on the drawing for retention shall be protected at all times during the construction period. Any soil within the drip-line of existing trees shall be excavated and removed by hand only. No stockpiling shall occur within the root zone of existing trees to be retained.

Any roots larger in diameter than 50mm shall only be severed under instruction by a qualified arborist. Roots smaller than 50mm diameter shall be cut cleanly with a saw.

Temporary fencing shall be installed around the base of all trees to be retained prior to the commencement of landscape works. Where possible this fencing will be located around the drip line of these trees, or a minimum of 3m from the trunk. The fencing shall be maintained for the full construction period.

1.04 EROSION & POLLUTION CONTROL

The Contractor shall take all proper precautions to prevent the erosion of soil from the subject site. The contractor shall install erosion & sediment control barriers and as required by council, and maintain these barriers throughout the construction period. Note that the sediment control measures adopted should reflect the soil type and erosion characteristics of the site.

Erosion & pollution control measures shall incorporate the following:

- Construction of a sediment trap at the vehicle access point to the subject site.
- Sediment fencing using a geotextile filter fabric in the location indicated on the erosion control plan or as instructed on site by the landscape architect.
- Earth banks to prevent scour of stockpiles
- Sandbag kerb sediment traps
- Straw bale & geotextile sediment filter.
- Exposed banks shall be pegged with an approved Jute matting in preparation for mass planting

Refer to "Sitewise Reference Kit" as prepared by DLWC & WSROC (1997) for construction techniques

SOIL WORKS

2.01 MATERIALS

Specified Soil Conditioner (Generally to improve site soil)

The specified soil conditioner for site top-soil improvement shall be an organic mix, equal to "Botany Humus", as supplied by ANL. Note that for sites where soil testing indicates toxins or extremes in pH, or soils that are extremely poor, allow to excavate and supply 300mm of imported soil mix.

New gardens & proposed Planting

New garden and planting areas shall consist of a 50/50 mix of clean site soil (refer d) below) and imported "Organic Garden Mix" as supplied by ANL or approved equal. All mixes are to comply with AS 4419 Soils for landscaping & garden use, & AS 4454 Composts, Soil conditioners & mulches.

Specified Soil Mix - Turf

The specified soil mix for all turf areas shall be a min 75mm layer of imported soil mix consisting of 80% washed river sand (reasonably coarse), and 20% composted organic matter equivalent to mushroom compost or soil conditioner, or other approved lawn top dress.

Site Topsoil

Site topsoil is to be clean and free of unwanted matter such as gravel, cXXlay lumps, grass, weeds, tree roots, sticks, rubbish and plastics, and any deleterious materials and materials toxic to plants. The topsoil must have a pH of between 5.5 and 7. Use 100% imported soil mix when site when site topsoil runs out.

2.02 INSTALLATION

a) Establishing Subgrade Levels

Subgrade levels are defined as the finished base levels prior to the placement of the specified material (i.e. soil conditioner). The following subgrade levels shall apply:

Mass Planting Beds - 300mm below existing levels with specified imported soil mix.

Turf areas - 100mm below finished surface level.

Note that all subgrades shall consist of a relatively free draining natural material, consisting of site topsoil placed previously by the Civil Contractor. No builders waste material shall be acceptable.

b) Subgrade Cultivation

Cultivate all subgrades to a minimum depth of 100mm in all planting beds and all turf areas, ensuring a thorough breakup of the subgrade into a reasonably coarse tilth. Grade subgrades to provide falls to surface and subsurface drains, prior to the placement of the final specified soil mix.

c) Drainage Works

Install surface and subsurface drainage where required and as detailed on the drawing. Drain subsurface drains to outlets provided, with a minimum fall of 1:100 to outlets and / or service pits.

d) Placement and Preparation of Specified Soil Conditioner & Mixes.

Trees in turf & beds - Holes shall be twice as wide as root ball and minimum 100mm deeper - backfill hole with 50/50 mix of clean site soil and imported "Organic Garden Mix" as supplied by ANL or approved equal.

Mass Planting Beds - Install specified soil conditioner to a compacted depth of 100mm

Place the specified soil conditioner to the required compacted depth and use a rotary hoe to thoroughly mix the conditioner into the top 300mm of garden bed soil. Ensure thorough mixing and the preparation of a reasonably fine tilth and good growing medium in preparation for planting.

Turf Areas - Install specified soil mix to a minimum compacted depth of 75mm.

Place the specified soil mix to the required compacted depth and grade to required finished soil levels, in preparation for planting and turfing.

PLANTING

3.01 MATERIALS

a) Quality and Size of Plant Material

All trees supplied above a 25L container size must be grown and planted in accordance with *Clarke, R 1996 Purchasing Landscape Trees: A guide to assessing tree quality. Natspec Guide No. 2.* Certification that trees have been grown to Natspec guidelines is to be provided upon request of Council's Tree Management Officer.

Above - Ground Assessment:

The following plant quality assessment criteria should be followed:

Plant true to type, Good vigour and health, free from pest & disease, free from injury, self-supporting, good stem taper, has been pruned correctly, is apically dominant, has even crown symmetry, free from included bark & stem junctions, even trunk position in pot, good stem structure

Below - Ground Assessment:

Good root division & direction, rootball occupancy, rootball depth, height of crown, non-suckering For further explanation and description of these assessment criteria, refer to Ross Clark's book.

All Plant material shall be to the type and size specified. No substitutions of plant material shall be permitted without written prior approval by the Landscape Architect. No plant shall be accepted which does not conform to the standards listed above.

b) Stakes and Ties

Provide min. 2 No. Stakes and ties to all plants identified as trees in the plant schedule. Stakes shall be sound, unpainted, straight hardwood, free of knots and pointed at one end. They shall be 2200mm x 50mm x 50mm Hardwood, or approved alternative. Ties shall be 50mm wide hessian webbing material.

c) Fertilisers

Fertilisers shall be approved slow release fertilisers suitable for the proposed planting types. Note that for native plants, specifically Proteaceae family plants including Grevillea species, low phosphorus fertilizers shall be used.

d) Mulch

Mulch shall be an approved equal to "Forest Blend" as supplied by ANL. Mulch shall be completely free from any soil, weeds, rubbish or other debris.

e) Turf

Turf shall be "Sir Walter" Buffalo or equivalent (unless stated otherwise), free from any weeds and other grasses, and be in a healthy growing condition.

3.02 INSTALLATION

a) Setting Out

All planting set out shall be in strict accordance with the drawings, or as directed. Note that proposed tree planting located near services should be adjusted at this stage. Notify Landscape Architect for inspection for approval prior to planting.

b) Planting

All plant material shall be planted as soon after delivery as possible. Planting holes for trees shall be excavated as detailed and specified. Plant containers shall be removed and discarded, and the outer roots gently teased from the soil mass. Immediately set plant in hole and backfill with specified soil mix, incorporating the approved quantity of fertiliser for each plant type. Ensure that plants are set plumb vertically and root balls set to the consolidated finished grades detailed on the drawings. Compact the backfilled soil and saturate by hand watering to expel any remaining air pockets immediately after planting.

c) Staking and Tying

Staking and tying shall be in strict accordance with the drawings and shall occur immediately following plant placement and soil backfilling. All plants identified as "Trees" on the planting schedule shall be staked with a min. 3 stakes.

d) Mulching

Mulch should be spread so that a compacted thickness of 75mm is achieved after settlement in all planting beds and around each individual plant. Apply immediately following planting and watering in, ensuring that a 50mm radius is maintained around the trunk of each plant . There shall be no mixing of soil and mulch material.

e) Turfing

Moisten soil prior to the turf being laid. Turf shall be neatly butt jointed and true to grade to finish flush with adjacent surfaces. Incorporate a lawn fertilizer and thoroughly water in. Keep turf moist until roots have taken and sods/rolls cannot be lifted. Keep all traffic off turf until this has occurred. Allow for top dressing of all turf areas. All turf shall be rolled immediately following installation.

f) Steel Garden Edging

The Contractor shall install stone edging as shown on the drawings, to all mass planting beds adjoining turf or gravel mulched areas, and where required. The resultant edge shall be true to line and flush with adjacent surfaces.

HARDSCAPE WORKS

4.01 GENERAL

The Contractor shall undertake the installation of all hardscape works as detailed on the drawing, or where not detailed, by manufacturers specification.

Paving - refer to typical details provided, and applicable Australian Standards. *Permeable paving may be used as a suitable means of satisfying Council permeable surface requirements, while providing a useable, hardwearing, practical surface.* In most instances, the client shall nominate the appropriate paving material to be used.

Australian Standards shall be adhered to in relation to all concrete, masonry & metal work. Some details are typical and may vary on site. All hardscape works shall be setout as per the drawings, and inspected and approved by the Landscape Architect prior to installation. All workmanship shall be of the highest standard. Any queries or problems that arise from hardscape variations should be bought to the attention of the Landscape Architect.

Your attention is directed to any obligations or responsibilities under the Dividing Fences Act, 1991 in respect of adjoining property owner/s which may arise from this application. Any enquiries in this regard may be made to the Crown Lands Division on (02) 8836 5332

IRRIGATION WORKS

5.01 GENERAL (PERFORMANCE SPECIFICATION)

An automated drip-irrigation system is to be installed to all gardens, planters and lawn areas in accordance with the approved Irrigation Design.

This system shall be designed and installed by a qualified and licensed irrigation specialist, to the highest industry standards and to maximise the efficient usage of water.

The Installer is required to obtain all approvals necessary for the completion of works in accordance with the Laws of Australia, Laws of the State of NSW, Council By-Laws and Ordinances.

Drawings:

- The Landscape Contractor nominated Licensed Irrigation Specialist shall provide irrigation drawings for approval upon engagement.

Design Requirements:

- The irrigation system shall be installed prior to all planting works. It shall incorporate a commercially available irrigation system, with sub-surface dripper lines to irrigate all gardens, planters and lawn areas.
- It shall incorporate a suitable back flow prevention device for the scale of works, an in-line filter, check valves, and suitable high and low density poly hose fittings and PVC piping to achieve flow rates suitable for specified planting.
- The irrigation application rate shall not exceed the infiltration rate of the soil or creates run-off.
- The landscape contractor shall check the existing pressure available from the ring mains and size irrigation piping to suit. Supply shall be from local hose cock where available.
- All piping and fittings shall be buried 50mm below the finished soil levels in garden and lawn areas, and secured in position at 500mm centres with galv wire pins.
- Size of pipes shall be selected to ensure the working pressure at the end of the line does not decrease by more than 5%.

Services Co-ordination:

- Co-ordination required by Landscape Contractor or Project Manager to provide required conduit, pipe work and penetration through slabs and planter walls for water and power provisions.
- The Landscape Contractor shall be engaged with the Irrigation Specialist to co-ordinate with the Project Manager to identify the preferred service and conduit locations.
- Project Manager and Landscape Contractor to establish area suitable for irrigation control system with required area, power provision and water supply.

Testing & Defects:

Upon completion of installation, the system shall be tested, including:

- Main Line Pressure Test: The main line is pressurised to test for leaks. All valves are shut and the pressure is taken over a determined length of time.
- Dripper Pressure Test: Measurement at flushing valves are taken and the pressure gauged to make sure it conforms to the manufacturer recommendations. The inlet pressure is then tested under the same conditions to check it does not exceed 300Kpa.
- All components are to be satisfactorily functional and operational prior to approval. Should any defect develop, or the capacity or efficiency of the system decline during the agreed maintenance system, then these faults shall be immediately rectified.

Warranty :

- A full 12 month warranty shall be included to cover labour and all parts.

Further Documentation:

- On request, a detailed irrigation performance specification report can be issued.

12 MONTH MAINTENANCE

6.01 GENERAL

The consolidation and maintenance period shall be 12 months beginning from the approved completion of the specified construction work (Practical Completion). A qualified landscape maintenance contractor shall undertake the required landscape maintenance works. Consolidation and maintenance shall mean the care and maintenance of Contracted works by accepted landscaping or horticultural practices, ensuring that all plants are in optimum growing conditions and appearance at all times, as well as rectifying any defects that become apparent in the contracted works.

This shall include, but not be limited to, the following items where and as required: Watering all planting and lawn areas / irrigation maintenance.

Clearing litter and other debris from landscaped areas.

Removing weeds, pruning and general plant maintenance.

Replacement of damaged, stolen or unhealthy plants. Make good areas of soil subsidence or erosion.

Topping up of mulched areas.

Spray / treatment for Insect and disease control.

Fertilizing with approved fertilizers at correct rates.

Mowing lawns & trimming edges each 14 days in summer or 18 days in winter Adjusting ties to Stakes

Maintenance of all paving, retaining and hardscape elements.

On the completion of the maintenance period, the landscape works shall be inspected and at the satisfaction of the superintendent or landscape architect, the responsibility will be signed over to the client.**xx**

ISSUE	DATE	COMMENT
D	6/10/20	FOR DA

AMENDMENTS

GENERAL NOTES

All work to be carried out in accordance with the Building Code of Australia, all Local and State Government Ordinances, relevant Australian Standards, Local Authorities Regulations and all other relevant Authorities concerned.
All structural work and site drainage to be subject to Engineer's details or certification where required by Council. This shall include r.c. slabs and footings, r.c. and steel beams & columns, wind bracing to AS 1170
and AS4055, anchor rods or bolts, tie downs, fixings etc., driveway slabs and drainage to Council's satisfaction. All timbers to be in accordance with SAA Timber Structure Code AS1720 and SAA Timber Framing Code AS 1684. All work to be carried out in a professional and workman- shiplike manner according to the plans and specification.
NOTE
Do not scale off the drawings unless otherwise stated and use figured dimensions in preference.
All dimensions are to be checked and verified on site before the commencement of any work, all dimensions and levels are subject to final survey and set-out
No responsibility will be accepted by Sitedesign for any variations in design, builder's method of construction or materials used, deviation from specification without permission or accepted work practices resulting in inferior construction. Locate and protect all services prior to construction.
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Project	DETAIL PLAN
Address	310-314 TAREN POINT ROAD CARINGBAH
Date	06/10/20
Drawing Title	SPECIFICATION
Scale	NTS
Drawing No.	

Page
L-11 D

PROPOSED DEVELOPMENT

310-314 Taren Point Road, Caringbah, NSW

greenview Job No: 181209

GENERAL NOTES

1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE NOMINATED OR APPLICABLE COUNCIL SPECIFICATION.
2. THE CONTRACTOR SHOULD REPORT ANY DISCREPANCIES ON THE DRAWINGS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN.
3. CONTRACTOR IS NOT TO ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE PERMISSION OF THE OWNER.
4. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED OR REMOVED FROM SITE.
5. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING.
6. ALL DRAINAGE LINES THOUGH ADJACENT LOTS SHALL BE CONTAINED WITHIN EASEMENTS CONFORMING TO COUNCIL'S STANDARDS.
7. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL PROVIDE A TRAFFIC MANAGEMENT PLAN PREPARED BY AN ACCREDITED PERSON IN ACCORDANCE WITH RMS REQUIREMENTS, FOR ANY WORK ON OR ADJACENT TO PUBLIC ROADS, PLAN TO BE SUBMITTED TO COUNCIL & RMS AS REQUIRED.
8. THESE PLANS SHALL BE A READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS.
9. THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.
10. THE BUILDER IS TO VERIFY ALL LEVELS ON SITE PRIOR TO COMMENCING CONSTRUCTION.
11. ALL THE CLEANING EYES (OR INSPECTION EYES) FOR THE UNDERGROUND PIPES HAVE TO BE TAKEN UP TO THE FINISHED GROUND LEVEL FOR EASY IDENTIFICATION AND MAINTENANCE PURPOSES
12. ALL TERRACE FLOOR AND PLANTER GRATES TO HAVE FIRE COLLARS FITTED.
13. ALL PITS HAVING AN INTERNAL DEPTH THAT EXCEEDS 1.0m SHALL BE PROVIDED WITH GALVANIZED STEP IRON'S AT 300 mm CENTRES PLACED IN A STAGGERED PATTERN AND SHALL BE IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS AS4198-1994.
14. ALL MULCHING TO BE USED WITHIN THE AREA DESIGNATED AS ON SITE DETENTION STORAGE SHALL BE OF A NON-FLOATABLE MATERIAL SUCH AS DECORATIVE RIVER GRAVEL. BARK MULCHING SHALL NOT BE USED WITHIN THE DETENTION STORAGE AREA.
15. PRIOR TO COMMENCING ANY WORKS ON THE SITE, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTION INTO COUNCIL'S KERB/DRAINAGE SYSTEM MATCH THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
16. GREENVIEW IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY SURVEY INFORMATION PROVIDED ON THIS DRAWING.
17. ALL LEVELS SHOWN ARE EXPECTED TO BE TO A.H.D.
18. ALL CHAINAGES AND LEVELS ARE IN METERS, AND DIMENSIONS IN MILLIMETRES, UNLESS NOTED OTHERWISE.
19. THE SURVEY INFORMATION ON THIS DRAWING HAS BEEN PROVIDED BY THE ARCHITECT.
20. CONTRACTORS SHALL ARRANGE FOR THE WORKS TO BE SET OUT BY A REGISTERED SURVEYOR.
21. W.A.E DRAWINGS BY A REGISTERED SURVEYOR ARE REQUIRED PRIOR TO CERTIFICATION OF DRAINAGE.
22. WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES WITHOUT WRITTEN APPROVAL.
23. WATER TREATMENT DEVICES TO STRICTLY COMPLY WITH MANUFACTURING SPECIFICATIONS.

RAINWATER REUSE SYSTEM NOTES

1. RAINWATER SUPPLY PLUMBING TO BE CONNECTED TO OUTLETS WHERE REQUIRED BY BASIX CERTIFICATE (BY OTHERS)
2. NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAINWATER SUPPLY
3. PROVIDE AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK
4. PROVIDE AT LEAST ONE EXTERNAL HOSE COCK ON THE TOWN WATER SUPPLY FOR FIRE FIGHTING.
5. PROVIDE APPROPRIATE FLOAT VALVE AND/OR SOLENOID VALVES TO CONTROL TOWN WATER SUPPLY INLET TO TANK IN ORDER TO ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL DETAIL.
6. ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS/NZ3500.1 NATIONAL PLUMBING AND DRAINAGE CODE.
7. PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY A LICENSED ELECTRICIAN.
8. ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK SURFACE WATER INLETS ARE NOT TO BE CONNECTED
9. PIPE MATERIALS FOR RAINWATER SUPPLY PLUMPING ARE TO BE APPROVED MATERIALS TO AS/NZS3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINWATER'. THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345)
10. EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELLED 'RAINWATER' ON A METALLIC SIGN IN ACCORDANCE WITH AS1319
11. ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY.
12. ALL DOWNPIPES CHARGED TO THE RAINWATER TANK ARE TO BE SEALED UP TO GUTTER LEVEL AND BE PRESSURE TESTED AND CERTIFIED
13. TOWN WATER CONNECTION TO RAINWATER TANK TO BE TO THE SATISFACTION OF THE REGULATORY AUTHORITY. THIS MAY REQUIRE PROVISION OF

    13.1. PERMANENT AIR GAP
    13.2. BACKFLOW PREVENTION DEVICE

SAFETY IN DESIGN NOTES

THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING. WE NOTE THIS DESIGN IS TYPICAL OF SIMILAR DESIGNS. AS FAR AS IS REASONABLY PRACTICABLE RISKS HAVE BEEN ELIMINATED OR MINIMISED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR, OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS. GREENVIEW ASSESSMENT DID NOT IDENTIFY ANY UNIQUE RISKS ASSOCIATED WITH THE DESIGN.

EARTHWORK NOTES

1. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS
2. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES AND DEBRIS ETC. TO THE EXTENT OF THE PROPOSED DEVELOPED AREA.
3. PROVIDE PROTECTION BARRIERS TO PROTECTED/SENSITIVE AREAS PRIOR TO ANY BULK EXCAVATION.
4. OVER FULL AREA OF EARTHWORKS, CLEAR VEGETATION, RUBBISH, SLABS ETC. AND STRIP TOP SOIL. AVERAGE 200mm THICK. REMOVE FROM SITE, EXCEPT TOP SOIL FOR RE-USE.
5. CUT AND FILL OVER THE SITE TO LEVELS REQUIRED.
6. PRIOR TO ANY FILLING IN AREAS OF CUT OR IN EXISTING GROUND, PROOF ROLL THE EXPOSED SURFACE WITH A ROLLER OF MINIMUM WEIGHT OF 5 TONNES WITH A MINIMUM OF 10 PASSES.
7. EXCAVATE AND REMOVE ANY SOFT SPOTS ENCOUNTERED DURING PROOF ROLLING AND REPLACE WITH APPROVED FILL COMPACTED IN LAYERS, THE WHOLE OF THE EXPOSED SUBGRADE AND FILL SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2%.
8. FOR ON SITE FILLING AREAS, THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
9. WHERE HARD ROCK IS EXPOSED IN THE EXCAVATED SUB-GRADE, THIS WILL BE INSPECTED AND A DECISION MADE ON THE LEVEL TO WHICH EXCAVATION IS TAKEN.
10. FILL IN 200mm MAXIMUM (LOOSE THICKNESS) LAYERS TO UNDERSIDE OF BASECOURSE USING THE EXCAVATED MATERIAL AND COMPACTED TO 98% STANDARD (AS 1289 5.1.1). MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT ± 2% SHOULD THERE BE INSUFFICIENT MATERIAL FROM SITE EXCAVATIONS, IMPORT AS NECESSARY CLEAN GRANULAR FILL TO APPROVAL.
11. COMPACTION TESTING SHALL BE CARRIED OUT AT THE RATE OF 2 TESTS PER 1000SQ METRES PER LAYER BY A REGISTERED NATA LABORATORY. THE COSTS OF TESTING AND RE-TESTING ARE TO BE ALLOWED FOR BY THE BUILDER.
12. BATTERS TO BE AS SHOWN, OR MAXIMUM 1 VERT : 4 HORIZ.
13. ALL CONDUITS AND MAINS SHALL BE LAID PRIOR TO LAYING FINAL PAVEMENT.
14. ALL BATTERS AND FOOTPATHS ADJACENT TO ROADS SHALL BE TOP SOILED WITH 150mm APPROVED LOAM AND SEEDED UNLESS OTHERWISE SPECIFIED.

DRAINAGE INSTALLATION

RCP CONVENTIONAL INSTALLATIONS & ROAD CROSSINGS

1. SUPPLY & INSTALLATION OF DRAINAGE WORKS TO BE IN ACCORDANCE WITH THESE DRAWINGS, THE COUNCIL SPECIFICATION AND THE CURRENT APPLICABLE AUSTRALIAN STANDARDS.
2. BACKFILL SHALL BE PLACED & COMPACTED IN ACCORDANCE WITH THE SPECIFICATION. A GRANULAR GRAVEL AGGREGATE MATERIAL (<10mm) BACKFILL IS RECOMMENDED FOR THE BEDDING, HAUNCH SUPPORT AND SIDE ZONE DUE TO IT'S SELF COMPACTING ABILITY.
3. A MINIMUM OF 150mm CLEARANCE IS TO BE PROVIDED BETWEEN THE OUTSIDE OF THE PIPE BARREL AND THE TRENCH WALL FOR PIPES < 600 DIA. 200mm CLEARANCE FOR PIPES 600 TO 1200 DIA AND DIA CLEARANCE FOR PIPES > 1200 DIA.
4. BEDDING OF THE PIPELINES IS TO BE TYPE 'HS2' IN ACCORDANCE WITH THE STANDARDS AND AS FOLLOWS:

   a.COMPACTED GRANULAR MATERIAL IS TO COMPLY WITH THE FOLLOWING GRADINGS:

M	19	2.3600	0.6000	0.3000	0.1500	0.0750
% MASS PASSING	100	50-100	20-90	10-60	0-25	0-10

   -AND THE MATERIAL PASSING THE 0.075 SIEVE HAVING LOW PLASTICITY AS DESCRIBED IN APPENDIX D OF AS1726.

   b.BEDDING DEPTH UNDER THE PIPE TO BE 100mm.

   c.BEDDING MATERIAL TO BE EXTENDED FROM THE TOP OF THE BEDDING ZONE UP TO 0.3 TIMES PIPE OUTSIDE DIAMETER. THIS REPRESENTS THE 'HAUNCH ZONE.'

   d.THE BEDDING & HAUNCH ZONE MATERIAL IS TO BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 98% WITHIN ROAD RESERVES AND TRAFFICABLE AREAS AND 95% ELSEWHERE FOR COHESIVE MATERIAL OR A MINIMUM DENSITY INDEX OF 70% IN ACCORDANCE WITH THE STANDARDS FOR COHESIONLESS MATERIAL.

   e.COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED ORGANISATION WITH A NATA CERTIFIED LABORATORY FOR ALL DRAINAGE LINES LAID WHOLLY OR IN PART UNDER THE KERB & GUTTER OR PAVEMENT

ROOF DRAINAGE

1. ALL ROOF DRAINAGE IS TO BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE CURRENT APPLICABLE AUSTRALIAN STANDARDS INCLUDING AS3500.3, NCC AND COUNCIL'S SPECIFICATIONS.
2. DOWNPIPES SHOWN ARE INDICATIVE ONLY. REFER ARCHITECTURALS FOR FINAL LOCATIONS.
3. ALL DOWNPIPES TO BE CONSTRUCTED OF ONE MATERIAL FOR AESTHETICS REASONS AND PAINTED TO PROTECT THEM AGAINST ULTRA-VIOLET LIGHT DAMAGE. UNLESS APPROVED OTHERWISE BY THE PROJECT ARCHITECT.
4. ALL DOWNPIPES TO HAVE LEAF GUARDS.
5. ALL EAVES GUTTERS ARE TO BE DESIGNED TO THE 5% AEP (20YR) STORM EVENTS UNO
6. ALL EAVES GUTTER OVERFLOWS ARE TO BE IN ACCORDANCE WITH AS3500.3 G3
7. ALL BOX GUTTERS ARE TO BE DESIGNED TO CATER TO THE 1% AEP (100YR) STORM EVENTS UNO
8. IN ACCORDANCE WITH AS3500.3 CLAUSE 3.7.6.G, BOX GUTTERS SHALL:
   a. BE STRAIGHT (WITHOUT CHANGE IN DIRECTION)
   b. HAVE A HORIZONTAL CONSTANT WIDTH BASE (SOLE) WITH VERTICAL SIDES IN A CROSS-SECTION.
   c. HAVE A CONSTANT LONGITUDINAL SLOPE BETWEEN 1:200 AND 1:40.
   d. DISCHARGE AT THE DOWNSTREAM END WITHOUT CHANGE OF DIRECTION (I.E. NOT TO THE SIDE); AND
   e. BE SEALED TO THE RAINHEADS AND SUMPS
9. GREENVIEW RECOMMENDS THAT THE BUILDER VERIFIES THAT ANY AND ALL BOX GUTTERS HAVE BEEN DESIGNED BY A QUALIFIED CIVIL ENGINEER PRIOR TO THE COMMENCEMENT OF WORKS.
10. GREENVIEW RECOMMENDS A SPECIFIC INSPECTION AND CERTIFICATION BY A QUALIFIED CIVIL ENGINEER OF ANY AND ALL BOX GUTTERS INSTALLED ON THE PROJECT PRIOR TO OCCUPATION CERTIFICATE

STORMWATER DRAINAGE NOTES

1. STORMWATER DRAINAGE SHALL BE GENERALLY IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARDS INCLUDING AS3500.3 , NCC AND COUNCIL'S SPECIFICATION.
2. PIPES OF 225mm DIA. AND UNDER SHALL BE UPVC
3. PIPES OF 300mm DIA. AND LARGER SHALL BE FRC OR CONCRETE CLASS 2 RUBBER RING JOINTED UNO.
4. ALL FRC OR RCP STORMWATER PIPES WITHIN ROAD RESERVE AREAS TO BE CLASS 3 U.N.O. BY COUNCILS SPECIFICATION.
5. PIPES SHALL GENERALLY BE LAID AT THE GRADES INDICATED ON THE DRAWINGS.
6. MINIMUM COVER TO PIPES 300mm DIA. AND OVER GENERALLY SHALL BE 600mm IN CARPARK & ROADWAY AREAS UNO.
7. ALL PIPES LOCATED IN LANDSCAPE AREAS TO HAVE 300mm COVER. WHERE NOT POSSIBLE AND COVER IS BETWEEN 150mm AND 300mm USE SEWER GRADE PIPE.
8. PIPES 225mm DIA AND OVER SHALL BE LAID AT 0.5% MIN. GRADE U.N.O.
9. PIPES UP TO 150mm DIA SHALL BE LAID AT 1.0% MIN. GRADE U.N.O
10. BACKFILL TRENCHES WITH APPROVED FILL COMPACTED IN 200mm LAYERS TO 98% OF STANDARD DENSITY.
11. ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULKHEADS AT ALL JOINTS
12. THE MINIMUM SIZES OF THE STORMWATER DRAINAGE PIPES SHALL NOT BE LESS THAN 90mm DIA FOR CLASS 1 BUILDINGS AND 100mm DIA FOR OTHER CLASSES OF BUILDING OR AS REQUIRED BY THE REGULATORY AUTHORITY.
13. BUILD INTO UPSTREAM FACE OF ALL PITS A 3.0m SUBSOIL LINE FALLING TO PITS TO MATCH PIT INVERTS.
14. ALL LANDSCAPED PITS TO BE 450 SQUARE UNO
15. GREENVIEW RECOMMENDS ALL COURTYARDS TO HAVE 450 SQUARE PLASTIC PIT INSTALLED WITH A 150mm DIA. CONNECTION TO FORMAL DRAINAGE SYSTEM.
16. ALL DRIVEWAY PITS TO BE 600 SQUARE UNLESS NOTED OTHERWISE
17. ALL PLANTER BOXES AND BALCONIES TO BE CONNECTED TO THE PROPOSED STORMWATER DRAINAGE LINE.
18. ALL STORMWATER DRAINAGE WORK TO AVOID TREE ROOTS. WHERE NOT POSSIBLE, ALL EXCAVATIONS IN VICINITY OF TREE ROOTS ARE TO BE HAND DUG.
19. GEOTEXTILE FABRIC TO BE PLACED UNDER RIP RAP SCOUR PROTECTION WHERE APPLICABLE.
20. ALL BASES OF PITS TO BE BENCHED (TO HALF PIPE DEPTH) TO THE INVERT OF THE OUTLET PIPE AND PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE.
21. ANY VARIATION TO THAT WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY THE ENGINEER PRIOR TO THE COMMENCEMENT.
22. ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
23. ALL GRATES TO HAVE CHILDPROOF LOCKS
24. ALL WORK WITHIN COUNCIL RESERVE AREAS TO BE INSPECTED BY COUNCIL PRIOR TO BACKFILLING.
25. COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
26. WATER PROOF ALL CONCRETE BALCONIES & ROOFS TO ARCHITECTS DETAILS
27. ALL BALCONIES TO HAVE FLOOR WASTE AND 1% FALL WITH SAFETY OVERFLOW.
28. ALL SUBSOIL DRAINAGE SHALL BE A MINIMUM OF Ø65mm AND SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE LANDSCAPE CONSULTANT.
29. SUBSOIL DRAINAGE PIPES AND FITTINGS SHALL BE PERFORATED PLASTIC TO CURRENT AUSTRALIAN STANDARDS. LAY PIPES ON FLOOR OF TRENCH GRADED AT 1% MIN. AND OVERLAY WITH FILTER MATERIAL EXTENDING TO WITHIN 200mm OF SURFACE. PROVIDE FILTER FABRIC OF PERMEABLE POLYPROPYLENE BETWEEN FILTER MATERIAL AND TOPSOIL. PROVIDE FLUSHING EYE'S AT HIGH POINTS OR TO COUNCILS REQUIREMENTS.
30. GRATES TO BE IN ACCORDANCE WITH TABLE BELOW:

PIT GRATE INLINE TYPE

GRATE TYPE	TRAFFIC CONDITIONS
A - EXTRA LIGHT DUTY	FOOTWAYS AND AREAS ACCESSIBLE ONLY TO PEDESTRIANS AND PEDAL CYCLISTS.
B - LIGHT DUTY	FOOTWAYS THAT CAN BE MOUNTED BY VEHICLES.
C - MEDIUM DUTY	MALLS AND PEDESTRIAN AREAS OPEN TO SLOW MOVING COMMERCIAL VEHICLES.
D - HEAVY DUTY	CARRIGEWAYS OF ROADS AND AREAS OPEN TO COMMERCIAL VEHICLES.

TABLE AS PER AS3996 - 2006. ENGINEER TO BE NOTIFIED IF LOAD CONDITIONS LISTED ABOVE ARE EXCEEDED.

31. COVER TO PIPE TO BE AS PER TABLE BELOW:

COVER TABLE

LOCATION	PIPE TYPE	COVER
LANDSCAPE	PVC	300
LANDSCAPE (ISINGLE DWELLING)	PVC	100
UNDER TRAFFICABLE AREA	PVC	100 BELOW UNDERSIDE OF PAVEMENT
CONCRETE	STEEL	NIL BELOW UNDERSIDE OF PAVEMENT
ROADS	RCP	500 BELOW UNDERSIDE OF PAVEMENT

32. GREENVIEW'S STORMWATER SYSTEM HAS BEEN DESIGNED TO CAPTURE SURFACE RUNOFF FROM THE SITE ITSELF BUT DOES NOT INCORPORATE SPECIFIC GROUNDWATER CAPTURE MECHANISMS. IN SOME CASES, GROUNDWATER INUNDATION MAY BE A SIGNIFICANT SOURCE OF WATER DURING A STORM EVENT. GREENVIEW RECOMMENDS THAT ALL RETAINING WALLS CLOSE TO HABITABLE AREAS BE FITTED WITH AN IMPERMEABLE MEMBRANE AND SUBSOIL DRAINAGE TO PREVENT GROUNDWATER INGRESS.
33. GREENVIEW RECOMMENDS ALL IN-GROUND STORMWATER PIPE RUNS ARE SET OUT BY THE BUILDER PRIOR TO COMMENCEMENT OF WORKS. WHERE 300MM COVER IS NOT ACHIEVED, NOTIFY ENGINEER.
34. WHERE STORMWATER DRAINAGE WORKS ARE TO BE UNDERTAKEN PRIOR TO THE CONSTRUCTION OF THE BUILDING, THE BUILDER IS TO SET OUT THE FLOOR LEVELS AND ENSURE PROPOSED STORMWATER DRAINAGE LEVELS AND BUILDING LEVELS ARE COMPATIBLE. NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES.

ON-SITE DETENTION

1. ON-SITE DETENTION (OSD) TANKS ARE TO BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE CURRENT APPLICABLE AUSTRALIAN STANDARDS INCLUDING AS3500.3, NCC AND COUNCILS' SPECIFICATIONS.
2. IT IS CRITICAL THAT THE MINIMUM OSD VOLUME AS CALCULATED BY THE DESIGN AND NOTED ON THESE PLANS IS ACHIEVED ON SITE. VOLUMES TO BE VERIFIED BE REGISTERED SURVEYOR AND NOTED IN THE WAE SURVEY PRIOR TO CERTIFICATION.
3. OSD VOLUME MAY BE ACHIEVED IN BELOW GROUND TANK, OR ABOVE GROUND PONDING, OR RAINWATER TANK OFFSET, OR INFILTRATION/ABSORPTION SYSTEM. EACH COUNCIL HAS SPECIFIC GUIDELINES FOR HOW STORMWATER FLOWS ARE TO BE CONTROLLED AND DISCHARGED.
4. PONDING AND OVERFLOW LEVELS FROM THE OSD SHALL BE NOT LESS THAN 300mm BELOW ADJACENT HABITABLE FLOOR LEVELS OF BUILDINGS AND NOT LESS THAN 150mm BELOW NON-HABITABLE FLOOR LEVELS (AS3500.1 CLAUSE 7.10.1)

BELOW GROUND OSD TANKS

1. THE HYDRAULIC CONTROL FOR THE STORAGE (USUALLY ORIFICE PLATE) SHALL BE FIRMLY FIXED IN PLACE TO PREVENT REMOVAL OR TAMPERING. A PLATE OF 3mm TO 5mm THICK STAINLESS STEEL WITH A CIRCULAR HOLE SHALL BE USED, PROVIDED:
   a. IT IS MACHINED TO 0.5mm ACCURACY
   b. IT RETAINS A SHARP EDGE; AND
   c. THE ORIFICE DIAMETER IS NOT LESS THAN 25mm (AS 3500.3 CLAUSE 7.10.2
2. INSPECTION / ACCESS OPENINGS SHALL BE PROVIDED ABOVE THE LOCATION OF THE OUTLET WITH DIMENSIONS AT LEAST 600mm x 600mm OR 600mm DIAMETER FOR STORAGES UP TO 600mm DEEP AND 600mm x 900mm FOR DEEPER STORAGES. THERE SHALL BE NO IMPEDIMENTS TO THE REMOVAL OF DEBRIS THROUGH THIS OPENING. INSPECTION SHALL BE POSSIBLE WITHOUT RESIDENTS OR OWNERS HAVING TO REMOVE HEAVY ACCESS COVERS (AS3500.3 CLAUSE 7.10.2.b.ii)
3. WHERE STORAGES ARE NOT DEEP ENOUGH TO WORK IN (<1.5m DEEP), ACCESS SHALL BE PROVIDED AT INTERVALS OF APPROXIMATELY 10m TO ALLOW THE SYSTEM TO BE FLUSHED TO THE STORAGE OUTLET> ACCESS SHALL BE PROVIDED AT THE OUTLET (AS3500.3 CLAUSE 7.10.2.b.iii)
4. A SUMP SHALL BE PROVIDED AT THE OUTLET POINT, SET BELOW THE LEVEL OF THE MAIN STORAGE TO COLLECT DEBRIS. WHERE A DISCHARGE CONTROL PIT IS INCLUDED IN THE STORAGE< THIS SHALL CONTAIN A SUMP SET A MINIMUM OF 1.5 TIMES THE DIAMETER OF THE ORIFICE OF THE OUTLET BELOW THE CENTRE OF THE ORIFICE. SUMPS SHALL BE PROVIDED WITH WEEP HOLES TO DRAIN OUT TO THE SURROUNDING SOIL, AND SHALL BE FOUNDED ON A COMPACTED GRANULAR BASE.
5. WHERE THE DEPTH OF THE TANK EXCEEDS 1.2m, A LADDER IN ACCORDANCE WITH AS3500.3 CLAUSE 7.5.5.4 SHALL BE INSTALLED.
6. BELOW GROUND OSD SYSTEMS SHALL CONFORM WITH AS2865.
7. IN ACCORDANCE WITH AS3500.3 CLAUSE 7.10.2.D SCREENS (TRASH RACKS) WITH THE FOLLOWING CHARACTERISTICS SHOULD BE PROVIDED TO COVER EACH ORIFICE OUTLET:
   a. FOR ORIFICES UP TO 150mm DIA., A FINE APERTURE-EXPANDED METAL MESH SCREEN WITH A MINIMUM AREA OF 50 TIMES THE AREA OF THE ORIFICE. FOR LARGER DIA. ORIFICES, A COARSER GRID MESH WITH A MINIMUM AREA OF 20 TIMES THE ORIFICE AREA MAY BE USED AS AN ALTERNATIVE.
   b. STEEL SCREENS SHOULD BE STAINLESS STEEL OR HOT-DIP GALVANIZED
   c. WHERE APERTURE-EXPANDED MESH SCREENS ARE EMPLOYED, THEY SHOULD BE POSITIONED SO THAT THE OVAL-SHAPED HOLES ARE HORIZONTAL, WITH THE PROTRUDING LIP ANGLED UPWARDS AND FACING DOWNSTREAM. A HANDLE MAY BE FITTED TO ENSURE CORRECT ORIENTATION AND EASY REMOVAL FOR MAINTENANCE.
   d. SCREENS SHOULD BE PLACED NO FLATTER THAN 45 DEGREES TO THE HORIZONTAL IN SHALLOW STORAGES UP TO 600mm DEEP. IN DEEPER OR MORE REMOTE LOCATIONS, THE MINIMUM ANGLE SHOULD BE 60 DEGREES TO THE HORIZONTAL.
8. IF THE BELOW GROUND OSD STORAGE IS SEALED, A VENT SHOULD BE PROVIDED TO EXPEL ANY NOXIOUS GASES (AS3500.3 CLAUSE 7.10.2.D.B).
9. THE STORAGE SHOULD BE DESIGNED TO FILL WITHOUT CAUSING OVERFLOWS IN UPSTREAM CONDUITS DUE TO BACKWATER EFFECTS (AS3500.3 CLAUSE 7.10.2.D.C).
10. BELOW GROUND STORAGES SHALL BE CONSTRUCTED OF CONCRETE, MASONRY, ALUMINIUM/ZINC AND ALUMINIUM/ZINC/MAGNESIUM ALLOY-COATED STEEL, ZINC-COATED STEEL, GALVANISED IRON OR PLASTICS (AS3500.3 7.10.3)

ABOVE GROUND OSD TANKS

1. WHERE ABOVE-GROUND OSD SYSTEMS ARE PROPOSED TO BE LOCATED IN LANDSCAPED AREAS THE FOLLOWING CRITERIA IS RECOMMENDED IN ACCORDANCE WITH AS3500.3 N12.A:
   a. A DESIRABLE MINIMUM SLOPE FOR SURFACES DRAINING TO AN OUTLET TO BE 1:60, AND AN ABSOLUTE MINIMUM SLOPE TO BE 1:100.
   b. THE DESIRABLE MAXIMUM DEPTH OF PONDING UNDER DESIGN CONDITIONS TO BE 300mm.
   c. STORAGE VOLUMES IN LANDSCAPING AREAS TO BE INCREASED BY 20% TO ALLOW FOR VEGETATION GROWTH, CONSTRUCTION INACCURACIES AND POSSIBLE FILLING.
   d. SUBSOIL DRAINS TO BE PROVIDED AROUND OUTLETS TO PREVENT THE GROUND BECOMING SATURATED DURING PROLONGED WET WEATHER; AND
   e. WHERE THE STORAGE IS LOCATED IN AREAS WHERE FREQUENT PONDING WOULD CAUSE MAINTENANCE PROBLEMS OR INCONVENIENCE, THE FIRST 10% TO 20% OF THE STORAGE SHOULD BE IN AN AREA THAT CAN TOLERATE FREQUENT INUNDATION, SUCH AS A PAVED OUTDOOR ENTERTAINMENT AREA, A SMALL UNDERGROUND TANK, A PERMANENT WATER FEATURE OR A ROCKERY.
2. WHERE ABOVE-GROUND OSD SYSTEMS ARE PROPOSED TO BE LOCATED IN DRIVEWAY AND CAR PARK STORAGES, THE FOLLOWING CRITERIA IS RECOMMENDED IN ACCORDANCE WITH AS3500.3 N12.B:
   a. DEPTHS OF PONDING TO NOT EXCEED 200mm UNDER DESIGN CONDITIONS
   b. TRANSVERSE PAVING SLOPES WITHIN STORAGES TO BE NOT LESS THAN 1:140; AND
   c. WHERE THE STORAGE IS LOCATED IN COMMONLY USED AREAS WHERE PONDING WOULD CAUSE INCONVENIENCE, PART OF THE STORAGE SHOULD BE PROVIDED IN AN AREA OR FORM THAT WILL NOT CAUSE A NUISANCE.

MAINTENANCE SCHEDULE: ON SITE DETENTION (OSD)

ALL OSD MAINTENANCE TASKS SHOULD BE UNDERTAKEN AFTER A SIGNIFICANT STORM EVENT

6 MONTHLY

ELEMENT	TASK	DESCRIPTION / ACTION
ORIFICE PLATE	INSPECT FOR BLOCKAGE	CHECK PLATE FOR BLOCKAGE AND CLEAN
TRASH SCREEN	CHECK / CLEAN	CHECK AND CLEAN TRASH SCREEN
PIT SUMP	CHECK FOR SEDIMENT	CHECK FOR SEDIMENT / LITTER / SLUDGE AND CLEAN-OUT
GRATED LIDS	CHECK FOR DAMAGE	CHECK FOR CORROSION OR OTHER DAMAGE AND REPAIR / REPLACE AS NEEDED
	CLEAR BLOCKAGES	CHECK AND CLEAR BLOCKAGES
STORAGE LIDS	CHECK	REMOVE DEBRIS / MULCH / LITTER / SEDIMENT
OUTLET PIPES	CHECK FOR BLOCKAGES	CHECK / CLEAN / FLUSH OUTLET PIPES, REMOVE ANY BLOCKAGES
STEP IRONS	CHECK FIXING	ENSURE STEP-IRON FIXINGS ARE SECURE AND REPAIR AS NEEDED

ANNUALLY

ELEMENT	TASK	DESCRIPTION / ACTION
ORIFICE PLATE	CHECK ATTACHMENT	ENSURE PLATE IS MOUNTED SECURELY, TIGHTEN AND SEAL GAPS AS REQUIRED
TRASH SCREEN	CHECK ATTACHMENT	ENSURE PLATE IS MOUNTED SECURELY, TIGHTEN AND SEAL GAPS AS REQUIRED
	CHECK CORROSION	CHECK TRASH SCREEN FOR CORROSION, ESPECIALLY AT CORNERS NEAR WELDS AND REPAIR / REPLACE AS NEEDED
STEP IRONS	CHECK FOR CORROSION	EXAMINE STEP IRONS AND REPAIR ANY DAMAGE
INTERNAL WALLS	CHECK	CHECK FOR CRACKS / SPALLING AND REPAIR AS NEEDED
OSD SURROUNDS	CHECK FOR SUBSIDENCE	CHECK FOR SUBSIDENCE (WHICH MAY INDICATE LEAKS) AND REPAIR AS NEEDED

5-YEARLY

ELEMENT	TASK	DESCRIPTION / ACTION
ORIFICE PLATE	CHECK ORIFICE PLATE	CHECK ORIFICE SIZE AGAINST WAE AND CHECK FOR PITTING / SCARRING, REPLACE IF NECESSARY

COLOUR LEGEND

NEW (REFER TO SCHEDULES FOR COLOUR DEFINITION)

EXISTING

REMOVED OR RELOCATED

RECOMMENDED SAFETY SIGNS

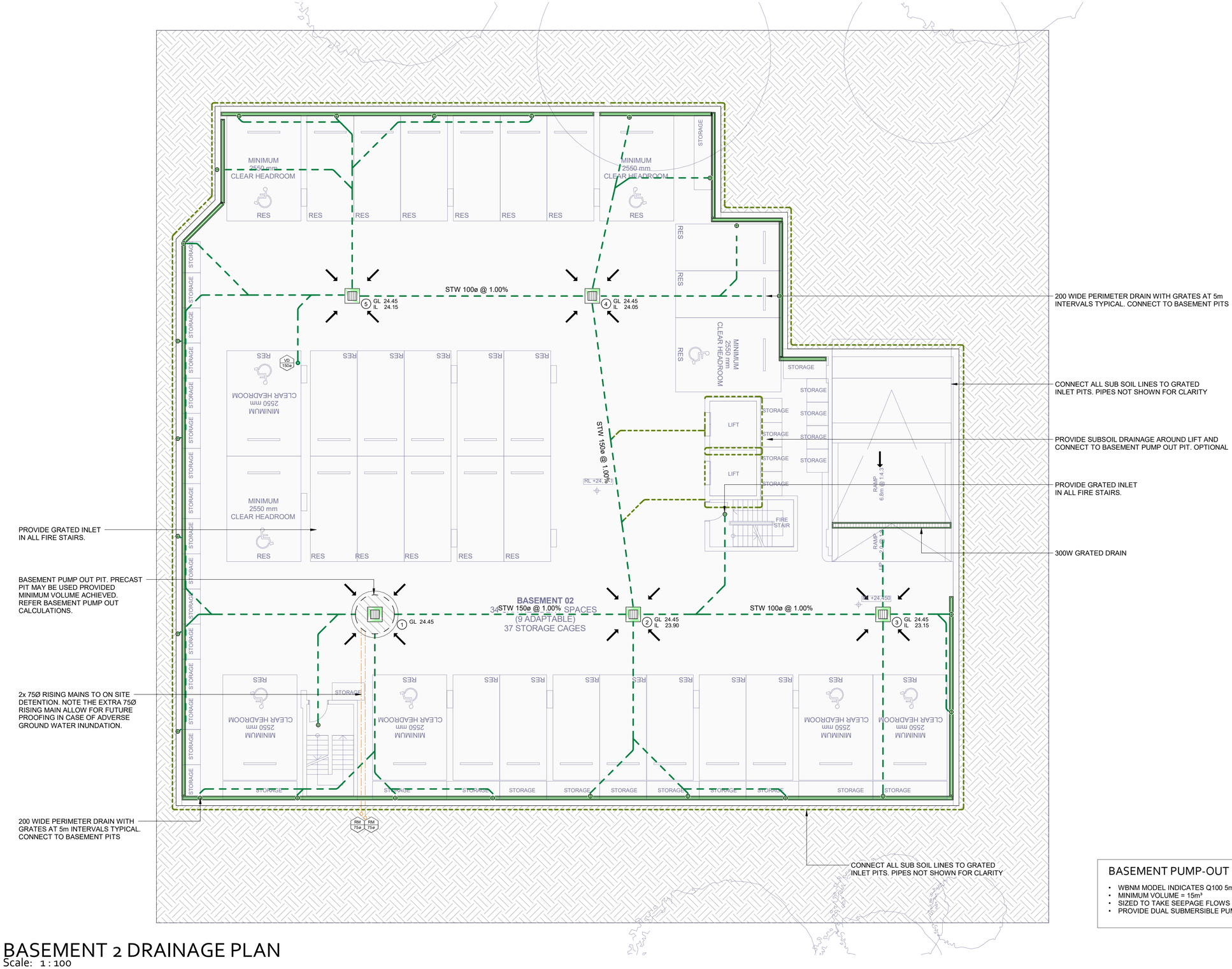
WARNING
PUMP OUT SYSTEM FAILURE IN BASEMENT WITH LIGHT IS FLASHING AND SIREN SOUNDING

BASEMENT PUMP OUT FAILURE WARNING SIGN

1. SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT

DANGER
CONFINED SPACE
NO ENTRY WITHOUT
CONFINED SPACE TRAINING

CONFINED SPACE DANGER S



LEGEND

- HARDSTAND
- EARTH

CIV - FIXTURES SCHEDULE		
	TYPE	DESCRIPTION
		GRATED LID
		GRATED STORMWATER PIT
		PERIMETER GRATES
		PERIMETER STRIP DRAIN
		SEALED LID
		SEALED STORMWATER PIT
	300W	GRATED STRIP DRAIN
	RWO	RAINWATER OUTLET

CIV - STANDARD SYMBOLS	
	DESCRIPTION
	FALL ARROW
	OVERLAND FLOW PATH

CIV - STORMWATER SERVICES		
	TYPE	DESCRIPTION
	RM	RISING MAIN
	SS	SUB SOIL DRAINAGE
	STW	STORMWATER

BASEMENT PUMP-OUT PIT

- WBNM MODEL INDICATES Q100 5min = 10L/s FROM 130m² OF EXPOSED DRIVEWAY, AND V100 2hr =14m³
- MINIMUM VOLUME = 15m³
- SIZED TO TAKE SEEPAGE FLOWS IN ACCORD WITH GEOTECH FINDINGS & 130m² OF EXPOSED DRIVEWAY
- PROVIDE DUAL SUBMERSIBLE PUMPS WITH MINIMUM CAPACITY = 12L/s

BASEMENT 2 DRAINAGE PLAN

Scale: 1 : 100

1. ALL PIPES TO BE 100mmØ @ 1% MINIMUM UNLESS KNOWN OTHERWISE.
2. ALL BASES OF PITS TO BE BENCHED (TO HALF PIPE DEPTH) TO THE INVERT OF THE OUTLET PIPE WITH ALL PIPES CUT FLUSH WITH SIDE OF PIT, TO ALLOW SMOOTH FLOW OF STORMWATER.
3. PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE WHERE IN TRAFFICABLE AREAS.

-10 -5 0 10
SCALE 1:100

REV.	DATE	BY	DESCRIPTION	REV.	DATE	BY	DESCRIPTION
4	08.05.20	LAS	ISSUED FOR APPROVAL				
3	02.08.19	LTR	ISSUED FOR DA				
2	25.06.19	JPS	ISSUED FOR DA				
1	24.06.19	JPS	ISSUED FOR APPROVAL				

DESIGN:
CHECKED: AMcK
SCALE: 1 : 100
SIZE: A1

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PROPOSED DEVELOPMENT
310-314 Taren Point Road, Caringbah, NSW
MBD Developments

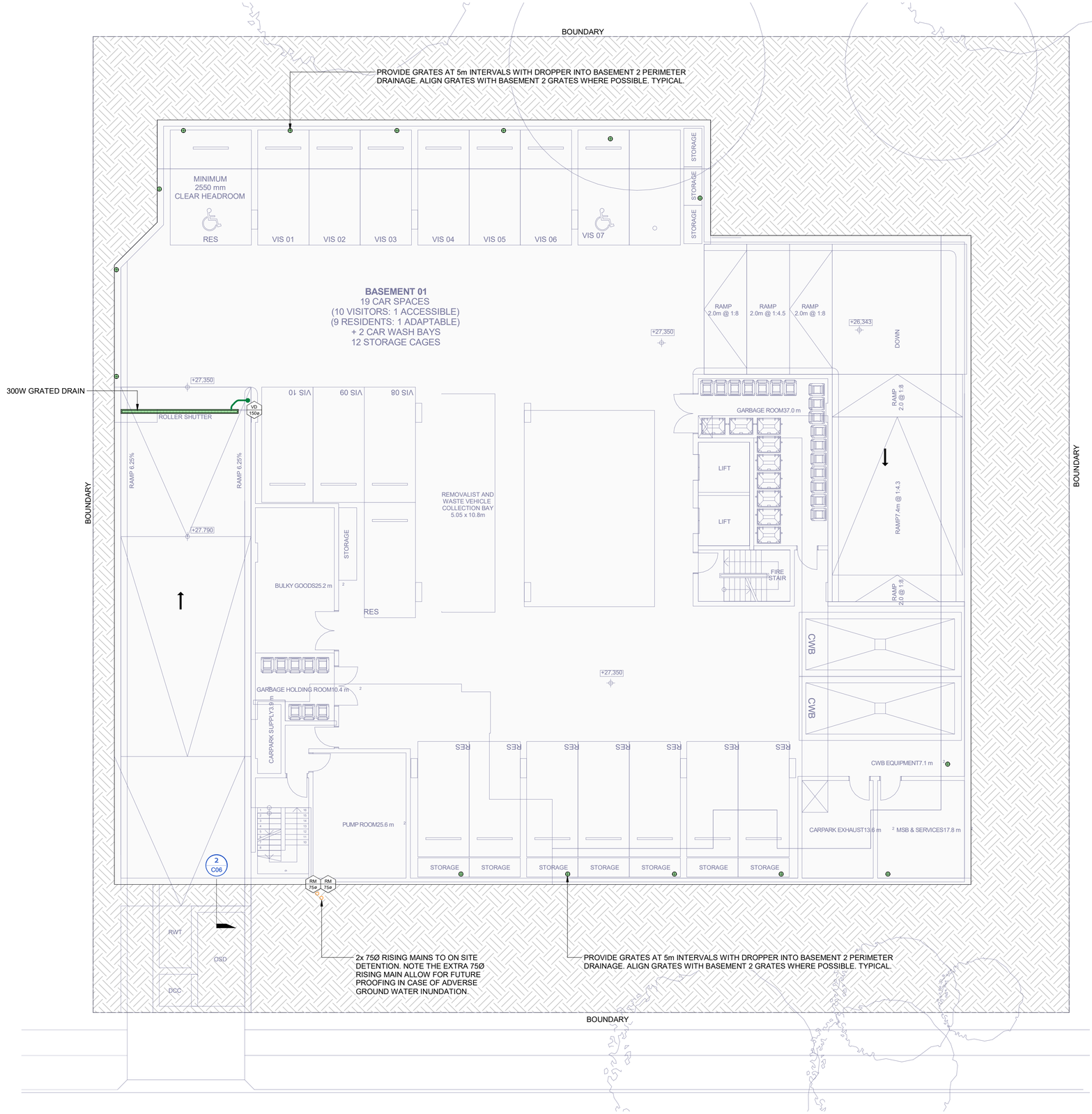
CIVIL DESIGN
BASEMENT 2 DRAINAGE PLAN

181209
PRELIMINARY
C02 4

BASEMENT 1 DRAINAGE PLAN

Scale: 1 : 100

1. ALL PIPES TO BE 100mmØ @ 1% MINIMUM UNLESS KNOWN OTHERWISE.
2. ALL BASES OF PITS TO BE BENCHED (TO HALF PIPE DEPTH) TO THE INVERT OF THE OUTLET PIPE WITH ALL PIPES CUT FLUSH WITH SIDE OF PIT, TO ALLOW SMOOTH FLOW OF STORMWATER.
3. PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE WHERE IN TRAFFICABLE AREAS.



LEGEND

- HARDSTAND
- EARTH

CIV - FIXTURES SCHEDULE		
	TYPE	DESCRIPTION
		GRATED LID
		GRATED STORMWATER PIT
		PERIMETER GRATES
		PERIMETER STRIP DRAIN
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	300W	GRATED STRIP DRAIN
	RWO	RAINWATER OUTLET

CIV - STANDARD SYMBOLS	
	DESCRIPTION
	FALL ARROW
	OVERLAND FLOW PATH

CIV - STORMWATER SERVICES		
	TYPE	DESCRIPTION
	RM	RISING MAIN
	SS	SUB SOIL DRAINAGE
	STW	STORMWATER

-10 -5 0 10

SCALE 1:100

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SCALE: 1 : 100
SIZE: A1

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PROPOSED DEVELOPMENT

310-314 Taren Point Road, Caringbah, NSW

MBD Developments

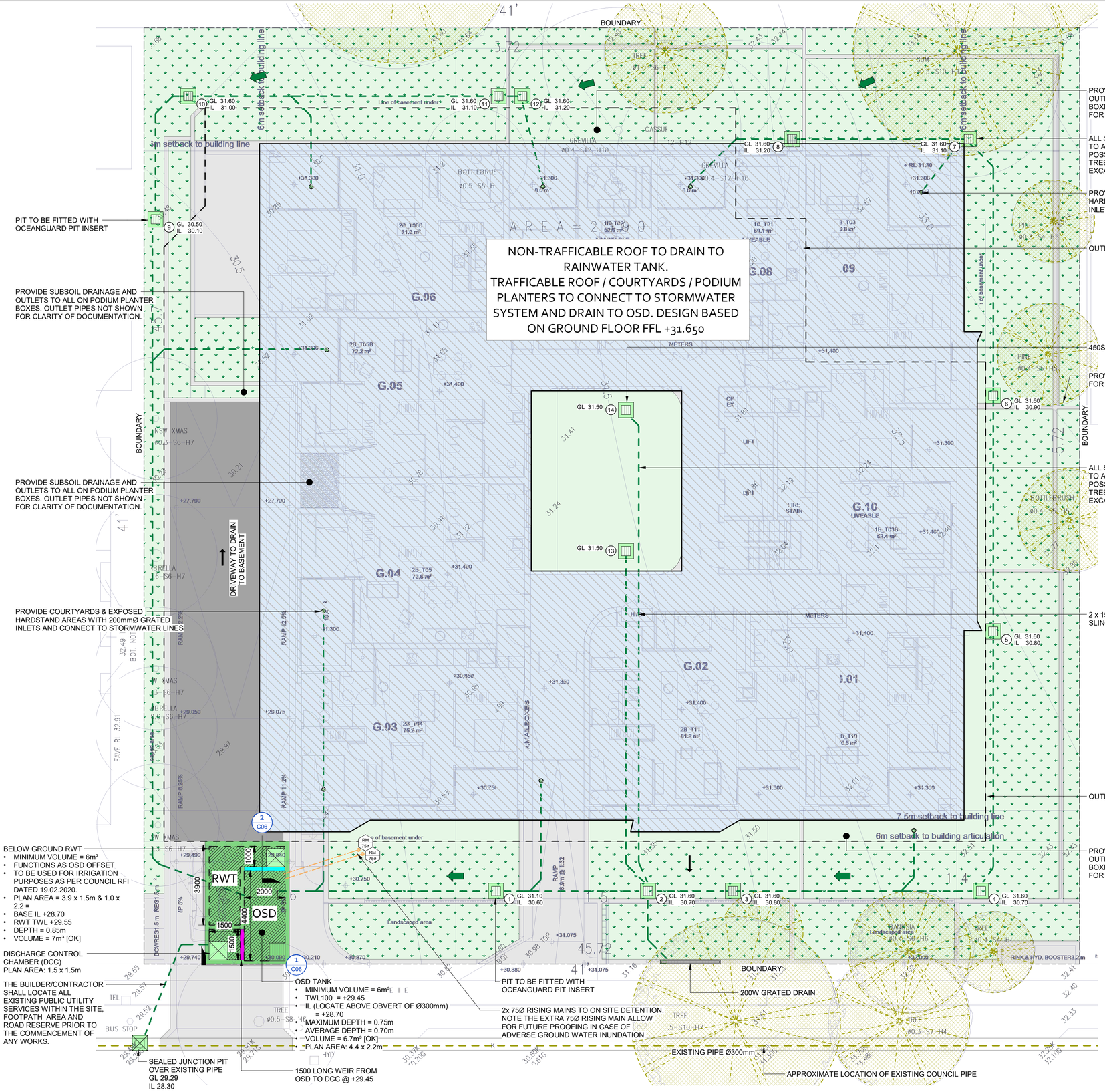
CIVIL DESIGN

BASEMENT 1 DRAINAGE PLAN

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PRELIMINARY
C03 4

GROUND FLOOR DRAINAGE PLAN

Scale: 1 : 100



1. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING.
2. THE BUILDER/CONTRACTOR SHALL LOCATE ALL EXISTING PUBLIC UTILITY SERVICES WITHIN THE SITE, FOOTPATH AREA AND ROAD RESERVE PRIOR TO THE COMMENCEMENT OF ANY WORKS. ALL LOCATIONS AND LEVELS OF SERVICES SHALL BE REPORTED TO THE STORMWATER ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORKS TO ENSURE THERE ARE NO OBSTRUCTIONS IN THE LINE OF THE DRAINAGE DISCHARGE PIPES.
3. PRIOR TO COMMENCING ANY WORKS ON THE SITE, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTION INTO COUNCIL'S KERB/DRAINAGE SYSTEM MATCH THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY
4. ALL STORMWATER DRAINAGE WORK TO AVOID TREE ROOTS. WHERE NOT POSSIBLE, ALL EXCAVATIONS IN VICINITY OF TREE ROOTS ARE TO BE HAND DUG.
5. ALL BASES OF PITS TO BE BENCHED (TO HALF PIPE DEPTH) TO THE INVERT OF THE OUTLET PIPE WITH ALL PIPES CUT FLUSH WITH SIDE OF PIT, TO ALLOW SMOOTH FLOW OF STORMWATER.
6. PROVIDE GALVANISED ANGLE SURROUNDINGS TO GRATE WHERE IN TRAFFICABLE AREAS.
7. PROVIDE 100mm GAP IN BASE OF FENCE FOR EMERGENCY OVERFLOWS.
8. PROVIDE SUBSOIL DRAINAGE AND OUTLETS TO ALL ON PODIUM PLANTER BOXES. OUTLET PIPES NOT SHOWN FOR CLARITY OF DOCUMENTATION.

GENERAL LEGEND

LANDSCAPE
LANDSCAPE ON PODIUM SLAB
HARDSTAND
ROOF AREA TO DRAIN
OSD

PROPOSED TREES
EXISTING TREES

CIV - FIXTURES SCHEDULE

	TYPE	DESCRIPTION
		GRATED LID
		GRATED STORMWATER PIT
		PERIMETER GRATES
		PERIMETER STRIP DRAIN
		SEALED LID
		SEALED STORMWATER PIT
	300W	GRATED STRIP DRAIN
	RWO	RAINWATER OUTLET

CIV - STANDARD SYMBOLS

	DESCRIPTION
	FALL ARROW
	OVERLAND FLOW PATH

CIV - STORMWATER SERVICES

	TYPE	DESCRIPTION
	RM	RISING MAIN
	SS	SUB SOIL DRAINAGE
	STW	STORMWATER

OSD CALCULATIONS

- DESIGN CRITERIA: REDUCE 100-YR POST-DEVELOPMENT BACK TO PRE-DEVELOPMENT LEVELS.
- SITE AREA = 2090m²
- PRE-DEVELOPMENT IMP: 47%
- POST- DEVELOPMENT AREA BYPASSING OSD: 0m² ASSUMED
- POST- DEVELOPMENT AREA TO OSD: 2090m² @ 71% IMPERVIOUS (ONLY COUNTING DEEP SOIL AS PERVIOUS, REMAINING PODIUM AND ROOFTOP LANDSCAPING CONSERVATIVELY COUNTED AS IMPERVIOUS)

USE WBNM RUNOFF-ROUTING MODEL
- WBNM PARAMETERS: LAG C = 1.6, IL=0mm, CLR=2.5 mm/hr
- SSR100 = 8m³ (WBNM RUNOFF ROUTING MODEL)
- Q5 PRE / POST = 88 / 88 L/s [25min]
- Q100 PRE / POST = 140 / 139 L/s [25min]
- IN RFI DATED 19th FEBUARY 2020, COUNCIL NOTES THAT ALTHOUGH BASIX REQUIRES NO RAINWATER TANK, CONSIDERATION SHOULD BE GIVEN TO REDUCING THE OSD VOLUME TO PROVIDE FOR A PROPORTION OF RAINWATER VOLUME FOR IRRIGATION PURPOSES.
- 6m³ VOLUE PROVIDED IN BELOW GROUND RWT THUS 2m³ OF OSD OFFSET ACHIEVED
- OSD VOLUME REQUIRED = 6m³
- OSD VOLUME PROVIDED = 6.7m³ IN TANK UNDER DRIVEWAY [OK]

NOTES:
- BASE OF OSD TANK SET AT +28.70, AT THE OBVERT OF THE EXISTING Ø300mm IN TAREN PT RD (APPROXIMATE HGL IN CONNECTING PIT AT THIS LEVEL)
- PROVIDE DISCHARGE CONTROL CHAMBER WITHIN OSD, SUCH THAT ORIFICE BLOCKAGE WILL CAUSE OVERFLOWS TO GO OVER INTERNAL WEIR, RATHER THAN INTO BASEMENT

WSUD:
- OCEANGUARD PIT INSERTS PROVIDED AS NOTED ON PLANS TO ADDRESS PRE-DA REQUIREMENT FOR STORMWATER TREATMENT DEVICE TO BE PROVIDED.

-10 -5 0 10
SCALE 1:100

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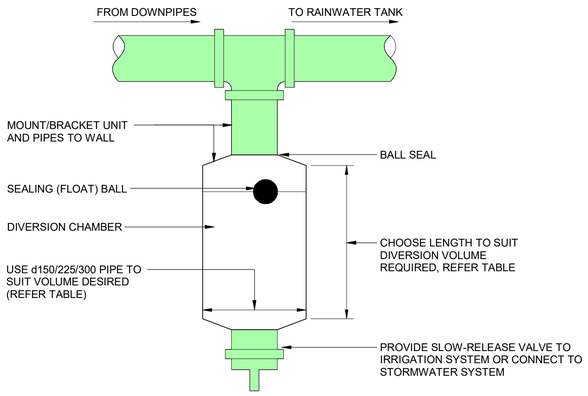
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CHECKED: AMcK
SCALE: As indicated
SIZE: A1

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PROPOSED DEVELOPMENT
310-314 Taren Point Road, Caringbah, NSW
MBD Developments

CIVIL DESIGN
GROUND FLOOR DRAINAGE PLAN

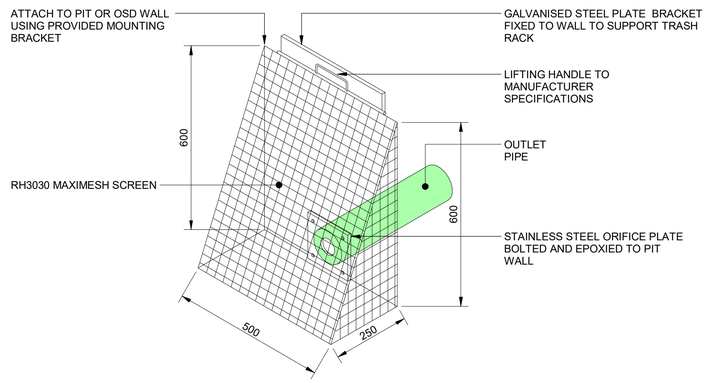
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C04 4



DIVERSION CHAMBER VOLUMES [L]

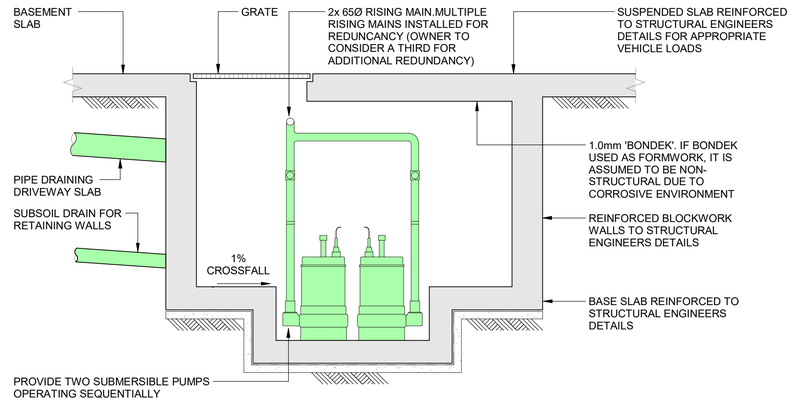
LENGTH [mm]	PIPE SIZE	150Ø	225Ø	300Ø
	250	4	10	18
	500	9	20	35
	1000	18	40	71
	1500	27	60	106

TYPICAL WALL MOUNTED FIRST-FLUSH DEVICE
Scale: 1 : 10



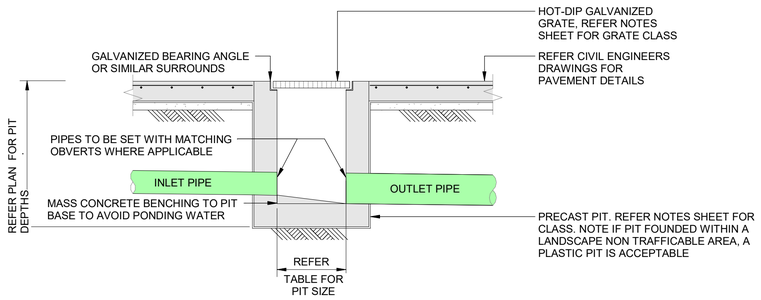
PROVIDE PRE-MADE TRASH SCREEN AS PER MASCOT ENGINEERING "MULTI-PURPOSE TRASH SCREENS" OR APPROVED EQUIVALENT

TYPICAL TRASH SCREEN DETAIL
Scale: 1 : 10



NOTES:
1. REFER TO HYDRAULIC ENGINEERS DEAILS FOR PUMP SPECIFICATIONS.

BASEMENT PUMPOUT TANK DETAIL
Scale: 1 : 20

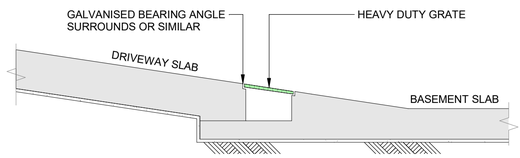


1. ENSURE CLIMB IRONS ARE PROVIDED UNDER LID AT 300 CTS TO COUNCIL'S SPECIFICATIONS WHERE PIT DEPTH IS DEEPER THAN 1000.
2. GREENVIEW RECOMMENDS THE PLUMBER PROVIDES 90Dia x 3000 LONG SUBSOIL DRAINAGE STUB PIPE SURROUNDED WITH 100mm THICKNESS OF NOMINAL 20mm COARSE FILTER MATERIAL WRAPPED IN GEOTEXTILE FILTER FABRIC. (BIDUM A24 OR APPROVED SIMILAR). TO BE PARALLEL TO UPSTREAM SIDE OF EACH INLET PIPE.

PIT SIZE

DEPTH	PIT DIMENSION
0 - 600	450 mm x 450 mm
600 - 900	600 mm x 600 mm
900 - 1200	600 mm x 900 mm
1200 +	900 mm x 900 mm

TYPICAL CONCRETE INLET PIT - CONCRETE SURFACE
Scale: 1 : 20



TYPICAL GRATED DRAIN DETAIL
Scale: 1 : 20

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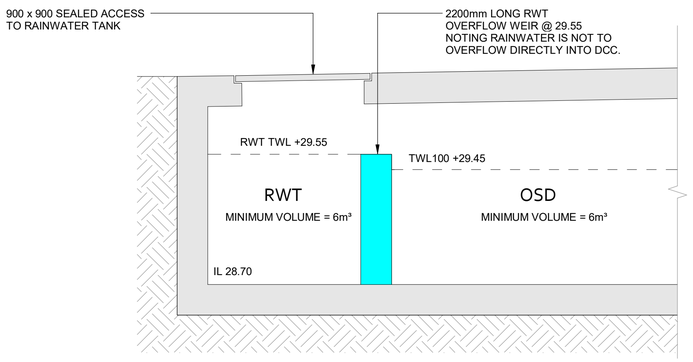
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SCALE: As indicated
SIZE: A1

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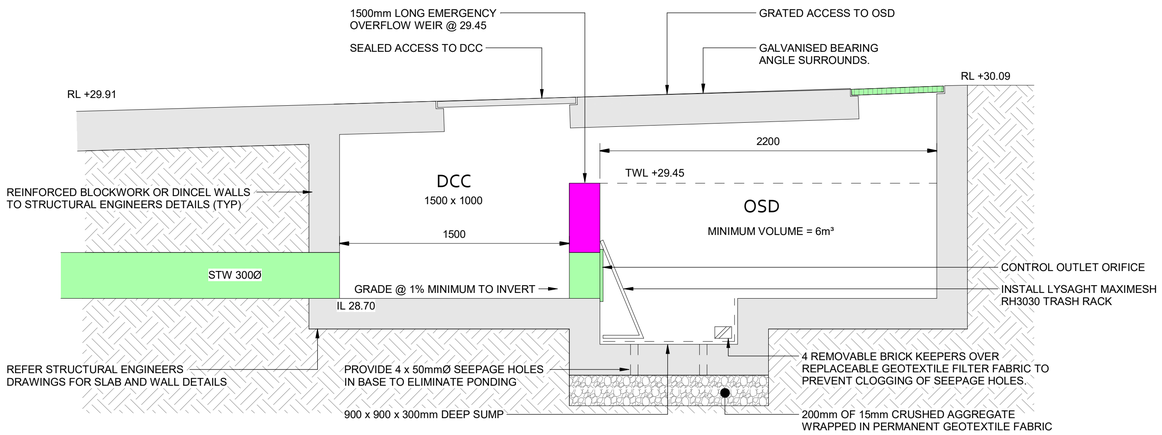
PROPOSED DEVELOPMENT
310-314 Taren Point Road, Caringbah, NSW
MBD Developments

CIVIL DESIGN
SITE STORMWATER DETAILS SHEET 1

181209
PRELIMINARY
C05 4



2 / C03 RWT/OSD SECTION
Scale: 1 : 20



1 / C04 OSD/DCC SECTION
Scale: 1 : 20

REV.	DATE	BY	DESCRIPTION	REV.	DATE	BY	DESCRIPTION
1	08.05.20	LAS	ISSUED FOR APPROVAL				

DESIGN:
CHECKED: AMcK
SCALE: 1 : 20
SIZE: A1

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PROPOSED DEVELOPMENT
310-314 Taren Point Road, Caringbah, NSW
MBD Developments

CIVIL DESIGN
SITE STORMWATER DETAILS SHEET 2

181209
PRELIMINARY
C06 1

PROPOSED DEVELOPMENT

310-314 Taren Point Road, Caringbah, NSW

greenview Job No: 181209

GENERAL INSTRUCTIONS

1. THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
2. CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 1998 (BLUE BOOK).
3. ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.
4. THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS, WHERE DISCREPANCIES ARE FOUND NOTIFY ENGINEER IMMEDIATELY FOR VERIFICATION.
5. WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES.

LAND DISTURBANCE INSTRUCTIONS

1. DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
2. ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
3. ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
4. WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE.
   A. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
   B. CONSTRUCT THE STABILISED SITE ACCESS.
   C. CONSTRUCT DIVERSION DRAINS AS REQUIRED.
   D. INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
   E. INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
   F. CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
   G. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
   H. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
   I. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
5. ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING.
6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.

SITE MAINTENANCE INSTRUCTIONS

1. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
   A. ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
   B. REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
   C. REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
   D. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND NOT TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
   E. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
   F. MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.

THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:

   A. THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
   B. THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
   C. THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
   D. THE NEED FOR DUST PREVENTION STRATEGIES.
   E. ANY REMEDIAL WORKS TO BE UNDERTAKEN.

THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

SAFETY IN DESIGN NOTES

1. THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING. WE NOTE THIS DESIGN IS TYPICAL OF SIMILAR DESIGNS. AS FAR AS IS REASONABLY PRACTICABLE RISKS HAVE BEEN ELIMINATED OR MINIMISED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR, OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS. GREENVIEW ASSESSMENT DID NOT IDENTIFY ANY UNIQUE RISKS ASSOCIATED WITH THE DESIGN.

SEDIMENT CONTROL INSTRUCTIONS

1. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE.
2. SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
3. SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
4. STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
5. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE.
6. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
7. ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

SOIL EROSION CONTROL INSTRUCTIONS

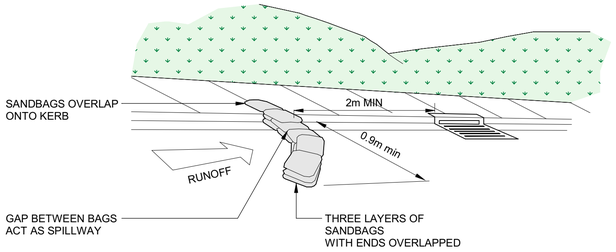
1. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:
   - 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES.
   - 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
   - 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 20 METRES.
   - 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
2. ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
3. WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUNDCOVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER-SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
4. STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
5. ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.
6. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
7. PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND-COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY, FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
8. REVEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

WASTE CONTROL INSTRUCTIONS

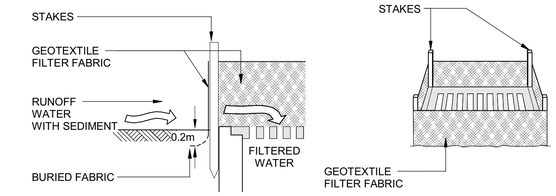
1. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.
2. ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PHONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
3. ALL SITE STAFF AND SUB-CONTRACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
4. ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
5. PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

PROCEDURE FOR DE-WATERING

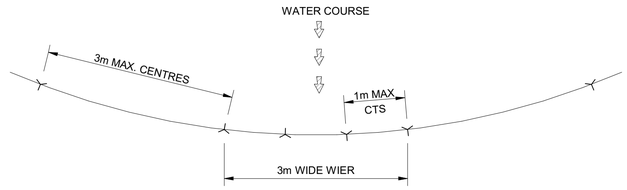
1. ENSURE PERMISSION FOR DE-WATERING IS RECEIVED FROM AUTHORITIES BEFORE PUMPING OUT.
2. AN ON-SITE TREATMENT PROCESS DISCHARGING TO THE STORMWATER SYSTEM WILL BE IMPLEMENTED. ALL SITE WATERS DURING CONSTRUCTION WILL BE CONTAINED ON SITE AND RELEASED ONLY WHEN pH IS BETWEEN 8.5 & 6.5. SUSPENDED SOLIDS ARE LESS THAN 50mg/L, TURBIDITY LESS THAN 100 NTU'S, OIL AND GREASE LESS THAN 10mg/L AND BIOCHEMICAL OXYGEN DEMAND (BOD5) LESS THAN 30mg/L (FOR STORMS LESS THAN 1 IN 5 YEAR EVENTS).
3. METHODS OF SAMPLING AND ANALYSIS OF WATER QUALITY WILL BE IN ACCORDANCE WITH THE APPLICABLE METHOD LISTED IN THE EPA PUBLISHED APPROVED METHODS FOR THE SAMPLING ANALYSIS OF WATER POLLUTANTS IN NEW SOUTH WALES.
4. WHERE LABORATORY ANALYSIS IS REQUIRED AS INDICATED BY IN-SITU TESTING, APPROPRIATE SAMPLE BOTTLES AND PRESERVATIVES WILL BE USED AND GUIDANCE FOR THE SAMPLING METHOD OBTAINED FROM APPLICABLE PARTS OF AS5667.1 AND AS5667.6. ANALYSIS WILL BE UNDERTAKEN WHERE PRACTICAL BY A NATA REGISTERED LABORATORY CERTIFIED TO PERFORM THE APPLICABLE ANALYSIS.
5. AS EXCAVATION TO TOP SOIL PROGRESSES, ANY WATER COLLECTED AT THE BOTTOM OF EXCAVATIONS WILL BE DIVERTED TO A TEMPORARY SEDIMENTATION BASIN OR SETTLEMENT TANK. IF THE WATER CONTAINS ONLY SEDIMENTS, IT WILL BE FILTERED AND PUMPED TO STORMWATER. BEFORE THIS CAN HAPPEN IT MUST CONTAIN LESS THAN 50mg/L TOTAL SUSPENDED SOLIDS.
6. POLLUTED WATER MUST NOT ENTER THE STORMWATER SYSTEM. IN SOME CIRCUMSTANCES, A LIQUID WASTE COMPANY MAY BE REQUIRED TO COLLECT CONTAMINATED WATER FOR DISPOSAL AT A LICENSED TREATMENT FACILITY.



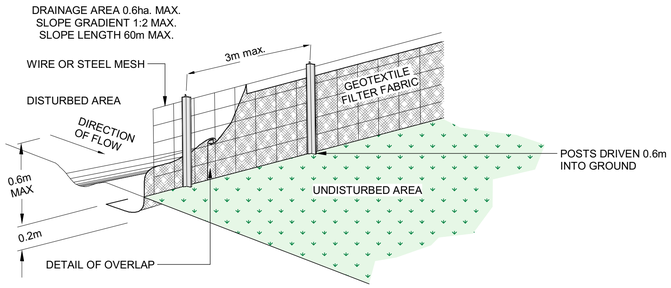
SANDBAG SEDIMENT TRAP
Scale: 1 : 20



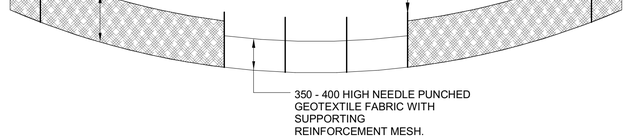
INLET SEDIMENT TRAP
Scale: 1 : 20



PLAN

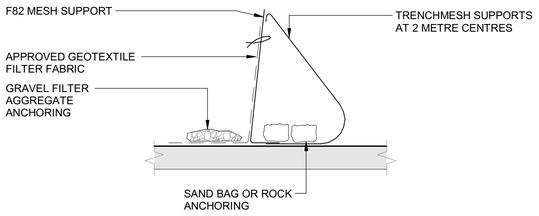


SEDIMENT SILT FENCE
Scale: 1 : 20



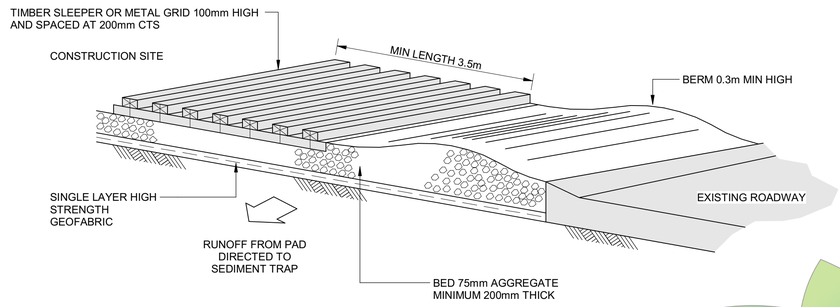
ELEVATION

ESM_SEDIMENT FENCE WEIR
Scale: 1 : 20



1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
3. JOIN SECTIONS OF FABRIC AT A SUPPORT WITH A 150mm OVERLAP.
4. REFER TO DETAIL SD 6-9 "BLUE BOOK"

SILT FENCE BARRIER DETAIL
Scale: 1 : 20



TEMPORARY CONSTRUCTION EXIT
Scale: 1 : 20

REV.	DATE	BY	DESCRIPTION	REV.	DATE	BY	DESCRIPTION
2	08.05.20	LAS	ISSUED FOR APPROVAL				
1	18.09.19	JPS	ISSUED FOR APPROVAL				

DESIGN:
CHECKED: AMcK
SCALE: As indicated
SIZE: A1

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MBD Developments

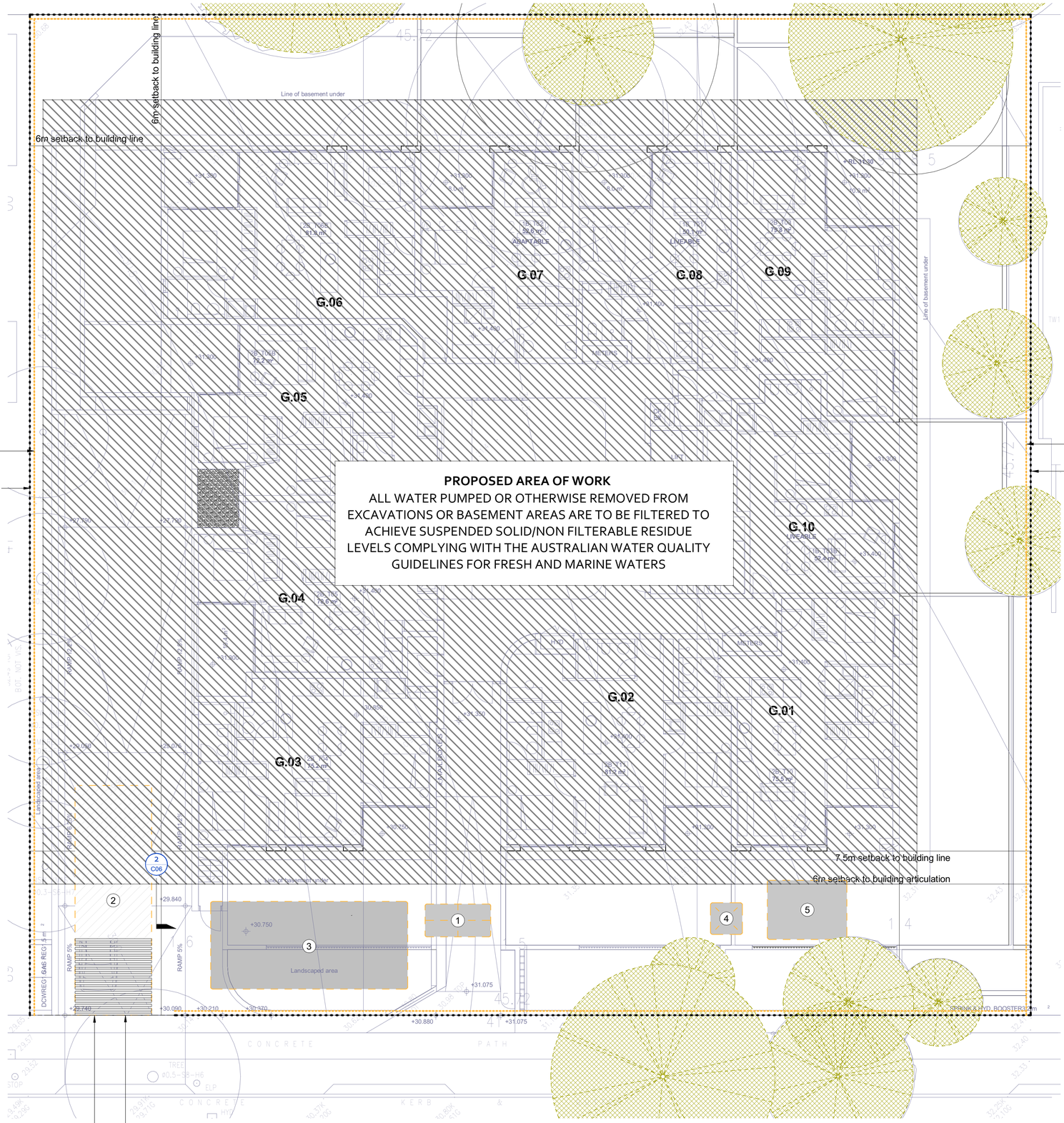
CIVIL DESIGN
NOTES & LEGEND

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PRELIMINARY
ESM12

ENVIRONMENTAL SITE MANAGEMENT LAYOUT

Scale: 1 : 100

FOR NOISE CONTROL, VIBRATION MANAGEMENT, DUST CONTROL, ODOUR CONTROL REFER TO NOTES ON THIS DRAWING.
FOR OTHER NOTES (LITTER/WASTE, STORMWATER) REFER ESM1



SITE MANAGEMENT LEGEND

- CHAIN WIRE FENCE
- SILT FENCE

ESM - SITE MANAGEMENT SCHEDULE	
TYPE	DESCRIPTION
1	SKIP BIN (PROVIDE COVER)
2	SITE ACCESS GRATE
3	MATERIALS STOCKPILE (RELOCATE AS NECESSARY)
4	TOILET FACILITY
5	SITE SHED

NOISE CONTROL
- WHERE POSSIBLE, STRATEGICALLY PLACE NOISE-GENERATING PLANT / EQUIPMENT TO TAKE ADVANTAGE OF NATURAL SCREENING (E.G. BUILDINGS)
- AVOID PLACING NOISE-GENERATING PLANT / EQUIPMENT CLOSE TOGETHER AND/OR OPERATE SIMULTANEOUSLY
- MAINTAIN ALL PLANT & EQUIPMENT TO MINIMISE NOISE EMISSIONS (E.G. REPAIR BROKEN SILENCING EQUIPMENT, TIGHTEN RATTLING COMPONENTS ETC)
- ALL PLANT & EQUIPMENT TO BE OPERATED IN THE CORRECT MANNER TO AVOID UNNECESSARY NOISE EMISSIONS
- ALL DELIVERIES TO SITE TO BE IN ACCORD WITH THE RELEVANT CONSTRUCTION TRAFFIC MANAGEMENT PLAN (CTMP)
- NO PUBLIC ADDRESS SYSTEMS TO BE USED EXCEPT IN THE CASE OF EMERGENCIES
- WHERE NECESSARY, FIT PLANT WITH SILENCERS AND/OR OTHER NOISE ATTENUATION MEASURES
- ENSURE CONSTRUCTION VEHICLES AND PLANT/EQUIPMENT ARE TURNED OFF WHEN NOT IN USE (I.E. AVOID IDLING)

VIBRATION MANAGEMENT
- USE LOW-VIBRATION EMITTING PLANT & EQUIPMENT WHERE POSSIBLE
- WHERE PRACTICAL, USE NON-PERCUSSIVE PILING TECHNIQUES OR PROVIDE ACCOUSTIC SHIELDING

DUST CONTROL
- WHERE POSSIBLE, STAGE ANY VEGETATION REMOVAL TO MINIMISE EXPOSED AREAS
- AREAS EXPOSED (IN THE SHORT TERM) TO BE STABILISED USING WATERING AND/OR GEO-FABRICS AS APPROPRIATE TO MINIMISE DUST GENERATION
- MODIFY / REDUCE CONSTRUCTION ACTIVITIES DURING HIGH WIND CONDITIONS IF INCREASED DUST GENERATION IS A POSSIBILITY
- DUST CONTROL MEASURES TO BE IMPLEMENTED AS THE SITE SUPERVISOR DEEMS APPROPRIATE, INCLUDING WATER ARTS, SPRINKLERS, SPRAYS, DUST SCREENS, ETC
- CHECK EROSION CONTROL MEASURE REGULARLY TO ENSURE CAPTURED SILT DOES NOT BECOME AIRBORNE

ODOUR CONTROL
- SEGRATE AND COLLECT WASTE REGULARLY TO ENSURE ODOURS ARE MINIMISED
- NO BURNING-OFF OF WASTE AT ANY TIME
- REMOVE WASTE BINS FROM SITE REGULARLY

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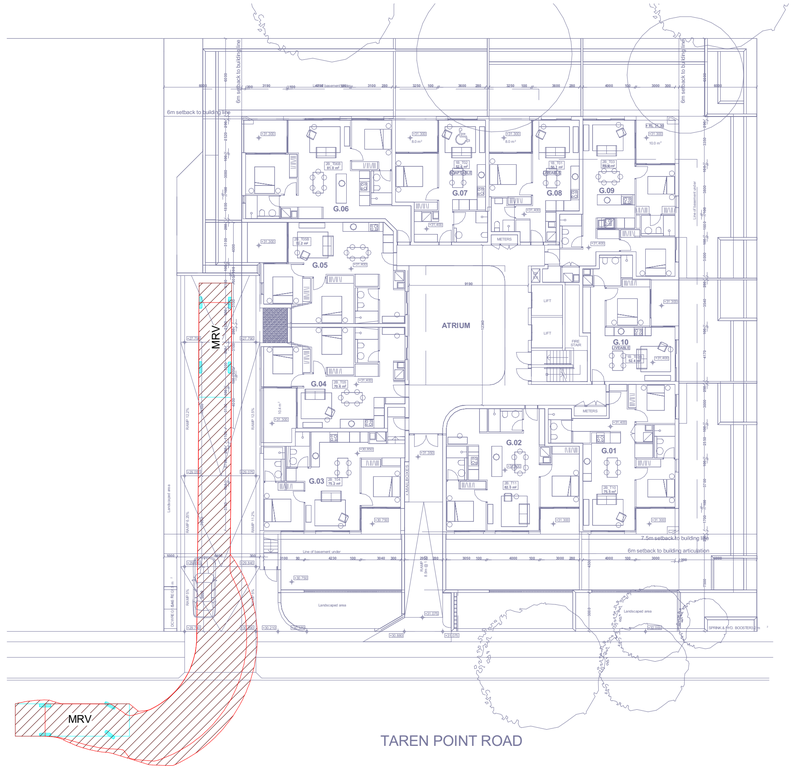
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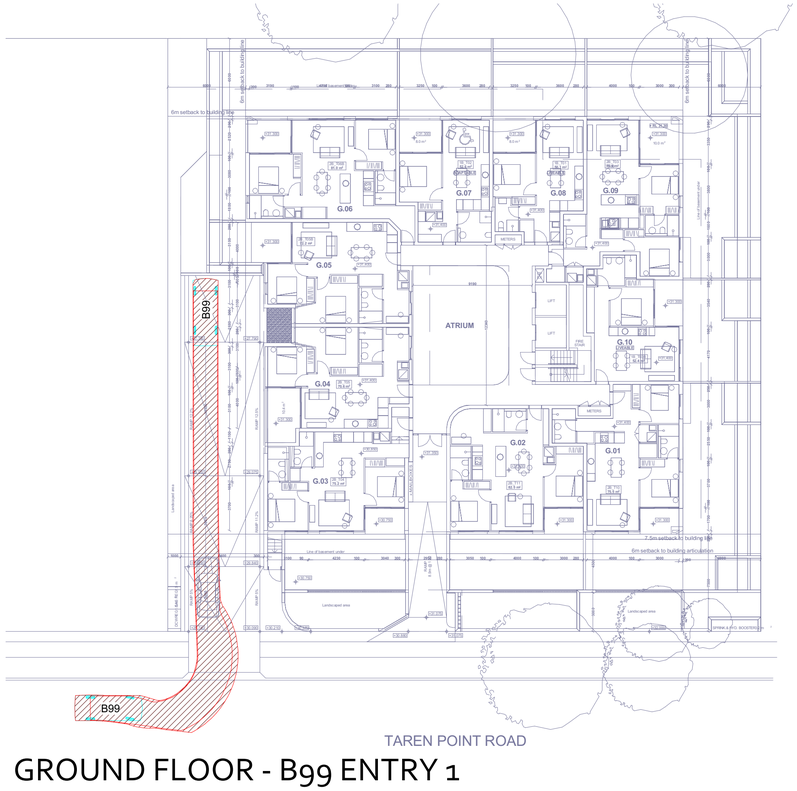
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CIVIL DESIGN
ENVIRONMENTAL SITE MANAGEMENT LAYOUT

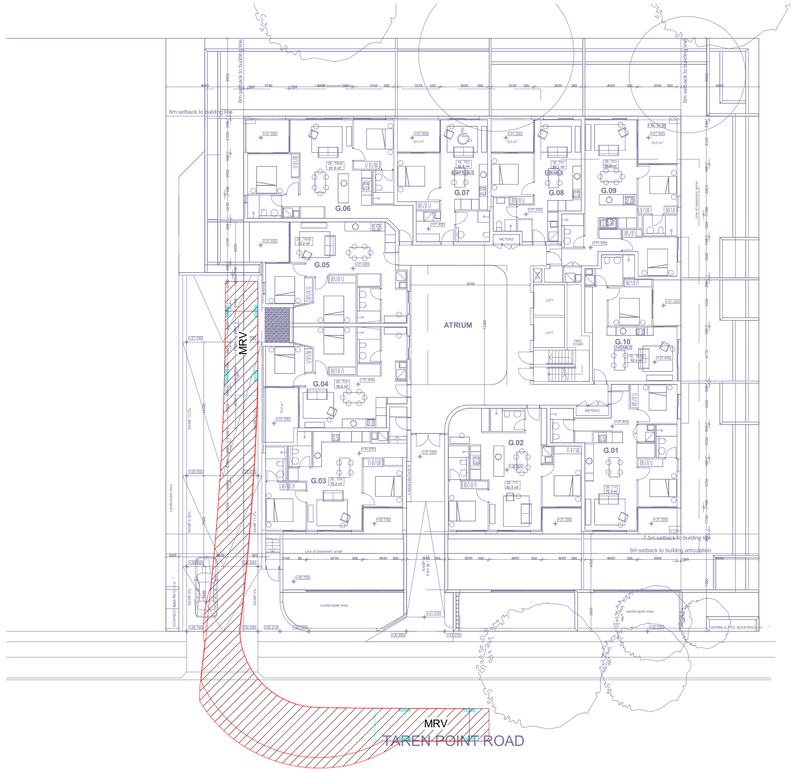
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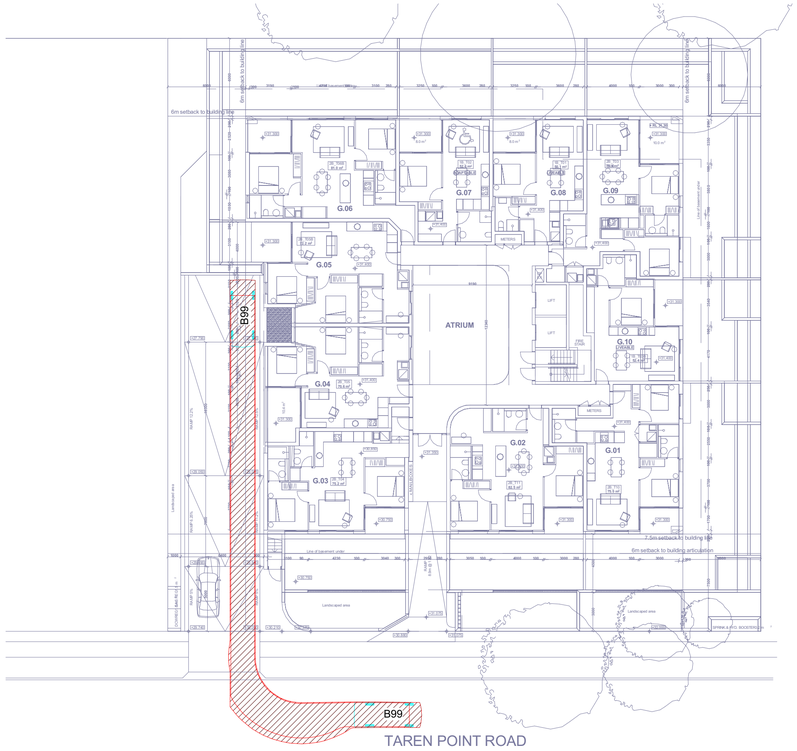
GROUND FLOOR - MRV ENTRY 1



GROUND FLOOR - B99 ENTRY 1



GROUND FLOOR - MRV EXIT 1



GROUND FLOOR - B99 EXIT 1

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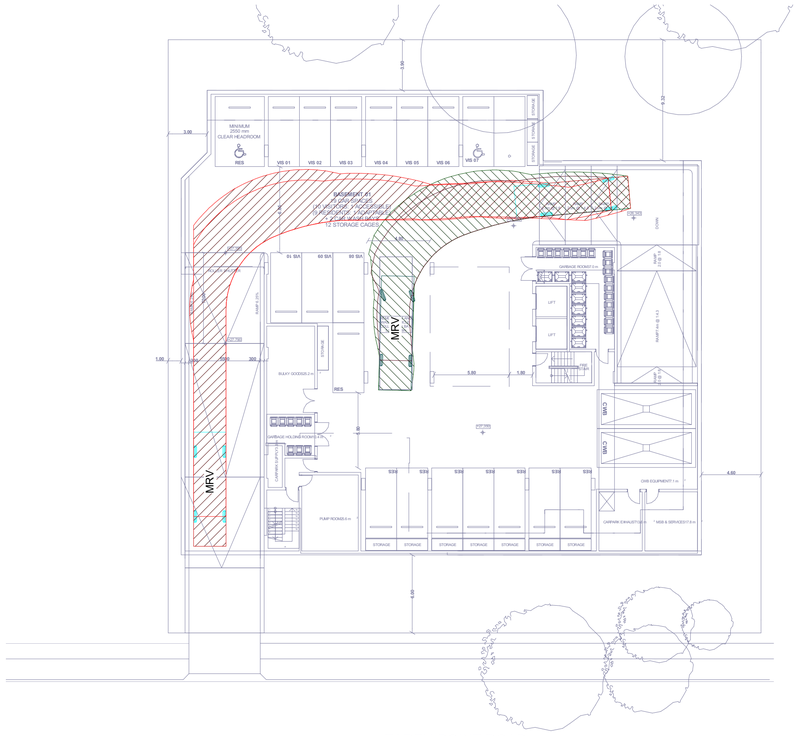
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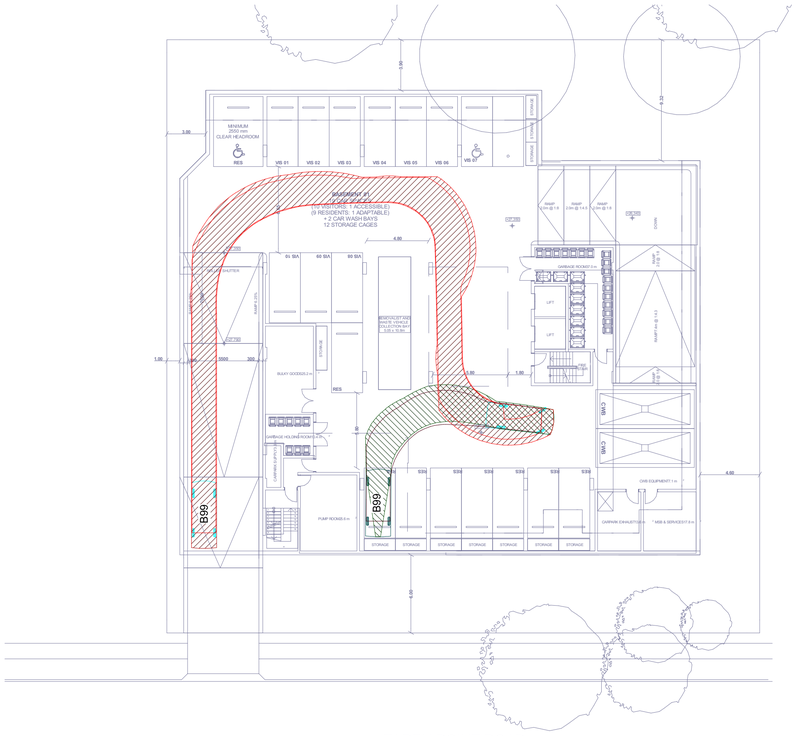
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GROUND FLOOR TURNING PATHS SHEET 1

181209
PRELIMINARY
C10 1



TAREN POINT ROAD

BASEMENT 1 - MRV ENTRY 1



TAREN POINT ROAD

BASEMENT 1 - B99 ENTRY 1

TAREN POINT ROAD

BASEMENT 1 - MRV EXIT 2

TAREN POINT ROAD

BASEMENT 1 - B99 EXIT 1

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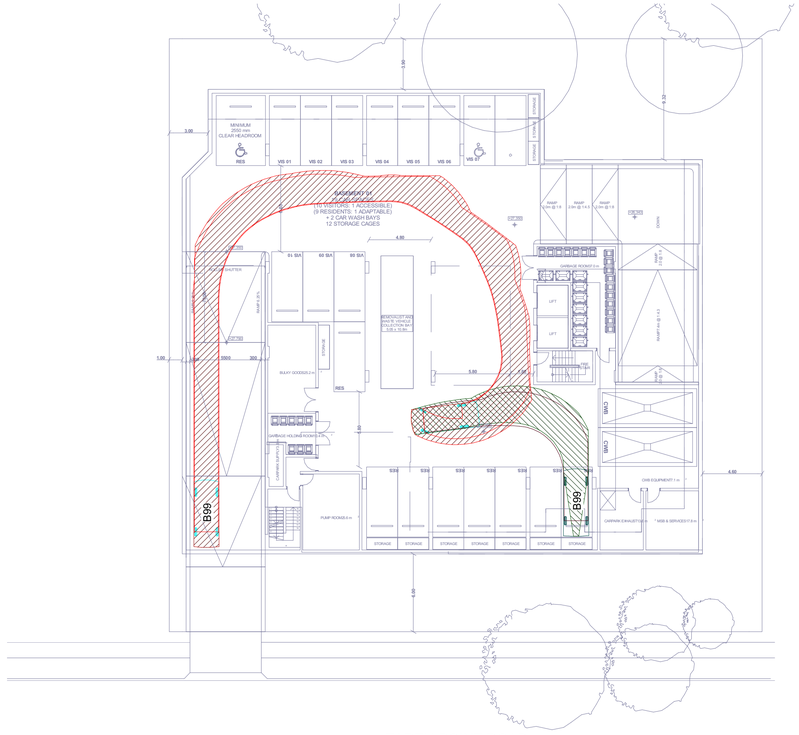
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MBD Developments

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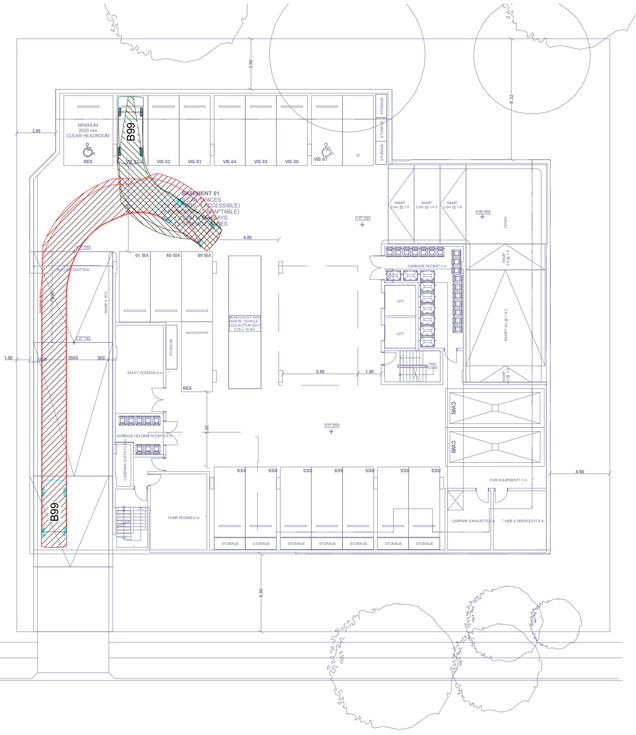
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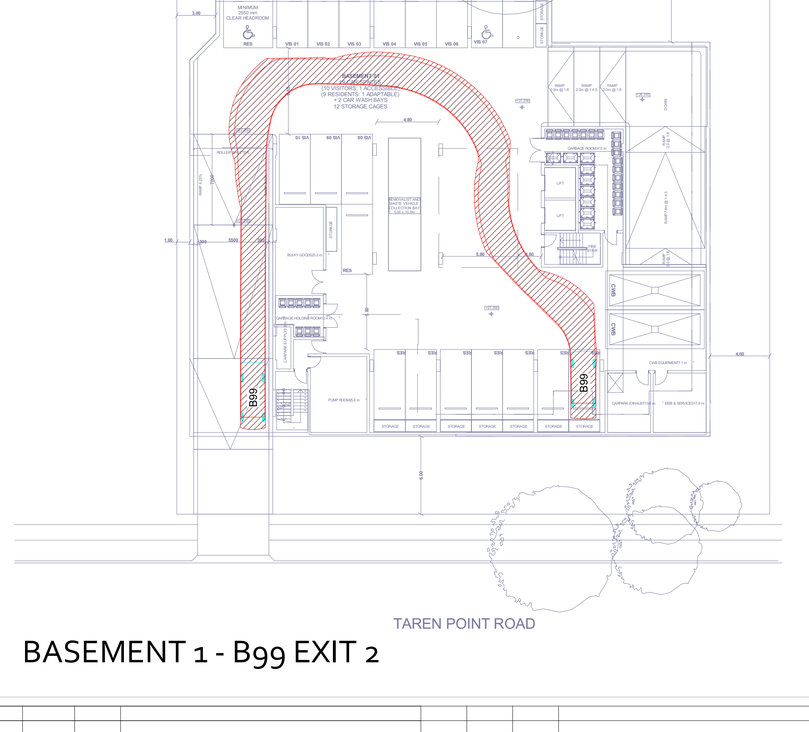
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BASEMENT 1 - B99 ENTRY 2



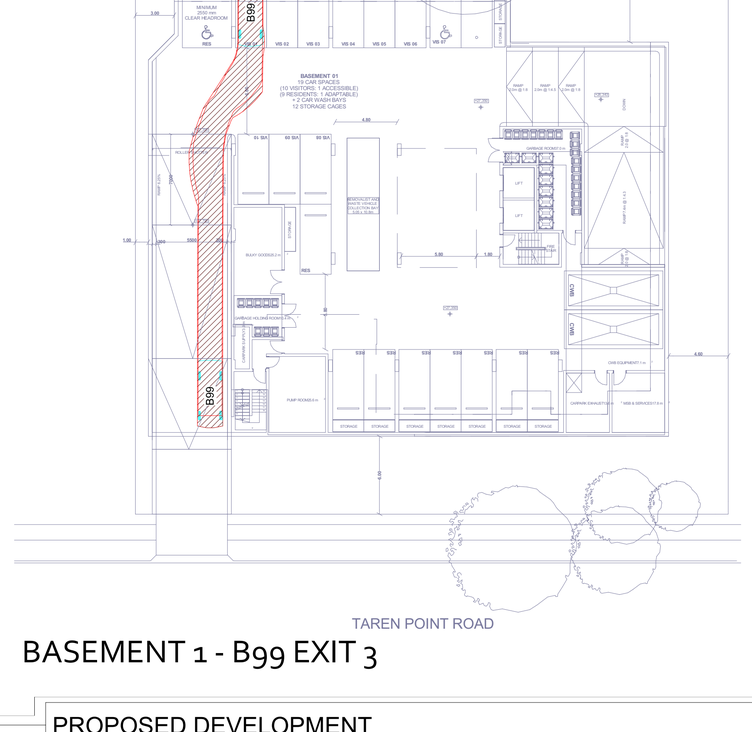
TAREN POINT ROAD

BASEMENT 1 - B99 ENTRY 3



TAREN POINT ROAD

BASEMENT 1 - B99 EXIT 2



TAREN POINT ROAD

BASEMENT 1 - B99 EXIT 3

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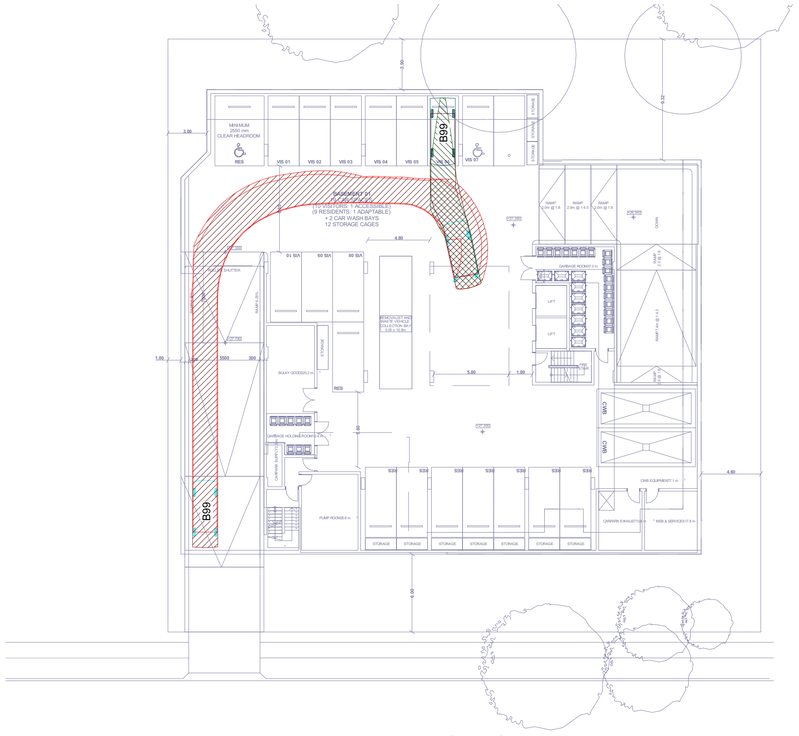
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MBD Developments

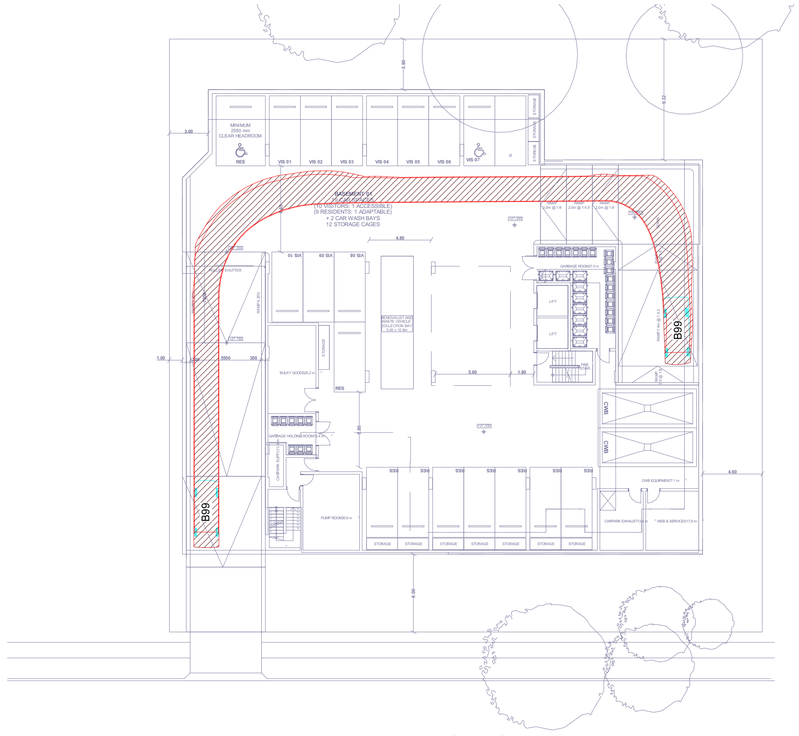
CIVIL DESIGN
BASEMENT 1 TURNING PATHS SHEET 2

181209
PRELIMINARY
C12 1



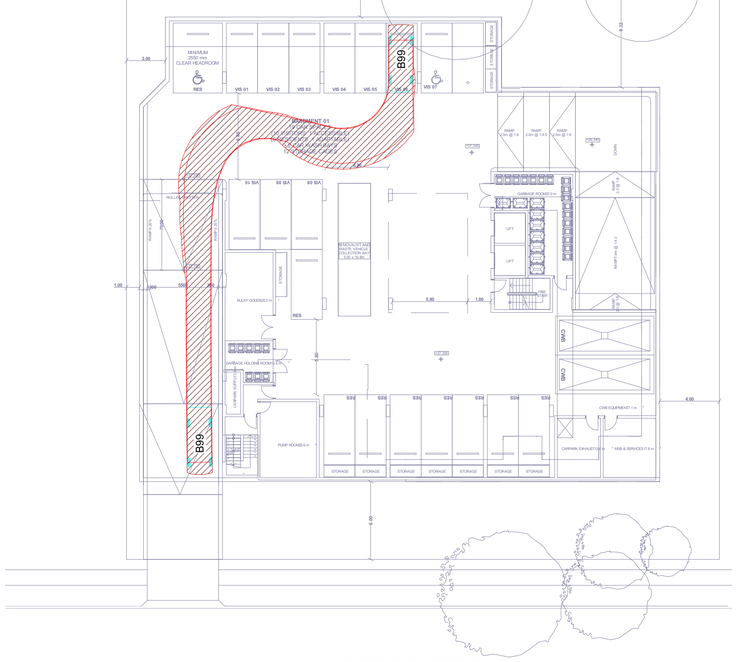
TARENPOINT ROAD

BASEMENT 1 - B99 ENTRY 4



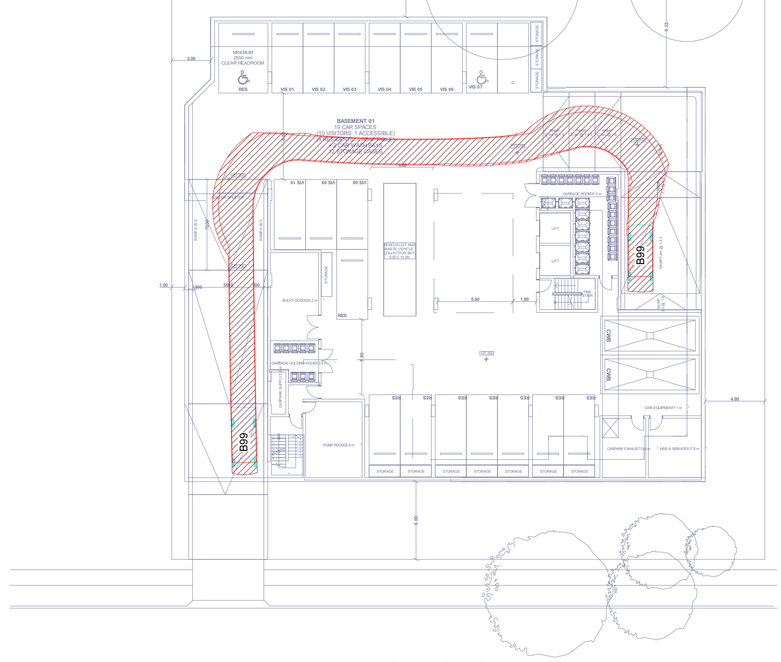
TARENPOINT ROAD

BASEMENT 1 - B99 ENTRY 5



TARENPOINT ROAD

BASEMENT 1 - B99 EXIT 4



TARENPOINT ROAD

BASEMENT 1 - B99 EXIT 5

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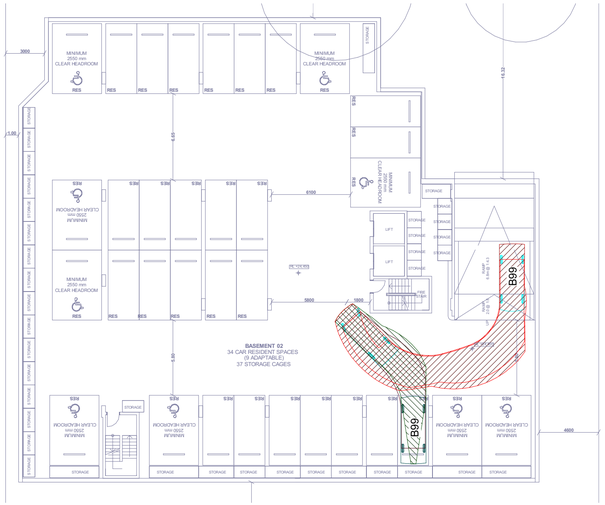
PROPOSED DEVELOPMENT
310-314 Taren Point Road, Caringbah, NSW
MBD Developments

CIVIL DESIGN
BASEMENT 1 TURNING PATHS SHEET 3

181209
PRELIMINARY
C13 1



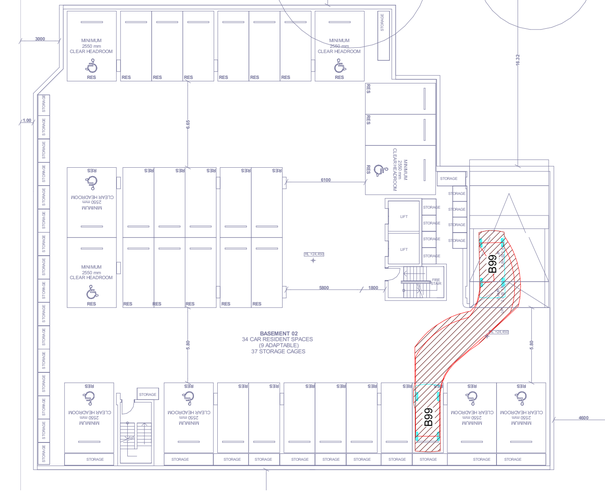
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BASEMENT 2 - B99 ENTRY 2



BASEMENT 2 - B99 EXIT 1



BASEMENT 2 - B99 EXIT 2

REV.	DATE	BY	DESCRIPTION	REV.	DATE	BY	DESCRIPTION
1	08.05.20	LAS	ISSUED FOR APPROVAL				

DESIGN:
CHECKED: AMcK
SCALE: 1 : 6000
SIZE: A1

greenview CONSULTING

PROPOSED DEVELOPMENT
310-314 Taren Point Road, Caringbah, NSW
MBD Developments

CIVIL DESIGN
BASEMENT 2 TURNING PATHS SHEET 1

181209
PRELIMINARY
C14 1



BASEMENT 2 - B99 ENTRY 3



BASEMENT 2 - B99 EXIT 3



BASEMENT 2 - B99 EXIT 4

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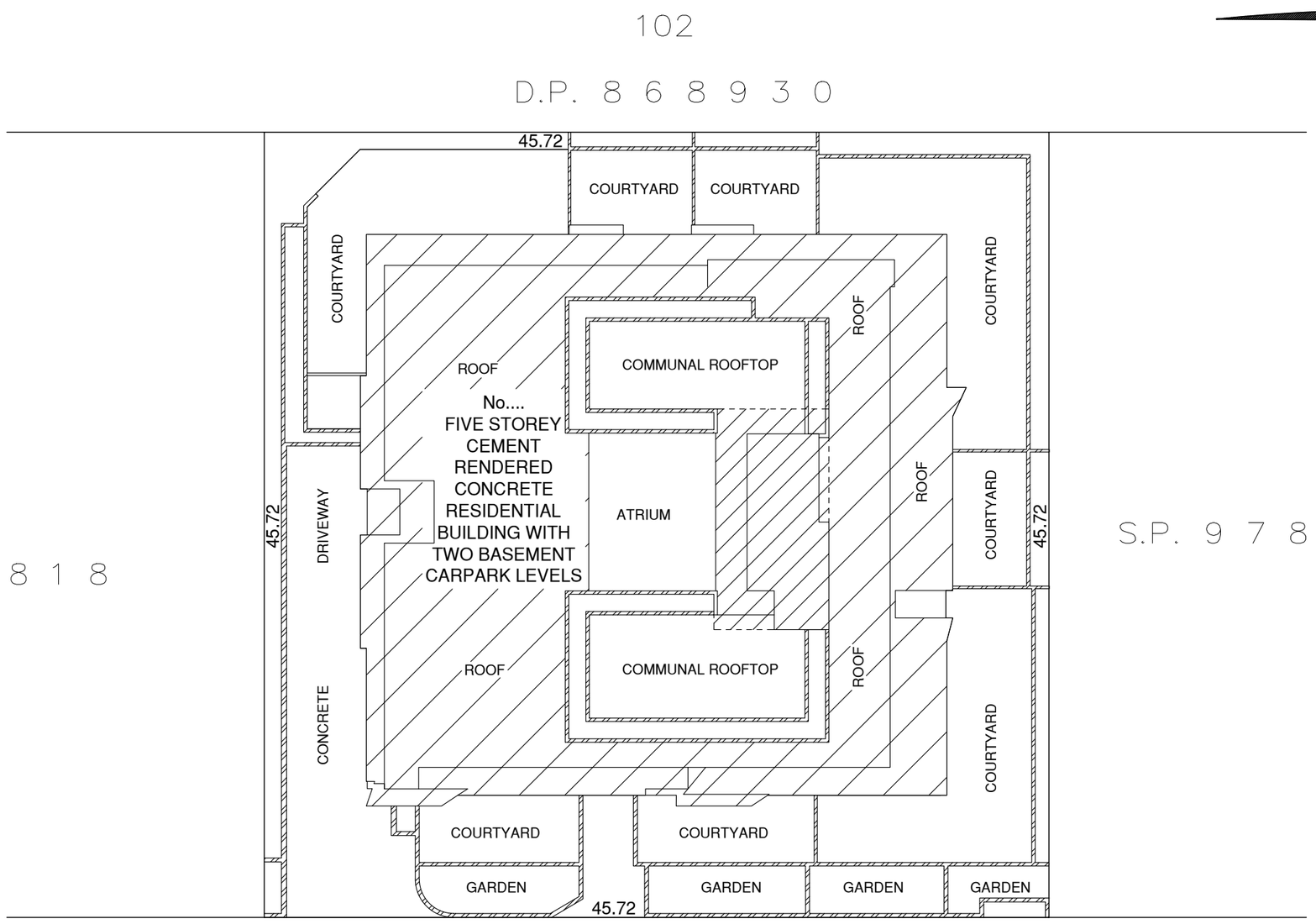
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CIVIL DESIGN
BASEMENT 2 TURNING PATHS SHEET 2

181209
PRELIMINARY
C15 1

cibar LANDSURVEYORS
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CP DENOTES COMMON PROPERTY

CY DENOTES COURTYARD

B DENOTES BALCONY (TILED)

T DENOTES TERRACE (TILED)

PB DENOTES PLANTER BOX (COMMON PROPERTY)

R DENOTES NON TRAFFICABLE ROOF

W DENOTES PROLONGATION INNER FACE OF WALL

Z DENOTES PROLONGATION CENTRE OF WALL

TAREN POINT ROAD

LOCATION PLAN

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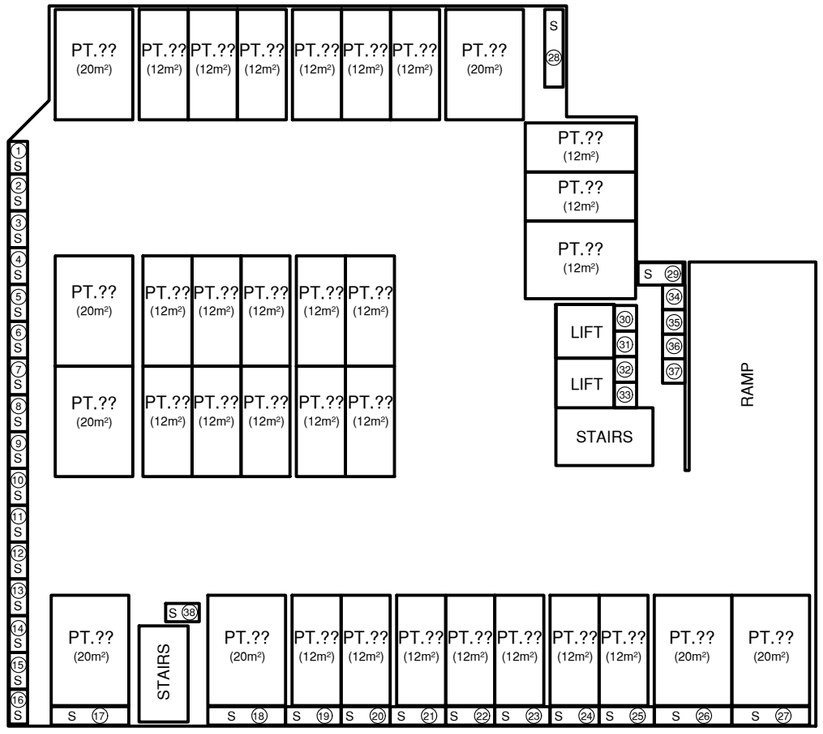
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BASEMENT 2 FLOOR PLAN

CP DENOTES COMMON PROPERTY

S DENOTES STEEL MESH STORAGE CAGE

G DENOTES GARAGE

AREAS ARE APPROXIMATE & ARE MEASURED FOR STRATA PURPOSES ONLY.

STORAGE CAGES

No.	PART LOT	AREA
1	PT. ??	1m²
2	PT. ??	1m²
3	PT. ??	1m²
4	PT. ??	1m²
5	PT. ??	1m²
6	PT. ??	1m²
7	PT. ??	1m²
8	PT. ??	1m²
9	PT. ??	1m²
10	PT. ??	1m²
11	PT. ??	1m²
12	PT. ??	1m²
13	PT. ??	1m²
14	PT. ??	1m²
15	PT. ??	1m²
16	PT. ??	1m²
17	PT. ??	3m²
18	PT. ??	3m²
19	PT. ??	2m²
20	PT. ??	2m²
21	PT. ??	2m²
22	PT. ??	2m²
23	PT. ??	2m²
24	PT. ??	2m²
25	PT. ??	2m²
26	PT. ??	3m²
27	PT. ??	3m²
28	PT. ??	3m²
29	PT. ??	2m²
30	PT. ??	1m²
31	PT. ??	1m²
32	PT. ??	1m²
33	PT. ??	1m²
34	PT. ??	1m²
35	PT. ??	1m²
36	PT. ??	1m²
37	PT. ??	1m²
38	PT. ??	1m²

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AND AREAS ARE APPROXIMATE AND SUBJECT TO FINAL SURVEY.

STORAGE CAGES		
No.	PART LOT	AREA
(39)	PT. ??	1m²
(40)	PT. ??	1m²
(41)	PT. ??	1m²
(42)	PT. ??	2m²
(43)	PT. ??	2m²
(44)	PT. ??	2m²
(45)	PT. ??	2m²
(46)	PT. ??	2m²
(47)	PT. ??	2m²
(48)	PT. ??	2m²
(49)	PT. ??	2m²



CP DENOTES COMMON PROPERTY

S DENOTES STEEL MESH STORAGE CAGE

G DENOTES GARAGE

AREAS ARE APPROXIMATE & ARE MEASURED FOR STRATA PURPOSES ONLY.

BASEMENT 1 FLOOR PLAN

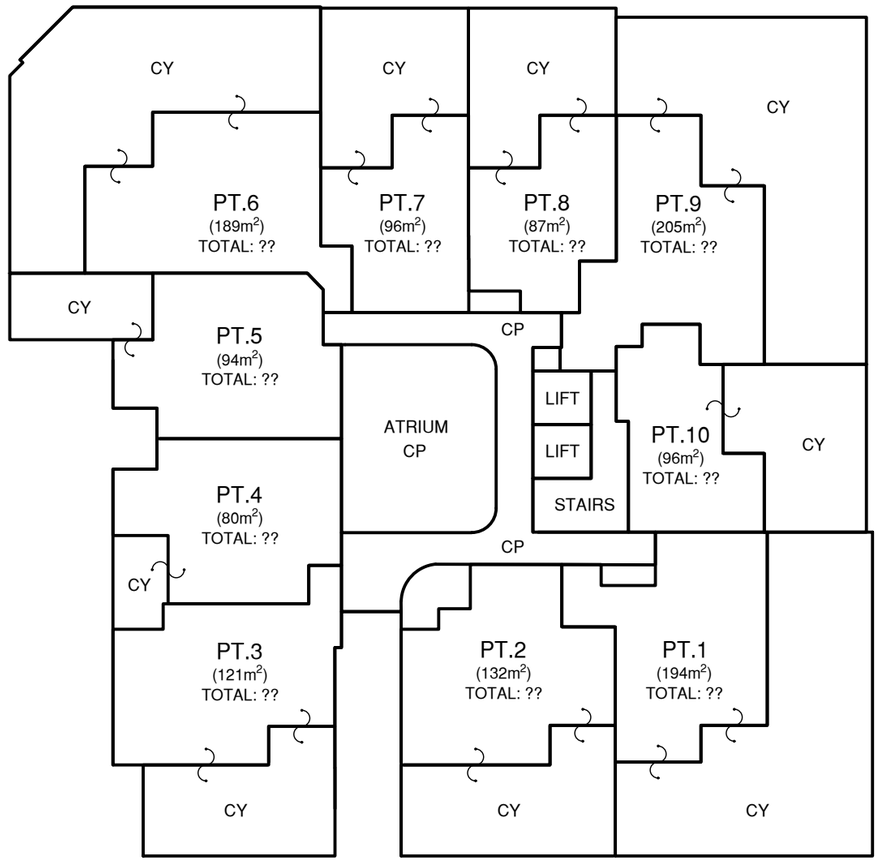
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CP DENOTES COMMON PROPERTY

CY DENOTES COURTYARD

T DENOTES TERRACE (TILED)

PB DENOTES PLANTER BOX

W DENOTES PROLONGATION INNER FACE OF WALL

Z DENOTES PROLONGATION CENTRE OF WALL

⌞ DENOTES RIGHT ANGLE (90°)

1. AREAS ARE APPROXIMATE & ARE MEASURED FOR STRATA PURPOSES ONLY.

2. COURTYARDS & PLANTER BOX ARE LIMITED IN HEIGHT AND DEPTH TO 2.7 METRES ABOVE AND BELOW THE UPPER SURFACE OF THEIR RESPECTIVE GROUND FLOOR UNIT LEVELS, UNLESS COVERED WITHIN THIS LIMIT.TERRACES ARE LIMITED IN HEIGHT TO 2.7 METRES ABOVE THE UPPER SURFACE OF THEIR RESPECTIVE GROUND FLOOR UNIT LEVELS,UNLESS COVERED WITHIN THIS LIMIT.

GROUND FLOOR PLAN

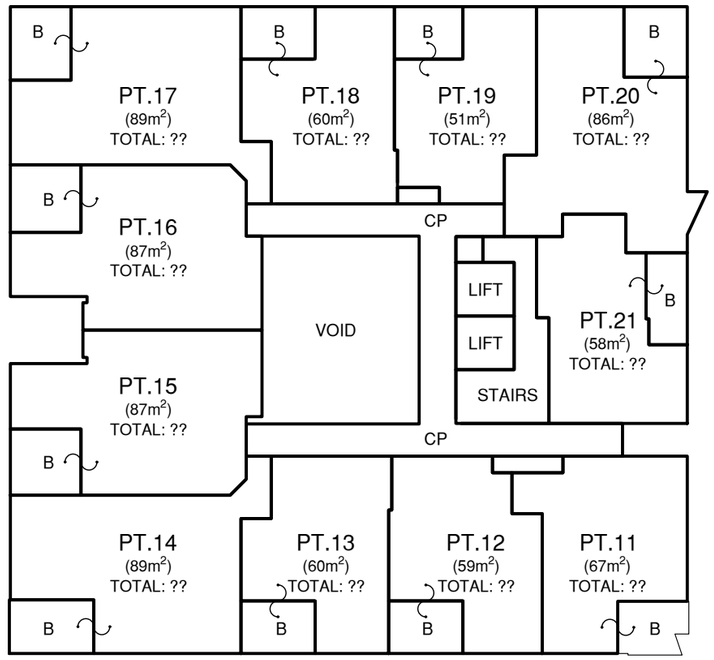
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FIRST FLOOR PLAN

CP DENOTES COMMON PROPERTY

B DENOTES BALCONY (TILED)

1. AREAS ARE APPROXIMATE & MEASURED FOR STRATA PURPOSES ONLY.

2. BALCONIES ARE LIMITED IN HEIGHT TO 2.7 METRES ABOVE ITS RESPECTIVE CONCRETE FLOOR EXCEPT WHERE COVERED IN THIS HEIGHT STATEMENT.

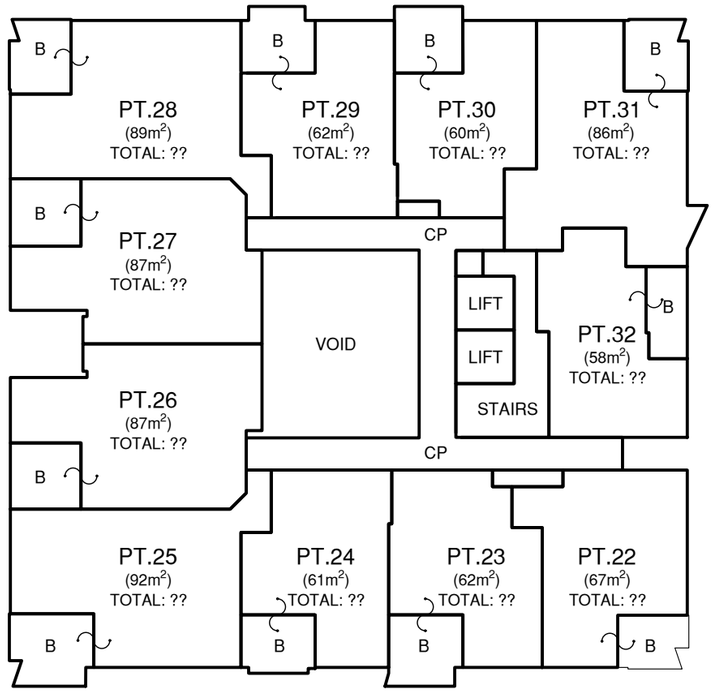
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CP DENOTES COMMON PROPERTY

B DENOTES BALCONY (TILED)

SECOND FLOOR PLAN

1. AREAS ARE APPROXIMATE & MEASURED FOR STRATA PURPOSES ONLY.
2. BALCONIES ARE LIMITED IN HEIGHT TO 2.7 METRES ABOVE ITS RESPECTIVE CONCRETE FLOOR EXCEPT WHERE COVERED IN THIS HEIGHT STATEMENT.

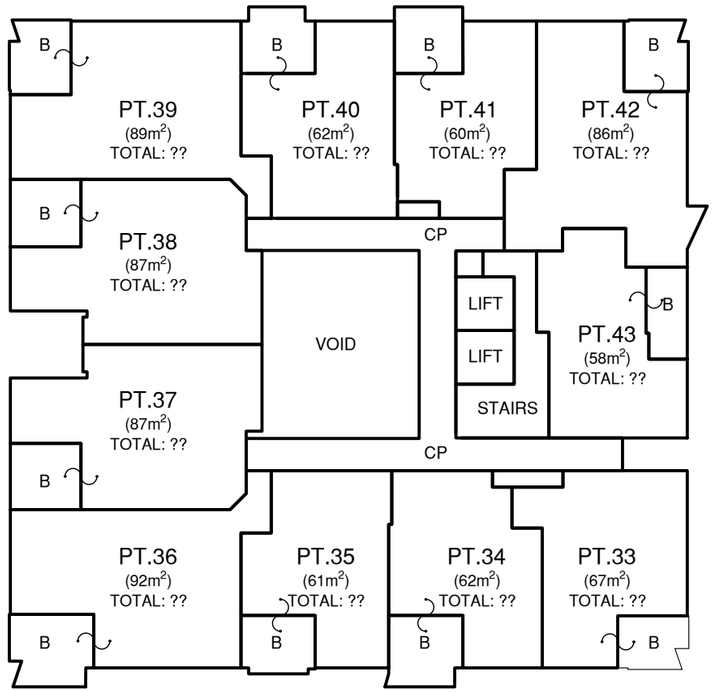
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CP DENOTES COMMON PROPERTY

B DENOTES BALCONY (TILED)

THIRD FLOOR PLAN

1. AREAS ARE APPROXIMATE & MEASURED FOR STRATA PURPOSES ONLY.
2. BALCONIES ARE LIMITED IN HEIGHT TO 2.7 METRES ABOVE ITS RESPECTIVE CONCRETE FLOOR EXCEPT WHERE COVERED IN THIS HEIGHT STATEMENT.

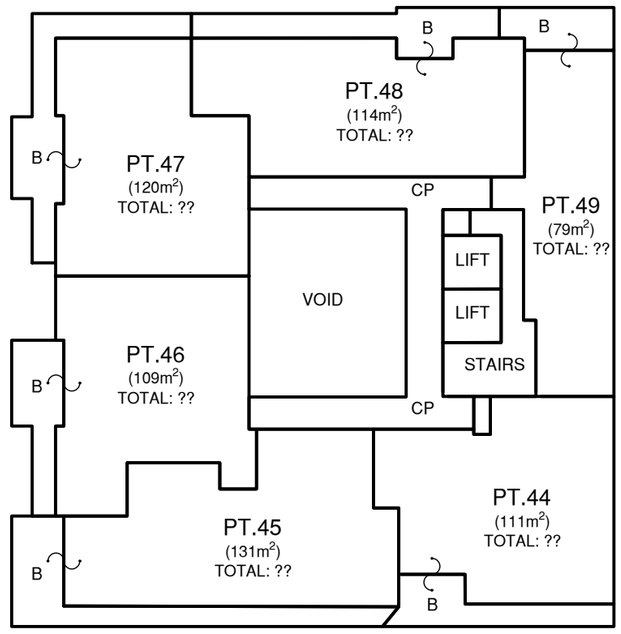
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FOURTH FLOOR PLAN

CP DENOTES COMMON PROPERTY

B DENOTES BALCONY (TILED)

1. AREAS ARE APPROXIMATE & MEASURED FOR STRATA PURPOSES ONLY.

2. BALCONIES ARE LIMITED IN HEIGHT TO 2.7 METRES ABOVE ITS RESPECTIVE CONCRETE FLOOR EXCEPT WHERE COVERED IN THIS HEIGHT STATEMENT.

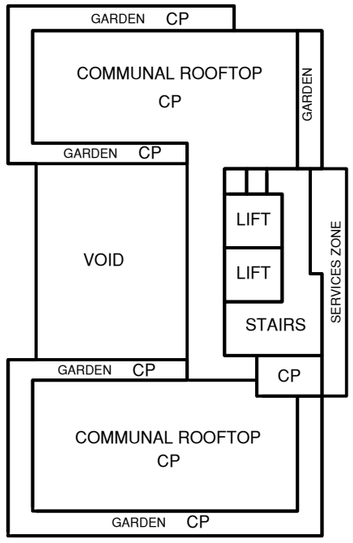
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CP DENOTES COMMON PROPERTY

B DENOTES BALCONY (TILED)

ROOF FLOOR PLAN

1. AREAS ARE APPROXIMATE & MEASURED FOR STRATA PURPOSES ONLY.
2. BALCONIES ARE LIMITED IN HEIGHT TO 2.7 METRES ABOVE ITS RESPECTIVE CONCRETE FLOOR EXCEPT WHERE COVERED IN THIS HEIGHT STATEMENT.

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RENZO TONIN & ASSOCIATES
inspired to achieve

Acoustics
Vibration
Structural Dynamics

310-314 TAREN POINT ROAD, CARINGBAH

Acoustic Assessment for Development Application

30 September 2020

MBD Developments

TK704-01F02 Acoustic Report for DA (r2)

Sydney Melbourne Brisbane Gold Coast Kuwait
Renzo Tonin & Associates ABN 29 117 462 861
Level 1/418A Elizabeth St SURRY HILLS NSW 2010 | PO Box 877 STRAWBERRY HILLS NSW 2012
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Document details

Detail	Reference
Doc reference:	TK704-01F02 Acoustic Report for DA (r2)
Prepared for:	MBD Developments
Address:	C/- Planning Ingenuity Suite 210, 531-533 Kingsway, Miranda NSW 2228
Attention:	Phoebe Jarvis

Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Instructed	Authorised
21.06.2019	Prepare draft	0		T. Wong		T. Wong
25.06.2019	Finalise report		1	T.H. Wong		T. Wong
29.09.2020	Provide acoustic treatment for atrium (Section 4.3)		2	T. Wong		T. Wong
30.09.2020	Update Section 4.3		3	T. Wong		T. Wong

Important Disclaimer:

The work presented in this document was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001.

This document is issued subject to review and authorisation by the Team Leader noted by the initials printed in the last column above. If no initials appear, this document shall be considered as preliminary or draft only and no reliance shall be placed upon it other than for information to be verified later.

This document is prepared for the particular requirements of our Client referred to above in the 'Document details' which are based on a specific brief with limitations as agreed to with the Client. It is not intended for and should not be relied upon by a third party and no responsibility is undertaken to any third party without prior consent provided by Renzo Tonin & Associates. The information herein should not be reproduced, presented or reviewed except in full. Prior to passing on to a third party, the Client is to fully inform the third party of the specific brief and limitations associated with the commission.

In preparing this report, we have relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, we have not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

We have derived data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination and re-evaluation of the data, findings, observations and conclusions expressed in this report.

We have prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

The information contained herein is for the purpose of acoustics only. No claims are made and no liability is accepted in respect of design and construction issues falling outside of the specialist field of acoustics engineering including and not limited to structural integrity, fire rating, architectural buildability and fit-for-purpose, waterproofing and the like. Supplementary professional advice should be sought in respect of these issues.

Executive summary

Renzo Tonin & Associates were engaged to conduct an environmental noise assessment of the proposed five storey residential development at 310-314 Taren Point Road, Caringbah, to accompany an application for Development Application.

As a result of our assessment of the following potential acoustic issues were identified;

- Traffic noise associated with Taren Point Road intruding into the development

This report presents an assessment of the above acoustic components in terms of Council's Development Control Plans, State Environmental Planning Policy (Infrastructure), Australian Standards and NSW Environment Protection Authority noise policies.

External Noise Intrusion into the Development

External noise intrusions into the development have been assessed in accordance with Sutherland Shire Council DCP 2006, ISEPP 2007, Australian Standard AS2107 and EPA Industrial Noise Policy. The major noise intrusion sources were identified as road traffic noise.

On the basis of the external noise impacting upon the development site, appropriate design of the building envelope is required to achieve a suitable indoor amenity for occupants. Our assessment has established laminated glass will be required on the worst affected external building facade.

Noise Emission Generated by the Development

Noise from mechanical plant such as building exhaust systems and air-conditioning associated with the development has the potential to impact on nearby noise-sensitive premises. As details of mechanical plant are not available at this stage of the development in-principle noise control advice are present in this report.

Construction Noise

The major construction activities proposed on this site are excavation works, concrete pours and general building works. Construction and building work will be adequately managed so as to minimise disruption to the local community and the environment. As details of construction equipment and operating time are not available at this stage of the project, in-principle noise and vibration measures are provided in this report.

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Noise Emission Generated by the Development iii
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1 Introduction

Renzo Tonin & Associates were engaged to assess noise impacts onto and from the proposed residential building at 310-314 Taren Point Road, Caringbah.

This study examines the effects of external noise intrusion onto the proposed development from road traffic noise. A noise survey was carried out on a neighbouring property at 306 Taren Point Road, Caringbah by Renzo Tonin & Associates from 10/11/2017 to 17/11/2017 to establish the existing levels of external noise affecting development. These noise levels were used to predict noise levels inside the future apartments and then assessed against the recommended internal noise criteria for the project.

The work documented in this report was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001.

The following architectural drawings from Manor House Design were reviewed.

Table 1: Drawings Reviewed

Drawing No.	Issue	Date	Title
DA101	K	01.05.2020	Basement 2 Plan
DA102	K	01.05.2020	Basement 1 Plan
DA103	K	01.05.2020	Ground Floor Plan
DA104	K	01.05.2020	Level 1 Floor Plan
DA105	K	01.05.2020	Level 2 Floor Plan
DA106	K	01.05.2020	Level 3 Floor Plan
DA107	K	01.05.2020	Level 4 Floor Plan
DA108	K	01.05.2020	Roof Plan
DA201	K	01.05.2020	West Elevation
DA202	K	01.05.2020	South Elevation
DA203	K	01.05.2020	East Elevation
DA204	K	01.05.2020	North Elevation
DA301	K	01.05.2020	Section AA
DA302	K	01.05.2020	Section BB

2 Internal Noise Criteria

A long-term noise survey was conducted on neighbouring site at 306 Taren Point Road, Caringbah from 10/11/2017 to 17/11/2017 to determine existing levels of ambient and background noise surrounding the site. These levels were used to predict noise levels within the residential spaces and assessed against the internal noise criteria recommended for this development.

2.1 Road Traffic Noise Criteria

Table 2 below presents internal noise criteria recommended for this development which was based on the following documentations;

1. Sutherland Shire Council Development Control Plan 2006
2. State Environment Planning Policy (Infrastructure 2007)
3. Department of Planning publication "Development Near Rail Corridors & Busy Roads – Interim Guideline" 2008
4. Australian Standard AS/NZS 2107:2000 "Acoustics – Recommended design sound pressure levels and reverberation times for building interior"

The Roads and Maritime Services (RMS) have identified Taren Point Road as a road that requires mandatory acoustic assessment in accordance with the State Environment Planning Policy (Infrastructure) 2007, meaning that the average annual daily traffic (AADT) volume on this road is greater than 40,000 vehicles per day - refer to RMS ISEPP Map 19 attached in APPENDIX B.

The internal noise criteria for this development as per ISEPP is outlined in Table 2 below and defined in APPENDIX A of this report.

Table 2: Recommended Maximum Internal Traffic Noise Level

Type of Occupancy	Windows & Doors Condition	Design Noise Level	
		Day, L_{Aeq} (15hour)	Night, L_{Aeq} (9hour)
Sleeping areas	Closed	-	35dB(A)
All other habitable rooms	Closed	40dB(A)	40dB(A)
Lobbies	Closed	55dB(A)[1]	55dB(A)[1]
Bathrooms and en-suites	Closed	50dB(A)[1]	50dB(A)[1]

Notes:
1. Based on Australia Standard AS2107 "Acoustics – Recommended design sound pressure levels and reverberation times for building interior"

Relevant sections of the State Environment Planning Policy, Australia Standard AS2107, Council DCP, and Government Policies are presented in APPENDIX A of this report. Results of the background and ambient noise monitoring conducted on site are presented in APPENDIX E.

3 Measured Noise Levels

3.1 Long-term Noise Survey

The proposed development is potentially affected by road traffic noise from Taren Point Road on the site western boundary. A noise monitor was installed in front yard of the existing single storey house at 306 Taren Point Road for a background and ambient noise survey from 10/11/2017 to 17/11/2017. The ambient and background noise levels measured at this monitoring location is representative of the subject development at 314-314 Taren Point Road.

The noise logger records noise levels on a continuous basis and stores data every fifteen minutes. The noise logger was calibrated before and after measurements and no significant deviation in calibration was noted. The noise monitoring equipment used here complies with Australian Standard 1259.2-1990 "Acoustics - Sound Level Meters" and is designated as Type 2 instruments suitable for field use.

The results of the background and ambient noise monitoring conducted on site are presented in APPENDIX E.

3.2 Measured Traffic Noise Level

The design traffic noise levels are taken from the representative L_{Aeq} for the week for both the day time (7am to 10pm) and night time (10pm-7am) periods. The design external traffic noise levels are presented Table 3 below.

Table 3: Representative Day and Night Traffic Noise Levels

Monitoring Location	Survey Period	Measured Traffic Noise Level $L_{Aeq,\ T}$ [1,2]	Predicted Traffic Noise Level $L_{Aeq,\ T}$ [1,2] Worst Affected Residential Facade
1m from façade on front yard of 306 Taren Point Road, Caringbah	Day time (7am to 10pm) 10/11/2017 to 17/11/2017	64 dB(A)	64 dB(A)
	Night time (10pm to 7am) 10/11/2017 to 17/11/2017	59 dB(A)	59 dB(A)

Notes:

1. Noise levels presented are façade values.
2. Representative road traffic noise level in measured L_{Aeq} over 15 hour and 9 hour day and night period respectively.

3.3 Existing Noise Environment at Development Site

The results of the long-term noise monitoring have been summarised in accordance with Industrial Noise Policy requirements published by NSW Environment Protection Authority and are presented in Table 4 and Table 5 below.

Table 4: Measured Site Background Noise Levels

Noise Monitoring		Representative L_{A90} Background Noise Levels in dB(A)		
Location	Duration	Day[1]	Evening[2]	Night[3]
306 Taren Point Road, Caringbah	10/11/2017 to 17/11/2017	48	45	35

Notes:

Day, Evening & Night assessment periods are defined in accordance NSW EPA's Noise Policy for Industry as follows.

1. Day is defined as 7:00am to 6:00pm, Monday to Saturday; 8:00am to 6:00pm Sundays & Public Holidays. As results were affected by construction noise weekend day and Saturday morning, Sunday results have been presented for the Day time period
2. Evening is defined as 6:00pm to 10:00pm, Monday to Sunday & Public Holidays
3. Night is defined as 10:00pm to 7:00am, Monday to Saturday; 10:00pm to 8:00am Sundays & Public Holidays

Table 5: Measured Site Ambient Noise Levels

Noise Monitoring		Representative L_{Aeq} Background Noise Levels in dB(A)		
Location	Duration	Day[1]	Evening[2]	Night[3]
306 Taren Point Road, Caringbah	10/11/2017 to 17/11/2017	62	61	56

Notes:

Day, Evening & Night assessment periods are defined in accordance NSW EPA's Noise Policy for Industry as follows.

1. Day is defined as 7:00am to 6:00pm, Monday to Saturday; 8:00am to 6:00pm Sundays & Public Holidays. As results were affected by construction noise weekend day and Saturday morning, Sunday results have been presented for the Day time period
2. Evening is defined as 6:00pm to 10:00pm, Monday to Sunday & Public Holidays
3. Night is defined as 10:00pm to 7:00am, Monday to Saturday; 10:00pm to 8:00am Sundays & Public Holidays

The representative background noise levels (L_{A90}) are used in defining external noise emission from the development such as mechanical ventilation and air-conditioning systems in accordance to EPA Noise Policy for Industry (NPfI).

3.4 Calculated Internal Noise Levels

Results from the noise surveys were used to calculate internal noise levels within the proposed development. Noise calculations were conducted using the OutsideIn Glazing Spreadsheet developed in this office which take into account external noise levels, facade transmission loss and room sound absorption characteristics. Noise levels were calculated for each building facade to account for any variation in the external noise levels affecting different parts of the building.

Glazing constructions required to comply with the nominated noise criteria are presented in the body of this report.

4 Recommendations

4.1 Glazing Design Requirements

Table 6 below presents recommended glazing treatment for the building facades to achieve compliance with the maximum noise levels nominated in Table 2 above.

Table 6: Recommended Glazing Treatment

Level	Facade	Occupancy Type	Recommended Minimum Sound Insulation Rating of Glazing Assembly	Typical Compliance Glazing Thickness, Type and Configuration	Laboratory Test Reference
Ground floor to Level 4	Western facade facing Taren Point Road	Bedrooms	Rw 32	6.38mm laminated glass	ESTIMATE
		Open plan living/dining/kitchen	Rw 32	6.38mm laminated glass	ESTIMATE
	Northern and southern facade	Bedrooms	Rw 32	6.38mm laminated glass	ESTIMATE
		Open plan living/dining/kitchen	Rw 27	6mm standard float glass	ESTIMATE
		Bathroom & en-suites	Rw 24	4mm standard float glass	ESTIMATE
	Eastern facade	Bedrooms	Rw 27	6mm standard float glass	ESTIMATE
		Open plan living/dining/kitchen	Rw 27	6mm standard float glass	ESTIMATE
		Bathroom & en-suites	Rw 24	4mm standard float glass	ESTIMATE
Ground floor to Level 3	Atrium / Internal Courtyard	Study	Rw 27	6mm standard float glass	ESTIMATE
Level 4	Atrium / Internal Courtyard	Bedroom	Rw 27	6mm standard float glass	ESTIMATE
		Kitchen area	Rw 27	6mm standard float glass	ESTIMATE
		Bathroom	Rw 24	4mm standard float glass	ESTIMATE
Roof	Skylight	Open plan living/dining/kitchen	Rw 27	6mm standard float glass	ESTIMATE

By way of explanation, the Sound Insulation Rating Rw is a measure of the noise reduction property of the partition, a higher rating implying a higher sound reduction performance.

Note that the Rw rating of systems measured as built on site (R'w Field Test) may be up to 5 points lower than the laboratory result.

LEGEND where no appropriate test certificate exists:

1. STIMATE: The client is advised not to commence detailing or otherwise commit to partition construction systems which have not been tested in an approved laboratory or for which an opinion only is available. Testing of partition construction systems is a component of the quality control of the design process and should be viewed as a priority because there is no guarantee the forecast results will be achieved thereby necessitating the use of an alternative which may affect the cost and timing of the project. No responsibility is taken for use of or reliance upon untested partition construction systems, estimates or opinions. The advice provided here is in respect of acoustics only.
2. ESTIMATE – APPROVED FOR CONSTRUCTION: Use of the form of construction is approved prior to laboratory certification. To complete the quality control of the design process and confirm the acoustical performance of the construction, we recommend testing in a laboratory to confirm the Rw rating as soon as practicable. In the case of impact rating for floor systems, no particular impact rating is guaranteed to comply with either the Building Code of Australia or Strata Scheme Management Act and hence carpet runners may still be required.
3. ESTIMATE – TEST NOT REQUIRED: Use of the form of construction is approved without laboratory certification. The STC/Rw of the form of construction exceeds the project requirements.
4. The advice provided here is in respect of acoustics only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.

Level	Facade	Occupancy Type	Recommended Minimum Sound Insulation Rating of Glazing Assembly	Typical Compliance Glazing Thickness, Type and Configuration	Laboratory Test Reference

NOTES FOR GLAZING CONSTRUCTIONS:

5. The information in this table is provided for the purpose of Council approvals process and cost planning and shall not be used for construction unless otherwise approved in writing by the acoustic consultant.
6. The design in this table is preliminary and a comprehensive assessment shall be conducted prior to Construction Certification.
7. Before committing to any form of construction or committing to any builder, advice should be sought from an acoustic consultant to ensure that adequate provisions are made for any variations which may occur as a result of changes to the form of construction where only an "estimate" is available for the sound insulation properties of recommended materials.
8. The glazing supplier shall ensure that installation techniques will not diminish the Rw performance of the glazing when installed on site.
9. All openable glass windows and doors shall incorporate full perimeter acoustic seals equivalent to Q-Lon, which enable the Rw rating performance of the glazing to not be reduced.
10. The above glazing thicknesses should be considered the minimum thicknesses to achieve acoustical ratings. Greater glazing thicknesses may be required for structural loading, wind loading etc.

GENERAL

11. The sealing of all gaps in partitions is critical in a sound rated construction. Use only sealer approved by the acoustic consultant.
12. Check design of all junction details with acoustic consultant prior to construction.
13. Check the necessity for HOLD POINTS with the acoustic consultant to ensure that all building details have been correctly interpreted and constructed.
14. The information provided in this table is subject to modification and review without notice.
15. The advice provided here is in respect of acoustics only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.

With the installation of the recommended glazing outlined in Table 6 above and windows and doors closed, internal traffic noise levels inside dwellings are expected to comply with the indoor noise goals set in Council DCP and ISEPP 2007 as outlined in Table 2 of this report.

4.2 Facade & Roof Sound Insulation

In principle advice is provided below for the acoustic requirements of the roofs and external walls.

4.2.1 External Walls

All external walls shall have sound isolation ratings, Rw, of at least 15dB higher acoustic performance than that of the acoustic glazing specified in Table 6 above.

4.2.2 Roof and Ceiling

Roof/ceiling construction shall have a sound isolation rating, Rw, at least 10dB higher than that of the acoustic glazing on its facade walls.

4.2.3 Glazing Assembly Requirements

The following acoustic measures should also be incorporated into the building design:

s1. All operable glass windows and doors shall incorporate full perimeter acoustic seals equivalent to Q-Lon, which enable the Rw rating performance of the glazing to not be reduced.

s2. The glazing thicknesses outlined in Table 6 should be considered the minimum thicknesses to achieve acoustical ratings. Greater glazing thicknesses may be required for structural loading, wind loading etc.

s3. The glazing supplier shall ensure that installation techniques will not diminish the Rw performance of the glazing when installed on site. Sliding door meeting stiles should form an airtight seal when closed and locked.

s4. The perimeter of all window and door frames are to be sealed airtight in the external facade using the following methods:

- For gaps less than 10mm - Fill all gaps around the window perimeter with an acoustic mastic sealer (minimum specific gravity 1.6sg) equivalent to Promat Promaseal. The depth of sealer shall be at least equal to the width of the gap.
- If the gap is greater than 10mm, fill the cavity with polyester insulation and a backing rod. Seal the gap airtight an acoustic mastic sealer (min specific gravity 1.6sg) equivalent to Promat Promaseal. The depth of sealer shall be at least equal to the width of the gap. The gaps between frames shall also be sealed using aluminium angle brackets (approximately 25 x 25 x 3mm).

4.3 Acoustic Treatment to Atrium

Excessive hard reflective surfaces such as painted plasterboard ceilings, exposed soffit, ceramic tile flooring, glass balustrades in the proposed atrium can result in elevated ambient noise levels inside the semi-enclosed space due to build-up of reflected sound. This can potentially impact habitable rooms with windows facing the atrium when the occupant(s) decides to open the windows for cross ventilation.

In order reduce excessive sound reflections and alleviate build-up of reverberation noises from patron conversations in the courtyard and breezeways of the atrium, the following acoustic treatment to exposed reflective surfaces of the atrium are recommended;

s1. Install acoustic ceiling to the breezeways/corridors around the atrium from Ground floor to Level 4 in lieu of standard plasterboard ceiling. The ceiling system shall have a minimum noise reduction coefficient (NRC) of 0.65 such as Décor CEWOOD panels, Echolinear perforated panels, Instyle Ecoustic timber panels, Armstrong perforated metal ceiling tiles. Alternatively; the acoustic ceiling can comprise of a sound absorptive material with minimum NRC 0.65 directly fixed to slab soffit behind a decorative timber batten ceiling system.

s2. Install sound absorptive panels to specific areas of the breezeway/corridor walls on Ground floor facing the courtyard garden as indicated in Figure 1 below. Wall panels shall have a minimum NRC of 0.65 such as Pyrotek Reapor, Décor CEWOOD panels, Echolinear perforated panels, Instyle Ecoustic timber panels from high of 1.5m extending to ceiling line.

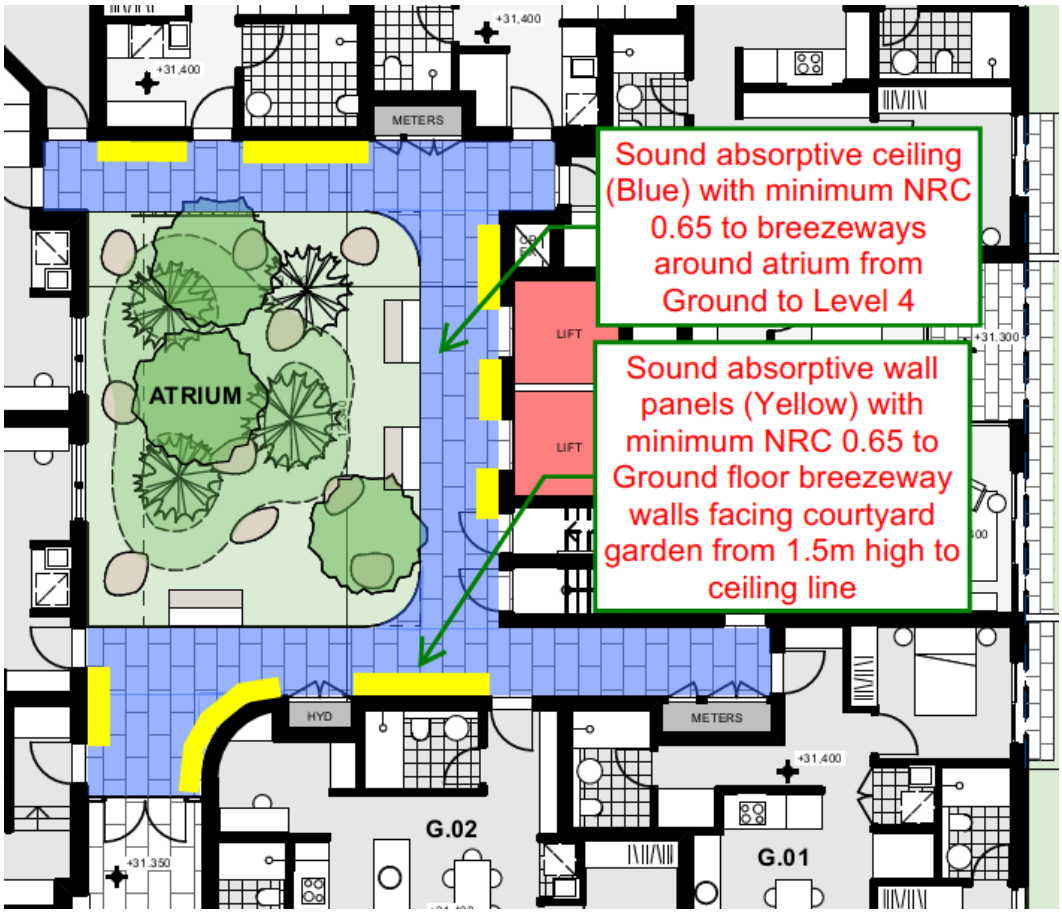


Figure 1: Acoustic Treatment of Atrium for Reverberation

s3. The landscape design at bottom of the atrium incorporates dense low-growing shrubs and a mix of short and tall trees distributed throughout the courtyard, and climber plants in planter boxes on balustrades of each level as indicated in the architectural drawings (DA103 and DA301). Studies have found vegetation and plants to be effective sound absorbers and diffusers and when used in the landscaping of courtyards it can significantly reduce the ambient noise level and reverberance time of the space.

Furthermore, the following measures will be incorporated into the design to enhance acoustic separation between apartments and atrium space;

s4. Install acoustic glazing to apartment windows facing atrium as recommended in Table 6 above

s5. Provide sound-rated apartment entry doors with a minimum acoustic rating of Rw30, typically 40mm solid-core timber door with perimeter acoustic seals.

5 Internal Sound Insulation between Tenancies

Internal walls and floors shall comply with the current National Construction Code of Australia 2019 (formally Building Code of Australia). All services and doors shall comply with the requirements of the NCC 2019. APPENDIX C presents a summary of acoustic provisions outlined in Part F5 of the NCC 2019.

6 External Noise Emission from Building Services

6.1 Environment Protection Authority Requirements

The NSW Environment Protection Authority (EPA) sets out noise criteria in its Noise Policy for Industry (NPfI) to control the noise emission from industrial sources.

The NPfI sets project noise trigger level to protect noise amenity for residential receivers. The project noise trigger level is set as the lower value of the following two assessment components:

- Controlling intrusive noise impacts in the short term for residences; and
- Maintaining noise level amenity for particular land uses for residences and other land uses.

Noise intrusiveness ensures that industrial noise does not exceed the background noise level by an excessive margin, preventing significant changes in the noise characteristic pertinent to the development site and surrounds. This is commonly referred to as the 'background plus 5' criterion. That is, the noise level from new industrial development, assessed in periods of 15 minutes, should not exceed the existing background noise level (measured in the absence of that development) by more than 5dB(A).

Noise amenity ensures that industrial noise levels do not increase without limit, for if a number of industrial noise sources are permitted to increase the background noise level by 5dB(A), in turn there would be a point where the ultimate noise level is unacceptable. A limit on the ultimate acceptable noise level is therefore included in the NPfI as a way of ensuring that cumulative noise impact from industrial growth is curtailed. This limit is referred to as the project amenity noise level. The appropriate limit in any circumstance relates to the land use category, for example, there are different limits for rural, suburban and urban areas.

The table below presents the recommended amenity noise level relevant to the receivers surrounding the proposed development site. The project amenity noise level is defined as the recommended amenity noise level minus 5dB(A).

Table 7: NPfI Amenity Noise Levels - Recommended L_{Aeq} Amenity Noise Levels from Industrial Noise Sources [EPA NPfI Table 2.1]

Receiver	Noise amenity area	Time of day	L_{Aeq}, dB(A)
			Recommended amenity noise level
Residential	Rural	Day	50
		Evening	45
		Night	40
	Suburban	Day	55
		Evening	45
		Night	40

Receiver	Noise amenity area	Time of day	L_{Aeq}, dB(A) Recommended amenity noise level
	Urban	Day	60
		Evening	50
		Night	45
Hotels, motels, caretakers' quarters, holiday accommodation, permanent resident caravan parks	See column 4	See Column 4	5dB(A) above the recommended amenity noise level for a residence for the relevant noise amenity area and time of day
School classroom - internal	All	Noisiest 1-hour period when in use	35
Hospital ward - internal	All	Noisiest 1-hour	35
Hospital ward - external	All	Noisiest 1-hour	50
Place of worship - internal	All	When in use	40
Area specifically reserved for passive recreation (e.g. national park)	All	When in use	50
Active recreation area (e.g. school playground, golf course)	All	When in use	55
Commercial premises	All	When in use	65
Industrial premises	All	When in use	70
Industrial interface (applicable only to residential noise amenity areas)	All	All	Add 5dB(A) to recommended noise amenity

Notes:

- Daytime 7.00 am to 6.00 pm; Evening 6.00 pm to 10.00 pm; Night-time 10.00 pm to 7.00 am
- On Sundays and Public Holidays, Daytime 8.00 am - 6.00 pm; Evening 6.00 pm - 10.00 pm; Night-time 10.00 pm - 8.00 am.
- The LAeq index corresponds to the level of noise equivalent to the energy average of noise levels occurring over a measurement period.

In accordance with Section 2.4 of the NPfI, the following **exceptions** to the above method to derive the project amenity noise level apply:

1. In areas with high traffic noise levels (see Section 2.4.1 of the NPfI).
2. In proposed developments in major industrial clusters (see Section 2.4.2 of the NPfI).
3. Where the resultant project amenity noise level is 10dB, or more, lower than the existing industrial noise level. In this case the project amenity noise levels can be set at 10dB below existing industrial noise levels if it can be demonstrated that existing industrial noise levels are unlikely to reduce over time.
4. Where cumulative industrial noise is not a necessary consideration because no other industries are present in the area, or likely to be introduced into the area in the future. In such cases the relevant amenity noise level is assigned as the project amenity noise level for the development.

The following table presents the site-specific noise production criteria from industrial noise sources, namely mechanical plant.

Table 8: Project noise trigger level for noise emission from mechanical plant (EPA NPfI)

Time of Day	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
	Rating Background Level (RBL) L_{A90}	Intrusiveness Criterion (RBL+5)	Project Amenity Noise Level (PANL)	Measured $L_{Aeq, period}$ existing noise levels	Is PANL 10dB, or more, lower than measured $L_{Aeq, period}$?	Existing noise level likely to decrease in future?	Exceptions to PANL?	Project Noise Trigger Level $L_{Aeq, period}$ dB(A)
Day (7am to 6pm)	48	53	55	62	No	No	None	55
Evening (6pm to 10pm)	45	50^	45	61	Yes	No	Existing L_{Aeq} minus 15	46
Night (10pm to 7am)	35	40	40	56	Yes	No	Existing L_{Aeq} minus 15	41

Explanatory notes:

Column 1 – RBL measured in accordance with the NPfI and outlined in Table 4 above

Column 3 – Project Amenity Noise Level determined based on 'Residential - suburban' area in Table 2.2 (Amenity noise levels) of the EPA's NPfI minus 5dB

Column 4 – Measured in accordance with the NPfI and outlined in Table 5 above

Column 7 - Determined in accordance with Section 2.4 of the NPfI.

Column 8 – Project Noise Trigger Level is the lower value of project intrusiveness noise level and project amenity noise level

^ - In accordance with Section 2.3 of the NPfI, the project intrusiveness noise level for evening shall be no greater than the project intrusiveness noise level for day.

6.2 Maximum noise level event assessment

The potential for sleep disturbance from maximum noise level events, from the proposed development, needs to be considered. Section 2.5 of the NPfI provides sleep disturbance trigger levels, summarised as follows:

Table 9: Sleep disturbance noise trigger levels

Receiver	Sleep Disturbance Trigger Levels, 10:00pm to 7:00am	
	$L_{Aeq, 15 minute}$	L_{AFmax}
All residential	Greater than 40dB(A) or RBL plus 5dB, whichever is the greater	52dB(A) or RBL plus 15dB, whichever is the greater

Where noise from the proposed development is predicted to exceed the sleep disturbance trigger levels above in Table 9, during the night time, a detailed noise level assessment is required. The detailed assessment is required to cover the maximum noise level, the extent to which the maximum noise level exceeds the RBL, and the frequency of events occurring during the night time.

6.3 Recommended noise control measures for mechanical plant

Where necessary, noise amelioration treatment will be incorporated in the design to ensure that noise levels comply with the recommended EPA's NPfI noise emission criteria noted above.

At this stage details of mechanical plant have not been finalised, the following in-principal recommendations are provided:

- Acoustic assessment of mechanical services equipment will need to be undertaken during the detail design phase of the development to ensure that they shall not either singularly or in total emit noise levels which exceed the noise limits in EPA's NPfI or Council's requirements;
- As noise control treatment can affect the performance of the mechanical services system, it is recommended that consultation with an acoustic consultant be made during the initial phase of mechanical services system design in order to reduce the need for revision of mechanical plant and noise control treatment;
- Mechanical plant noise emission can be controllable by appropriate mechanical system design and implementation of common engineering methods that may include any of the following:
    - procurement of 'quiet' plant,
    - strategic positioning of plant away from sensitive neighbouring premises, maximising the intervening shielding between the plant and sensitive neighbouring premises,
    - commercially available silencers or acoustic attenuators for air discharge and air intakes of plant;
    - acoustically lined and lagged ductwork;
    - acoustic screens and barriers between plant and sensitive neighbouring premises; and/or
    - Partially-enclosed or fully-enclosed acoustic enclosures over plant.
- Mechanical plant shall have their noise specifications and their proposed locations checked prior to their installation on site; and
- Fans shall be mounted on vibration isolators and balanced in accordance with Australian Standard 2625 "Rotating and Reciprocating Machinery – Mechanical Vibration".

We recommend a full and detailed assessment with fully documented acoustic treatments be undertaken at the detailed design phase of the development, followed by construction/installation supervision of mechanical plant and equipment acoustic treatment. Compliance testing following the installation of the plant should also be undertaken.

6.4 Recommended Noise Control Measures for Mechanical Plant

Mechanical plant such as exhaust systems, air-conditioning, mechanical ventilation and refrigeration associated with the development has the potential to impact on nearby residential and commercial properties. As details of mechanical plant are not available at this stage of the development the following in principle noise control advice are provided.

- Acoustic assessment of mechanical services equipment will be require to be undertaken during the detail design phase of the development to ensure that they shall not either singularly or in total emit noise levels which exceed the noise limits in established in Table 6.
- Mechanical plant noise emission can be controllable by appropriate mechanical system design and implementation of common engineering methods that may include any of the following;
  - procurement of 'quiet' plant
  - strategic positioning of roof and balcony plant equipment away from sensitive neighbouring premises, maximising the intervening shielding between the plant and sensitive neighbouring premises
  - installation of commercially available silencers or acoustic attenuators for air discharge and air intakes of plant
  - acoustically lined and lagged ductwork
  - provide acoustic screens and/or acoustic louvres between plant and sensitive neighbouring premises
  - provide partially enclosed or fully enclosed acoustic enclosure over plant
  - Mechanical plant shall have their noise specifications and proposed locations checked prior to installation
  - Fans shall be mounted on vibration isolators and balanced in accordance with Australian Standard 2625 "Rotating and Reciprocating Machinery - Mechanical Vibration"

7 Construction Noise

The nature of the construction processes proposed for the development does not present difficulties in ensuring that the associated noise limits at surrounding properties are achieved. The major construction activities proposed on this site are excavation works, concrete pours and general building works.

Construction and building work will be adequately managed so as to minimise disruption to the local community and the environment.

Noise generated by construction activities will comply with the Department of Environment Climate Change & Water's Interim Construction Noise Guide (ICNG). APPENDIX D presents a summary ICNG's standard construction times and conditions.

8 Conclusion

Renzo Tonin & Associates have completed an acoustic assessment of road traffic noise impacts onto the proposed residential development at 310-314 Taren Point Road, Caringbah.

The study of external noise intrusion into the subject development has found that appropriate noise control measures can be incorporated such as acoustic glazing into the building design to achieve compliance with the acoustic requirements of Sutherland Shire Council DCP 2006, State Environment Planning Policy ISEPP 2007 and Australian Standard AS/NZS 2107.

Recommendations have been provided in Section 4 of this report to comply with the nominated internal noise criteria.

APPENDIX A Assessment and Design Methodology

A.1 Sutherland Shire Council Development Control Plan 2006

Sutherland Shire Council is the regulatory authority for the proposed development. Council's DCP 2006 refers to the Department of Planning publication "Development near rail corridors and busy roads – Interim Guidelines" and State Environment Planning Policy (Infrastructure) 2007 as design guide for residential development near busy roads with annual daily traffic volume of greater than 20,000. Chapter 3 "Urban Design", Section 13.b.5 of the DCP states the following.

" 13.b.5 Controls for Residential and Noise Sensitive Development Subject to Road and/or Railway Noise and Vibration

1. This clause applies to development that is:

i. situated on a busy road where the average annual traffic volume is greater than 20,000 vehicles as per Sutherland Shire Council's Road and Rail Buffer Map and the most recent traffic volume data published on the RTA website

ii. located up to 300m from the road kerb and with a direct line of sight to busy roads, and, or

iii. located within 80m of an operational rail track, and

iv. a residential or other use likely to be adversely affected by rail and / or road noise or vibration. Sensitive uses include but are not limited to:

- building for residential use

- place of public worship

- a hospital

- an educational establishment or childcare centre, and

- any other noise sensitive development such as aged care accommodation, churches, libraries, surgeries, retirement villages, nursing homes, motels, hostels, other medical institutions, recreational areas.

2. Noise levels in residential development subject to this clause must not exceed:

- LA eq of 35dB (A) measured within any bedroom in the building at any time between 10pm-7am and

- LA eq of 40dB(A) measured within any bedrooms between 7am-10pm and anywhere else in the building (other than a garage, kitchen, bathroom or hallway) at any time.

Calculation of the LA eq is to be carried out in accordance with the methodology prescribed for airborne noise and/or ground borne noise in the NSW Department of Planning's publication Development near Rail Corridors and Busy Roads – Interim Guidelines

If internal noise levels with windows and doors open exceed the criteria by more than 10dB(A), the design of the ventilation for these rooms should be such that the occupants can leave the windows closed, if they desire and also meet the ventilation requirements of the Building Code of Australia. "

A.2 State Environmental Planning Policy (Infrastructure) 2007

The NSW State Environmental Planning Policy (Infrastructure) 2007 (known as 'ISEPP') came into force in NSW on 1 January 2008 to facilitate the effective delivery of infrastructure across the State. The aim of the policy includes identifying the environmental assessment category into which different types of infrastructure and services development fall and identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure.

Pertinent to noise assessment, the ISEPP includes the following clauses:

87 Impact of rail noise or vibration on non-rail development

5. This clause applies to development for any of the following purposes that is on land in or adjacent to a rail corridor and that the consent authority considers is likely to be adversely affected by rail noise or vibration:

a. a building for residential use,

b. a place of public worship,

c. a hospital,

d. an educational establishment or child care centre.

6. Before determining a development application for development to which this clause applies, the consent authority must take into consideration any guidelines that are issued by the Director-General for the purposes of this clause and published in the Gazette.

7. If the development is for the purposes of a building for residential use, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded:

e. in any bedroom in the building - 35 dB(A) at any time between 10 pm and 7am,

f. anywhere else in the building (other than a garage, kitchen, bathroom or hallway) - 40 dB(A) at any time.

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

8. This clause applies to development for any of the following purposes that is on land in or adjacent to the road corridor for a freeway, a tollway or a transitway or any other road with an annual average daily traffic volume of more than 40,000 vehicles (based on the traffic volume

data published on the website of the RTA) and that the consent authority considers is likely to be adversely affected by road noise or vibration:

g. a building for residential use,

h. a place of public worship,

i. a hospital,

j. an educational establishment or child care centre.

9. Before determining a development application for development to which this clause applies, the consent authority must take into consideration any guidelines that are issued by the Director-General for the purposes of this clause and published in the Gazette.

10. If the development is for the purposes of a building for residential use, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded:

k. in any bedroom in the building - 35 dB(A) at any time between 10 pm and 7am,

l. anywhere else in the building (other than a garage, kitchen, bathroom or hallway) - 40 dB(A) at any time.

11. In this clause, "freeway", "tollway" and "transitway" have the same meanings as they have in the Roads Act 1993

A.2.1 Department of Planning publication 'Development near rail corridors and busy roads – Interim guideline'

To support the Infrastructure SEPP, the NSW Department of Planning released the *Development in Rail Corridors and Busy Roads – Interim Guideline* (December 2008). The Guideline assists in the planning, design and assessment of developments in, or adjacent to, major transport corridors in terms of noise, vibration and air quality. While the ISEPP applies only to roads with an AADT greater than 40,000 vehicles, the guideline is also recommended for other road traffic noise affected sites.

A.2.2 Clarification of ISEPP noise limits

The Guideline clarifies the time period of measurement and assessment. Section 3.4 '*What Noise and Vibration Concepts are Relevant*' and Table 3.1 of Section 3.6.1 confirms that noise assessment is based over the following time periods:

- Daytime 7:00am - 10:00pm $L_{Aeq(15hr)}$
- Night-time 10:00pm - 7:00am $L_{Aeq(9hr)}$

The noise criteria nominated in the ISEPP apply to internal noise levels with windows and doors closed. However, as the preliminary noise assessment is based on measurements/predictions at external locations, equivalent external noise criteria has been established. The equivalent external noise criterion is used to determine which areas of the development may require acoustic treatment in order to meet

the internal noise requirements of the ISEPP. The equivalent external goals have been determined on the following basis:

- The ISEPP states: "*If internal noise levels with windows or doors open exceed the criteria by more than 10dBA, the design of the ventilation for these rooms should be such that occupants can leave windows closed, if they so desire, and also to meet the ventilation requirements of the Building Code of Australia*." The internal criteria with windows open is therefore 10dB(A) above the criteria explicitly outlined in the ISEPP.
- The generally accepted noise reduction through an open window from a free-field external position is 10dB(A). Windows/doors are assumed to be open no more than 5% of room floor area, in accordance with the Building Code of Australia (BCA) ventilation requirements.

Table 10 presents the ISEPP internal noise criteria along with the equivalent external noise criteria for residential premises.

Table 10: ISEPP noise criteria for new residential development

Room	Location	$L_{Aeq,\ 15hr}$ Day 7am – 10pm	$L_{Aeq\ 9hr}$ Night 10pm – 7am
Living rooms*	Internal, windows closed	40	40
	Internal, windows open	50	50
	External free-field (allowing windows to remain open)^	60	60
Bedrooms*	Internal, windows closed	40	35
	Internal, windows open	50	45
	External free-field (allowing windows to remain open)^	60	55

Notes: * Requisite for 40,000AADT Roads only under ISEPP 2007.

^ ISEPP Guideline states that where internal noise criteria are exceeded by more than 10dB(A) with windows open mechanical ventilation is required. External goals have been calculated on the basis of nominal 10dB(A) reduction through an open window to a free-field position. Windows open to 5% of floor area in accordance with the BCA 2011 requirements.

A.3 Australian/New Zealand Standard AS/NZS 2107:2000

As traffic noise levels are not constant, an L_{eq} noise level descriptor is used when assessing this type of noise source. The L_{eq} is the mean energy level of the noise being measured, and has been found to accurately describe the level of annoyance caused by traffic noise.

This standard provides recommended noise levels for steady state such as noise from building services and quasi-steady state sounds, such as traffic and industrial noise. The noise levels recommended in AS/NZS 2107:2000 take into account the function of the area and apply to the sound level measured within the space unoccupied although ready for occupancy.

This standard recommends the following noise levels for residential buildings.

Table 11: Recommended design sound levels for different areas of occupancy in buildings

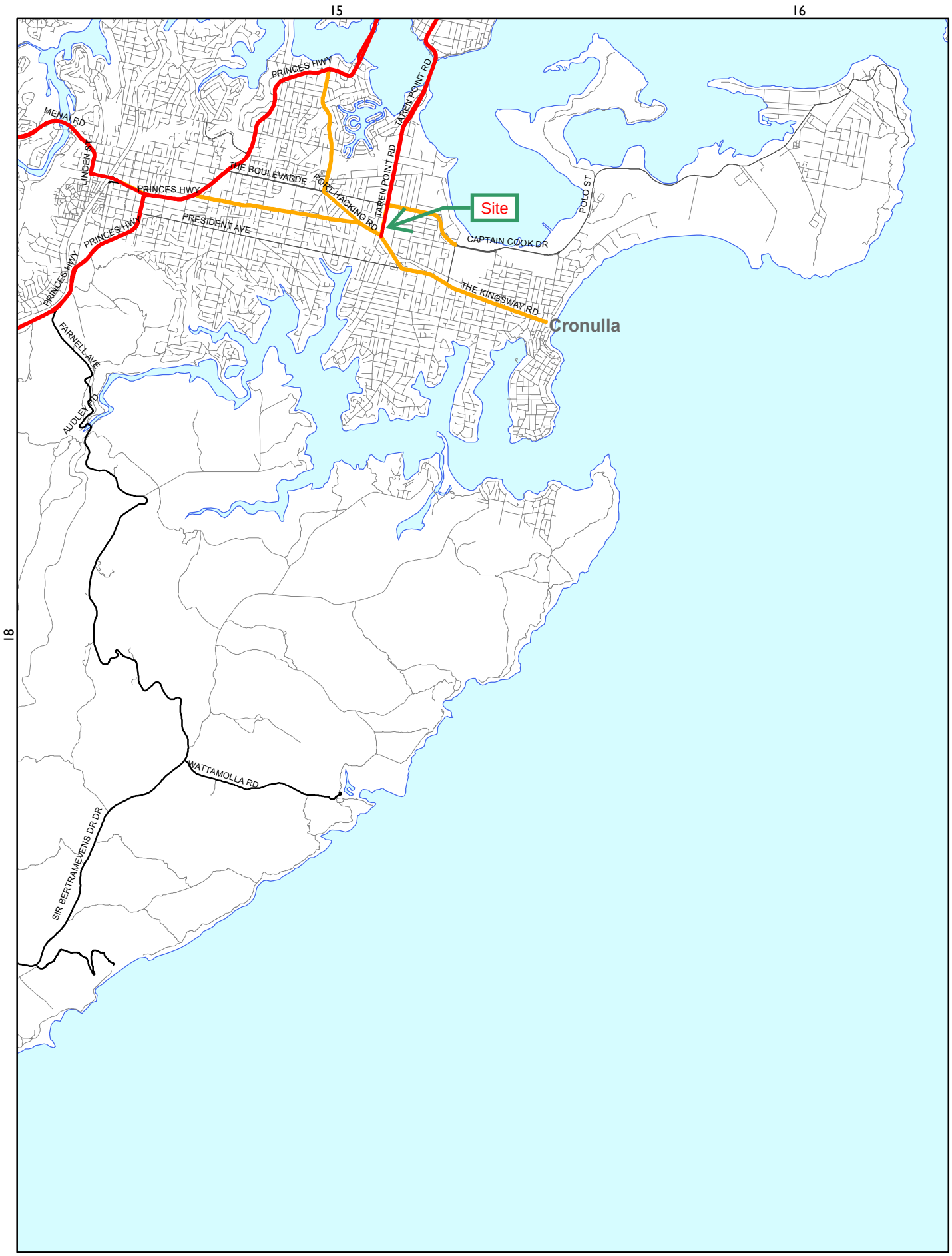
Type of occupancy/ activity	Recommended design sound level, L_{Aeq}, dB(A)		Recommended reverberation time (T),s
	Satisfactory	Maximum	
5 OFFICE BUILDINGS			
General office areas	40	45	0.4 to 0.6
Private offices	35	40	0.6 to 0.8
Public spaces	40	50	0.5 to 1.0
Reception areas	40	45	See Note 3
Rest rooms and tea rooms	40	45	0.4 to 0.6
Toilets	50	55	-
Undercover carparks	55	65	-
7 RESIDENTIAL BUILDINGS (see Note 7 and Clause 5.2)			
Houses in areas with negligible transportation -			
Sleeping areas	25	30	-
Houses and apartments near minor roads -			
Living areas	30	40	-
Sleeping areas	30	35	-
Work areas	35	40	-
Apartment common areas (e.g. foyer, lift lobby)	45	55	See Note 3
Houses and apartments near major roads -			
Living areas	35	45	-
Sleeping areas	30	40	-
Work areas	35	45	-
Apartment common areas (e.g. foyer, lift lobby)	45	55	See Note 3
8 SHOP BUILDINGS			
Enclosed carparks	55	65	-
Show rooms	45	50	See Note 3
Small retails stores (general)	45	50	See Note 3
Specialty Shops (where detailed discussion is necessary in transactions)	40	45	See Note 3

NOTES:

Type of occupancy/ activity	Recommended design sound level, L_{Aeq}, dB(A)		Recommended reverberation time (T),s
	Satisfactory	Maximum	

1. The recommended design sound levels are for a fully fitted out and completed building. Attention is drawn to the additive noise effect of many machines within the same area and adjacent areas. Allowance for the total number and type of noise sources should therefore be made in the selection of equipment and in the design of building spaces. A building owner or developer may consider an allowance of 3-5 dB(A) to be appropriate.
2. Recommended reverberation time is 10 percent to 20 percent higher than Curve 1 of Appendix A.
3. Reverberation time should be minimized as far as practicable for noise control.
4. Certain teaching spaces, including those intended for students with learning difficulties and students with English as a second language, should have reverberation times at the lower end of the specified range.
5. Specialist advice should be sought for these spaces.
6. A very wide range of noise levels can occur in the occupied state in spaces housing manufacturing processes, and the levels are primarily subject to control as part of a noise management program (see AS/NZS 1269.2). The possibilities for segregating very noisy processes from quieter ones by partitioning vary between particular industries and plants. For reasons such as these, it is difficult to make generalized recommendations for desirable, or even maximum, design levels for the unoccupied state, but one guiding principle may still be observed - when the activity in one area of a manufacturing plant is halted, it is desirable that the local level should if possible drop to 70 dB(A) or lower to permit speech communication without undue effort.
7. In situations where traffic noise levels may vary widely over a 24-hour period, measurements to assess compliance with this Standard should be taken at the relevant time and for an appropriate measurement period according to the area of occupancy or activity in the building. Where traffic noise fluctuates rapidly with the passage of individual vehicles, the community reaction may not correlate well with the equivalent continuous noise level as measured.
8. The overall sound pressure level in dB(A) should conform to the recommended design sound level given in Table 1. In these spaces, a balanced sound pressure level across the full frequency range is essential. These spaces should therefore be evaluated in octave bands across the full frequency spectrum. The recommended maximum sound pressure levels for the individual octave bands corresponding to the overall dB(A) value are given in Appendix C.
9. In spaces in which high quality sound recordings are to be made, the levels set for low frequency octave bands should not be exceeded (see Appendix C). Subsequent replay of the recordings may cause an amplification of the ambient sound resulting in an overemphasis of its low-frequency components. Specialist advice should always be sought when these spaces are being designed. In some circumstances, for purposes of very high quality recording, lower levels than those specified in Table 1 may be required.

APPENDIX B Traffic Volume Map For Noise Assessment



Scale 1:100,000

0 1 2 4

Kilometres

Map produced by RTA, RIAMT, SIS Unit.
Map data copyright (c) 2006 Roads & Traffic Authority, NSW.
Some spatial data is subject to © LNSW, Department of Lands

TRAFFIC VOLUME MAPS FOR NOISE ASSESSMENT FOR BUILDING ON LAND ADJACENT TO BUSY ROADS

LEGEND

- Mandatory under clause 102 of the Infrastructure SEPP (Freeways, tollways, transitways and >40,000 AADT)
- Recommended (> 20,000 and < 40,000 AADT)

Roads

- Local Roads
- Regional Roads
- State Roads

Map: 19

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APPENDIX C Internal Sound Insulation

C.1 National Construction Code of Australia 2019

The National Construction Code of Australia (NCC) outlines minimum requirements for inter-tenancy (party) walls and ceiling/ floors to maintain privacy. This includes the incorporation of penetration of a service through a floor or through more than one sole-occupancy unit.

NCC nominates required Weighted Sound Reduction Indexes (Rw) and spectrum adaptation factor (Ctr) for partition constructions, of different space/ activity types in adjoining units. The Rw and Rw + Ctr are single number descriptors for quantifying the attenuating performance of partitions for typical intrusive noises produced inside residences. The higher the rating, the greater the isolation provided by the partition.

Spectrum adaptation factors are commonly used to compensate for the fact that certain kinds of sounds are more readily transmitted through insulating materials than others insulate.

The adaptation factor Ctr has now been introduced for most building elements which require an airborne sound insulation rating. The only exception is a wall which separates a dwelling from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification. Therefore, both the Ctr factor and the Rw of the building element will need to be considered in most cases.

The Ctr factor takes into account lower frequency level sounds, and has been chosen in large part, in recognition of the problem of the high bass frequency outputs of modern home theatre systems and music reproduction equipment.

The Deemed-to-Satisfy Provisions also have impact sound insulation requirements for floors. The terms to describe the impact sound insulation of the floor is the weighted normalised impact sound pressure level (Ln,w). The lower the Ln,w of the floor, the better the performance of the floor in terms of impact sound insulation.

The following section represents a summary of acoustic provisions outlined in the Part F5 of the NCC.

C.2 Sound Insultion Provision of NCC of Australia

The acoustic provisions for inter-tenancy walls in Class 2 & 3 buildings are outlined in the National Construction Code of Australia and the following is an extract from the NCC:

F5.2 Determination of airborne sound insulation ratings

A form of construction required to have an airborne sound insulation rating must –

a. have the required value for weighted sound reduction index (Rw) or weighted sound reduction index with spectrum adaptation term (Rw + Ctr) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or

b. comply with Specification F5.2.

F5.3 Determination of impact sound insulation ratings

a. A floor in a building required to have an impact sound insulation rating must –

i. have the required value for weighted normalised impact sound pressure level (Ln,w) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or

ii. comply with Specification F5.2.

b. A wall in a building required to have an impact sound insulation rating must –

i. for a Class 2 or 3 building be of discontinuous construction;

c. For the purposes of this part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and

i. for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and

ii. for other than masonry, there is no mechanical linkage between leaves except at the periphery.

F5.4 Sound insulation rating of floors

a. A floor in a Class 2 or 3 building must have an Rw + Ctr (airborne) not less than 50 and an Ln,w (impact) not more than 62 if it separates –

i. sole-occupancy units; or

ii. a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification.

F5.5 Sound insulation rating of floors

a. A wall in a Class 2 or 3 building must –

i. have an Rw + Ctr (airborne) not less than 50, if it separates sole-occupancy units; and

ii. have an Rw (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and

iii. comply with F5.3(b) if it separates:

A. a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit; or

B. a sole-occupancy unit from a plant room or lift shaft.

b. A door may be incorporated in a wall in a Class 2 or 3 building that separates a sole-occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an Rw not less than 30.

c. Where a wall required to have sound insulation has a floor above, the wall must continue to –

i. the underside of the floor above; or

ii. a ceiling that provides the sound insulation required for the wall.

F5.6 Sound insulation rating of services

a. If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an Rw + Ctr (airborne) not less than –

i. 40 if the adjacent room is a habitable room (other than a kitchen); or

ii. 25 if the adjacent room is a kitchen or non-habitable room.

b. If a storm water pipe passes through a sole-occupancy unit it must be separated in accordance with (a).

F5.7 Sound isolation of pumps

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.

APPENDIX D Construction Noise

The NSW *Interim Construction Noise Guideline* (ICNG, 2009) provides guidelines for assessing noise generated during the construction phase of developments.

The key components of the guideline that are incorporated into this assessment include:

- Use of L_{Aeq} as the descriptor for measuring and assessing construction noise.

  NSW noise policies, including the INP, RNP and RING have moved to the primary use of L_{Aeq} over any other descriptor. As an energy average, L_{Aeq} provides ease of use when measuring or calculating noise levels since a full statistical analysis is not required as when using, for example, the L_{A10} descriptor.

- Application of reasonable and feasible noise mitigation measures

- As stated in the ICNG, a noise mitigation measure is feasible if it is capable of being put into practice, and is practical to build given the project constraints.

- Selecting reasonable mitigation measures from those that are feasible involves making a judgement to determine whether the overall noise benefit outweighs the overall social, economic and environmental effects.

The ICNG provides two methods for assessment of construction noise, being either a quantitative or a qualitative assessment. A quantitative assessment is recommended for major construction projects of significant duration, and involves the measurement and prediction of noise levels, and assessment against set criteria. A qualitative assessment is recommended for small projects with a duration of less than three weeks and focuses on minimising noise disturbance through the implementation of reasonable and feasible work practices, and community notification.

Table 12 below (reproduced from Table 2 of the ICNG) sets out the noise management levels and how they are to be applied for residential receivers. The guideline intends to provide respite for residents exposed to excessive construction noise outside the recommended standard hours whilst allowing construction during the recommended standard hours without undue constraints.

The rating background level (RBL) is used when determining the management level. The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours).

Table 12: Noise management levels at residential receivers

Time of day	Management level $L_{Aeq\ (15\ min)}$	How to apply
Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	Noise affected RBL + 10dB(A)	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5dB(A)	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see section 7.2.2 of the ICNG.

Sensitive Land Use

Table 13 below (reproduced from Table 3 of the ICNG) sets out the noise management levels for various sensitive land use developments.

Table 13: Noise management levels at other noise sensitive land uses

Land use	Where objective applies	Management level $L_{Aeq\ (15\ min)}$
Classrooms at schools and other educational institutions	Internal noise level	45 dB(A)
Hospital wards and operating theatres	Internal noise level	45 dB(A)
Places of worship	Internal noise level	45 dB(A)
Active recreation areas	External noise level	65 dB(A)
Passive recreation areas	External noise level	60 dB(A)
Community centres	Depends on the intended use of the centre.	Refer to the 'maximum' internal levels in AS2107 for specific uses.
Commercial premises	External noise level	70 dB(A)
Industrial premises	External noise level	75 dB(A)

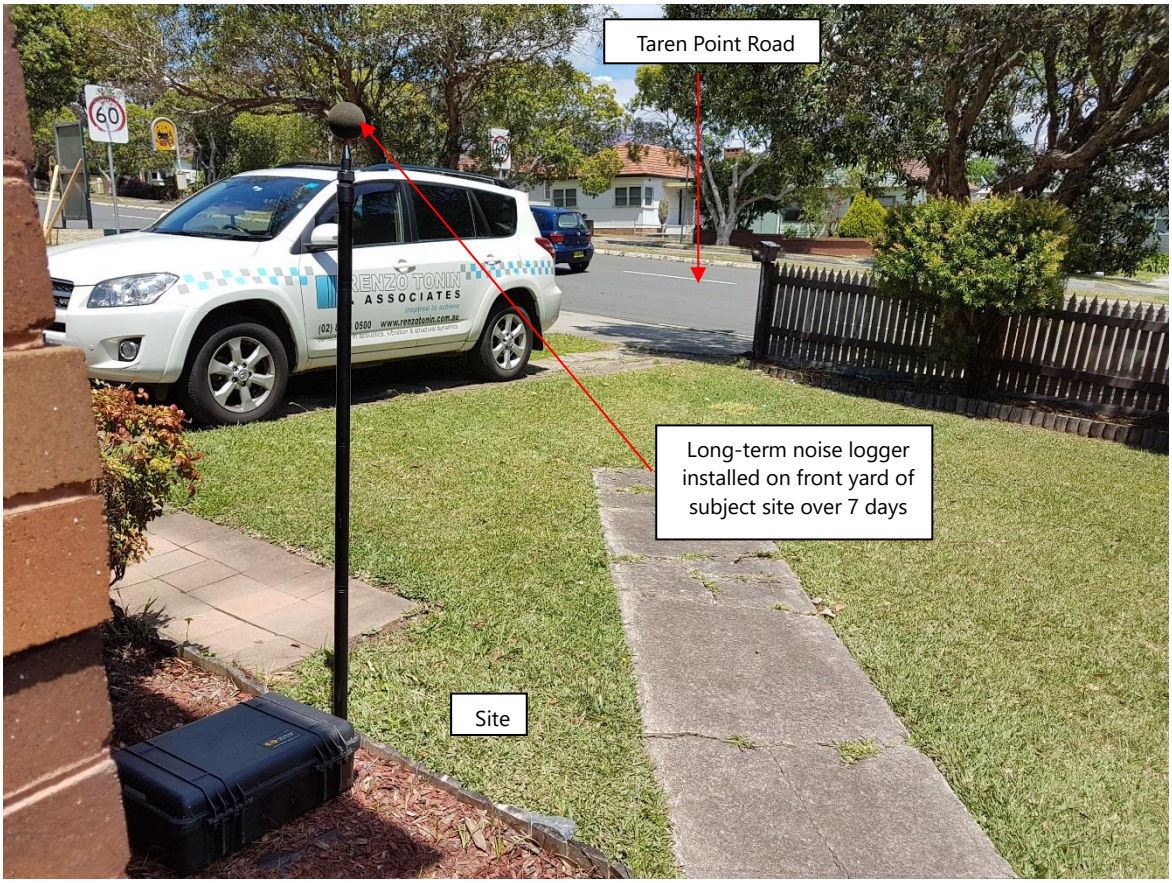
Notes: Noise management levels apply when receiver areas are in use only.

APPENDIX E Results of Noise Survey

E.1.1 Ambient Noise Survey

Unattended noise monitoring location: 1m from façade in front yard of existing house at 306 Taren Point Road, Caringbah.

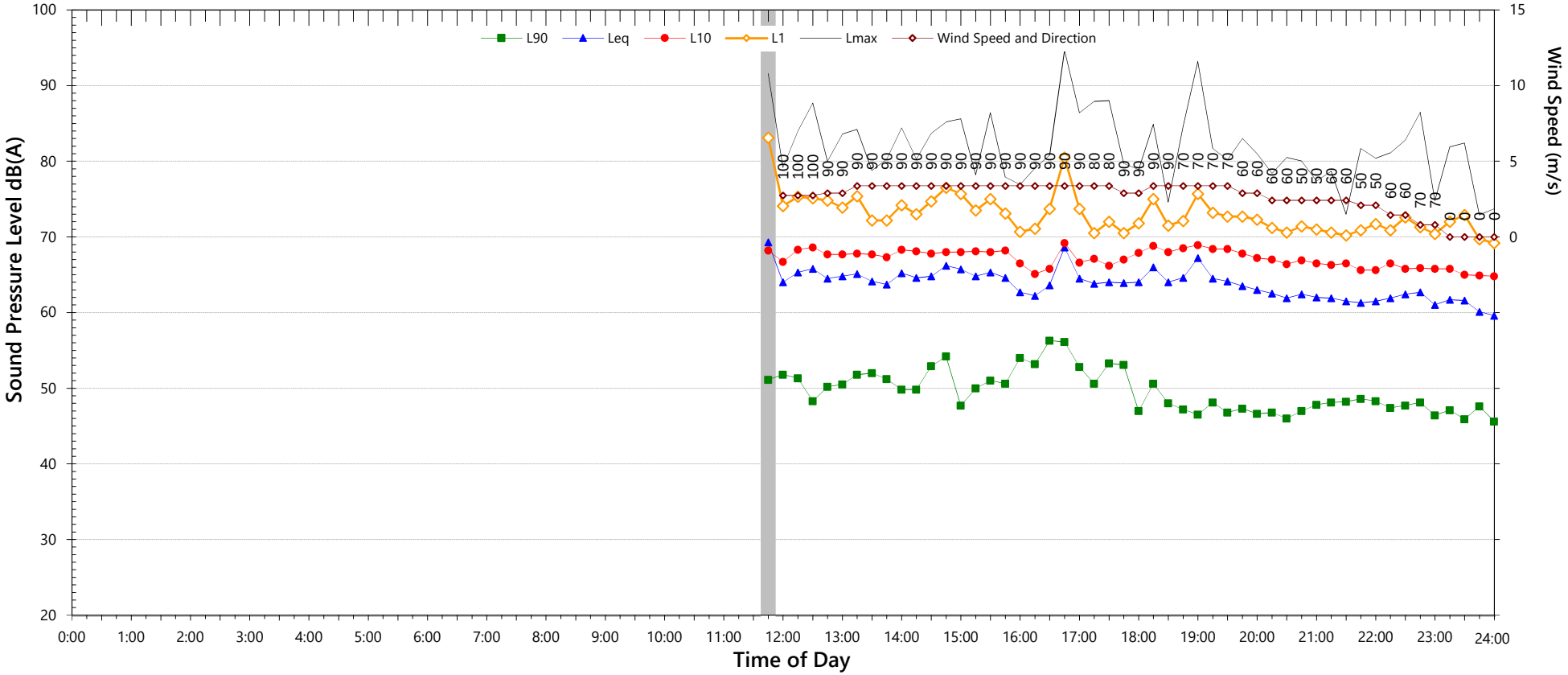
Survey Period: 10/11/2017 to 17/11/2017



Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Friday, 10 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	46.5	41.1
LAeq (see note 6)	-	61.1	57.2

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	75.0	to	86.5
L_{Max} - L_{eq} (Range)	20.1	to	24.5

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	64.4	59.7
$L_{eq\ 1hr}$ upper 10 percentile	65.6	63.1
$L_{eq\ 1hr}$ lower 10 percentile	61.6	54.8

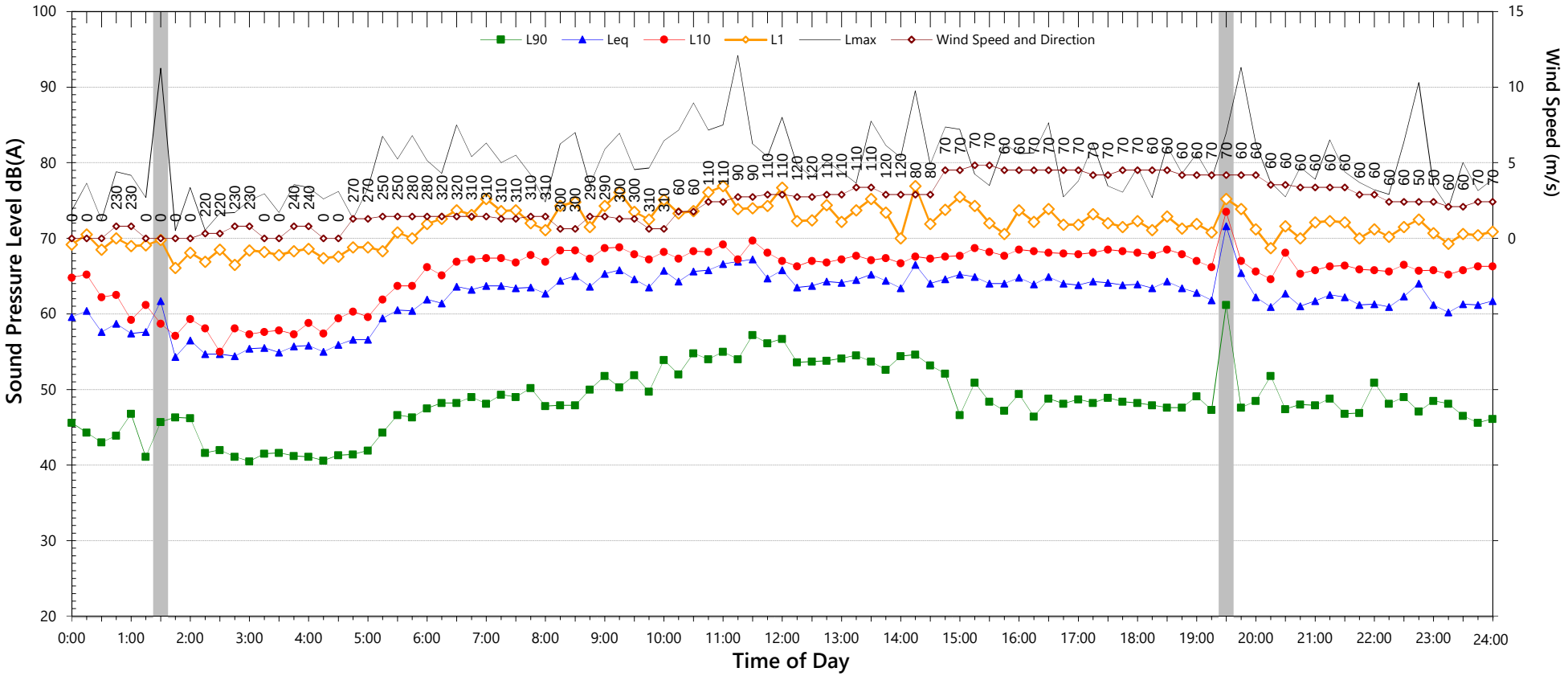
Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the remaining periods
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Saturday, 11 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{90}	47.9	46.9	34.6
LAeq (see note 6)	62.2	60.1	56.5

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	75.9	to	90.6
L_{Max} - L_{eq} (Range)	18.7	to	28.3

NSW Road Noise Policy (1m from facade)		
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	64.3	58.8
$L_{eq\ 1hr}$ upper 10 percentile	66.0	62.3
$L_{eq\ 1hr}$ lower 10 percentile	61.7	55.1

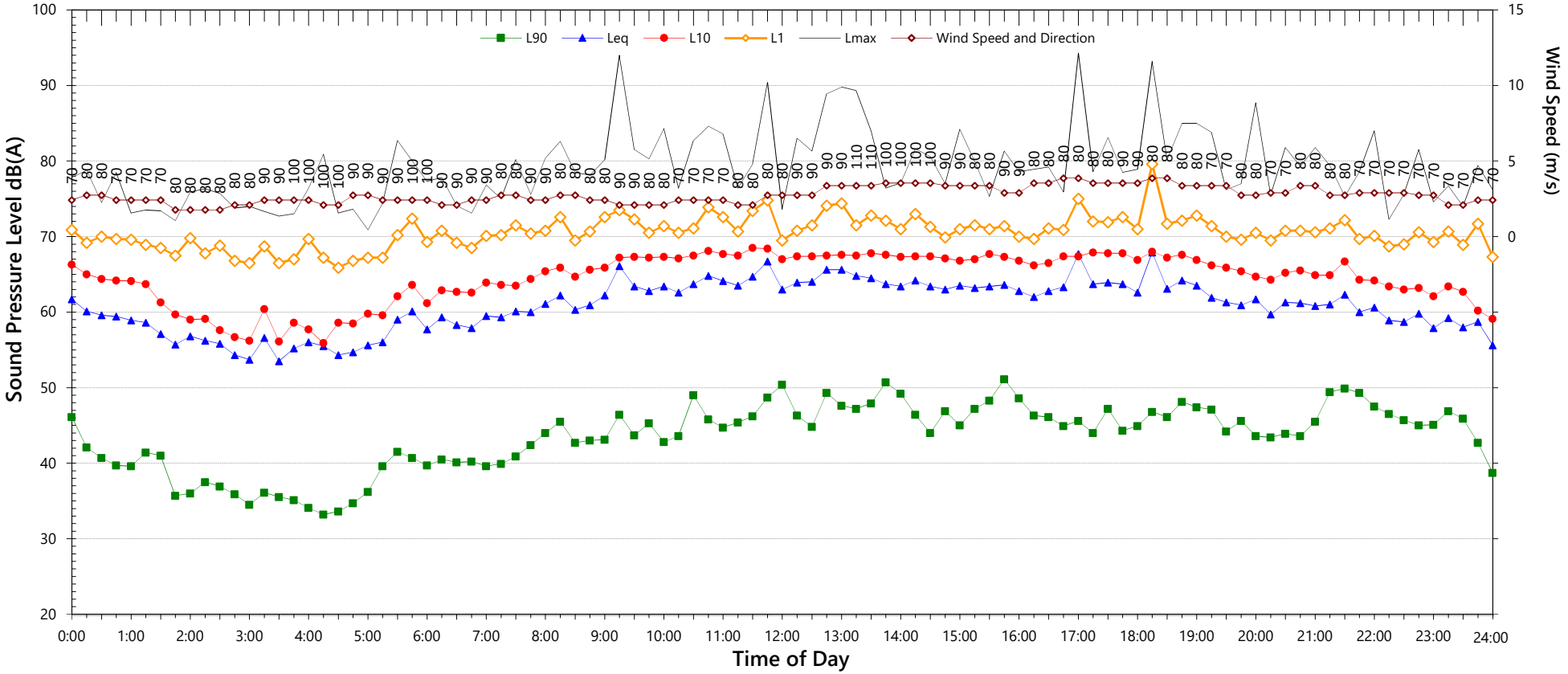
Notes:

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6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Sunday, 12 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{90}	43.4	43.6	31.3
LAeq (see note 6)	61.4	60.0	55.8

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	73.7	to	85.7
L_{Max} - L_{eq} (Range)	17.1	to	26.2

NSW Road Noise Policy (1m from facade)		
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	63.4	58.3
$L_{eq\ 1hr}$ upper 10 percentile	65.0	63.8
$L_{eq\ 1hr}$ lower 10 percentile	60.5	51.6

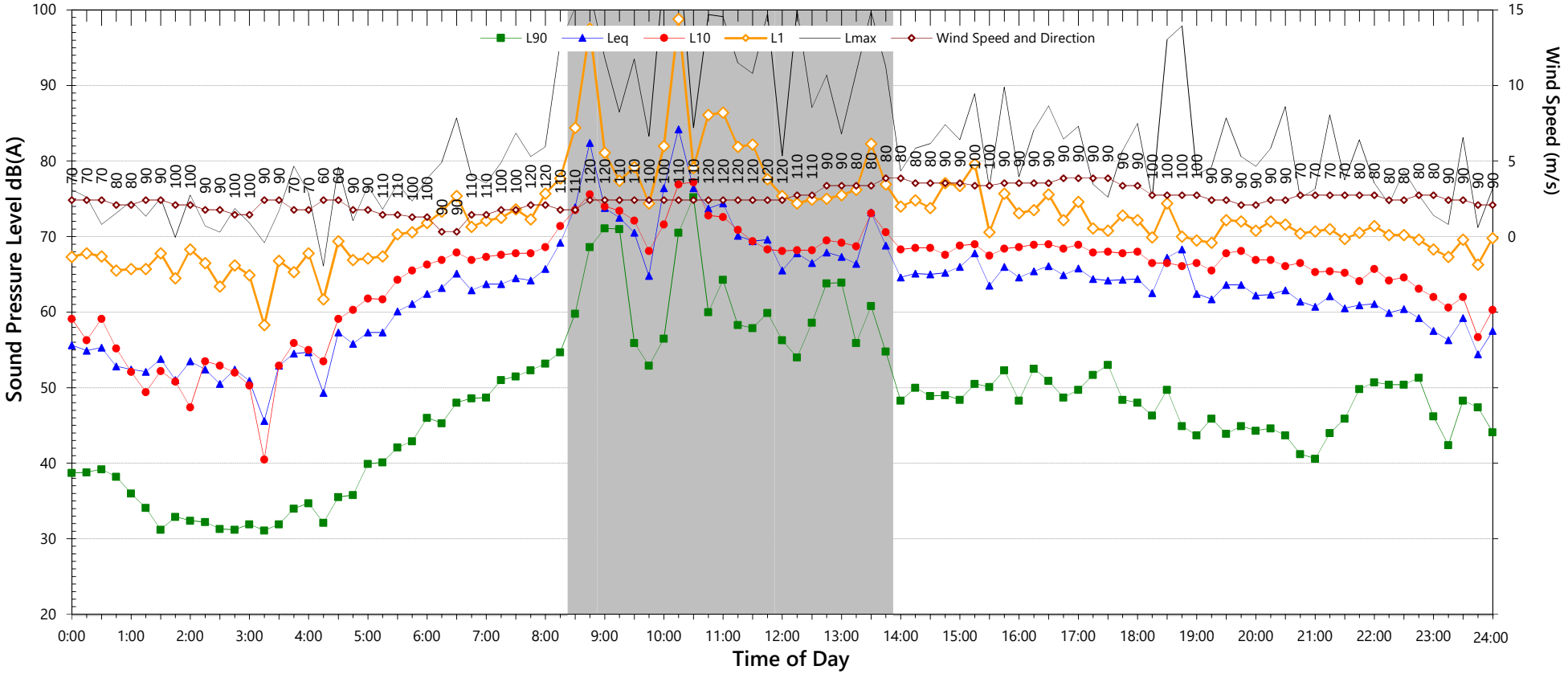
Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
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3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the remaining periods
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Monday, 13 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	41.2	31.8
LAeq (see note 6)	-	60.9	55.7

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	73.9	to	84.4
L_{Max} - L_{eq} (Range)	19.3	to	27.6

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	64.7	58.2
$L_{eq\ 1hr}$ upper 10 percentile	69.0	63.7
$L_{eq\ 1hr}$ lower 10 percentile	61.3	50.4

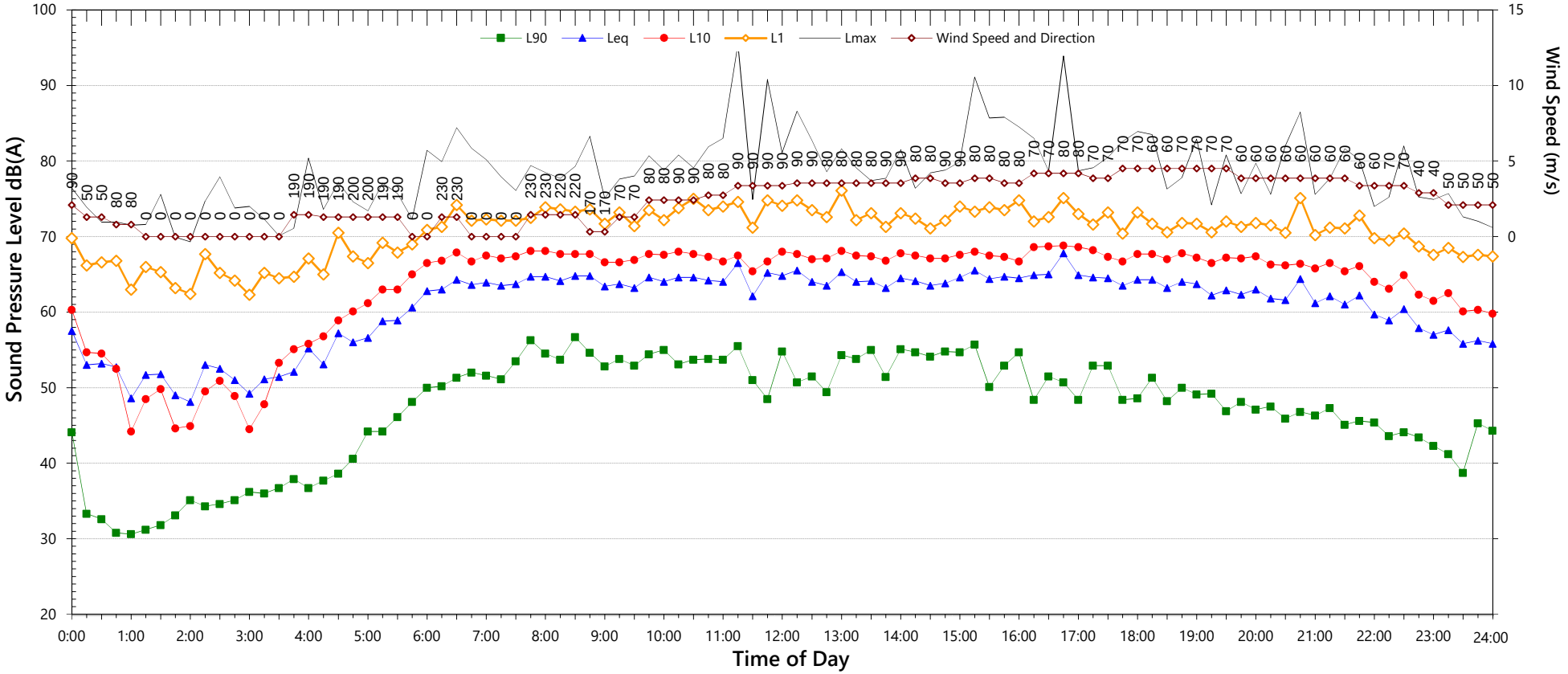
Notes:

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6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Tuesday, 14 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	48.6	45.4	37.2
LAeq (see note 6)	62.0	60.1	55.6

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	72.4	to	85.0
L_{Max} - L_{eq} (Range)	19.3	to	25.7

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	64.1	58.1
$L_{eq\ 1hr}$ upper 10 percentile	65.4	63.5
$L_{eq\ 1hr}$ lower 10 percentile	61.9	51.2

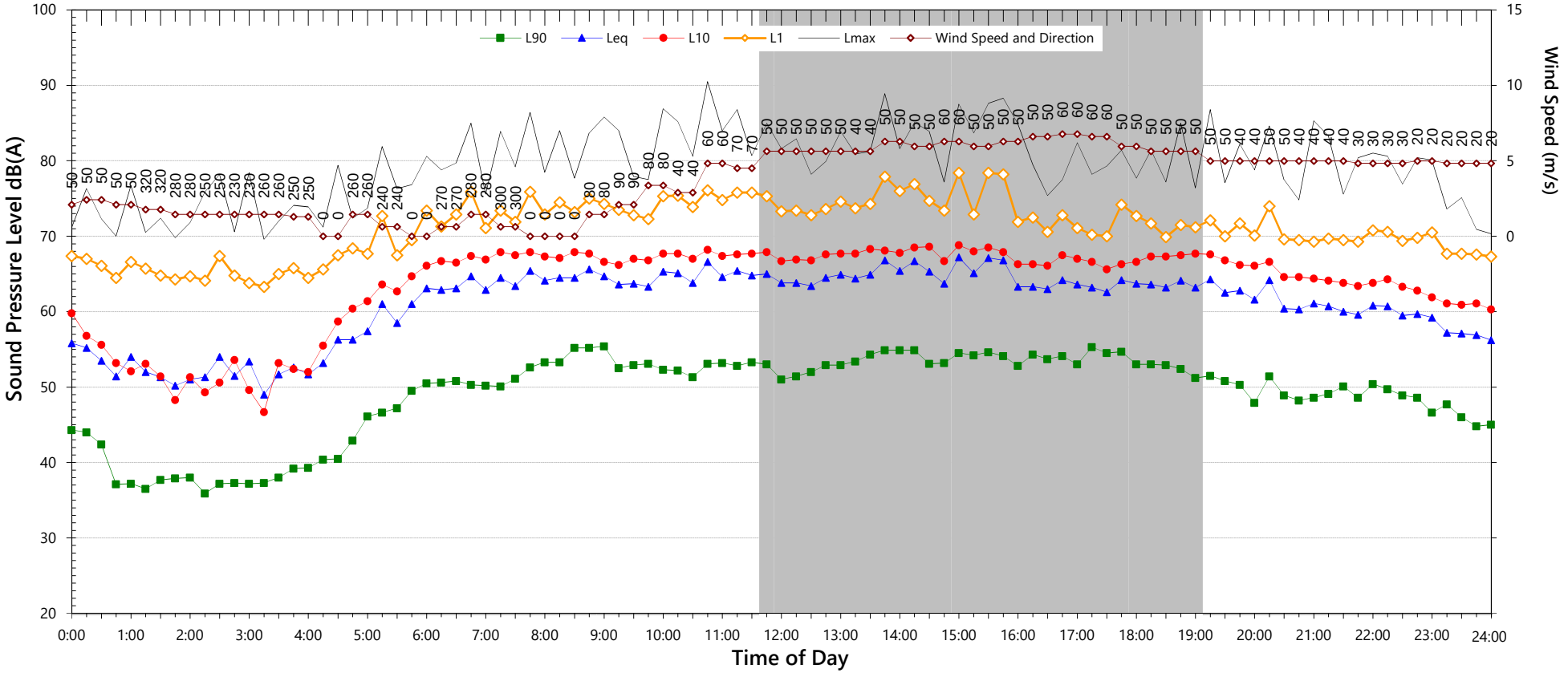
Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the remaining periods
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Wednesday, 15 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	-	35.6
LAeq (see note 6)	-	-	55.6

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	75.0	to	82.0
L_{Max} - L_{eq} (Range)	18.2	to	24.7

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	63.8	58.1
$L_{eq\ 1hr}$ upper 10 percentile	65.1	63.0
$L_{eq\ 1hr}$ lower 10 percentile	60.3	52.2

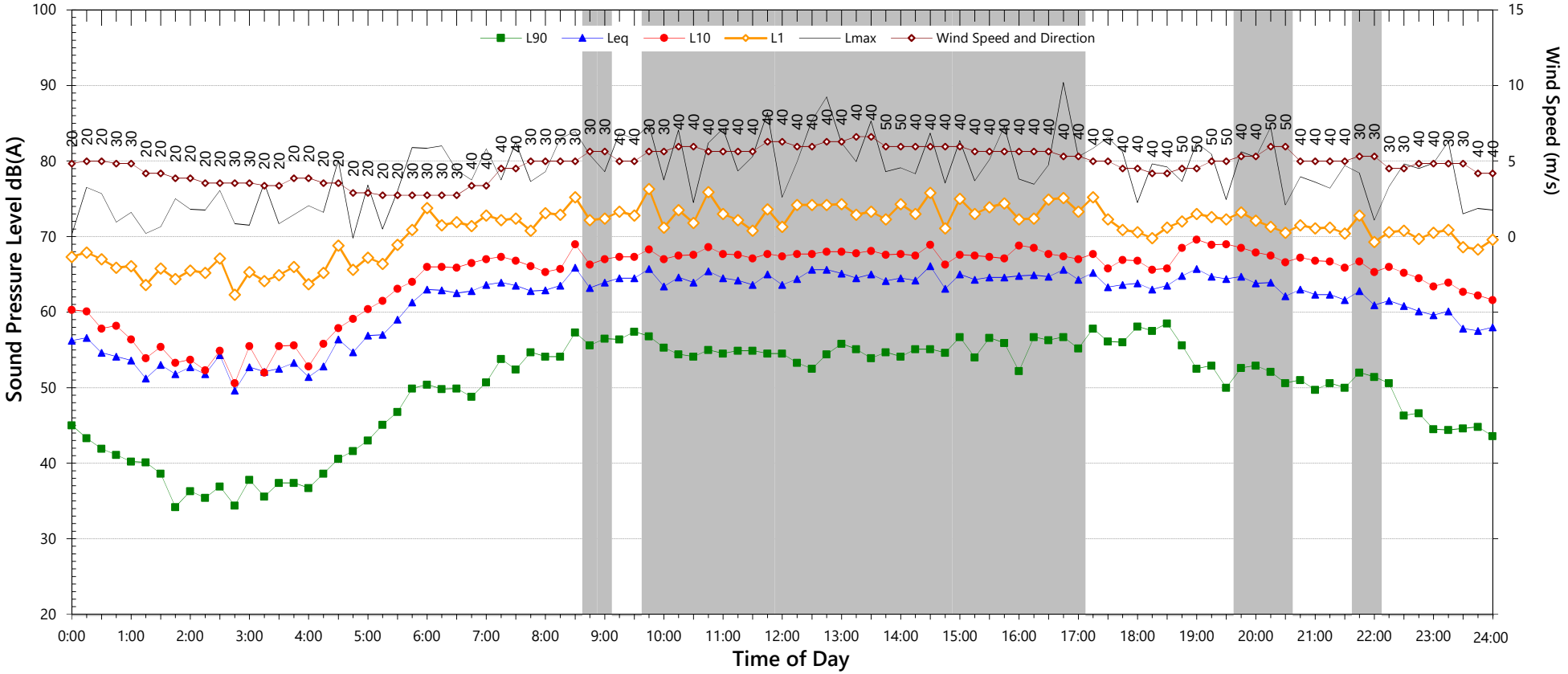
Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the remaining periods
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Thursday, 16 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	-	34.2
LAeq (see note 6)	-	-	56.4

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	72.6	to	87.2
L_{Max} - L_{eq} (Range)	18.5	to	26.8

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	63.9	58.9
$L_{eq\ 1hr}$ upper 10 percentile	64.9	63.9
$L_{eq\ 1hr}$ lower 10 percentile	62.0	52.0

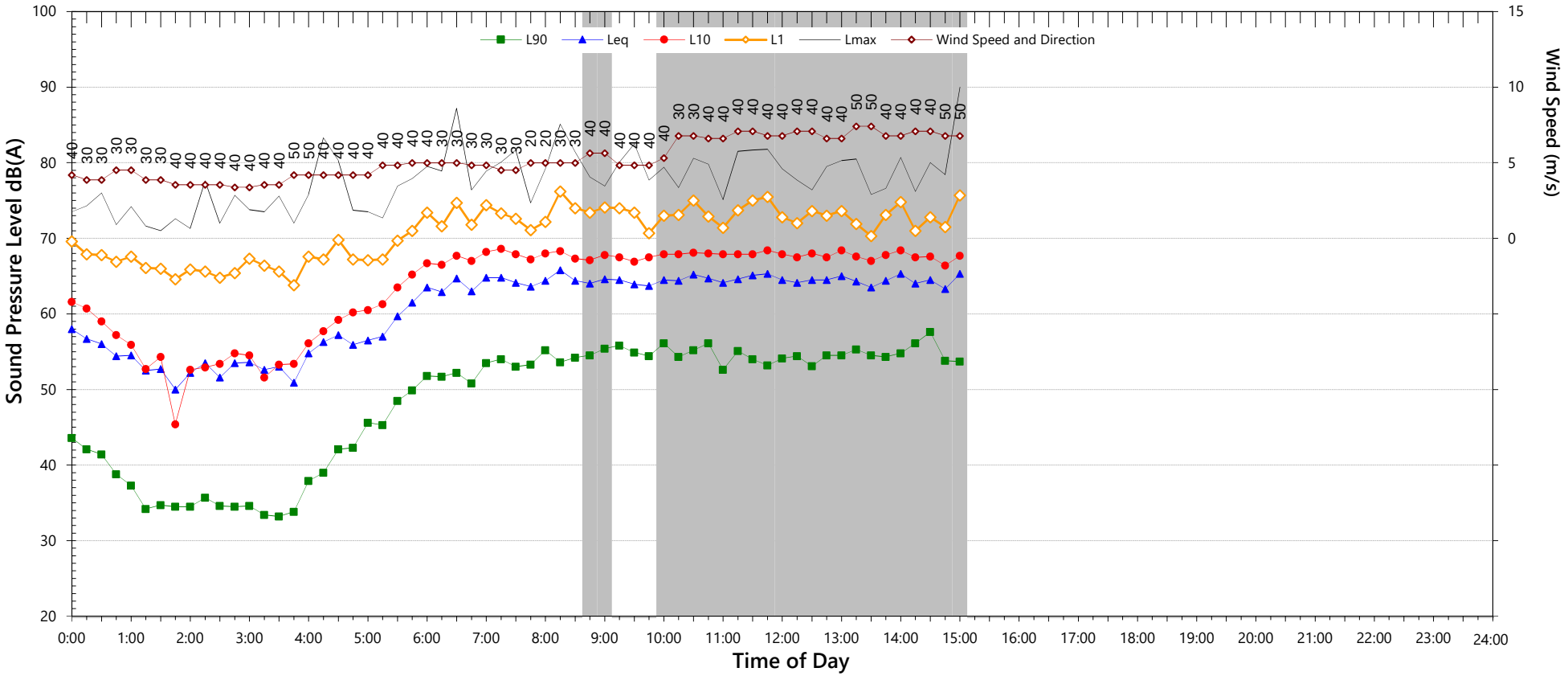
Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the remaining periods
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

Unattended Noise Monitoring Results

1m front of house at 306 Taren Point Rd, Caringbah

Friday, 17 November 2017



NSW Industrial Noise Policy (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{90}	-	-	-
LAeq (see note 6)	-	-	-

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	-	to	-
L_{Max} - L_{eq} (Range)	-	to	-

NSW Road Noise Policy (1m from facade)		
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	64.4	-
$L_{eq\ 1hr}$ upper 10 percentile	65.2	-
$L_{eq\ 1hr}$ lower 10 percentile	64.0	-

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
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6. Graphed data measured 1m from facade; tabulated results free-field corrected
7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max}- Leq ≥15dB(A)

APPENDIX K

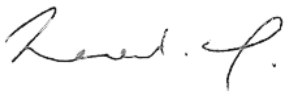
BCA LOGIC PTE LTD

Building Regulation, BCA,
Fire, Access and Energy Consultants



To:	MBD Developments
Project:	310-314 Taren Point Road, Caringbah
Report:	FIRE ENGINEERING STRATEGY REPORT
Reference No:	110223-FESR-r2
Date:	7 October 2020
Client Contact:	Darren Yealland
Email:	dyealland@optusnet.com.au
From:	Leonard Tunhavasana
Direct:	02 8484 4096
Email:	leonard@bcalogic.com.au

DOCUMENT CONTROL

Reference	Rev.	Date	Description	
110223-FESR	r1	12 May 2020	Fire Engineering Strategy Report	
110223-FESR	r2	7 October 2020	Inclusion of comments relating to cross ventilation.	
			Prepared by:	Checked by:
			Leonard Tunhavasana Fire Engineer	Michael Mason Fire Engineering Manager C10 BPB No. 3308
				

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1 INTRODUCTION

1.1 The Project

This Fire Engineering Strategy Report has been prepared on behalf of MBD Developments in support of a Development Application (DA) for 310-314 Taren Point Road, Caringbah.

The subject site consists of a multi-storey residential development with an associated carpark basement.

1.2 Building Code of Australia

The Building Code of Australia currently applicable to this project is the National Construction Code Series Volume 1 - Building Code of Australia 2019 (Amendment 1), herein referred to as the BCA.

1.3 Report scope

BCA Logic Pty Ltd has been engaged by MBD Developments to carry out concept stage Fire Engineering consulting for the development. This report presents a summary of the proposed performance solutions, based on concept architectural drawings and BCA advice. Actual performance solutions required for Detailed Design and Construction Certificate may change in response to design changes between now and then. It is intended that this report be used as a basis for future Fire Engineering Brief (FEB) and Fire Engineering Report (FER) documents as the project progresses.

1.4 Stakeholders

The key stakeholders in the fire engineering process for this project are identified below.

Table 1 Key stakeholders

Role	Company	Contact
Client	MBD Developments	Darren Yealland
Architect	Manor House Design	Sam Tadros
Consent Authority	Sutherland Shire Council	-
Fire engineer	BCA Logic	Michael Mason Leonard Tunhavasana

2 PRINCIPAL BUILDING CHARACTERISTICS

2.1 Building description

The subject site is located at 310-314 Taren Point Road, Caringbah which incorporates five (5) above ground levels used for residential living and two (2) carpark basement levels. A site plan of the proposed development as well as floor plans are provided in the figures below.

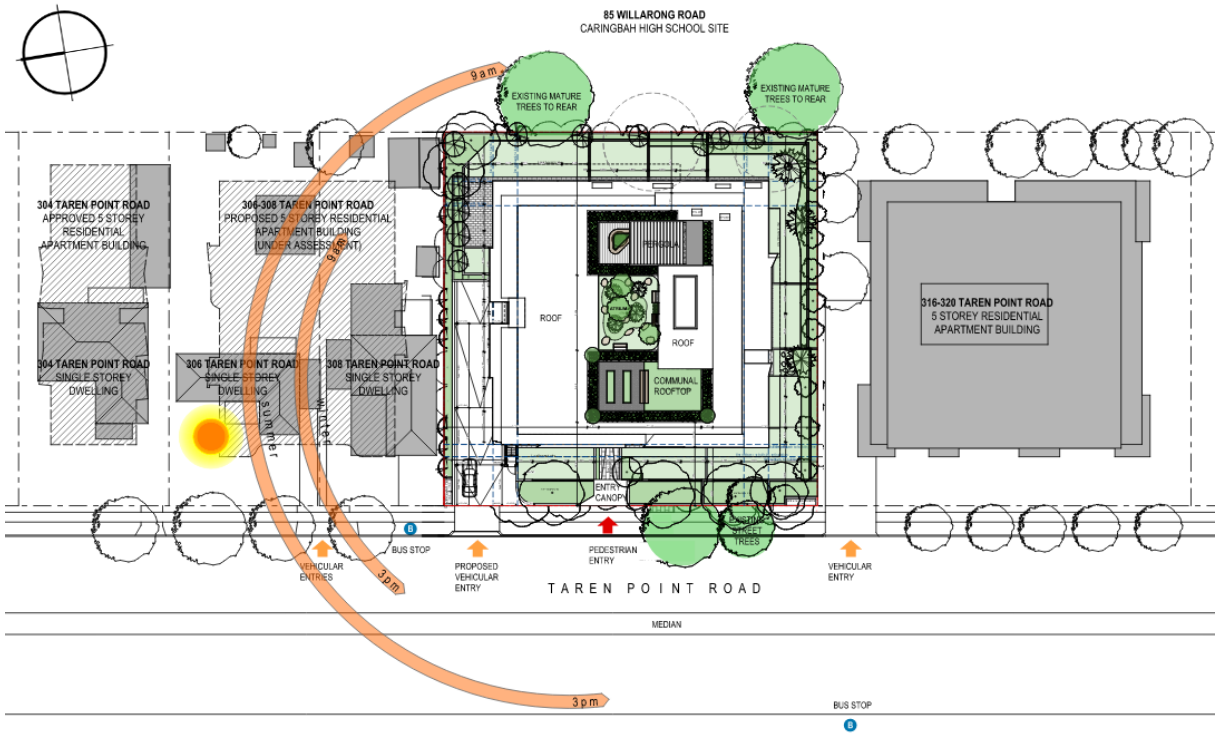


Figure 1 Site plan

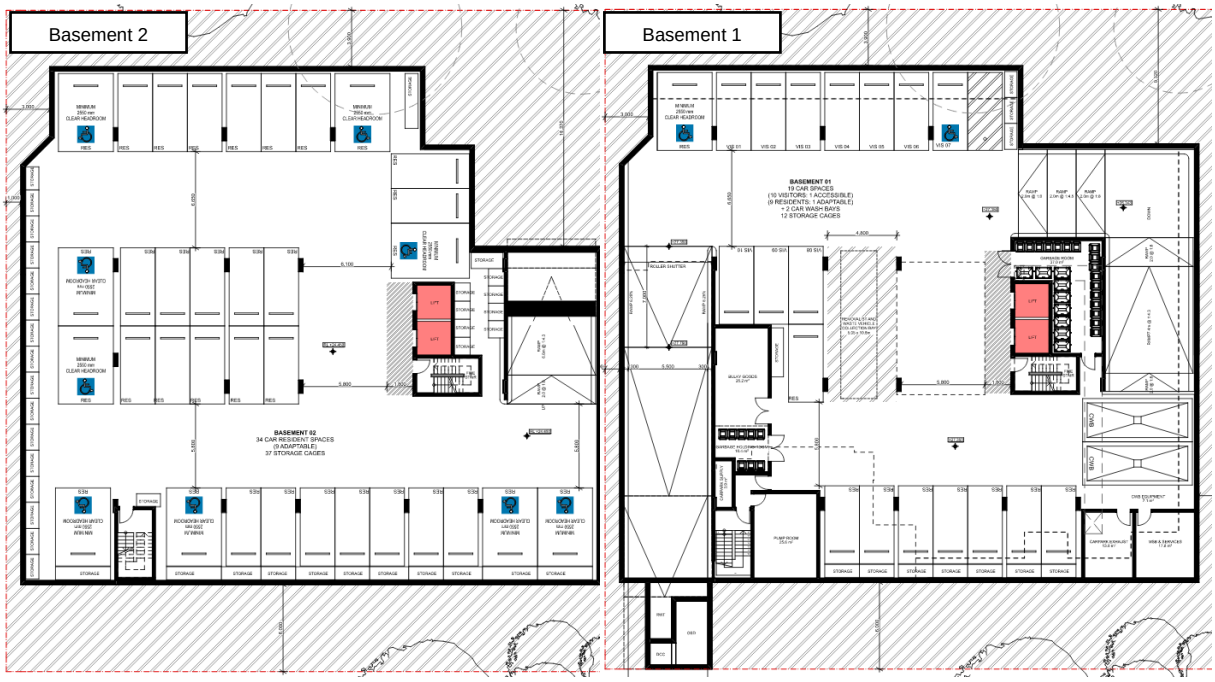


Figure 2 Floor plans – Basement 1 and 2



Figure 3 Floor plans – Ground to roof level

2.2 Potential fire hazards

The potential fire hazards in the subject building are tabled below.

Table 2 Fire hazards

Factor	Example
Ignition sources	Cooking equipment. Kitchen and electrical appliances. Personal technology, ie phones and tablets etc. Heating and air-conditioning equipment. Electrical power supply and lighting system. Vehicle (carpark only)
Fuel sources	Carpets and wall hangings. Furnishings. Furniture. Electrical appliances. Personal belongings. Vehicle (carpark only.
Activities	Improper use of electrical equipment. Minor arson.

Major arson fires with multiple ignition sources and/or multiple ignition locations are discounted in this instance (relative to the Performance Solutions reviewed) and are outside the scope of this report. No amount of professional advice (in both DTS and performance-based designs) can obviate major arson fires with multiple ignition sources and areas of fire origin. Security and fire management procedures and measures would be required to address major arson fires (as for any building).

In any case, it is assumed within this report that a fire will start. The worst credible design fires selected to evaluate the proposed Performance Solutions are considered to have included minor arson fires as minor arsonists are typically opportunistic and use the combustibles readily available on site rather than employ introduced fuel load.

3 PREVENTATIVE AND PROTECTIVE MEASURES

The following schedule lists the key fire safety systems considered during the development of the fire engineering strategy. It is noted that the responsibility for confirming the full fire safety schedule of required systems remains with the Certifying Authority (Certifier).

Table 3 Schedule of essential services

Fire Safety Measure	Standard of Performance
Automatic fire detections and alarm system	BCA Clause E2.2 BCA Specification E2.2a (Clause 3 or 5 TBC by the client)
Automatic Fire Suppression System (sprinklers)	BCA Clause E1.5 BCA Specification E1.5 AS2118.1-2017 Additional requirements as per FER at CC stage.
Emergency Lighting	BCA Clause E4.4 AS2293.1-2018
Exit Signs	BCA Clauses E4.5 E4.6; E4.8 AS2293.1-2018
Fire Hydrant Systems	BCA Clause E1.3 AS2419.1-2005
Fire Doors	BCA Clauses C2.12, C2.13, C3.4, C3.5, C3.8, C3.11 AS 1905.1 – 2015 Manufacturer's specification
Fire rated construction	BCA Clause C1.1 Specification C1.1 Additional requirements as per FER at CC stage.
Fire Seals (protecting openings in fire resisting components of the building)	BCA Clause C3.15 AS 1530.4–2014, AS 4072.1–2005 manufacturer's specification
Fire Hose Reel System (carpark only)	BCA Clause E1.4 AS2441-2001
Paths of Travel, Stairways, Passageways or Ramps	EP&A Regulation Clause 186 Additional requirements as per FER at CC stage.
Portable Fire Extinguishers	BCA E1.6 AS2444-2001
Smoke hazard management - Carpark ventilation	BCA Clause E2.2 AS1668.1-2018 (Clause 5.5), AS1668.2-2012
Warning & Operational Signage	Section 183 of the EP&A Regulation 2000 BCA Clauses D2.23, D3.6, E3.3 AS 1905.1–2015
Fire Safety Engineering	Discharge of fire isolated stairway - Additional requirements as per FER at CC stage.

3.1 Fire and smoke resisting construction

The bounding construction of the ground floor lobby which is on the path of travel between the fire stair discharge and the main building entrance, is to be of fire rated construction having a minimum FRL of 90/90/90 (see Figure 4). Furthermore, all openings within the subject walls shall be protected in accordance with BCA Clause C3.4.

It is noted that as part of Sutherland Shire Council's letter in request for additional information (Ref: DA19/0756 dated 22 September 2020) indicates concerns relating to impact of fire protection of openings on cross-ventilation of the building.

The openings which are subject to fire-rating through the Performance Solution are not within any of the cross-ventilation paths as shown in Annexure A i.e. no conflict between fire engineering requirements and cross ventilation are currently present.

It is noted that if other openings require fire protection to achieve DTS provisions e.g. openings near fire source features, other fire compartments, etc. and are in cross ventilation paths, fire protection would be restricted to the use of fire shutters/curtains as this allows for windows to remain operable during normal hours.

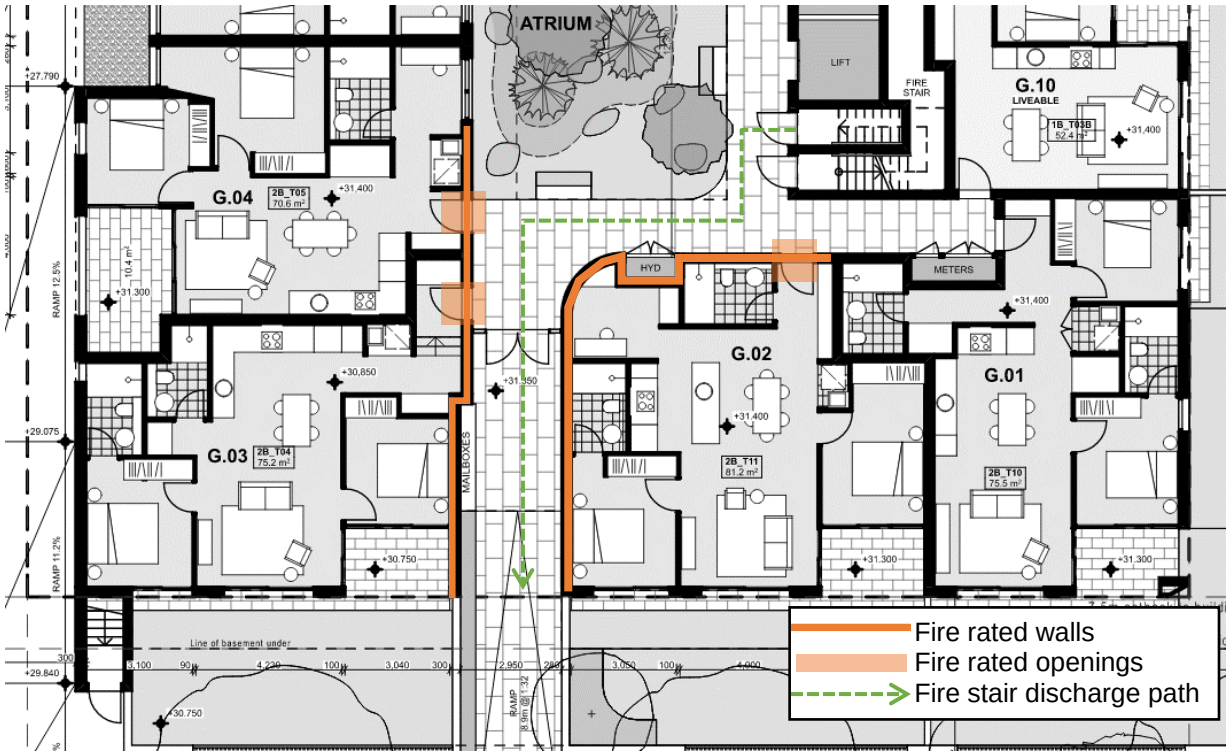


Figure 4 Discharge path of fire stairs – Ground floor plan

3.2 Egress provisions

The discharge path of fire stairs (as shown in Figure 4 above) is to remain free of combustible storage (with the exclusion of the temporary storage of posted mail). This shall be incorporated as part of the management of use of the building which is maintained and enforced by building management.

4 PROPOSED PERFORMANCE SOLUTIONS

The below table presents a summary of the fire engineering performance solutions proposed for the project.

Table 4 Performance Solution Summary

Performance Solution 1 – Discharge of fire isolated exits	
BCA DTS clause:	D1.7(b)
Applicable BCA PR's:	DP5 and EP2.2
Description of the DTS Non-conformance:	The discharge from both fire-isolated exits are within the Ground Floor lobby which area does not have two-thirds open perimeter.
Premise of the Performance Solution:	The Performance Solution considers limited risk of occupants being impeded beyond the fire stair discharge for the following reasons: > Fire rated construction is provided along the path of travel between the stairway and open space, limiting risk of fire exposure to occupants. > The lobby incorporates a large light well area permitting any potential smoke into the lobby area a means of venting directly to atmosphere. > In the case a SOU doorway on the path to open space is left ajar, the fire sprinkler system installed throughout, is considered to limited fire and smoke within tenable limits.
Fire safety measures proposed to support the performance solution:	Fire rated construction provided along the path between fire stair discharge and open space. Fire sprinkler system installed throughout the building.

5 ASSUMPTIONS AND LIMITATIONS

5.1 Assumptions

Assumptions are based on the practice nominated in the International Fire Engineering Guidelines and practical simplifications have been utilised to maintain a simple analysis that is representative of a real fire and life safety situation. For the purpose of this report, the following are assumed:

- Only one (1) fire will occur at a time.
- Occupants will become aware of the fire through fire cues, respond to the cue, cope with the cue and attempt to avoid the fire, as intended by the BCA for safe evacuation.
- Occupants do not engage in major firefighting activities. However, occupants may engage in minor firefighting. Any positive outcome from this will not be included in the analysis.
- It is assumed no excessive quantity of hazardous, flammable, explosive or highly combustible materials will be stored on site.

5.2 Limitations

This report does not include nor imply any design or assessment of compliance or upgrading for:

- the structural adequacy or design of the building;
- the inherent derived fire-resistance ratings of any proposed structural elements of the building (unless specifically referred to);
- the design basis and/or operating capabilities of any proposed electrical, mechanical or hydraulic fire protection services (other than any specifically referred to);
- This report also does not include, or imply compliance with:
  - Sections B, G, I or J of the BCA.
  - Demolition Standards not referred to by the BCA;
  - Work Health and Safety Act;
  - Construction Safety Act;
  - Requirements of other Regulatory Authorities including, but not limited to, Telstra, Water Supply Authority, Electricity Supply Authority, WorkCover, Roads and Maritime Services (RMS), Council and the like; and
  - Conditions of Development Consent;
  - Any Fire Engineered Performance Solutions.

Note: This report is not a Specification Document to be used for tendering purposes.

5.3 Safety in design

- Design of the Performance Solution elements and the development as a whole remains the full responsibility of others, who in turn assign where and how systems and structures are installed and therefore are responsible for safety in design.
- No unique or unusual hazards that would not otherwise be present in the construction, installation, maintenance and decommissioning of a building and its elements are specified by the fire engineering requirements of this FER.
- System and building designers are responsible for the identification and mitigation of any risks associated with the construction, installation, maintenance and decommissioning of systems described within this report

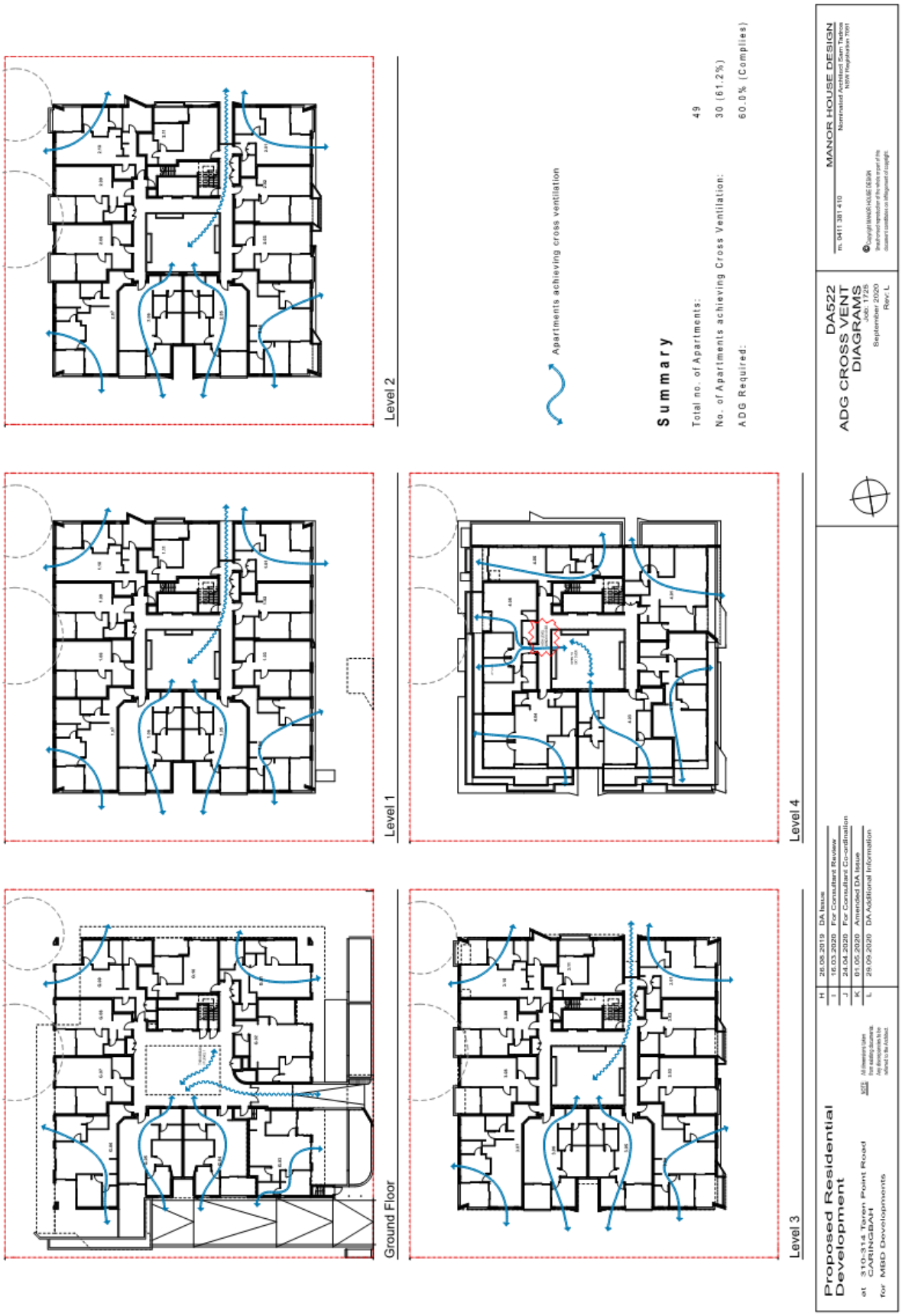
6 INFORMATION SOURCES

This report has been based on the following information tabled below.

Table 5 Information sources

Reference	Title	Produced by	Revision	Date
110223-BCA	BCA Assessment Report	BCA Logic	1	May 2019
1725-DA101	Basement Level 2	Manor House Design	K	May 2020
1725-DA102	Basement Level 1	Manor House Design	K	May 2020
1725-DA103	Ground Floor Plan	Manor House Design	K	May 2020
1725-DA104	Level 1 Plan	Manor House Design	K	May 2020
1725-DA105	Level 2 Plan	Manor House Design	K	May 2020
1725-DA106	Level 3 Plan	Manor House Design	K	May 2020
1725-DA107	Level 4 Plan	Manor House Design	K	May 2020
1725-DA108	Roof Plan	Manor House Design	K	May 2020
1725-DA201	West Elevation	Manor House Design	K	May 2020
1725-DA202	South Elevation	Manor House Design	K	May 2020
1725-DA203	East Elevation	Manor House Design	K	May 2020
1725-DA204	North Elevation	Manor House Design	K	May 2020
1725-DA301	Section AA	Manor House Design	K	May 2020
1725-DA302	Section BB	Manor House Design	K	May 2020

7 ANNEXURE A - CROSS VENTILATION PATHS



PLANNING
INGENUITY

STATEMENT OF ENVIRONMENTAL EFFECTS

Demolition of existing structures and the construction of an affordable rental housing development with basement parking

310-314 Taren Point Road
Caringbah NSW 2229

Prepared for: MBD Developments

REF: M180014
DATE: 24 September 2019

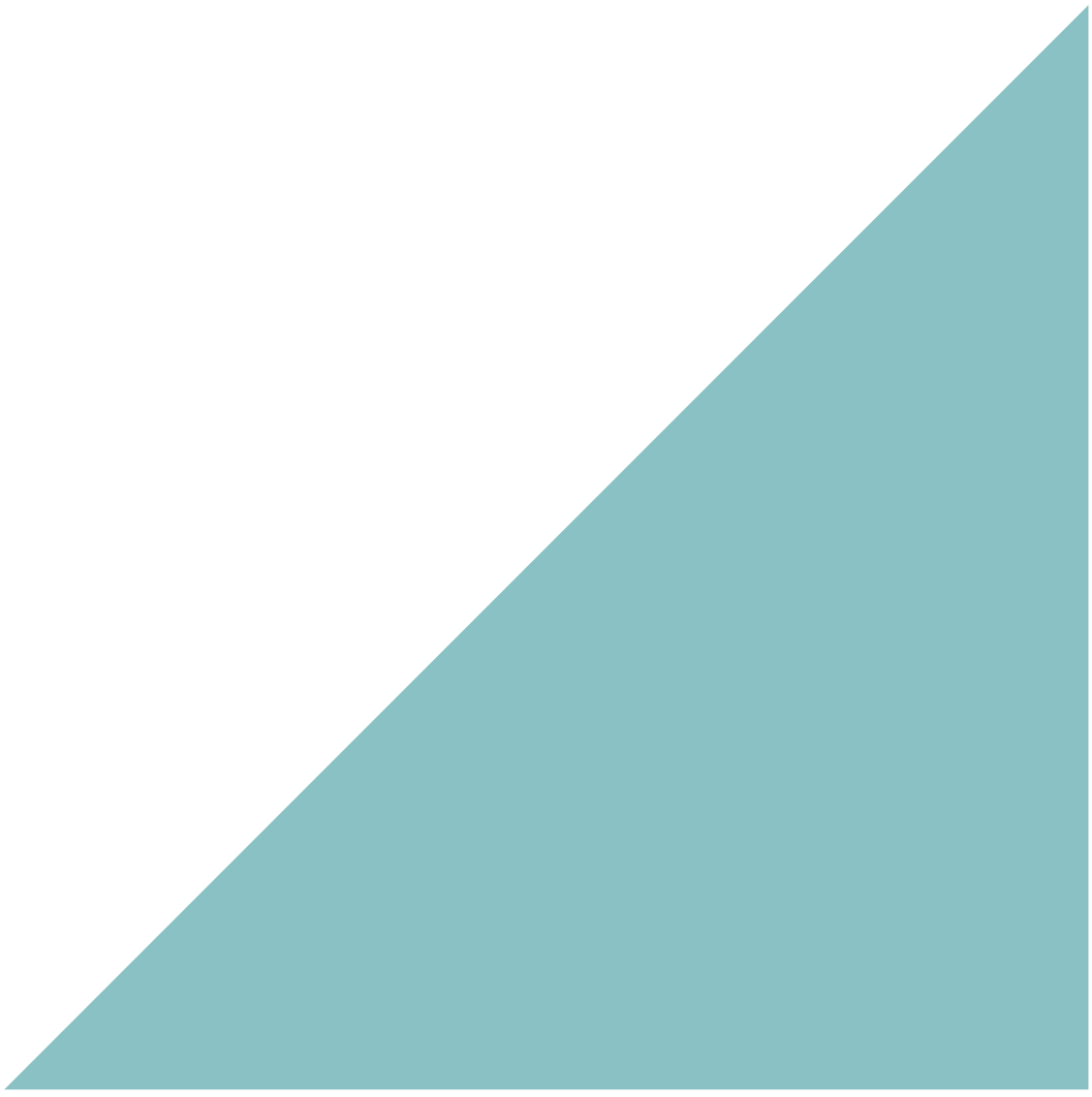


PLANNING
INGENUITY

AFFORDABLE RENTAL HOUSING DEVELOPMENT –

RESIDENTIAL FLAT BUILDING

Statement of Environmental Effects
Prepared for: MBD Developments
Ref: M180014
Date: 24 September 2019



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1. Introduction

This Statement of Environmental Effects has been prepared by Planning Ingenuity for the applicant for the proposed development. The report is to accompany a development application to Sutherland Shire Council seeking consent for the demolition of existing structures and construction of a five storey residential flat building over basement parking at Nos. 310-314 Taren Point Road, Caringbah. Strata subdivision of the residential flat building is proposed.

The development application also proposes to allocate 50% of the total gross floor area as affordable rental housing under *State Environmental Planning Policy (Affordable Rental Housing) 2009* (SEPP ARH) and therefore constitutes *infill affordable housing* for the purposes of the SEPP. On the basis of the allocated affordable housing, the proposal complies with the floor space ratio requirement under SEPP ARH.

The proposal aligns with the objectives of Zone R4 in that it will contribute high quality dwelling stock in a high density residential form. The proposal is generally consistent with all relevant development standards, design criteria and planning controls. The proposal projects to a degree beyond the permitted building height plane and a written variation request pursuant to clause 4.6 of Sutherland LEP 2015 has been prepared and submitted accordingly.

The proposal has a construction cost of $15,477,000 and as such it is to be determined by Council's Local Planning Panel.

The purpose of this Statement is to address the planning issues associated with the development proposal and specifically to assess the likely impact of the development on the environment in accordance with the requirements of S.4.15 of the Environmental Planning & Assessment (EP&A) Act, 1979.

This Statement has been divided into five sections. The remaining sections include a locality and site analysis; a description of the proposal; an environmental planning assessment; and a conclusion.

2. Site Analysis and Context

2.1 THE SITE

The subject site is located to the eastern side of Taren Point Road and comprises three rectangular shaped allotments known as Nos. 310-314 Taren Point Road, Caringbah with a legal description of Lots 14, 15 and 16 in DP 19885. Taren Point Road is a Classified road that is under the care and control of the RMS. The location of the subject site is shown edged red in the aerial image provided at Figure 1.



Figure 1 Aerial photograph of locality (Source: SIX Maps)

The subject site is a regular shape and has a 45.72m frontage to Taren Point Road, a depth of 45.72m, a rear property boundary of 45.72m and an area of 2,090.30m^2. A detailed Land Survey has been submitted with the development application and indicates boundary lengths, site area, spot levels and the location of existing structures and vegetation within the allotment.

The site falls approximately 3.5m from the south-eastern corner, to the north-western corner. The site currently contains three single storey dwelling houses with tiled roof, various outbuildings and an in-ground swimming pool. Vehicular and pedestrian access is provided to the site from Taren Point Road via three driveways, each located along the northern boundary of the individual properties.

The site contains 18 trees, located within all setback areas. The trees are detailed in the Arborist Report submitted with the development application which includes an assessment of the trees located on the subject site, street trees, and trees located on adjoining sites.

A photograph of the subject site depicting existing site conditions is provided at Figure 2.



Figure 2 Existing residential dwellings at subject site

2.2 SURROUNDING DEVELOPMENT

The site is situated to the north-west of the Caringbah Town Centre and is in close proximity to Caringbah Railway Station. The site therefore has good access to public transport, and by extension, local services and facilities including shopping centres, professional and health services, and places of leisure. Proximity to public transport, services and facilities enhances the status of the site as a desirable location for additional housing, including affordable housing.

Land use composition in the immediate locality is characterised by residential development which exists in a variety of forms, predominantly older single dwelling houses. Changes to the planning regime has precipitated considerable redevelopment of land in the immediate locality and low density residential development is being replaced with high density residential flat buildings on amalgamated lots.

Residential development in the locality is situated amongst a series of community and recreational facilities and educational establishments such as Caringbah High School, Caringbah North Public School, Caringbah Bowling Club and Caringbah long day care and preschool facilities.

Immediately to the north of the site at No. 308 Taren Point Road is a dwelling house, however, there is a current DA lodged with Council for a five storey residential flat building under SEPP (Affordable Rental Housing) 2009, as per DA18/1203. Provided at Figure 3 is an image depicting the existing site conditions. Provided at Figure 4 is the western elevation (as viewed from Taren Point Road) of the building, as proposed under the current DA.



Figure 3 No. 308 Taren Point Road (existing conditions)

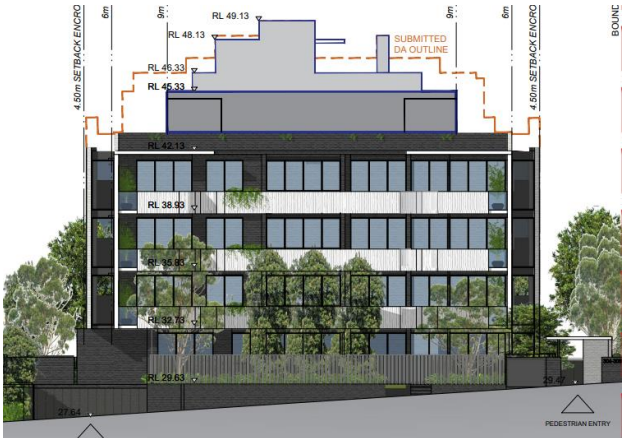


Figure 4 No.308 Taren Point Road (as proposed under DA18/1203)

To the south of the site at No. 316 Taren Point Road is a recently constructed five storey residential flat building (Figure 5).



Figure 5 No. 316 Taren Point Road

To the rear of the subject site is No. 113 Willarong Road, Caringbah. This site contains land that was previously part of Caringbah High School. A development application (DA16/0388) for a staged development for a concept master plan for the site was refused in 2018. It is understood that there is a Land & Environment Court appeal underway for the refused development.

It is clear that while the existing neighbourhood generally contains low density residential buildings, within the locality, to the east of Taren Point Road, Sutherland Shire LEP 2015 facilitates high density residential living comprising residential flat developments, generally on amalgamated sites. It is evident that the area is undergoing a transition to higher density residential development and many sites are currently undergoing redevelopment to realise the higher density development potential.

To the west of the subject site, on the western side of Taren Point Road is an area of R2 Low Density Residential zoning. This area is characterised by single and two storey residential dwellings. Figure 6 depicts the residential dwellings directly opposite the subject site, which are typical of the residential development on the western side of Taren Point Road.



Figure 6 Development on the western side of Taren Point Road

3. Description of the proposal

3.1 BACKGROUND

The applicant attended a pre-DA Meeting at Council on 7 September 2018. The following table addresses each of the recommendations raised in the letter.

Table 1: Pre-DA Meeting

Recommendation	Response
1. Planning Matters <u>State Environmental Planning Policy (Affordable Rental Housing) 2009 (ARHSEPP)</u> Identification of the affordable rental housing units is to be provided with a DA. Please note that the number of units required to be affordable rental housing is based on a percentage of the gross floor area (GFA) and not a percentage of the number of units proposed as commonly mistaken. The plans identify a FSR of 1.7:1 which results in 50% of the GFA to be affordable rental housing.	The units that are proposed to be affordable are identified on the Yield and Commitment Summary plan. 50% are proposed to be affordable.
<u>Floor Space Ratio (FSR)</u> FSR calculations have incorrectly excluded areas of the development which are in fact considered GFA. These areas include: - Central garden space and surrounding pathways within atrium at the ground level; - Walkways on all upper levels within atrium; and	It is argued that the areas within the atrium and adjoining walkways are between the external faces of walls (i.e. outside) and are therefore not included in GFA. Refer to the legal advice prepared by Mills Oakley, included separately with this application.
- A w/c will be required within the basement to fulfil BCA requirements and will need to be counted towards FSR.	The applicant's BCA consultant had advised that the updated NCC 2019 no longer requires a w/c in the basement. An accessible w/c is provided on the rooftop to serve the communal open space.
<u>Bulk and Scale</u> A maximum height of 16m is permitted for development on the site under SSLEP 2015. The proposal significantly breaches the 16m building height limit with the plant room, lift, fire stairs, planter boxes, pergola and roofline protruding above the allowable height limit. In determining whether a breach in height is acceptable, a few key issues arise that require further consideration. Firstly, the non-compliant elements are not centrally located on the roof so it is doubtful that they will be concealed above the roofline when viewed from the existing ground level. Secondly, the building has a poor relationship to the existing ground level. The site's cross fall of 3.5m needs to be considered when developing the building's relationship to the existing ground level as units within the south-eastern corner	The proposal has a maximum height of 19.64m (measured to the lift overrun). Refer to the Clause 4.6 variation statement at Annexure D.

Table 1: Pre-DA Meeting	
of the site are unacceptably submerged below ground by approximately 2.2m. Conversely, the building in the north western corner of the site is elevated well above the ground which causes the roofline to protrude above the allowable 16m height limit. Aside from breaching the building height, the development's inability to relate to the existing ground level creates poor ground floor relationships between internal and adjoining external spaces. Any breach in building height will need to be accompanied by a variation request in accordance with Clause 4.6 of SSLEP 2015.	Ground Floor Unit Section plans (plan DA526) demonstrate that the private open space of units in the south-eastern corner of the site are 1.4m below ground level, and that their private open space areas receive adequate access to natural daylight.
A 9m building setback is required at Level 4 to achieve ADG requirements. The continuous, unarticulated 6m setback at Level 4 is unacceptable. It is noted that the adjoining site to the south breaches this control which further reinforces the need for your development to comply to achieve adequate visual and spatial separation.	The southern setback has been amended to provide a compliant 9m setback, by deleting balconies.
<u>Design and Aesthetics</u> The ARHSEPP requires a development to be compatible with the character of the local area. The proposed aesthetic of the development adopts a 'classical' style that portrays an appearance of an institutional type of building. Such an aesthetic does not relate with the building forms of residential flat buildings that are currently being developed within the streetscape character of this locality. The lack of detail / articulation to the side and rear façades emphasises the scale and mass of the building form and results in an indistinguishable expression of the apartment mix which could produce a more visually interesting presentation.	The design and aesthetic of the proposal has been amended to adopt a more contemporary residential flat building design, incorporating blade walls and horizontal and vertical façade modulation.
<u>Building Services</u> The need for additional building services (including electricity kiosk / substation and fire services facilities) must be integrated with the overall design of the development without compromising the building or landscape design. This information is to be shown on any future DA plans.	An offer to provide design related services by Ausgrid confirms that the proposal is able to connect to an existing substation, being substation S.78274. A preliminary hydrant design has been prepared by Greenview Consulting.
Mail boxes are well recessed within the building. It is recommended that you consult with Australia Post for their servicing requirements as their guidelines require mail boxes to be closely located to the front boundary.	Mail boxes are conveniently located in the entry portal to the development.
<u>Amenity</u> It is not assured that there will be sufficient solar access or cross ventilation achieved for the units. This is due to the reliance of the central open light well / atrium for cross ventilation where it would be difficult to achieve approximately equal areas between inlet and outlet openings. Similarly, the deep, recessed balconies on occasions impede solar access into living room areas of the units. The use of the proposed centre light well cannot be relied upon as a reasonable solar access source. Any future	Cross ventilation diagrams have been prepared indicating 61.2% of apartments achieve ADG requirements. For the central atrium, only units that have approximately equal areas between inlet and outlet openings have been included in the cross ventilation calculation. Sun-eye diagrams have been prepared to demonstrate solar access compliance. 35 of 49 apartments (71.4%)

Table 1: Pre-DA Meeting	
DA will require submission of suns eye diagrams to demonstrate that compliance with ADG requirements is achieved.	achieve a minimum of 2 hours direct sunlight between 9am and 3pm midwinter, which complies with the ADG.
A total of 5 livable and 10 adaptable units are to be provided within the development pursuant Ch. 7 of SSDCP 2015. These units and their car spaces are to be identified on plans. Post-adaptation plans need to be shown, and should involve minimal changes to walls and plumbing for affordability. With an ageing population, this form of housing is necessary to ensure occupants can remain in their home as they age without the need to modify their home in the future.	5 livable and 10 adaptable units are provided, and are identified on plans. 10 adaptable car spaces are indicated on Basement Level 2. Post-adaptation plans are provided.
Residential storage is required at a rate of 6m3 for studio / 1 bedroom, 8m3 for 2 bedrooms and 10m3 for 3 bedrooms, in accordance with the ADG and SSDCP 2015. These areas are to be identified (along with their cubic metre volume) on plans submitted with the DA. A maximum 50% of required storage can be provided within the basement with their allocation to each unit demonstrated. Currently, 36 storage units are provided within the basement causing 13 units to have no basement storage area.	Plans demonstrate compliance with the ADG storage requirements.
A maximum of 8 units off a circulation core on a single level is to be provided as per the ADG to allow comfortable movement and access to each unit. Ground Floor through to Level 3 do not comply with this requirement and thereby a 2nd lift is needed.	A 2nd lift is provided.
Safety Any future DA must address Crime Prevention Through Environmental Design (CPTED) principles. A CPTED Assessment Report should be submitted with the DA. Whilst the plans are preliminary in form, the identification of the entry to residential units could be improved.	Refer to the CPTED assessment at section 4.2.9 of this statement.
2. Engineering Matters	
Waste Waste collection is to occur from within the subject site in accordance with a Waste Collection For New Multi-Unit Dwellings and Residential Flat Buildings 2017 Sutherland Shire Council Environmental Specification. This means that the development will need to facilitate waste collection via a HRV. Due to Taren Point Road being a Classified Road, Roads and Maritime Services (RMS) will require waste vehicles to enter and exit in a forward direction. As discussed in the PAD meeting, a turning bay within the front setback cannot be supported as it will detract from the streetscape. A Waste Management Plan must be provided which includes the following details: - Waste generation, including type and volume Reuse and recycling potential	On site waste collection is proposed by a Medium Rigid Vehicle (MRV). Council has consented to such an arrangement on nearby sites given the difficulty of providing HRV access to sites and impacts on traffic flow on Taren Point Road. A Waste Management Plan prepared by Waste Audit is submitted separately with this application.

Table 1: Pre-DA Meeting	
- Waste systems, such as provision for waste separation and details of any garbage chute or compactors - Bin quantity, size and type / colour - Proposed bin storage and collection areas, including how bins are to be moved from waste storage area/s to collection area/s - Collection frequency - Collection location onsite - Scaled waste management drawings - Waste vehicle access (swept path analysis) - Details of the ongoing management, maintenance and cleaning of all waste and recycling management facilities	
A 25m^2 bulky waste room is required for the development. This may be split into multiple bulk storage areas. This area is essential for residents to store large household items prior to them being put out for Council collection.	A 28.602m^2 bulky goods storage room is provided in Basement Level 1.
<u>Parking and vehicular access</u> Internal driveway grades must comply with AS2890.1. The current driveway is not suitable for a HRV.	The Traffic Impact and Parking Assessment Report prepared by Greenview Consulting confirms that the proposed driveway grades comply with the relevant Australian Standards.
Car parking rates must comply with the ARHSEPP. The proposal in its current form complies with ARHSEPP car parking rates but with 16 tandem parking spaces, this prevents each unit's ability to be allocated a car space. The car parking space dimensions must comply with AS2890.1 and be shown on the plans. Swept path diagrams must also be provided in accordance with AS2890.1.	53 car parking spaces are required, and 53 are provided. No spaces are provided in tandem.
<u>Drainage</u> A Drainage Plan, prepared by a suitably qualified civil engineer including OSD calculations to limit site discharge to pre-development states for all storm events for a 5-100 year ARI is required. A stormwater treatment device is required in accordance with Ch. 38 of SSDCP 2015. It is recommended that a rainwater tank is incorporated into the design for irrigation purposes.	A 10m^3 OSD tank is provided under the driveway, limiting site discharge to pre-development states up to a 100 year ARI. A stormwater treatment device in accordance with Chapter 38 of SSDCP 2015 is provided. Refer to the Stormwater Plans prepared by Greenview Consulting for details.
3. Building Surveying Matters	
A BCA Report and Access Report, prepared by suitably qualified accredited consultants to guide and inform the design are required with any future DA.	Refer to the BCA & Access Report prepared by BCA Logic.
Given the development will require hydrant coverage and provision of a booster, preliminary hydraulic design should be sought to ensure these elements are properly incorporated into the design.	A preliminary hydraulic design has been prepared by Greenview Consulting and is included separately with this application.

Table 1: Pre-DA Meeting	
4. Landscape Architectural Matters	
Communal Open Space The decision to locate communal open space on the roof is supported. Consideration should be given to providing a climber species over the pergola, with non-climbable treatments around the perimeter of the roof and the internal atrium light shaft. The podium planters are to be irrigated and a species that is suitable to the extremes of weather experienced in a roof top garden provided.	Refer to the Landscape Plan prepared by Site Design + Studios.
Existing Street Trees The Dwarf Water Gums are to be retained and protected (except for where the driveway is proposed) as these trees provide a link to the local community's past and unify the streetscape of this area.	The two Dwarf Water Gum trees that are not located within the proposed driveway are to be retained.
Existing Site Trees It would be a positive decision to retain at least two of the trees located adjacent to the rear boundary - namely, the Forest Red Gum (Eucalyptus tereicomus) and the Native River Oak (Casuarina cunninghamiana). In order for this to occur, the basement will need to be re-configured towards the southern boundary to allow enough room for the tree protection zone of these trees. This will provide some immediate screening and separation to any future development on the adjoining site to the rear.	The trees located adjacent to the rear boundary cannot be accommodated, due to the MRV driveway requirements in the basement. Significant landscaping is proposed to compensate for the loss of these trees, including the provision of 53 canopy trees. Loss of existing vegetation is unavoidable given the tree size, location and desire for high density residential development in the R4 zone.
Central Courtyard / Atrium The atrium is buried deep within the structure and will be of limited value for direct solar access to the lower levels. The tree to be planted in the podium planter may need to be either a small deciduous or a small rainforest species to provide the best solar or privacy outcomes and not outgrow its container. The planter will need to have irrigation and drainage supplied with the surrounding pavement area properly drained. It is problematic as to how this area will be sufficiently weatherproofed. The supporting floor and basement below will need to be specifically designed to take the combined weight of the tree, soil and planter. Integrated seating should also be provided as part of the planter or in the area around the planter to encourage use of this area. Each floor has a planter box on the southern side of the atrium. Each one must have irrigation and drainage supplied. Any future DA must demonstrate how this will be achieved.	Three Tasmanian Tree Ferns are proposed to be planted in the atrium, reaching a mature height of 3-5m. The stormwater plans prepared by Greenview Consulting include notes to "*provide subsoil drainage and outlets to all on podium planter boxes*".
Landscaping A minimum 3m landscaping setback is required along the front boundary, with private courtyard and fencing occurring outside this area.	A 3m landscaped area is provided in front of private courtyards.
A minimum of three endemic canopy trees (with a minimum height at maturity of 12m) are to be planted between the building façade and Taren Point Road to improve the	Two Sydney Red Gums reaching a mature height of 15-20m, two Blackbutt Trees reaching a mature height of over

Table 1: Pre-DA Meeting	
immediate microclimate and reduce the visual impact of the development from the street. A minimum 1m wide garden bed is required along the northern boundary of the site. This area is to be appropriately planted and irrigated. <u>Utilities and Infrastructure</u> You are advised to make enquiry early with the various infrastructure and utility providers to ensure relevant considerations for the provision of services have been taken into account early in the building design. Urban infrastructure and utilities are reaching, or have reached maximum capacity in some localities. Electricity substations are required on occasion to ensure sufficient power to buildings and NSW Fire have required substantial water tanks in some instances to meet flow requirements for sprinkler systems. Infrastructure to support these requirements in the front boundary setback at the expense of landscaping or parking requirements is not likely to be acceptable. So you are encouraged to make enquiries and plan in advance.	30m, and three Tuckeroo Trees reaching a mature height of 10-15m are proposed within the front setback area. A 1m wide landscaped area is provided along the northern boundary. An offer to provide design related services by Ausgrid confirms that the proposal is able to connect to an existing substation, being substation S.78274. A preliminary hydrant design has been prepared by Greenview Consulting.

3.2 RESIDENTIAL COMPONENT

The development application seeks consent for the demolition of existing structures and the construction of a five storey residential flat building over basement parking, with an affordable rental housing component. Detailed architectural plans have been prepared by Manor House Design and are included with the development application. Strata subdivision of the residential flat building is proposed.

The proposal contains a total of 49 apartments distributed over 5 levels. The apartment composition is provided as follows: 18 x single bedroom apartments; 25 x two bedroom apartments; and 6 x three bedroom apartments. Of the 49 apartments proposed, 10 constitute ‘adaptable’ dwellings and 5 constitute ‘liveable’ dwellings, and are equitably distributed across the residential levels. Each apartment has an open plan living and dining arrangement and a private open space in the form of a terrace or balcony which is directly accessible from the living area. Communal open space is provided at the rooftop with a northern orientation offering expansive views for the use and enjoyment of all residents. The rooftop communal open space can be accessed via two lifts and a staircase. A plant room is also located on the rooftop. The development satisfies accommodation size, solar access requirements, natural ventilation requirements, and storage volume requirements of the Apartment Design Guide.

A central atrium is included in the building design, to allow natural light to penetrate the building. All balconies provided to units are oriented north, east or west (i.e. no private open space relies on the central atrium). The proposal allows for deep soil planting along all boundaries, with substantial planting in each setback area. The site includes deep soil planting of approximately 29.4% for the establishment and continuation of landscaping and improved privacy relationship with the neighbouring properties.

3.3 ACCESS AND PARKING

Pedestrian access to the site is provided via a pathway adjoining the western frontage to Taren Point Road. Vehicular access to the site is proposed from Taren Point Road. The driveway to the basement parking area is proposed to be

situated close to the northern (side) property boundary, a logical location given site levels. The basement car park comprises two levels and contains 53 car parking spaces, 11 of which are accessible spaces. Pedestrian access from the parking area to the upper levels is provided via a stairwell and two passenger lifts.

A Traffic Impact and Parking Assessment Report has been prepared by Greenview Consulting and addresses parking requirements, the adequacy of proposed access and internal design arrangements, and the anticipated traffic impacts associated with the development. The Report concludes that the projected increase in the traffic generation potential of the site as a consequence of the development will not have any unacceptable implications in terms of road network capacity, and confirms that the proposed parking facilities satisfy the relevant parking requirements.

3.4 TREE REMOVAL

An Arborist Report prepared by Naturally Trees has been prepared in relation to the proposed development and is submitted with the Development Application. The Report assesses 23 trees, including 18 trees within the subject site, 3 trees on Council land, and 2 trees adjoining the site to the rear. The Report concludes that 19 trees are required to be removed, 18 on the subject site and 1 on Council land. The Report also makes recommendations in relation to excavation technique and tree protection measures.

3.5 LANDSCAPING

A Landscape Plan has been prepared by Site Design + Studios and is submitted with the Development Application. The Landscape Plan details the extent and location of planting as well as species selection, anticipated mature height and spread, and planter bed details. Significant trees provided throughout the site are detailed below.

Front Setback:

- Two Sydney Red Gums reaching a mature height of 15-20m;
- Two Blackbutt Trees reaching a mature height of over 30m; and
- Three Tuckeroo Trees reaching a mature height of 10-15m.

Southern Side Setback:

- Eight Coastal Banksias reaching a mature height of 8m; and
- Ten Smoothed Leaved Quandong Trees reaching a mature height of 5-10m.

Northern Side Setback:

- Four Water Gums reaching a mature height of 5-10m; and
- Ten Coastal Banksias reaching a mature height of 8m.

Rear Setback:

- Nine Water Gums reaching a mature height of 5-10m; and
- Five Smoothed Leaved Quandong Trees reaching a mature height of 5-10m.

As demonstrated above, substantial trees and shrubs are provided within the deep soil areas to supplement retained trees and to ameliorate the apparent visual bulk of the development when viewed from neighbouring properties and the street, as well as to provide privacy screening. The central atrium on the ground floor is to be planted with three Tasmanian Tree Ferns reaching a mature height of 3-5m. The communal open space at the upper-most level incorporates outdoor furniture and raised planter beds at its edges, to soften the space and limit trafficable area.

3.6 WASTE MANAGEMENT

A Waste Management Plan (WMP) prepared by Waste Audit is submitted with the Development Application. The WMP covers operational waste management details, describing the location and capacity of waste storage areas, waste volumes that are anticipated to be generated by the development, and reporting and management responsibilities.

A residential waste storage room is provided at basement level and will be concealed from view in this location. The waste room is of a sufficient size and proportion to accommodate waste receptacles. A bulky waste area is also provided within the basement level parking area. An area in the basement is reserved for a Medium Rigid Vehicle (MRV) to collect waste. Council has consented to such an arrangement on nearby sites given the difficulty of providing HRV access to sites and impacts on traffic flow on Taren Point Road. Swept path diagrams submitted with the application demonstrate that the MRV can enter and exit the site in a forward direction.

3.7 PROJECT DATA

Table 2 provides project data for the proposal.

Table 2: Project Data

	Proposed development
Site area	2,090.30m^2
GFA	3,535.40m^2
FSR	1.7:1
Car parking	53 spaces
Building height	19.64m
Landscaped area (Deep Soil)	612.5m^2 (29.4%)
Communal open space	526m^2
Solar access	35 of 49 units (71.4%)
Cross ventilation	30 of 49 units (61.2%)
Adaptable dwellings	10 units
Liveable dwellings	5 units

4. Environmental Planning Assessment

This section of the Statement provides a planning assessment of the proposed development covering all relevant heads of consideration under Section 4.15 of the EP&A Act, 1979.

4.1 STATUTORY AND POLICY COMPLIANCE

The relevant matters for consideration under Section 4.15(1)(a) of the EP&A Act, 1979, are identified in Table 3.

Table 3 Section 4.15 Matters for Consideration

EP & A Act, 1979.	Matters for Consideration	OK	See Comments	N/A
S4.15(1)(a)(i)	SEPP No.55 – Remediation of Land	✓	✓	
"	SEPP BASIX 2004	✓	✓	
"	SEPP (Infrastructure) 2007	✓	✓	
"	SEPP No. 65 – Design Quality of Residential Apartment Development	✓	✓	
"	SEPP (Affordable Rental Housing) 2009	✓	✓	
"	Sutherland Shire LEP 2015	✓	✓	
S4.15(1)(a)(iii)	Sutherland Shire DCP 2015	✓	✓	
S4.15(1)(a)(iv)	Any other prescribed matter			
	• AS 2601-1991: Demolition of structures	✓		
	• Government Coastal Policy			✓
	• Provisions of Subdivision Order			✓

The matters identified in Table 3 as requiring specific comment are discussed below.

The primary statutory documents that relate to the subject site and the proposed development are State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development (SEPP 65), State Environmental Planning Policy (Affordable Rental Housing) 2009 (ARH SEPP) and Sutherland Shire Local Environmental Plan 2015 (SLEP 2015). The primary non-statutory plan relating to the subject site and proposed development is Sutherland Shire Development Control Plan 2015 (SDCP 2015).

The relevant provisions and controls of the above Instruments and Plans are summarised in the following sections of this SEE.

4.1.1 SEPP No.55 – Remediation of Land

This State Environmental Planning Policy (SEPP) was gazetted on 28 August 1989 and applies to the whole State. It introduces planning controls for the remediation of contaminated land and requires an investigation to be made if land contamination is suspected.

Based on an investigation of application history, perusal of historic aerial imagery and a site inspection, it is unlikely that the site has previously been used for any potentially contaminating land uses, and is therefore unlikely to be contaminated. No further action is required in relation to contamination.

4.1.2 SEPP Building Sustainability Index: BASIX 2004

A "BASIX Certificate" has been prepared and is submitted separately with this application. The certificate demonstrates compliance with the thermal comfort, energy efficiency and water efficiency requirements of SEPP BASIX. Commitments made under the BASIX Certificate are detailed on the architectural plans.

4.1.3 SEPP (Infrastructure) 2007

The site adjoins a State Road (Taren Point Road) to the west which requires mandatory assessment under Clause 102 of the SEPP. The following aspects of SEPP (Infrastructure) 2007 are relevant to the proposed development:

Table 4 SEPP (Infrastructure) 2007 – Clause 102

Clause	Requirement	Proposal
Cl 101	(2) The consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that: (a) where practicable, vehicular access to the land is provided by a road other than the classified road, and (b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of: (i) the design of the vehicular access to the land, or (ii) the emission of smoke or dust from the development, or (iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and (c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.	Currently, the site only has frontage to Taren Point Road and as such, vehicular access to the site is provided via Taren Point Road. An Acoustic Assessment has been prepared by Renzo Tonin & Associates with recommendations to ensure the development will comply with the relevant acoustic criteria. The report concludes: *"Renzo Tonin & Associates have completed an acoustic assessment of road traffic noise impacts onto the proposed residential development at 310-314 Taren Point Road, Caringbah.* *The study of external noise intrusion into the subject development has found that appropriate noise control measures can be incorporated such as acoustic glazing into the building design to achieve compliance with the acoustic requirements of Sutherland Shire Council DCP 2006, State Environment Planning Policy ISEPP 2007 and Australian Standard AS/NZS 2107.* *Recommendations have been provided in Section 4 of this report to comply with the nominated internal noise criteria."* Accordingly, the development will not affect the safety, efficiency and ongoing operation of and will not be adversely affected Taren Point Road.
Cl 102	(3) If the development is for the purposes of a building for residential use, the consent authority must not grant	As above, an Acoustic Assessment has been prepared by Renzo Tonin & Associates and following the recommendations of the report,

Table 4 SEPP (Infrastructure) 2007 – Clause 102		
	consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded: (a) in any bedroom in the building—35 dB(A) at any time between 10 pm and 7 am, (b) anywhere else in the building (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time.	the proposed development will comply with the relevant acoustic criteria.

In light of the above, the proposal satisfies the relevant provisions of SEPP (Infrastructure) 2007.

4.1.4 SEPP No. 65 – Design Quality of Residential Apartment Development

SEPP No.65 – Design Quality of Residential Flat Buildings (SEPP 65) was gazetted on 26 July 2002 and applies to the assessment of Development Applications for residential flat developments of three or more storeys in height and containing at least four dwellings. Amendment 3 to SEPP 65 commenced on 17 July 2015 and implemented various changes including the introduction of the Apartment Design Guide (ADG) to replace the Residential Flat Design Code. SEPP 65 applies to the proposal.

Schedule 1 of the Policy sets out the 9 'Design Quality Principles' and Clause 28(2) requires that the consent authority takes into consideration the following when determining an application:

(a) The advice (if any) of a relevant design review panel;

(b) The design quality of the residential flat development when evaluated in accordance with the design quality principles; and

(c) The Apartment Design Guide.

In relation to Clause 28(2)(b), and in order to satisfy cl. 50 of the *Environmental Planning and Assessment Regulation 2000*, a Design Verification Statement has been prepared by Manor House Design and is submitted with the Development Application. The Design Verification Statement details compliance with the Design Quality Principles. In relation to Clause 28(c) an ADG compliance table has been prepared and is provided at Annexure A of this SEE.

Clause 30(1) of SEPP 65 states that a Development Application cannot be refused for reasons relating to ceiling heights, parking and internal apartment sizes, if the development complies with the prescribed design criteria for these matters as specified in the ADG. The proposal satisfies these design criteria, as outlined in the compliance table at Annexure A of this SEE.

The proposal is generally consistent with remaining ADG design criteria, with the exception of building setbacks prescribed by Section 3F Visual Privacy. The proposed variations to the minimum building setback requirement are marginal and the development will satisfy the intent of the design criteria despite numeric non-compliance. The proposed variations and consideration of impact is discussed in more detail below.

4.1.4.1 Visual Privacy

Design Criteria 1 of Part 3F of the ADG prescribes setback requirements between proposed buildings and the side or rear boundaries of an allotment and are reproduced at Table 5. The objective of the design criteria is to ensure adequate separation distances are shared equitably between neighbouring sites to achieve reasonable levels of external and internal visual privacy. It is pertinent to note that the objective relates solely to visual amenity.

Table 5: Setback distances prescribed by the ADG		
Building height	Habitable rooms & balconies	Non-habitable rooms
Up to 12m (4 storeys)	6m	3m
Up to 25m (5-8 storeys)	9m	4.5m
Over 25m (9+ storeys)	12m	6m

The boundary setbacks proposed for the development are summarised in Table 5.

Table 6: Proposed minimum boundary setbacks						
Building height	Southern (side)	Complies	Eastern (rear)	Complies	Northern (side)	Complies
Ground	6m	✓	6m	✓	6m	✓
Level 1 - 3	4.96m	×	6m	✓	6m	✓
Level 4	9m	✓	6.99m (balcony edge)	×	6.99m (balcony edge)	×

Despite numeric non-compliance, the proposal is considered to achieve the objective of the design criteria, as follows:

- Levels 1-3: The breach of the setback requirement at the southern side setback is very minor, relating to an angled blade wall in two bedrooms (refer to Figure 7). The blade wall appears as a blank wall from the neighbouring residential flat building at No. 316 Taren Point Road. The angled blade wall allows for windows to bedrooms, oriented to the front and rear setback area of the subject site. The variation therefore provides natural light penetration to bedrooms, without affecting visual privacy to the adjoining southern RFB.

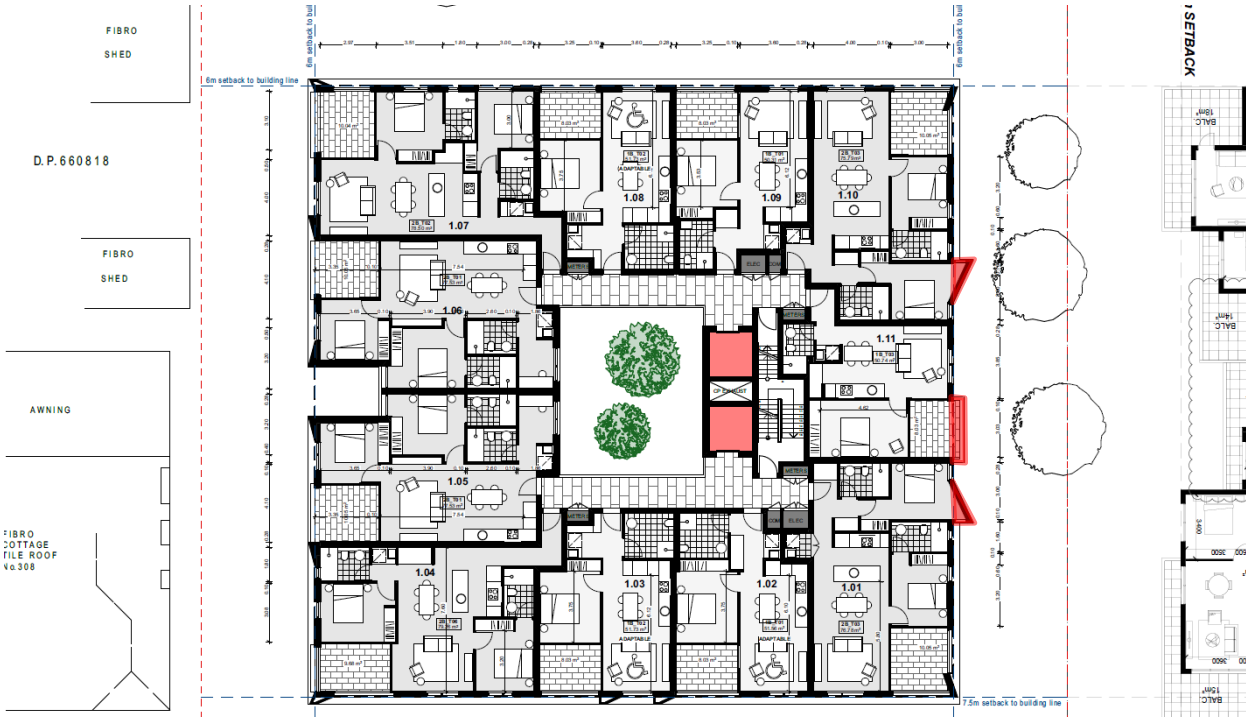


Figure 7 Levels 1-3 side setback non-compliance (non-compliant portions indicated red)

- Level 4 eastern setback: The eastern setback at Level 4 is 6.99m to the balcony edge, representing a 1.01m breach of the control (refer to Figure 8). This reduced setback is considered acceptable, given the significant landscaping that is proposed, including planting of five Smoothed Leaved Quandong trees, and nine Water Gums.
- Level 4 northern setback: The breach of the setback requirement at the northern side setback at Level 4 is considered acceptable, since edge planters are proposed, to be planted with spilling plants to soften edges. The provision of balconies encroaching within the setback requirement does not significantly impact on visual privacy outcomes to dwellings to the north.



Figure 8 Level 4 rear and side setback non-compliances (non-compliant portions indicated red)

In summary, despite minor numeric non-compliance with the separation distance requirements from shared boundaries, the layout and design of the proposed apartments, balconies and windows will ensure the visual privacy of neighbouring dwellings is not unreasonably compromised and a suitable relationship is achieved between adjacent residential uses. As such, the proposal achieves the objective of the design criteria and a variation to the separation requirement is considered appropriate.

4.1.5 SEPP (Affordable Rental Housing) 2009

State Environmental Planning Policy (Affordable Rental Housing) 2009 (ARH SEPP) commenced on 31 July 2009 and aims to facilitate the effective delivery of new affordable rental housing by providing incentives by way of expanded zoning permissibility and floor space ratio bonuses.

Division 1 of Part 2 of the ARH SEPP contains development standards for in-fill affordable housing and also identifies a series of standards that cannot be used by a consent authority to refuse consent, provided prescribed thresholds are achieved.

A compliance table which considers the proposal against the relevant standards and provisions of the ARH SEPP is provided at Annexure B. The proposal will contribute to the quantum of affordable residential accommodation in the Sutherland Shire Local Government Area and provides for dwellings with a high level of internal amenity and functionality.

4.1.5.1 Character of local area

Clause 16A of ARH SEPP states that a consent authority must not consent to development to which this Division applies (being development for the purposes of affordable housing) unless it has taken into consideration whether the design of the development is compatible with the character of the local area. The concept of character and the extent to which a particular development achieves compatibility with character, is inherently subjective.

The subject site is located in the Caringbah North Residential Flat Precinct. Chapter 7 Part 2 of SSDCP 2015 states for the Caringbah North Residential Flat Precinct:

> *The aim is to develop flats where all residents have adequate privacy, good light and natural ventilation, attractive outlooks, and good quality landscaped private and shared open space between buildings. To allow for adequate solar access and privacy for future residents, building separation distances which increase with increased building height are required.*

The application documentation and the discussion contained within this Report demonstrates that the physical impacts of the proposal are acceptable. Specifically, the proposal incorporates appropriate mitigation measures to ensure overlooking from windows and balconies will not occur and that the amenity afforded to the future occupants is not diminished, whilst privacy of neighbours is protected. Units are predominantly orientated to the front and the rear of the site, resulting in side elevations that provide reduced opportunities for overlooking adjoining sites to the north and south. Landscaping is proposed within the side setbacks, as far as is practicable, with additional, larger plantings proposed within the front and rear setbacks. Additionally, solar access diagrams indicate that shadow will be cast over the adjoining site to the south, however will move across the site throughout the day, allowing sunlight to reach the rear and front of the site respectfully.

Further, it is considered that the appearance of the building is consistent with typical residential flat building development within the immediate locality and also those seen at a wider scale within the local government area. The proposal will therefore comfortably sit with the development that is emerging to define the locality.

4.1.6 Sutherland LEP 2015

The Sutherland Shire Local Environmental Plan 2015 (SLEP 2015) applies to the subject site. Under SLEP 2015 the subject site is identified as being within Zone R4 High Density Residential. The proposal is characterised as a residential flat building which is permissible with consent in in Zone R4.

The objectives of Zone R4 are as follows:

- *To provide for the housing needs of the community within a high density residential environment.*
- *To provide a variety of housing types within a high density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To encourage the supply of housing that meets the needs of the Sutherland Shire's population, particularly housing for older people and people with a disability.*
- *To promote a high standard of urban design and residential amenity in a high quality landscape setting that is compatible with natural features.*
- *To minimise the fragmentation of land that would prevent the achievement of high density residential development.*

The proposed development is consistent with the objectives of Zone R4 in that it will provide additional residential accommodation in a high density format, the development will comprise a range of dwelling sizes and types, including affordable accommodation, and the development is of a high quality architectural design considered to be compatible with its landscape setting.

Annexure C provides a compliance table which addresses the relevant provisions of SLEP 2015. The proposal involves a departure from the 'height of buildings' development standard, and a written clause 4.6 variation request is provided at Annexure D in relation to this variation.

4.1.7 Sutherland Shire DCP 2015

The Sutherland Shire DCP 2015 came into effect on 2 August 2017 and applies to the subject site.

A compliance table is provided at Annexure E and considers the proposal against the relevant objectives and controls of SSDCP 2015. The proposal is largely consistent with relevant DCP controls contained within Chapter 6 which relates specifically to residential flat building development in Zone R4. Where areas of non-compliance occur, justification has been provided within the compliance table.

4.2 IMPACTS ON NATURAL & BUILT ENVIRONMENT

4.2.1 Topography & Scenic Impacts

The proposal involves a substantial degree of excavation which relates to the proposed basement parking. Basement parking is considered to be the most logical and efficient means of providing parking on site in this context, and has been adopted for this reason. The basement levels will be largely subterranean when perceived from Taren Point Road and therefore site topography will appear relatively unchanged.

There are no significant scenic features such as significant trees, rock outcrops and the like that will be affected by the development proposal.

4.2.2 Micro-climate Impacts

The proposed development will have no significant adverse impact on surface or ground water regimes. Therefore no notable impact on local micro-climate is anticipated.

4.2.3 Water & Air Quality Impacts

During construction, appropriate sediment and erosion controls will be installed and maintained to prevent migration of sediment from the site (refer to civil package). Stormwater concept plans submitted with the development application detail the proposed stormwater management methods. The proposal is unlikely to have any notable impact on water quality.

In terms of air quality, the site will be managed during construction to mitigate potential for dust generation. During operation, the proposed use, being for the purposes of residential accommodation, is not anticipated to generate any unusual odour or fumes. The proposal is unlikely to have any notable impact on air quality.

4.2.4 Flora & Fauna Impacts

The redevelopment works necessitates removal of some vegetation. Existing vegetation has not been identified as significant flora or habitat for threatened fauna and therefore the proposal will have no significant adverse impacts on local flora and fauna. New landscaping appropriate to the locality is proposed to be provided to offset the loss of existing trees and vegetation (refer to Landscape Plans prepared by Site Design + Studio submitted with the Development Application).

4.2.5 External Appearance & Design

The massing arrangement adopted relates to the dimensions and configuration of the site. The upper most level is setback from the edge of the levels below to reduce the apparent volume of the building when viewed from the street and neighbouring properties. Horizontal and vertical modulation of the street façade serves to modulate the building volume and achieve human proportions, while variations in materiality help to define the layers of the building and create visual interest.

Appropriate window positioning and proportions serve to articulate elevations and help to avoid unadorned expanses of masonry or cladding. A schedule of materials and finishes is included with the Architectural Plans and specifies the materials proposed to be incorporated into the building. Materials have been selected for durability, robustness and suitability in a town centre context. A photomontage is provided at Figure 9.



Figure 9 Photomontage of proposed development

4.2.6 Solar Access

Shadow diagrams for the proposed development are submitted with the development application. These diagrams indicate shadow cast by the development at 9am, 12noon and 3pm on the winter solstice (June 21), summer solstice (December 21) and the autumn equinox (March 21).

In terms of solar access to the subject site, SEPP ARH states that a consent authority must not refuse consent to development on the following grounds:

> *(e)* ***solar access*** *if living rooms and private open spaces for a minimum of 70 per cent of the dwellings of the development receive a minimum of 3 hours direct sunlight between 9am and 3pm in mid-winter.*

71.40% of units receive a minimum of 3 hours of direct solar access between 9am and 3pm at mid-winter, and as such the proposed development cannot be refused on these grounds.

Detailed plan, elevational and sun-eye shadow diagrams have been prepared and are included in the architectural plan set. These diagrams indicate that the proposal will cast shadow towards the site to the south, given the site's east-west orientation. In terms of shadow cast to adjoining sites, the site has an east-west orientation and as such, shadow diagrams indicate that the proposal will cast shadow towards the site to the south.

The proposed development will cast shadow over the centre and western portion of the site to the south in the morning, allowing solar access to the rear (east) of the site. Throughout the day shadow moves across the site to the south, falling to the east of that site and allowing sunlight to fall to the west and centre of the site. Consequently, as to be expected of a site of this orientation, the shadow cast by the proposed development falls to the site to the south however, as the day progresses, it allows direct solar access to a large portion of the site to the south.

In fact, there are only three neighbouring apartments to the south that achieve less than 2 hours of solar access at midwinter (all located on the ground floor). It is noted that the portion of the building casting the greatest shadow (being the parapet of the roof at the southern elevation) has a compliant height and setback, and is therefore not contributing to unreasonable overshadowing not anticipated by the controls. The shadow impacts are a result of the east-west lot pattern in the locality. Sun eye diagrams provided in the architectural plans are reproduced below.

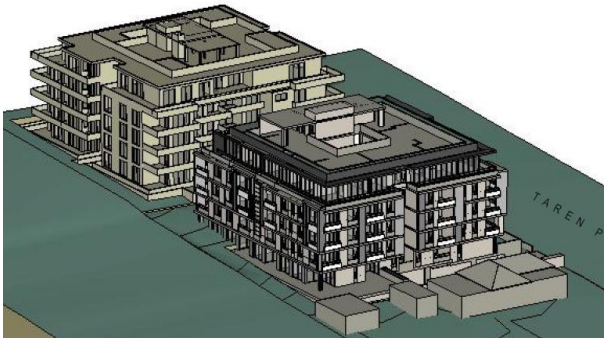


Figure 10 Sun eye diagram (9am June 21)

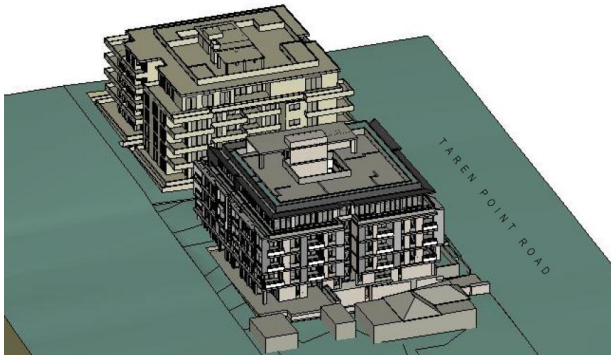


Figure 11 Sun eye diagram (10am June 21)

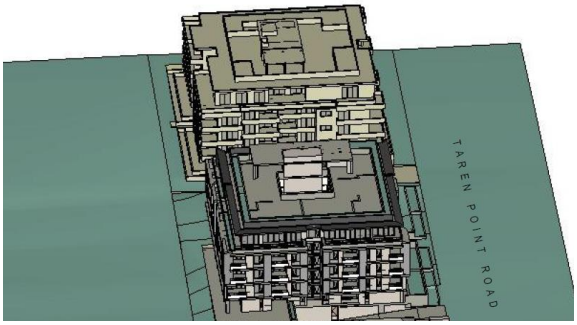


Figure 12 Sun eye diagram (11am June 21)

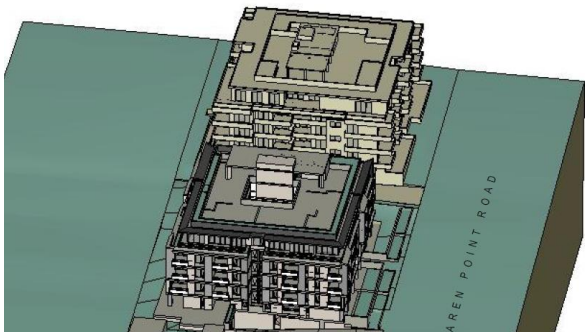


Figure 13 Sun eye diagram (12pm June 21)

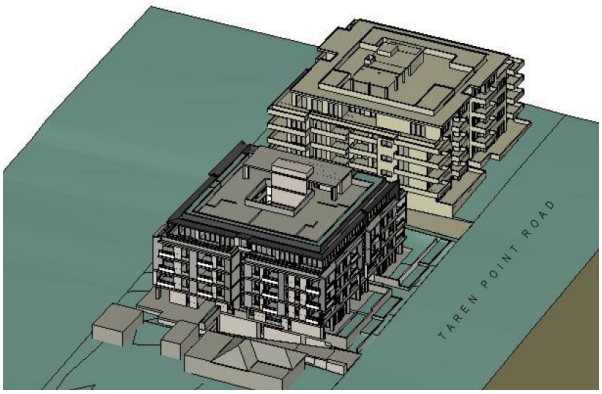


Figure 14 Sun eye diagram (1pm June 21)

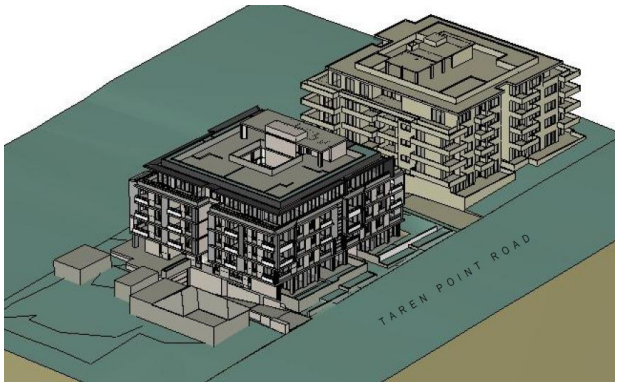


Figure 15 Sun eye diagram (2pm June 21)

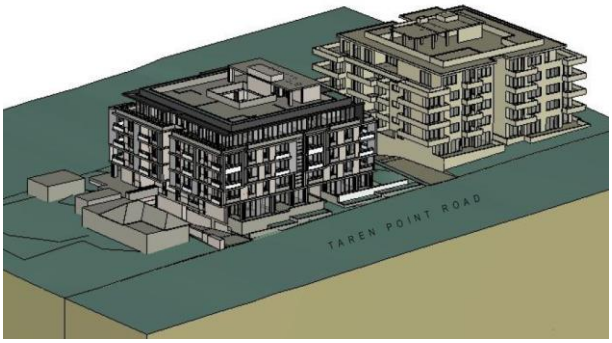


Figure 16 Sun eye diagram (3pm June 21)

4.2.7 Views

It is noted that the proposed development has a largely compliant building height (with the exception of a height breach to accommodate the lift overrun in the centre of the building and rooftop terrace balustrades), compliant density and adopts sensible front, side and rear setbacks. It follows that any incidental view loss associated with the subject proposal is anticipated by the controls and therefore acceptable. The scale of the proposal is reasonably expected at the site and will not result in unacceptable view impacts from adjoining properties or nearby public places.

4.2.8 Aural & Visual Privacy

The communal open space area provided at rooftop level is setback a substantial distance from side and rear property boundaries. This location is most appropriate in regards to mitigating acoustic impacts on neighbouring properties i.e. noise emanating from the communal spaces will not be directed towards neighbouring noise sensitive rooms. Planter beds will be provided at the edges of open space area and will buffer transmission of noise thus contributing to noise attenuation. The site has frontage to a state road (Taren Point Road) and an Acoustic Report has been prepared by Renzo Tonin & Associates and is submitted with the application. The report concludes:

> *The study of external noise intrusion into the subject development has found that appropriate noise control measures can be incorporated such as acoustic glazing into the building design to achieve compliance with the acoustic requirements of Sutherland Shire Council DCP 2006, State Environment Planning Policy ISEPP 2007 and Australian Standard AS/NZS 2107.*

The design and configuration of the development has also considered the need to protect the privacy of occupants of both the proposed dwellings and neighbouring dwellings. Setbacks comply with the intent of the ADG criteria (refer to discussion at Section 4.1.4.1 of this SEE) and this arrangement avoids close and direct views of neighbouring properties. The communal open space is designed to mitigate incidental overlooking and cross views by incorporating planting at the edges of the rooftop.

4.2.9 Crime Prevention Through Environmental Design

Both Sutherland Shire LEP 2015 and Sutherland Shire DCP 2015 require that development proposals incorporate design elements and features that align with the principles of crime prevention through environmental design (CPTED). The configuration, arrangement and design of the proposed residential flat building development responds to CPTED principles to ensure that crime in and around the site is discouraged and safety of occupants enhanced.

The principles of CPTED and corresponding design approach is identified in Table 7.

Table 7: CPTED assessment

Principle	Design approach
Surveillance	Landscaping at the street edge and along the driveway is of an appropriate height and will not completely obscure views between the site and the street, and view corridors through the site. A number of living room windows and private open spaces are oriented towards Taren Point Road and will provide direct outlook towards the street, thus facilitating passive surveillance. A number of ground floor living room and terrace areas are oriented towards the side and rear setbacks and common driveway and will also permit passive surveillance.
Access control	Landscaping at the edge of the site will ensure access to private open space areas, particularly the courtyards associated with the street-facing dwellings, is controlled. Similarly, access to the basement parking area will be restricted by way of a gate.
Territorial reinforcement	The landscaping and fencing arrangement at the property boundaries and edges of private open space areas clearly demarcates the public and private domain, without compromising passive surveillance between the spaces.
Space management	Common spaces will be managed by an Owner's Corporation who will be responsible for maintaining common landscaped areas and driveway access. Were damage as a result of crime to occur in these spaces, it will be the responsibility of the Owner's Corporation to repair damage in a timely fashion.

4.3 ECONOMIC & SOCIAL IMPACTS

The proposal provides for 49 new dwellings and therefore assists in meeting the housing needs of the community. The range of dwelling sizes, including dwellings capable of being adapted for people with a mobility impairment, will cater for a cross-section of the community and a range of household compositions, and is therefore considered to have a positive social impact. Importantly, the development will contribute to the quantum of affordable housing stock in the Sutherland Shire Local Government Area, and there are tangible social benefits associated with this aspect of the proposal.

Undertaking construction works will have some short-term positive economic impacts through employment generation. The proposal will increase the number of residents in the locality and this will translate into additional consumers for local businesses and services. The affordable housing component of the development will be attractive for lower socio-economic cohorts and in that the accommodation will be, by nature, affordable. For these reasons, it is considered that the proposed development is likely to have only positive economic impacts in the locality.

4.4 THE SUITABILITY OF THE SITE

4.4.1 Access to Services

The site is located in close proximity to the Caringbah Town Centre and Caringbah Railway Station and therefore has optimal access to public transport, and local services and facilities including shopping centres, professional and health services, and places of leisure. The site is in close proximity to Caringbah High School, Caringbah Primary School and Captain Cook Playing Fields. Proximity to these facilities and public open spaces also enhances the status of the site as a desirable location for higher density residential development incorporating an affordable accommodation component.

As the site is within an established area, connections to electricity, sewer, telephone, and water supply are available.

4.4.2 Access and parking

Vehicular access to the site is proposed from Taren Point Road. The driveway to the basement parking area is proposed to be situated towards the northern (side) property boundary, a logical location given site levels. The basement car park comprises two levels and contains 53 car parking spaces. Pedestrian access from the parking area to the upper levels is provided via stairwells and two passenger lifts.

A Traffic Impact and Parking Assessment Report has been prepared by Greenview Consulting and addresses parking requirements, the adequacy of proposed access and internal design arrangements, and the anticipated traffic impacts associated with the development. The Report concludes that the projected increase in the traffic generation potential of the site as a consequence of the development will not have any unacceptable implications in terms of road network capacity, and confirms that the proposed parking facilities satisfy the relevant parking requirements.

4.4.3 Hazards

The site is not in an area recognised by Council as being subject to landslip, flooding, bushfire or any other particular hazards. The proposed development is not likely to increase the likelihood of such hazards occurring and is considered appropriate in this instance.

4.5 THE PUBLIC INTEREST

The proposed development has been designed to relate to the size and configuration of the allotment and is compatible with the anticipated future character of the locality. The proposal has no significant adverse impacts on the natural environment in terms of hydrology and drainage or vegetation removal.

The proposal satisfies the relevant objectives of Zone R4 in that it will provide additional residential accommodation in a high density format, the development will comprise a range of dwelling sizes and types, including affordable accommodation, and the development is of a high quality architectural design considered to be compatible with its landscape setting.

This SEE demonstrates that the proposal will have no significant adverse impact on the amenity of neighbouring properties and proposed dwellings will have a high level of internal amenity. The proposal is consistent with the objectives and intent of relevant planning provisions, including core development standards, unless identified and suitably justified within this report.

Importantly, the development will contribute to the quantum of affordable housing stock in the Sutherland Shire Local Government Area, and there are tangible social benefits associated with this aspect of the proposal. Accordingly, the proposed development is considered to be in the public interest.

5. Conclusion

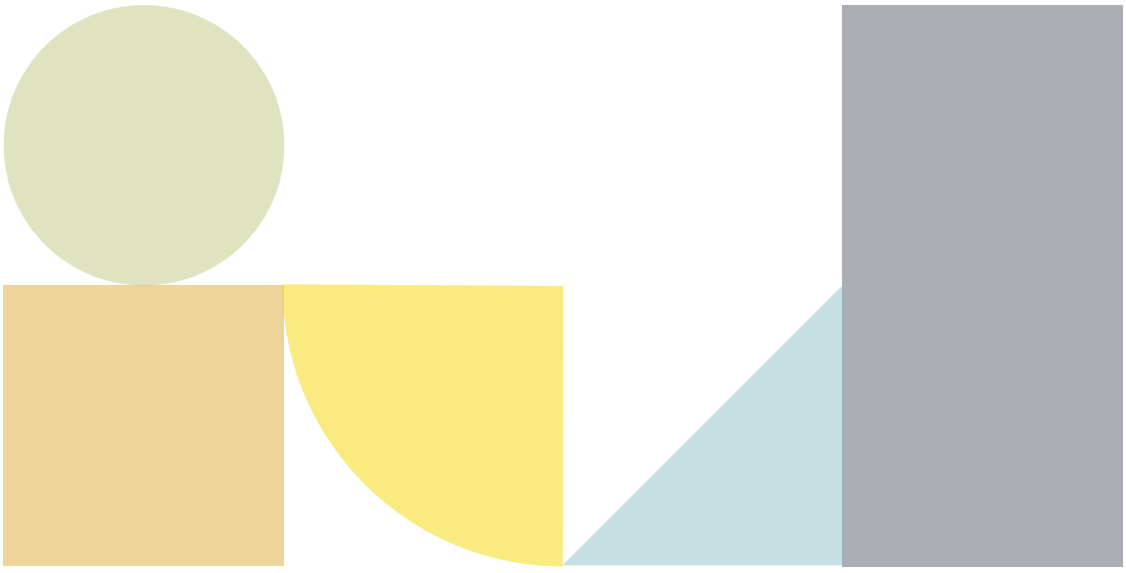
This Statement accompanies a development application for the demolition of existing structures and the construction of a five storey residential flat building over basement parking at No.310-314 Taren Point Road, Caringbah. The development application also proposes to allocate a number of apartments as affordable rental housing. The proposed development has been assessed in light of Section 4.15 of the *Environmental Planning & Assessment Act 1979* and Council's planning instruments.

The proposal is permissible with Council consent in Zone R4 and generally satisfies the relevant requirements of SEPP ARH, SEPP No.65 and SSLEP 2015 unless otherwise identified and justified within this SEE. The proposal involves a departure from the 'height of buildings' development standard and a written variation request pursuant to Clause 4.6 is provided at Annexure D. The proposal is also generally consistent design criteria prescribed in the ADG and with the controls contained in SSDCP 2015 (refer to Annexure A and E). The development proposes marginally non-compliant setbacks to side and rear property boundaries, however the variation to controls is considered acceptable in the circumstances.

The proposal provides for 49 new high-quality dwellings in the Sutherland Shire Local Government Area, a proportion of which will be dedicated as affordable accommodation, and therefore assists in meeting the housing needs of the community. Accordingly the proposal is considered to be in the public interest and worthy of Council's support.

ANNEXURE A

Apartment Design Guide
Compliance Table



Apartment Design Guide - Compliance Table

<table>
<tr><th>Clause / Control</th><th>Requirement</th><th>Proposal</th><th>Complies?</th></tr>
<tr><td colspan="4">Part 3 Siting the development</td></tr>
<tr><td rowspan="2">3D Communal Open Space</td><td>1. Communal open space has a minimum area equal to 25% of the site.</td><td>526m^2 (25.16%) of communal open space provided.</td><td>✓</td></tr>
<tr><td>2. Developments achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9 am and 3 pm on 21 June (mid-winter)</td><td>Communal open space is located on the rooftop, oriented to the north. As such, it will receive direct solar access between 9am and 3pm at mid-winter.</td><td>✓</td></tr>
<tr><td>3E Deep Soil Zones</td><td>1. Deep soil zones are to meet the following minimum requirements:
<table>
<tr><th>Site Area</th><th>Minimum Dimension</th><th>Deep Soil Zone</th></tr>
<tr><td>Less than 650m2</td><td>-</td><td rowspan="3">7% of the site area</td></tr>
<tr><td>650m2 to 1,500m2</td><td>3m</td></tr>
<tr><td>Above 1,500m2</td><td>6m</td></tr>
</table></td><td>The proposal provides 331.5m^2 (15.9%) of deep soil area with a dimension over 6m, and an additional 281m^2 (13.5%) of deep soil area with a dimension less than 6m.</td><td>✓</td></tr>
<tr><td>3F Visual Privacy</td><td>1. Separation between windows and balconies is provided to ensure visual privacy is achieved. Minimum required separation distances from buildings to the side and rear boundaries are as follows:
<table>
<tr><th>Building height</th><th>Habitable rooms and balconies</th><th>Non-habitable rooms</th></tr>
<tr><td>Up to 12m (4 storeys)</td><td>6m</td><td>3m</td></tr>
<tr><td>Up to 25m (5-8 storeys)</td><td>9m</td><td>4.5m</td></tr>
<tr><td>Over 25m (9+ storeys)</td><td>12m</td><td>6m</td></tr>
</table>
No building separation is necessary where building types incorporate blank party walls. Typically this occurs along a main street or at podium levels within centres
Apartment buildings should have an increased separation distance of 3m (in addition to the requirements set out in design criteria 1) when adjacent</td><td>Compliant 6m setbacks are provided to side and rear boundaries of the site at Ground Level, Level 1 and Level 2. Level 3 also provides 6m setbacks, which is non-compliant. Level 4 provides 9m setbacks, however balconies protrude into these setback areas. Refer to discussion at Section 4.1.4.1.</td><td>On merit</td></tr>
</table>

Apartment Design Guide - Compliance Table			
	to a different zone that permits lower density residential development to provide for a transition in scale and increased landscaping.		
3J Bicycle and Car Parking	1. For development in the following locations: • on sites that are within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area; or • on land zoned, and sites within 400 metres of land zoned, B3 Commercial Core, B4 Mixed Use or equivalent in a nominated regional centre the minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments (GTTGD), or the car parking requirement prescribed by the relevant council, whichever is less. The car parking needs for a development must be provided off street.	The proposal incorporates an affordable housing component, and is therefore subject to the provisions of the ARH SEPP. The ARH SEPP contains parking requirements and the proposal satisfies these requirements (refer to Annexure B). The development application cannot be refused on parking grounds if the proposal satisfies the parking requirements stipulated by the ARH SEPP.	-
Part 4 Designing the Building			
4A Solar Access and Daylight	1. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid-winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas	35 of 49 or 71.4% of apartments receive the minimum of 2 hours of direct solar access during between 9am and 3pm at mid-winter. Solar access diagrams are provided with the Architectural Plans.	✓
	3. A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter.	4 apartments (8%) receive no direct sunlight between 9am and 3pm at mid-winter.	✓
4B Natural Ventilation	1. At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed.	30 of 49 or 61.2% of apartments satisfy cross ventilation requirements.	✓
	2. Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line.	No apartment has a depth that exceeds 18m.	✓

<table>
<tr><th colspan="4">Apartment Design Guide - Compliance Table</th></tr>
<tr><td>4C Ceiling Height</td><td>1. Measured from finished floor level to finished ceiling level, minimum ceiling heights are:<table><tr><th colspan="2">Minimum ceiling height</th></tr><tr><td>Habitable rooms</td><td>2.7m</td></tr><tr><td>Non-habitable rooms</td><td>2.4m</td></tr><tr><td>Two storey apartments</td><td>2.7m for main living area and 2.4m for second floor where its area does not exceeds 50% of the apartment area.</td></tr><tr><td>If located in mixed use areas</td><td>3.3m for ground and first floor to promote future flexibility of use.</td></tr></table></td><td>2.8m floor to ceiling heights are proposed.</td><td>✓</td></tr>
<tr><td rowspan="3">4D Apartment Layout</td><td>1. Apartments are required to have the following minimum internal areas:<table><tr><th>Apartment type</th><th>Minimum internal area</th></tr><tr><td>Studio</td><td>35m^2</td></tr><tr><td>1 bedroom</td><td>50m^2</td></tr><tr><td>2 Bedroom</td><td>70m^2</td></tr><tr><td>3 Bedroom</td><td>90m^2</td></tr></table>The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5m^2 each.
A fourth bedroom and further additional bedrooms increase the minimum internal area by 12m^2 each.</td><td>All units comply with the minimum internal areas. Where an additional bathroom is proposed an extra 5m^2 has been provided to the dwelling.</td><td>✓</td></tr>
<tr><td>2. Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms</td><td>Each habitable room has a sufficiently sized window for solar access and natural ventilation.</td><td>✓</td></tr>
<tr><td>1. Habitable room depths are limited to a maximum of 2.5 x the ceiling height.</td><td>Habitable rooms are appropriately proportioned to comply with the numeric requirements of the ADG and to permit entry of sunlight and natural ventilation throughout internal spaces.</td><td>✓</td></tr>
</table>

<table>
<tr><th colspan="4">Apartment Design Guide - Compliance Table</th></tr>
<tr><td></td><td>2. In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window.</td><td>Open plan kitchen, living and dining spaces are proposed for all apartments and there are no apartments which have a room depth of more than 8m from a window.</td><td>✓</td></tr>
<tr><td></td><td>1. Master bedrooms have a minimum area of 10m^2 and other bedrooms 9m^2 (excluding wardrobe space)</td><td>Refer to Architectural Plans which demonstrates that each bedroom is sized to comply with the numeric requirements of the ADG. Furniture layouts are shown and confirm that room configuration will allow for a space with a high utility value.</td><td>✓</td></tr>
<tr><td></td><td>2. Bedrooms have a minimum dimension of 3m (excluding wardrobe space)</td><td>Each bedroom has a minimum dimension of 3m. Apartment dimensions are sufficient to accommodate bedroom furniture in various arrangements.</td><td>✓</td></tr>
<tr><td></td><td>3. Living rooms or combined living/dining rooms have a minimum width of:
• 3.6m for studio and 1 bedroom apartments
• 4m for 2 and 3 bedroom apartments</td><td>Refer to Architectural Plans which demonstrates that each living room is sized to comply with the numeric requirements of the ADG. Furniture layouts are shown and confirm that room configuration will allow for a space with a high utility value.</td><td>✓</td></tr>
<tr><td></td><td>4. The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts</td><td>All apartments have a depth greater than 4m.</td><td>✓</td></tr>
<tr><td>4E Open Space</td><td>All apartments are required to have primary balconies as follows:
<table><tr><th>Dwelling type</th><th>Minimum area</th><th>Minimum depth</th></tr><tr><td>Studio</td><td>4m^2</td><td>-</td></tr><tr><td>1 bedroom</td><td>8m^2</td><td>2m</td></tr><tr><td>2 Bedroom</td><td>10m^2</td><td>2m</td></tr><tr><td>3 Bedroom +</td><td>12m^2</td><td>2.4m</td></tr></table>The minimum balcony depth to be counted as contributing to the balcony area is 1m.</td><td>Apartments are provided with an area of private open space in the form of a balcony or a ground floor courtyard that is directly accessible from a primary living area and complies with the minimum area and depth requirements of the ADG.</td><td>✓</td></tr>
<tr><td></td><td>2. For apartments at ground level or on a podium or similar structure, a private open space is provided instead of a balcony. It must have a minimum area of 15m^2 and a minimum depth of 3m</td><td>Ground floor apartments have private open space areas of 15m^2 or greater.</td><td>✓</td></tr>
</table>

Apartment Design Guide - Compliance Table			
4F Common Circulation Space	1. The maximum number of apartments off a circulation core on a single level is 8.	The maximum number of apartments off a single circulation core on a single level is 11. Design guidance for Objective 4F-1 states that *"Where design criteria 1 is not achieved, no more than 12 apartments should be provided off a circulation core on a single level"*. Two lifts are provided to each level, therefore access to each level is considered to be acceptable.	On Merit
4G Storage	1. In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided: Dwelling type / Storage volume Studio / 4m^3 1 bedroom / 6m^3 2 Bedroom / 8m^3 3+ Bedroom / 10m^3 At least 50% of the required storage is to be located within the apartment.	Storage has been provided within each apartment and additional basement level storage is allocated to each apartment.	✓

ANNEXURE B

SEPP (Affordable Rental Housing) 2009 –
Compliance Table



SEPP (Affordable Rental Housing) 2009 - Compliance Table			
Clause / Control	Requirement	Proposal	Complies?
Division 1 In-fill affordable housing			
10 Development to which Division applies	(1) This Division applies to development for the purposes of dual occupancies, multi dwelling housing or residential flat buildings if: (a) the development concerned is permitted with consent under another environmental planning instrument, and (b) the development is on land that does not contain a heritage item that is identified in an environmental planning instrument, or an interim heritage order or on the State Heritage Register under the Heritage Act 1977.	The development application proposes the construction of a residential flat building which is permissible in Zone R4 under Sutherland Shire LEP 2015. The subject site is not identified as an item of environmental heritage.	✓
	(2) Despite subclause (1), this Division does not apply to development on land in the Sydney region unless all or part of the development is within an accessible area.	The subject site is within the Sydney region and satisfies the definition of accessible area by virtue of its proximity to Caringbah train station i.e. the site is within 800m walking distance of the entry to the station.	✓
13 Floor space ratios	(1) This clause applies to development to which this Division applies if the percentage of the gross floor area of the development that is to be used for the purposes of affordable housing is at least 20 per cent.	50.0% of the gross floor area of the development is to be used for the purposes of affordable housing.	✓
	(2) The maximum floor space ratio for the development to which this clause applies is the existing maximum floor space ratio for any form of residential accommodation permitted on the land on which the development is to occur, plus: (a) if the existing maximum floor space ratio is 2.5:1 or less: (i) 0.5:1—if the percentage of the gross floor area of the development that is used for affordable housing is 50 per cent or higher, or	The existing maximum floor space ratio for the site is 1.2:1 under Sutherland Shire LEP 2015. 50% of the gross floor area of the development is to be used for the purposes of affordable housing. Therefore the maximum permitted floor space ratio is 1.7:1. The proposal has a floor space ratio of 1.7:1 and complies with this development standard.	✓
14 Standards that cannot be used to refuse consent	(1) Site and solar access requirements A consent authority must not refuse consent to development to which this Division applies on any of the following grounds:		
	(b) site area if the site area on which it is proposed to carry out the development is at least 450 square metres,	The site area is 2,090.30m^2.	✓

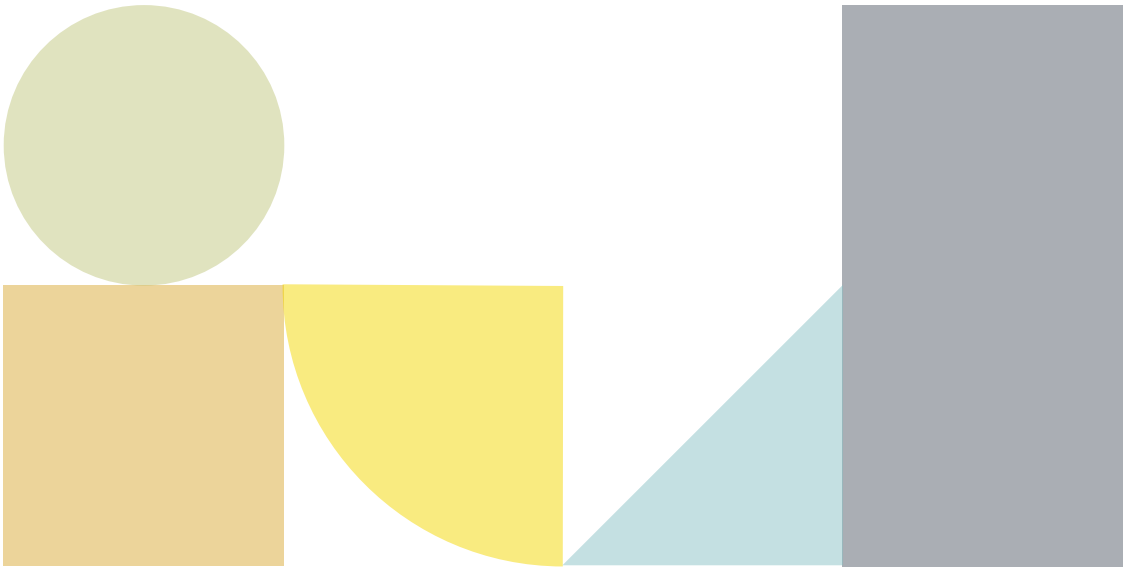
SEPP (Affordable Rental Housing) 2009 - Compliance Table			
	(c) landscaped area if: (ii) in any other case—at least 30 per cent of the site area is to be landscaped,	A total of 1,194.3m^2 (57.1%) of the site is to be landscaped area.	✓
	(d) deep soil zones if, in relation to that part of the site area (being the site, not only of that particular development, but also of any other associated development to which this Policy applies) that is not built on, paved or otherwise sealed:		
	(i) there is soil of a sufficient depth to support the growth of trees and shrubs on an area of not less than 15 per cent of the site area (the deep soil zone), and	29.4% (612.5m^2) of the site is landscaped deep soil area.	✓
	(ii) each area forming part of the deep soil zone has a minimum dimension of 3 metres, and	The proposal complies	✓
	(iii) if practicable, at least two-thirds of the deep soil zone is located at the rear of the site area,	Deep soil in setback areas have been optimised.	✓
	(e) solar access if living rooms and private open spaces for a minimum of 70 per cent of the dwellings of the development receive a minimum of 3 hours direct sunlight between 9am and 3pm in mid-winter.	71.4% of units receive at least 3 hours of direct sunlight between 9am and 3pm at mid-winter.	✓
	(2) General A consent authority must not refuse consent to development to which this Division applies on any of the following grounds:		
	(a) parking if: (ii) in any other case—at least 0.5 parking spaces are provided for each dwelling containing 1 bedroom, at least 1 parking space is provided for each dwelling containing 2 bedrooms and at least 1.5 parking spaces are provided for each dwelling containing 3 or more bedrooms,	The development contains the following: - 18 x single bedroom dwellings (requires 9 spaces) - 25 x two bedroom dwellings (requires 25 spaces) - 6 x three bedroom dwellings (requires 9 spaces) The development requires a total of 43 car parking spaces and provides 53 car parking spaces. Given the number of parking spaces provided, it	✓

SEPP (Affordable Rental Housing) 2009 - Compliance Table			
		is not open to the consent authority to refuse the application on parking grounds.	
	(b) dwelling size if each dwelling has a gross floor area of at least: (i) 35 square metres in the case of a bedsitter or studio, or (ii) 50 square metres in the case of a dwelling having 1 bedroom, or (iii) 70 square metres in the case of a dwelling having 2 bedrooms, or (iv) 95 square metres in the case of a dwelling having 3 or more bedrooms.	Apartments satisfy the minimum internal area requirements prescribed by this development standard.	✓
	(3) A consent authority may consent to development to which this Division applies whether or not the development complies with the standards set out in subclause (1) or (2).	The proposal complies with the majority of the relevant threshold requirements however, as they are standards and not controls Council is not required to seek uniform compliance with all the standards.	✓
15 Design requirements	(1) A consent authority must not consent to development to which this Division applies unless it has taken into consideration the provisions of the Seniors Living Policy: Urban Design Guidelines for Infill Development published by the Department of Infrastructure, Planning and Natural Resources in March 2004, to the extent that those provisions are consistent with this Policy.	See below.	N/A
	(2) This clause does not apply to development to which clause 4 of State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development applies.	The proposal is a five storey residential flat building comprising more than three dwellings and therefore is subject to SEPP No. 65. As such, the Seniors Living Policy: Urban Design Guidelines are not applicable to the proposal.	-
16 Continued application of SEPP 65	Nothing in this Policy affects the application of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development to any development to which this Division applies.	A design statement and a response to design quality principles has been prepared and submitted with the development application. An Apartment Design Guide compliance table is provided at Annexure A to this SEE. Aspects of non-compliance have been documented and discussed at Section 4.1.4.1 of this Statement.	-

SEPP (Affordable Rental Housing) 2009 - Compliance Table			
16A Character of local area	A consent authority must not consent to development to which this Division applies unless it has taken into consideration whether the design of the development is compatible with the character of the local area.	The proposal is demonstrably consistent with the character of the locality in terms of built form, extent of landscaping, parking arrangement, building setbacks, external materials, and so on. Importantly, the proposal will have no significant adverse physical impact on neighbours and is considered to be in harmony with its context.	✓
17 Must be used for affordable housing for 10 years	(1) A consent authority must not consent to development to which this Division applies unless conditions are imposed by the consent authority to the effect that: (a) for 10 years from the date of the issue of the occupation certificate: (i) the dwellings proposed to be used for the purposes of affordable housing will be used for the purposes of affordable housing, and (ii) all accommodation that is used for affordable housing will be managed by a registered community housing provider, and (b) a restriction will be registered, before the date of the issue of the occupation certificate, against the title of the property on which development is to be carried out, in accordance with section 88E of the Conveyancing Act 1919, that will ensure that the requirements of paragraph (a) are met.	It is anticipated that a condition in relation to affordable housing will be imposed by the consent authority accordingly. 50.0% of GFA will be dedicated to affordable housing. The apartments that will be dedicated will be identified prior to Occupation Certificate being granted and conditions to this effect can be imposed.	✓
18 Subdivision	Land on which development has been carried out under this Division may be subdivided with the consent of the consent authority.	Strata subdivision of the residential flat building is proposed.	✓

ANNEXURE C

Sutherland LEP 2015 –
Compliance Table



Sutherland Shire Local Environmental Plan 2015 - Compliance Table			
Clause / Control	Requirement	Proposal	Complies?
Part 2 Permitted and prohibited development			
2.3 Zone objectives and Land Use Table	Zone R4 High Density Residential		
	• To provide for the housing needs of the community within a high density residential environment.	The development will introduce additional housing stock in a residential flat building format.	✓
	• To provide a variety of housing types within a high density residential environment.	The proposal will provide a variety of housing types in terms of dwelling size i.e. single, two and three bedroom dwellings, and will also provide for adaptable and accessible dwellings. The proposal also provides an affordable accommodation component.	✓
	• To enable other land uses that provide facilities or services to meet the day to day needs of residents.	Objective not relevant to the proposal.	-
	• To encourage the supply of housing that meets the needs of the Sutherland Shire's population, particularly housing for older people and people with a disability.	As noted, the proposal will provide a variety of housing types in terms of dwelling size i.e. single, two and three bedroom dwellings, and will also provide for adaptable and accessible dwellings. The adaptable and accessible dwellings are particularly suitable for older people and people with a disability. The proposal also provides an affordable accommodation component.	✓
	• To promote a high standard of urban design and residential amenity in a high quality landscape setting that is compatible with natural features.	The proposal is considered to have an acceptable degree of architectural quality, as described in SEPP No. 65 Report submitted with the development application, and within this compliance table. The dwellings proposed have adequate amenity and the landscape concept proposed will ensure the development is compatible with the natural characteristics of the locality.	✓
	• To minimise the fragmentation of land that would prevent the achievement of high density residential development.	The proposal will amalgamate three existing single lots into one larger lot that is more suitable for high density residential development.	✓

Sutherland Shire Local Environmental Plan 2015 - Compliance Table			
Part 4 Principal development standards			
4.3 Height of buildings	(2) The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map. *Height of Buildings map: 16m*	The maximum height of the proposal is 19.64m when measured to the top of the lift overrun, and is therefore non-compliant. A written variation request is provided at Annexure D in relation to this aspect of non-compliance.	On merit (See clause 4.6 variation at Annexure D)
4.4 Floor space ratio	(2) The maximum floor space ratio for a building on any land is not to exceed the floor space ratio shown for the land on the Floor Space Ratio Map. *Floor Space Ratio Map: 1.2:1*	Not applicable. Refer to Annexure B.	-
Part 6 Local provisions			
6.2 Earthworks	(3) In deciding whether to grant development consent for earthworks (or for development involving ancillary earthworks), the consent authority must consider the following matters:		
	(a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development,	The excavation works proposed will alter drainage patterns to a small degree however the stormwater drainage concept submitted with the development application demonstrates that post-development flows will be comparable to pre-development flows. Retaining walls will ensure soil stability is not compromised in and around areas of proposed cut and fill.	✓
	(b) the effect of the development on the likely future use or redevelopment of the land,	The earthworks proposed facilitate rather than hinder the future use and redevelopment of the land by creating a suitable building platform upon which the development will be erected. Earthworks also allow for basement car parking to be provided, and this is considered to be the most appropriate means of providing on site car parking.	✓

Sutherland Shire Local Environmental Plan 2015 - Compliance Table			
	(c) the quality of the fill or the soil to be excavated, or both,	Excavated material will be used elsewhere on site as fill, where possible. Material to be excavated is understood to be virgin material and highly unlikely to be contaminated given the long standing use of the site for residential purposes. It is anticipated that standard conditions of consent will be imposed in relation to land contamination and disposal of excavated material.	✓
	(d) the effect of the development on the existing and likely amenity and structural integrity of adjoining properties,	Where proposed excavation works occur within or close to the zone of influence of neighbouring structures, specific excavation and earth retention methods will be implemented to ensure structural integrity of adjacent buildings is not compromised. There will be temporary amenity impacts associated with site preparation works, including land modification works, however these will be managed by limiting the hours of the day site preparation works can occur.	✓
	(e) the source of any fill material and the destination of any excavated material,	It is anticipated that material excavated from the site will be used where necessary as fill material, and that no additional fill material from external sources will be required. Excess material will be appropriately disposed of at a licenced waste management facility, and it is anticipated that a standard condition of consent will be imposed in this regard.	✓
	(f) the likelihood of disturbing relics,	It is considered unlikely that the site, which for the most part has been relatively undisturbed, contains relics or any items of historic significance. Should any such item be encountered during site preparation works, excavation will cease immediately and the appropriate government authority notified. It is anticipated that a standard condition of consent will be imposed in this regard.	✓
	(g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area,	The site is not in proximity to, nor are earthworks likely to have any detrimental impact on, a waterway, drinking water catchment or environmentally sensitive area. Sediment and erosion controls will be installed and maintained for the duration of site preparation and construction phases to ensure there is no risk of sediment laden water leaving the site and entering council's drainage infrastructure.	✓

Sutherland Shire Local Environmental Plan 2015 - Compliance Table			
	(h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.	The development has been designed to limit the extent of excavation and land modification works required, by ensuring the ground floor level generally relates to that of natural ground. Excavation techniques which focus on minimising disturbance resulting from noise and vibration transmission will be implemented. Sediment and erosion controls will be installed and maintained for the duration of site preparation and construction phases.	✓
6.14 Landscaped areas in certain zones	(3) The minimum percentage of the site area on land to which this clause applies that is to consist of landscaped areas is the percentage shown on the Landscape Area Map in relation to that land. Landscape Area Map: 30%	The proposal incorporates an affordable housing component and is therefore subject to the ARH SEPP. The ARH SEPP contains a development standard for deep soil (15%) and the application cannot be refused on grounds relating to a lack of deep soil if the proposal complies with this standard. The proposal includes 29.4% of deep soil. The deep soil standard in the ARH SEPP prevails over the landscape area standard contained in the LEP.	-
6.16 Urban design—general	(1) In deciding whether to grant development consent for any development, the consent authority must consider the following:		
	(a) the extent to which high quality design and development outcomes for the urban environment of Sutherland Shire have been attained, or will be attained, by the development,	The arrangement and configuration of dwellings ensures that the urban form of the proposed development corresponds with the high density nature of development envisaged in Zone R4. The proposed buildings have a contemporary appearance and the selection of external materials will provide for a high quality finish.	✓
	(b) the extent to which any buildings are designed and will be constructed to: (i) strengthen, enhance or integrate into the existing character of distinctive locations, neighbourhoods and streetscapes, and (ii) contribute to the desired future character of the locality concerned,	The massing arrangement, façade modulation and material combinations achieve a fine grain building form consistent with the emerging high density character of the locality. Roof form, window arrangement and proportions and external materials are contemporary in appearance and compatible with the existing character of the locality.	✓
	(c) the extent to which recognition has been given to the public domain in the design of the development and the extent to which that design will facilitate improvements to the public domain,	The street-facing elevation of the building is well articulated and external materials provide visual interest, thus contributing positively to the streetscape and, by extension, the public domain. The proposal	✓

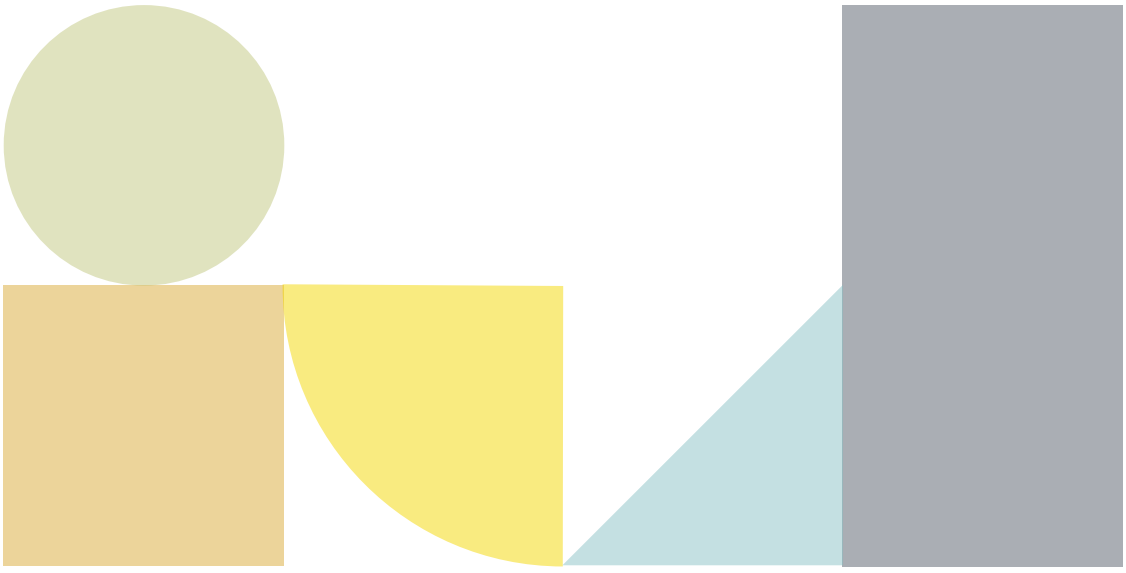
Sutherland Shire Local Environmental Plan 2015 - Compliance Table			
		includes landscaping at street edge improving the visual qualities and amenity of the public domain.	
	(d) the extent to which the natural environment will be retained or enhanced by the development,	Existing trees are to be retained where possible as articulated in the Arborist Report submitted with the development application, with extensive supplementary landscaping proposed in front, rear and side setback areas to enhance the natural qualities of the site.	✓
	(e) the extent to which the development will respond to the natural landform of the site of the development,	The subject site has a gentle fall of approximately 3.5m from south to north, with the lowest point being in the north-western corner. Land modification works are proposed to accommodate the basement car park and to ensure direct level access is provide from each ground floor dwelling to the adjoining private open space. Overall, the proposed development preforms well in terms of responding to the natural fall of the site appearance from the streetscape.	✓
	(f) the extent to which the development will preserve, enhance or reinforce specific areas of high visual quality, ridgelines and landmark locations, including gateways, nodes, views and vistas,	The subject site has not been identified as a specific area of high visual quality. Notwithstanding, the proposal largely complies with the building height development standard and provides high levels of visual and physical articulation, thus ensuring that the development is not visually prominent from nearby locations, nor will the proposal unreasonably impact view corridors.	✓
	(g) the principles for minimising crime risk set out in Part B of the Crime Prevention Guidelines and the extent to which the design of the proposed development applies those principles.	A discussion regarding CPTED principles is provided at Section 4.2.9 of this Statement. In brief, the development has been designed to accord with the crime prevention through environmental design principles.	✓
6.17 Urban design—residential accommodation	In deciding whether to grant development consent for development for the purposes of residential accommodation the consent authority must consider the following:		

Sutherland Shire Local Environmental Plan 2015 - Compliance Table			
	(a) the extent to which recognition has been given in the design of the development to the needs of the diverse and changing population of Sutherland Shire,	The proposed development will replace two single dwellings with a residential flat building containing 49 apartments and therefore aligns with the objectives of Zone R4 by providing for the housing needs of the community. The development contains adaptable dwellings, and this will assist with aging in place and / or will contribute to housing suitable for those who are mobility impaired. Furthermore, a portion of dwellings will be allocated as affordable accommodation, and will be available to lower socio-economic cohorts in the area.	✓
	(b) the extent to which any adverse impacts of the development on adjoining land and open space, in terms of overshadowing, overlooking, views, privacy and visual intrusion, will be minimised,	The development complies with floor space ratio and generally complies with building height requirements. The floor space proposed has been arranged and configured to limit overshadowing of neighbouring properties. Detailed discussion concerning impacts on visual privacy are discussed at Section 4.1.4.1.	✓
	(c) the extent to which the quality of the streetscape concerned will be improved by the development,	The street-facing elevation is well-articulated through façade modulation and projecting balcony elements.	✓
	(d) the extent to which there will be private open space of a sufficient area and dimensions to enable proposed and required activities,	Sufficient private open space areas are provided for each dwelling and will facilitate a range of passive recreation activities, thus enhancing the amenity of each dwelling. Communal open space provided at the roof top will provide an alternative space for passive recreation.	✓
	(e) the extent to which any adverse impacts of the development on adjoining land, in terms of size, bulk, height, scale and siting, will be minimised,	The proposal complies with the permitted floor space ratio and a variation for height is proposed. The development generally provides setbacks, as stipulated in the ADG and where a variation occurs, the intent of the control continues to be met. Overall, the proposed development is considered to be of a suitable scale.	✓
	(f) the extent to which the residential accommodation concerned integrates with a well-designed landscaped setting,	The landscape design is detailed in the landscape plans submitted with the development application. The landscape concept incorporates a series of trees, shrubs and groundcovers arranged to ameliorate the visual bulk of the building form and enhance the amenity of occupants, and more broadly, the locality.	✓

Sutherland Shire Local Environmental Plan 2015 - Compliance Table			
	(g) any opportunities for the provision of affordable housing.	A portion of dwellings will be allocated as affordable accommodation as per the definition in SEPP (Affordable Rental Housing) 2009.	✓

ANNEXURE D

Clause 4.6 Variation
Building Height



Clause 4.6 variation statement – maximum height (clause 4.3)

1. INTRODUCTION

This Variation Statement has been prepared in accordance with Clause 4.6 of Sutherland Shire Local Environmental Plan 2015 to accompany an application for a five storey residential flat building at Nos. 310-314 Taren Point Road, Caringbah ('the site').

2. PROPOSED VARIATION

Clause 4.3(2) of Sutherland Shire LEP 2015 relates to the maximum height requirements and refers to the *Height of Buildings Map.* The relevant map identifies the subject site as having a maximum permitted height of 16m. Building height is defined as follows:

> *" building height (or height of building) means the vertical distance between ground level (existing) and the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like."*

When measured in accordance with the above definition, the proposed lift overrun, rooftop plant room, planter box edge and parts of the rooftop communal open space are over the maximum 16m height limit reaching a maximum height of 19.64m. The largest extent of non-compliance is measured to the lift overrun, which is centrally located within the building and not visible from the public domain. Lift access to the communal roof space is required for equitable use by all residents.

The extent of non-compliance is indicated in the height blanket diagram at Figure 17. Due to the centralised location of the primary non-compliance, and minor extent of non-compliance created by the planter box edge and communal open space, the proposal will appear to have compliant height to the casual observer. Within the street, the building will also appear to have comparable scale to the development that was recently constructed for the neighbouring site to the south (No.316 Taren Point Road), and for which development consent is anticipated for Nos. 306-308 Taren Point Road.

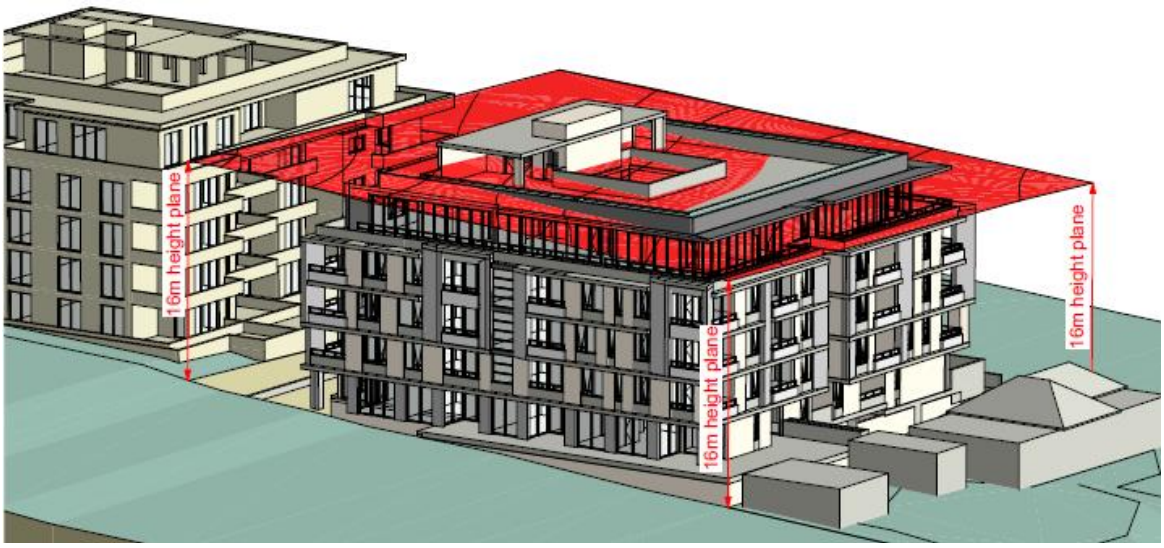


Figure 17 Height Blanket Diagram

The maximum building height control is a "development standard" to which exceptions can be granted pursuant to clause 4.6 of the LEP.

3. OBJECTIVES AND PROVISIONS OF CLAUSE 4.6

The objectives and provisions of clause 4.6 are as follows:

"

(1) The objectives of this clause are as follows:

(a) to provide an appropriate degree of flexibility in applying certain development standards to particular development,

(b) to achieve better outcomes for and from development by allowing flexibility in particular circumstances.

(2) Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument. However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.

(3) Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:

(a) that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and

(b) that there are sufficient environmental planning grounds to justify contravening the development standard.

(4) Development consent must not be granted for development that contravenes a development standard unless:

(a) the consent authority is satisfied that:

(i) the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and

(ii) the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and

(b) the concurrence of the Secretary has been obtained.

(5) In deciding whether to grant concurrence, the Secretary must consider:

(a) whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and

(b) the public benefit of maintaining the development standard, and

(c) any other matters required to be taken into consideration by the Secretary before granting concurrence.

(6) Development consent must not be granted under this clause for a subdivision of land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU3 Forestry, Zone RU4 Primary Production Small Lots, Zone RU6 Transition, Zone R5 Large Lot Residential, Zone E2 Environmental Conservation, Zone E3 Environmental Management or Zone E4 Environmental Living if:

(a) the subdivision will result in 2 or more lots of less than the minimum area specified for such lots by a development standard, or

(b) the subdivision will result in at least one lot that is less than 90% of the minimum area specified for such a lot by a development standard.

Note. When this Plan was made it did not include all of these zones.

(7) After determining a development application made pursuant to this clause, the consent authority must keep a record of its assessment of the factors required to be addressed in the applicant's written request referred to in subclause (3).

(8) This clause does not allow development consent to be granted for development that would contravene any of the following:

(a) a development standard for complying development,

(b) a development standard that arises, under the regulations under the Act, in connection with a commitment set out in a BASIX certificate for a building to which State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 applies or for the land on which such a building is situated,

(c) clause 5.4."

The development standard in clause 4.3 is not "expressly excluded" from the operation of clause 4.6.

Objective 1(a) of clause 4.6 is satisfied by the discretion granted to a consent authority by virtue of subclause 4.6(2) and the limitations to that discretion contained in subclauses (3) to (8). This submission will address the requirements of subclauses 4.6(3) & (4) in order to demonstrate to Council that the exception sought is consistent with the exercise of "an appropriate degree of flexibility" in applying the development standard, and is therefore consistent with objective 1(a). In this regard, the extent of the discretion afforded by subclause 4.6(2) is not numerically limited, in contrast with the development standards referred to in subclause 4.6(6).

4. THAT COMPLIANCE WITH THE DEVELOPMENT STANDARD IS UNREASONABLE OR UNNECESSARY IN THE CIRCUMSTANCES OF THE CASE (CLAUSE 4.6(3)(a))

In Wehbe V Pittwater Council (2007) NSW LEC 827 Preston CJ sets out ways of establishing that compliance with a development standard is unreasonable or unnecessary. This list is not exhaustive. It states, inter alia:

> *An objection under SEPP 1 may be well founded and be consistent with the aims set out in clause 3 of the Policy in a variety of ways. The most commonly invoked way is to establish that compliance with the development standard is unreasonable or unnecessary because the objectives of the development standard are achieved notwithstanding non-compliance with the standard.*

The judgement goes on to state that:

> *The rationale is that development standards are not ends in themselves but means of achieving ends. The ends are environmental or planning objectives. Compliance with a development standard is fixed as the usual means by which the relevant environmental or planning objective is able to be achieved. However, if the proposed development proffers an alternative means of achieving the objective strict compliance with the standard would be unnecessary (it is achieved anyway) and unreasonable (no purpose would be served).*

Preston CJ in the judgement then expressed the view that there are 5 different ways in which an objection may be well founded and that approval of the objection may be consistent with the aims of the policy, as follows (with emphasis placed on number 1 for the purposes of this Clause 4.6 variation [our underline]):

- *<u>The objectives of the standard are achieved notwithstanding non-compliance with the standard</u>;*
- *The underlying objective or purpose of the standard is not relevant to the development and therefore compliance is unnecessary;*
- *The underlying object of purpose would be defeated or thwarted if compliance was required and therefore compliance is unreasonable;*
- *The development standard has been virtually abandoned or destroyed by the Council's own actions in granting consents departing from the standard and hence compliance with the standard is unnecessary and unreasonable;*
- *The zoning of the particular land is unreasonable or inappropriate so that a development standard appropriate for that zoning is also unreasonable and unnecessary as it applies to the land and compliance with the standard that would be unreasonable or unnecessary. That is, the particular parcel of land should not have been included in the particular zone.*

Relevantly, in *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118* (paragraph 16), Preston CJ makes reference to *Wehbe* and states:

"…Although that was said in the context of an objection under State Environmental Planning Policy No 1 – Development Standards to compliance with a development standard, the discussion is equally applicable to a written request under cl 4.6 demonstrating that compliance with a development standard is unreasonable or unnecessary."

Compliance with the maximum building height development standard is considered to be unreasonable and unnecessary as the objectives of that standard are achieved for the reasons set out in this statement. For the same reasons, the objection is considered to be well-founded as per the first method underlined above.

Notably, under Clause 4.6(4)(a)(ii) a consent authority must now be satisfied that the contravention of a development standard will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out. Clause 4.6(4)(a)(ii) is addressed in Section 6 below.

5. SUFFICIENT ENVIRONMENTAL PLANNING GROUNDS (CLAUSE 4.6(3)(b))

Having regard to Clause 4.6(3)(b) and the need to demonstrate that there are sufficient environmental planning grounds to justify contravening the development standard, it is considered that there is an absence of significant impacts of the proposed non-compliance on the amenity of future building occupants, on area character and on neighbouring properties. The non-compliance will not be readily visible from the public domain or surrounding sites, does not contribute significantly to overshadowing and does not impact any significant views. To require strict compliance would mean removing parts of the building without resulting in a real planning benefit to neighbourhood character or amenity. In fact, removal of units would be counterproductive as it would result in the loss of affordable rental accommodation within the locality.

To insist on strict compliance would thwart and preclude the redevelopment of the land to a reasonable standard, and not allow the site to reach its full development potential. There is no planning purpose to be served by limiting the height strictly to the maximum height allowable given the absence of amenity related impacts and the provision of a lift which enables equitable access to the communal roof space.

On "planning grounds" the proposal provides rooftop communal open space that will increase the amenity of the development for future residents. The lift continues to this level to give disabled access. The communal open space is setback from elevations below to ensure no overlooking will occur.

The variation to building height does not adversely impact on solar access, views or outlook and the streetscape appearance is not impacted by the variation. As indicated, the proposal provides for a floor space ratio which complies with the maximum permitted and accordingly, the height breach is not associated with additional density beyond what is expected by the controls or planned for the locality.

It is noted that in *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118,* Preston CJ clarified what items a Clause 4.6 does and does not need to satisfy. Importantly, there does not need to be a "better" planning outcome:

> *86. The second way is in an error because it finds no basis in cl 4.6. Clause 4.6 does not directly or indirectly establish a test that the non-compliant development should have a neutral or beneficial effect relative to a compliant development. This test is also inconsistent with objective (d) of the height development standard in cl 4.3(1) of minimising the impacts of new development on adjoining or nearby properties from disruption of views or visual intrusion. Compliance with the height development standard might be unreasonable or unnecessary if the non-compliant development achieves this objective of*

minimising view loss or visual intrusion. It is not necessary, contrary to what the Commissioner held, that the non-compliant development have no view loss or less view loss than a compliant development.

87. The second matter was in cl 4.6(3)(b). I find that the Commissioner applied the wrong test in considering this matter by requiring that the development, which contravened the height development standard, result in a "better environmental planning outcome for the site" relative to a development that complies with the height development standard (in [141] and [142] of the judgment). Clause 4.6 does not directly or indirectly establish this test. The requirement in cl 4.6(3)(b) is that there are sufficient environmental planning grounds to justify contravening the development standard, not that the development that contravenes the development standard have a better environmental planning outcome than a development that complies with the development standard.

As outlined above, it is in any case considered that the proposal will provide for a better planning outcome than a strictly compliant development due to the enhanced occupant amenity and equitable access provided for. At the very least, there are sufficient environmental planning grounds to justify contravening the development standard.

6. Clause 4.6(4)(a)

Preston CJ in *Initial Action Pty Ltd v Woollahra Municipal Council* details how Clause 4.6(4)(a) needs to be addressed (paragraphs 15 and 26 are rephrased below):

The first opinion of satisfaction, in clause 4.6(4)(a)(i), is that a written request seeking to justify the contravention of the development standard has adequately addressed the matters required to be demonstrated by clause 4.6(3). These matters are twofold: first, that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case (clause 4.6(3)(a)) and, secondly, that there are sufficient environmental planning grounds to justify contravening the development standard (clause 4.6(3)(b)). This written request has addressed Clause 4.6(3)(a) in Section 4 above (and furthermore in terms of meeting the objectives of the development standard, this is addressed in 7a below). Clause 4.6(3)(b) is addressed in Section 5 above.

The second opinion of satisfaction, in clause 4.6(4)(a)(ii), is that the proposed development will be in the public interest because it is consistent with the objectives of the particular development standard that is contravened and the objectives for development for the zone in which the development is proposed to be carried out. The second opinion of satisfaction under cl 4.6(4)(a)(ii) differs from the first opinion of satisfaction under clause 4.6(4)(a)(i) in that the consent authority, or the Court on appeal, must be directly satisfied about the matter in clause 4.6(4)(a)(ii), not indirectly satisfied that the applicant's written request has adequately addressed the matter in clause 4.6(4)(a)(ii). The matters in Clause 4.6(4)(a)(ii) are addressed in Section 7 below.

7. THE PROPOSED DEVELOPMENT WILL BE IN THE PUBLIC INTEREST BECAUSE IT IS CONSISTENT WITH THE OBJECTIVES OF THE PARTICULAR STANDARD AND THE OBJECTIVES FOR DEVELOPMENT WITHIN THE ZONE IN WHICH THE DEVELOPMENT IS PROPOSED TO BE CARRIED OUT (CLAUSE 4.6(4((a)(ii))

7a. Objectives of Development Standard

The objectives and relevant provisions of clause 4.3 are as follows, inter alia:

" *(a) to ensure that the scale of buildings:*

(i) is compatible with adjoining development, and

(ii) is consistent with the desired scale and character of the street and locality in which the buildings are located or the desired future scale and character, and

(iii) complements any natural landscape setting of the buildings,

(b) to allow reasonable daylight access to all buildings and the public domain,

(c) to minimise the impacts of new buildings on adjoining or nearby properties from loss of views, loss of privacy, overshadowing or visual intrusion,

(d) to ensure that the visual impact of buildings is minimised when viewed from adjoining properties, the street, waterways and public reserves,

(e) to ensure, where possible, that the height of non-residential buildings in residential zones is compatible with the scale of residential buildings in those zones,

(f) to achieve transitions in building scale from higher intensity employment and retail centres to surrounding residential areas."

The *Height of Buildings Map* nominates a maximum height of 16m for the site. It is hereby requested that an exception to this development standard be granted pursuant to clause 4.6 so as to permit a maximum height of 19.64m for the lift overrun.

Objectives (e) and (f) are not applicable to the proposal. In order to address the requirements of subclause 4.6(4)(a)(ii), each of the relevant objectives of clause 4.3 are addressed in turn below.

Objective (a)

Objective (a) refers to being "compatible" with adjoining development. It is considered that "compatible" does not promote "sameness" in built form but rather requires that development fits comfortably with its urban context. Of relevance to this assessment are the comments of Roseth SC in Project Venture Developments Pty Ltd v Pittwater Council [2005] NSWLEC 191:

> *"22 There are many dictionary definitions of compatible. The most apposite meaning in an urban design context is capable of existing together in harmony. Compatibility is thus different from sameness. It is generally accepted that buildings can exist together in harmony without having the same density, scale or appearance, though as the difference in these attributes increases, harmony is harder to achieve."*

The proposed encroachments into the maximum building height applies mainly to the lift overrun with other minor building components that sit within the footprint of the proposed roof space. The majority of the building is below the maximum building height. The siting and scale of the proposed development has been designed to distribute building mass in a manner that best minimises impact on adjoining development and achieves appropriate separation from neighbouring dwellings. To the casual observer, the building will visually appear to have compliant height and will therefore be compatible with future nearby development. The proposed height non-compliance will not impact on any natural features of the site.

Accordingly, it is considered that the scale of the buildings is compatible with the desired future character of the locality and the site context. The minor height breach does not offend this compatibility in any noticeable way. The proposal therefore satisfies Objective (a).

Objectives (b) & (c)

In terms of daylight access to buildings and the public domain, the proposed height non-compliance does not contribute towards any unreasonable overshadowing of the adjoining public domain or adjoining development and the shadow diagrams provided with the amended plans demonstrate reasonable solar access to southern adjoining units, given the allotment pattern and orientation in the locality. It is noted that the portion of the building casting the greatest shadow (being the parapet of the roof at the southern elevation) has a compliant height and setback, and is therefore not

contributing to unreasonable overshadowing not anticipated by the controls. The shadow impacts are a result of the east-west lot pattern in the locality.

In terms of views, the height of the building will not result in any significant additional view loss compared with a compliant building. There are no significant views from adjoining properties as a result of the topography of the area.

In terms of privacy, the non-compliance will not have any additional impacts on adjoining properties, as described in Section 4.1.4.1. The proposed non-compliance will not compromise the use or enjoyment of neighbouring properties.

The proposal is therefore consistent with objectives (b) and (c).

Objective (d):

Matters of visual bulk have largely been addressed in relation to Objective (a). In essence, it is considered that given the location of the proposed non-compliance, architectural treatment of the building in terms of setbacks, materials and viewing points from which the non-compliances would be seen, visual impacts will be minimal. The proposed development provides for a floor space ratio that complies with the maximum allowed for an affordable rental housing development. Accordingly, the proposal satisfies Objective (d).

The proposed development is therefore consistent with the objectives for maximum height, despite the numeric non-compliance.

7b. Objectives of the Zone

Clause 4.6 (4) also requires consideration of the relevant zone objectives. The objectives of the Zone R4 High Density Residential are as follows:

> *" -To provide for the housing needs of the community within a high density residential environment.*
> *-To provide a variety of housing types within a high density residential environment.*
> *-To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
> *-To encourage the supply of housing that meets the needs of the Sutherland Shire's population, particularly housing for older people and people with a disability.*
> *-To promote a high standard of urban design and residential amenity in a high quality landscape setting that is compatible with natural features.*
> *-To minimise the fragmentation of land that would prevent the achievement of high density residential development."*

The zone objectives overlap to a large extent with the objectives of the height control and have been addressed above. In addition, it is noted that Council regularly support height variations to access to rooftop common open space, providing housing options with high amenity for future occupants. Further to that, it is considered that the proposal directly responds to the housing needs of the community by providing a high quality residential flat development, which includes 50.0% dedication as affordable rental housing for a 10 year period. The proposal includes a variety of apartment sizes, and adaptable and 'livable' apartments. The proposal will not fragment land for redevelopment, as outlined in the accompanying Statement of Environmental Effects.

The height variation does not contravene any objectives for the zone and for that reason the proposed variation is acceptable.

8. THE CONCURRENCE OF THE SECRETARY HAS BEEN OBTAINED (CLAUSE 4.6(4)(b))

The second precondition in cl 4.6(4) that must be satisfied before the consent authority can exercise the power to grant development consent for development that contravenes the development standard is that the concurrence of the Secretary (of the Department of Planning and the Environment) has been obtained (cl 4.6(4)(b)). Under cl 64 of the

Environmental Planning and Assessment Regulation 2000, the Secretary has given written notice dated 21 February 2018, attached to the Planning Circular PS 18-003 issued on 21 February 2018, to each consent authority, that it may assume the Secretary's concurrence for exceptions to development standards in respect of applications made under cl 4.6, subject to the conditions in the table in the notice.

9. WETHER CONTRAVENTION OF THE DEVELOPMENT STANDARD RAISES ANY MATTER OF SIGNIFICANCE FOR STATE OR REGIONAL ENVIRONMENTAL PLANNING (CLAUSE 4.6 (5)(a))

Contravention of the maximum height development standard proposed by this application does not raise any matter of significance for State or regional environmental planning.

10. THE PUBLIC BENEFIT OF MAINTAINING THE DEVELOPMENT STANDARD (CLAUSE 4.6(5)(b))

As detailed in this submission there are no unreasonable impacts that will result from the proposed variation to the maximum building height. As such there is no public benefit in maintaining strict compliance with the development standard. Whilst the proposed building height exceeds the maximum permitted on the site by 3.64m (22.75%), the proposed development is consistent with the objectives of the development standard and the objectives for development of the zone in which the development is proposed to be carried out. It is the proposed development's consistency with the objectives of the development standard and the objectives of the zone that make the proposed development in the public interest.

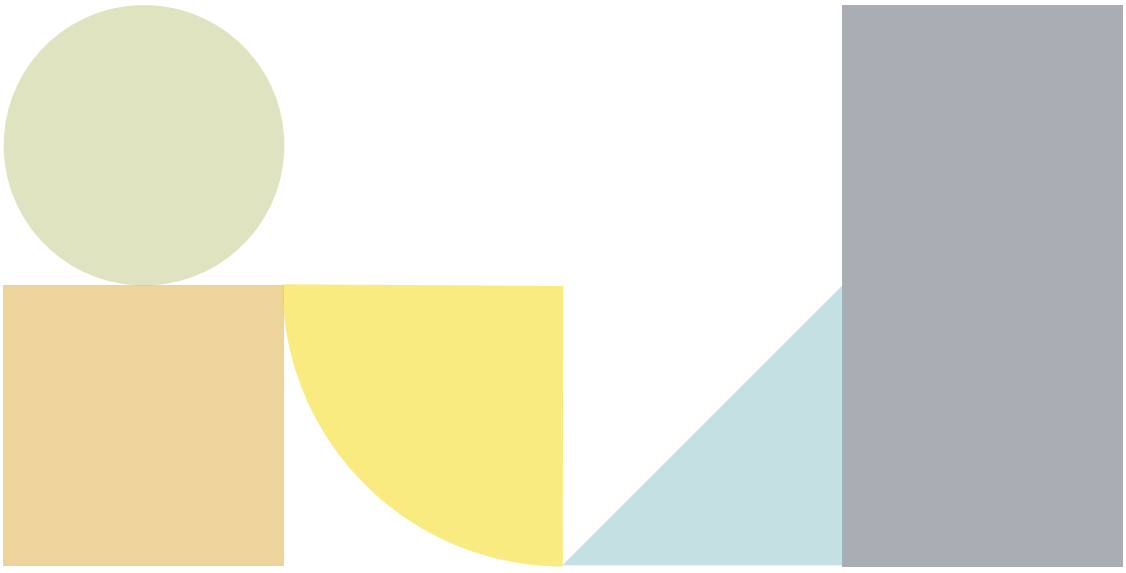
11. CONCLUSION

Having regard to all of the above, it is our opinion that compliance with the maximum height development standard is unreasonable and unnecessary in the circumstances of this case as the development meets the objectives of that standard and the zone objectives. The proposal has also demonstrated sufficient environmental planning grounds to support the breach.

Therefore, insistence upon strict compliance with that standard would be unreasonable. On this basis, the requirements of Clause 4.6(3) are satisfied and the variation supported.

ANNEXURE E

Sutherland Shire DCP 2015
Compliance Table



Sutherland Shire DCP 2015 - Compliance Table			
Clause / Control	Requirement	Proposal	Complies?
Chapter 7	R4 Caringbah North Precinct		
5. Streetscape and Building Form	1. Lots must be of sufficient width to accommodate development. A site of minimum width of 26m is appropriate for residential flat development. Where development of a narrower site is proposed the development must: a. provide safe and efficient access and servicing facilities- particularly in relation to parking, pedestrian and vehicle access, collection and storage of waste; b. provide a high standard of resident amenity- particularly in relation to privacy, solar access, ventilation and the provision of outlooks to landscaped setbacks; c. respond to the local context, including providing adequate separation from existing and future adjoining development. Development sites with site frontage width less than 26m may not allow for the full FSR to be realised.	The subject site has a frontage to Taren Point Road of 45.72m.	Y
	2. Development must be designed and sited so that it addresses the street and must have a clearly identifiable entry. Where possible, ground floor units facing the street should have street access.	The development presents to Taren Point Road and contains clearly identifiable pedestrian and vehicular entrances.	Y
	3. The building form must be articulated to avoid large expanses of unbroken wall, and to visually reduce bulk.	Refer to the submitted elevations which demonstrate building articulation and no blank walls.	Y
	4. Facades are to be composed with an appropriate scale, rhythm and proportion, which respond to the building's use and the desired character of a locality.	The building appears as a contemporary residential flat development that is suitable to the proportions of the site and the desired future character of the area.	Y
	5. Developments on street corners should be designed to define and address the setback and address both street frontages,	Not applicable.	N/A

Sutherland Shire DCP 2015 - Compliance Table			
	6. Where development has two (2) or more road frontages, vehicular access shall be from the lowest order road.	Not applicable - currently, the development only has frontage to Taren Point Road.	N/A
	7. The finished roof levels of basements are to be located at or near ground level.	The finished roof levels of the basement carpark are at or near ground level.	Y
	8. Basement roofs and walls, and vehicular entries must not dominate the overall design of the building or streetscape and are to be integrated into the finished building design and landscaped treatment of the site.	The basement entry ramp is located at the lowest topographical point of the site, thus its visual intrusion is minimised. The basement walls will be treated to match the material details of the building and will not be a dominant feature.	Y
	9. A 1m landscaped setback to neighbouring properties is to be provided along the driveways to basement car parks.	The driveway is setback by 1m from the northern adjoining site. This setback area is proposed to be landscaped.	Y
	10. Driveway walls adjacent to the entrance of a basement car park are to be treated so that the appearance is consistent with the external finish of the building. If basement car park entry points are to be located on the main street frontage of a development, these should be designed so as to reduce the visual impact.	Driveway walls will be treated to complement the proposed building.	Y
	12. Lift overruns and service plants must be concealed within well designed architectural elements which are an integral part of the building design.	The lift overrun will be integrated with the building's roof design, recessed from the front façade and treated with colours and materials that minimise its visual impact.	Y
	13. The need for additional building services (e.g. electricity kiosk/substation & fire services facilities) must be co-ordinated and integrated with overall design of the development.	An offer to provide design related services by Ausgrid confirms that the proposal is able to connect to an existing substation, being substation S.78274. A preliminary hydrant design has been prepared by Greenview Consulting.	Y
	14. Frontage works for all developments must be in accordance with the SSC Public Domain Design Manual.	Council may impose a suitable condition.	Y
	15. Development of land for residential flat buildings or shop top housing in the Caringbah North Precinct must include the replacement of existing local distribution power lines and other utilities with subsurface utilities	Council may impose a suitable condition.	Y

Sutherland Shire DCP 2015 - Compliance Table			
	and the provision of new street lighting to meet the requirements of the SSC Public Domain Design Manual.		
6. Street Setbacks	1. A minimum 7.5m setback from the primary and secondary street frontages is required for all development, unless an alternative street setback is specified in a locality strategy.	The proposal is setback 7.5m from Taren Point Road, with some balconies and other building elements protruding into the articulation zone. See comments below.	Y
	2. Where a development has a street setback of 7.5m or greater, building elements may encroach 1.5m into the front setback for a maximum of one third of the area of the façade, forming an articulation zone. Built form encroachments into the articulation zone can include open structure elements such as balconies and hoods, as well as elements which contribute to floor space ratio such as bay windows. Built form encroachments into the articulation zone must not include: Garages, or Lift shafts. Built form encroachments into the articulation zone must: Improve the design quality of the development with good façade articulation.	The proposed development encroaches into the 1.5m articulation zone to a minor extent.	Y
	3. Basement underground car parks may be allowed within the articulation zone of the street setback, provided the structure is considered in conjunction with the overall landscape design.	The basement wall is setback 6m from the street boundary. The proposal provides 29.4% of deep soil landscaping, complying with the deep soil landscape controls specified within ARH SEPP.	Y
	4. Where private courtyards are located in the front setback, the outdoor living space must be set back a minimum of 3m from the front boundary to allow a landscape strip at the street frontage, which should be planted with trees and landscaping that complement the scale of the development. Where the front setback is to be used as a private open space for a ground floor unit, it should include both paving and planting.	The private courtyards within the front setback are setback a minimum of 3m from the front boundary, allowing for landscaping and plantings at the street frontage. Private open space within the front setback is provided with both paving and soft landscaping.	Y
	5. At grade car parking must not be located within the setback area to a primary street.	N/A – parking is in the basement	N/A

Sutherland Shire DCP 2015 - Compliance Table			
7. Side and Rear Setbacks	1. Side and rear setbacks must result in a development that: i. provides appropriate access and servicing facilities – vehicular parking, access, storage and waste management areas; ii. provides resident amenity- including privacy, solar access, ventilation, and landscaped setbacks; iii. responds to the local context and provides streetscape amenity, including providing adequate separation from existing and future adjoining development; iv. does not prevent a neighbouring site from achieving its full development potential; v. has architectural merit.	Refer to Section 4.1.4.1 of this Statement for discussion.	On merit
	2. Walls are to be articulated to prevent continuous linear walls and promote variation and interest to setback areas and these walls.	Walls to each façade incorporate suitable articulation.	Y
	3. That part of a basement construction which extends beyond the building footprint must be set back a minimum of 3m from side and/or rear boundaries.	A small portion of the basement along the northern edge of the site encroaches into the 3m setback requirement. Despite the encroachment of the basement into the 3m setback, the proposal continues to meet the objectives and intent of the control .The development does not impact upon the proposal's capacity to provide visual and acoustic privacy for existing and new occupants and, as the encroachment is underground, it does not increase the perceived building bulk to neighbouring properties. The variation does not result in additional overshadowing of adjacent properties and private or shared open space. Opportunities for deep soil planting are provided within the eastern, western and southern setbacks. Landscaped deep soil area is proposed to be 29.4% of total site area, as per the ARH SEPP. It is considered that the proposed development provides an effective solution with	On merit

Sutherland Shire DCP 2015 - Compliance Table			
		sufficient opportunities for deep soil planting, while also supporting the feasibility of the development.	
	4. Variations to basement construction side boundary setback control may be considered if: i. The basement construction does not protrude from the natural ground level, so potential overlooking of the neighbouring property is not increased by the development. ii. Opportunities for the planting of trees are provided in the setback area.	See above.	On merit
8. Landscape Design	2. The landscape design must include indigenous canopy trees that will achieve minimum 8 metres height at maturity within suitable setback areas. Where setbacks allow, the trees must be planted more than 3 metres from adjoining structures.	Refer to Landscape Plan for compliance.	Y
	3. A minimum street tree planting rate is set at one indigenous canopy tree that will attain a minimum mature height of 6m to be planted at maximum spacing of 5m planted at least 1m from the kerb and/or footpath. Informal clumping of trees is encouraged. Street trees must be selected from the Native Plant Selector available on Council's website. Turf must also be planted.	Council may impose a suitable condition.	Y
	4. Where there are powerlines which are not being undergrounded, street tree planting will only be required if they can be located 2m away from the edge of the wires.	Council may impose a suitable condition.	Y
	5. A minimum rear boundary indigenous tree planting rate is set at 2 trees for every 15m of linear boundary. All indigenous tree species must be selected from the Native Plant Selector available on Council's website.	Refer to Landscape Plan for compliance.	Y
	6. The landscape design should achieve opportunities for deep soil landscape planting between buildings that provide a deep soil separation of more than 3m between trees and structures. Planting beds should be a minimum of 900mm wide to support shrubs and small trees.	Suitable landscaping is proposed to all site boundaries to optimise opportunities for landscaping and provide privacy to the ground floor units.	Y

Sutherland Shire DCP 2015 - Compliance Table			
	7. Existing canopy trees in good health in the front and rear setback must be retained.	While trees are retained where possible, eighteen existing trees are to be removed from the site and one street tree prior to construction of the development.	Y
	8. Landscaping in the vicinity of a driveway entrance should not obstruct visibility for the safe ingress and egress of vehicles and pedestrians.	Landscaping adjacent to the driveway does not obstruct visibility to and from the vehicular exit.	Y
	9. Ground floor courtyards must not extend into the 3m landscape strip along the frontage of development.	A 3m landscape strip is provided along the frontage of the development.	Y
	10. Landscaping and design should be employed to create privacy for residents.	Plantings are proposed within the ground floor private courtyards to delineate private from communal space.	Y
	11. Any privacy fencing must be appropriately landscaped with screen planting.	Privacy fencing is appropriately screened.	Y
	12. Communal open space should have a minimum area equal to 25% of the site for all residential flats with a floor space ratio of 2:1 or greater. Where residential flat buildings have a floor space ratio of less than 2:1, 100sqm of communal open space is required.	Communal open space is provided at the ground floor central atrium (51.8m^2) and on the rooftop (474.2m^2) allowing for a total of 526m^2 (25.16%) of communal open space.	Y
	13. Communal open space should have a minimum dimension of 3m, and larger developments should consider greater dimensions. This space must incorporate shelter, furniture and facilities suitable for outdoors, and if provided at ground level, include canopy trees. Communal open space on roof tops should be designed to optimise privacy for occupants and adjoining residents	At the rooftop, communal open space is located in the centre of the building, with a northern orientation. Facilities, including BBQs, seating and shelter are provided to enhance the amenity of the area.	Y
	14. Planting is required on that part of a basement which extends beyond the building footprint. Planting in this area is to have sufficient soil depth to support the species selected and should constitute a minimum of 30% of the area of the exposed basement. This planting is intended: a. to offset the potential for excessive paved areas; b. to provide residents with attractive outlooks from dwellings, and	Plantings are proposed in the areas where the basement extends beyond the building footprint.	Y

Sutherland Shire DCP 2015 - Compliance Table			
	c. to assist in the creation of privacy between dwellings, and between dwellings and common areas.		
	15. Where planting is proposed on podiums, that part of a basement which extends beyond the building footprint, roof tops or within planter boxes, the space to be planted must be designed and constructed to contain a minimum soil depth of: 450mm for grass and ground covers 600mm for shrubs 900mm for small trees 1200mm for large trees Species selection must be suited to the future microclimate. Landscaping on basement roofs and planter boxes must be accessible for maintenance access.	Refer to Landscape Plans for compliance.	Y
	16. Where trees are proposed on roofs or planter boxes an area of 3m x 3m per tree must be provided. Planter boxes in this case must be stepped, mounded or set down in the slab to reduce their apparent height on the surface to 450mm.	No trees are proposed within planter boxes.	N/A
	17. Where site levels allow, landscaping on basement roofs is to be integrated with surrounding deep soil landscaping and hard paved areas so the basement roof landscaping reads as an extension of the deep soil landscaping.	The landscaping of the development presents as an integrated design.	Y
	18. Where planter boxes edge both sides of a pedestrian path or entrance, the vertical height of the planter shall not exceed a height greater than half the width of the pathway.	Noted. Refer to Landscape Plan for compliance.	Y
	19. Appropriate paving must be provided to driveways, walkways, entries, fire egress points, garbage bin enclosures, letter boxes and clothes lines and under pergolas.	Suitable paving will be provided.	Y

Sutherland Shire DCP 2015 - Compliance Table			
	20. A communal rainwater tank and pump should be located underground in common open space. Common open space areas must be provided with a water efficient irrigation system and taps at a minimum 25m intervals connected to the rainwater tank. Each private open space must be provided with a tap connected to the rainwater tank.	Council may wish to impose a suitable condition.	Y
	21. An external energy efficient lighting system is to be provided for pedestrian access and driveways located within communal open space.	Council may wish to impose a suitable condition.	Y
	22. Internal driveways within the drip zone of existing trees should have a pervious surface treatment.	The driveway is not within the drip zone of any trees.	Y
9. Building Layout and Private Open Space	1. Suitable clothes drying facilities shall be provided which are not visible from a public place and have access to sunlight.	Clothes drying facilities can be provided within balconies to each apartment.	Y
	2. Access to all levels of the development, including the basement, must be made available by a lift in order to facilitate access by people with disabilities.	Access to the basement levels is provided via two lifts.	Y
10. Solar Access	1. New buildings and additions shall be sited and designed to maximise direct sunlight to north-facing living areas, communal and private open space areas.	The vast majority of private open space areas have orientation to the north, west and east to maximise sunlight access. The rooftop communal open space is oriented to the north.	Y
	2. Living rooms and private open spaces for at least 70% of residential units in a development should receive a minimum of 3 hours direct sunlight between 9am and 3pm in midwinter.	The living room and private open space areas of 71.4% of dwellings receive a minimum of 3 hours sunlight during midwinter.	Y
	3. New development is to be designed to ensure direct daylight access to communal open space between March and September and provide appropriate shading in summer	The rooftop communal open space receives solar access throughout the year, and provides appropriate shading in summer in the form of a pergola and landscaping.	Y
	4. Skylights and lightwells must not be used as the primary source of daylight in habitable rooms.	All habitable rooms have their primary light source from an external window.	Y
	5. For neighbouring dwellings:		

Sutherland Shire DCP 2015 - Compliance Table			
	a. Direct sunlight to north facing windows of habitable rooms and 10sq.m. of private open space areas of adjacent dwellings should not be reduced to less than 3 hours between 9.00am and 3.00pm on 21 June. b. Consideration will be given to reduced solar access where the proposed dwelling is generally compliant with all development standards and controls, and the extent of impact is the result of orientation, site constraints, and or existing built forms. c. overshadowing by vegetation should be ignored, d. overshadowing by fences, roof overhangs and changes in level should be taken into consideration.	Refer to Section 4.2.6 of the Statement for detailed consideration of shadow impacts. Noted. Noted. Noted.	Y - - -
11. Visual and Acoustic Privacy	1. Locate, orientate and design new development to maximise the provision of visual privacy	The proposal generally complies with separation requirements and therefore ensures acceptable visual privacy outcomes.	Y
	2. Use detailed site and building design elements to increase visual privacy without compromising access to light and air.	Architectural detailing and blade walls are provided to ensure that visual privacy is maintained.	Y
	3. Minimise the potential for overlooking of adjacent school yards through the careful orientation of balconies and windows, coupled with screening devices.	Not applicable.	N/A
	4. All noise generating equipment such as mechanical plant or equipment, air conditioning units, swimming pool filters, fixed vacuum systems, mechanical ventilation from carparks, driveway entry shutters, garbage collection areas or similar must be designed to protect the acoustic privacy of residents and neighbours. All such noise generating equipment must be acoustically screened. The noise level generated by any equipment must not exceed an LAeq (15min) of 5dB(A) above background noise at the property boundary.	Council may wish to impose a suitable consent condition.	Y
	5. Residential development adjacent to a rail corridor or a busy road as identified on the Road and Rail Noise Buffer Map should be sited and designed to include noise and vibration attenuation measures to minimise noise and vibration impacts. Refer to State Environmental Planning	The site is located adjacent to Taren Point road and as such is identified within a Road Traffic Buffer Zone on the Road and Rail Noise Buffer Map. An Acoustic Report has been prepared by Renzo Tonin &	Y

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	Policy (Infrastructure) 2007 and the NSW Department of Planning's Development near Rail Corridors and Busy Roads –Interim Guideline.	Associates, which includes recommendations to ensure the development will comply with the relevant acoustic criteria	
12. Adaptable and Livable Housing	12.2 Controls for Adaptable Housing 1. All new multi dwelling housing and residential flat building developments must provide dwellings designed in accordance with the Australian Adaptable Housing Standard (AS4299) to Class C Certification at the following rates: • Development containing 3-5 dwellings – none. • Developments of 6 or more dwellings – 20% adaptable 2. When the calculations for the number of dwellings results in a fraction, numbers < = .5 should be rounded down.	The proposed development contains a total of 49 dwellings, therefore 9.8, or 10 adaptable dwellings are required. 10 adaptable dwellings are proposed.	Y
	3. Variations will be considered where it can be demonstrated that site conditions would preclude achieving the controls.	N/A	N/A
	4. An applicant will need to demonstrate compliance with the adaptable housing provisions. This may include a report prepared by an appropriately qualified person submitted with the development application, specifying how the proposal has addressed the requirements in this chapter, the relevant Australian Standards (e.g., Australia Standard 1428 – Design for access and mobility) and the National Construction Code. 5. The design of adaptable dwellings must be integrated into the development with the use of consistent materials and finishes.	Refer to the BCA Report prepared by BCA Logic, submitted separately with this application.	Y
	5. The design of adaptable dwellings must be integrated into the development with the use of consistent materials and finishes.	The adaptable dwellings are integrated into the design of the development.	Y
	8.2 Controls for Livable Housing 1. In addition to complying with the adaptable housing rates in clause 1 above, all new multi dwelling housing and residential flat building developments must provide 'livable dwellings (i.e., dwellings designed to Livable Housing Design Guidelines) at the following rates:	The proposed development contains a total of 49 dwellings, therefore 4.9, or 5 livable dwellings are required to be provided. The development provides 5 livable dwellings.	Y

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	• Developments containing 3-5 dwellings – 1 dwelling. • Developments of 6 or more dwellings –10% of dwellings. 2. When the calculations for the number of dwellings results in a fraction, numbers < = .5 should be rounded down.		
	3. Dwellings provided in accordance with Clause 1 must incorporate the following Livable Housing Design Guidelines: • A car park 3.2m wide. • An accessible continuous path of travel from the street entrance and/or parking area to dwelling entrance. • At least one level entrance into the dwelling. • Internal doors and corridors width that facilitate comfortable and unimpeded movement between spaces. • A toilet on the ground (or entry) level that provides easy access. • Reinforced walls around the toilet, shower and bath to support the safe installation of grab rails at a later date. • A continuous handrail on one side of any stairway where there is a rise of more than one metre.	Refer to plans for compliance	Y
	4. Where proposed, all 'livable' dwellings must be clearly identified on the submitted DA plans.	Refer to the architectural plans.	Y
	5. Variations to (1) will only be considered where it can be demonstrated that site conditions would preclude achieving the controls.	N/A	N/A
13. Safety and Security	1. The design of development is to incorporate Crime Prevention Through Environmental Design (CPTD) principles.	The design provides for good levels of passive surveillance to the street. In addition, access control is managed by the provision of security doors to pedestrian and vehicular access points. The development provides for clear lines of sight from the street along the main entrance pathway and appropriate lighting will limit opportunities for concealment opportunities	Y

Sutherland Shire DCP 2015 - Compliance Table			
	2. Development is to be designed to incorporate and/or enhance opportunities for effective natural surveillance by providing clear sight lines between public and private places, installation of effective lighting, and the appropriate landscaping of public areas.	Orientation of dwellings to the street as well as the rear and side of the site facilitates appropriate levels of passive surveillance. Lighting will be provided as is necessary to ensure that access to the site is safe.	Y
	3. Balcony balustrades should respond to the location, being designed to allow views and passive surveillance of the street while maintaining visual privacy and allowing for a range of uses on the balcony.	Balustrades allow for surveillance of the street and privacy.	Y
	4. Driveways and fencing must provide adequate sight distance for the safety of pedestrians using the footpath area.	Adequate sight lines are provided adjacent to the driveway entry.	Y
	5. To facilitate access especially by emergency services, street numbering should be adjacent to the doorway and on a vertical surface adjacent to the driveway entrance.	Council may wish to impose a consent condition.	Y
14. Parking	1. Car parking shall be provided in accordance with the following table: **Zone**: Residential Flat Building In Zone R4 **Requirements**: A minimum of 1 space per 1 bed, 1.5 spaces per 2 bed, 2 spaces per 3 bed, Plus 1 visitor space per 4 units	Not applicable – car parking is provided as per SEPP (Affordable Residential Housing) 2009.	N/A
	6. Developments with 10 or more dwelling require one designated carwash bay with minimum dimensions of 3m x 7.6m. Additional carwash bays are required in development in excess of 30 dwellings at a rate of 1 per 20 dwellings.	2 carwash bays are provided in Basement Level 1.	Y
	8. The minimum vehicular crossing and driveway width for a combined vehicular crossing (Entry/Exit) is 5.5m and 4m for a separate vehicular crossing with a minimum spacing between driveways of 3m.	A minimum driveway width of 5.5m is provided.	Y
	9. The design of the all vehicle access ways shall enable all vehicles to enter and leave the site in a forward direction. Turning areas shall be provided to enable a maximum 3-point turn to achieve this egress.	Vehicles can enter and exit the basement car park in a forwards direction.	Y

<table>
<tr><th colspan="4">Sutherland Shire DCP 2015 - Compliance Table</th></tr>
<tr><td></td><td>10. Car parking areas must be designed to minimise headlight glare onto the windows of dwellings within the site or neighbouring properties.</td><td>Dwellings are orientated away from the access driveway.</td><td>Y</td></tr>
<tr><td>12. Waste Management requirements</td><td>1. For new multi dwelling housing, residential flat buildings and the residential components of shop top housing and mixed use developments provision for waste management, including storage areas, separation of waste from recyclables, collection areas and the like must be in accordance with Sutherland Shire Council's "Waste Collection Policy for Multi-Unit Dwellings and Residential Flat Buildings".</td><td>Noted – see below.</td><td>Y</td></tr>
<tr><td colspan="4">Environmental Specification: Waste Collection for New Multi-Unit Dwellings and Residential Flat Buildings</td></tr>
<tr><td colspan="4">4. Operational Waste Management Plan Requirements</td></tr>
<tr><td colspan="4">5. Planning and Design</td></tr>
<tr><td>2.1 Dwelling Waste Storage Requirements</td><td>Each dwelling is to be provided with an indoor waste and recycling cupboard (or other appropriate storage space) to store two days of garbage waste and recycling generation.</td><td>Each dwelling will provide waste storage bins in the kitchen.</td><td>Yes</td></tr>
<tr><td>2.2 Waste Generation rates</td><td>The residential waste generation rates per dwelling are 120L/week garbage and 120L/week recycling.</td><td>Noted.</td><td>Yes</td></tr>
<tr><td>2.3 Bin Sizes</td><td>The size of the bins that can be used in the provision of waste and recycling services in Sutherland Shire are described in Table 1.
Table 1: Standard Bin Sizes and Dimensions
<table>
<tr><th>Bin Type (L)</th><th>Height (mm)</th><th>Width (mm)</th><th>Depth (mm)</th></tr>
<tr><td>120</td><td>940</td><td>485</td><td>560</td></tr>
<tr><td>240</td><td>1,080</td><td>580</td><td>735</td></tr>
<tr><td>360</td><td>1,100</td><td>600</td><td>885</td></tr>
<tr><td>660*</td><td>1,250</td><td>1,370</td><td>850</td></tr>
<tr><td>1,100*</td><td>1,470</td><td>1,370</td><td>1,245</td></tr>
</table>
* onsite collection only</td><td>Noted.</td><td>Yes</td></tr>
<tr><td>2.4 Collection Frequency</td><td>The service frequencies for garbage waste and recycling collection in Sutherland Shire are one collection per week and one collection per fortnight respectively. Alternative arrangements may be discussed with</td><td>Noted.</td><td>Yes</td></tr>
</table>

Sutherland Shire DCP 2015 - Compliance Table			
	Councils Waste Services during a pre-application discussion with Council.		
2.5 Waste Storage Area	Waste storage area/s is to be provided for all developments. They must be: • Located in a position that is convenient for residents. • Situated behind the building line. • Maintain the amenity of the development and the character of the streetscape. • Constructed in accordance with the requirements of Building Code of Australia. The location of waste and recycling facilities must not impact on car parking or landscaping requirements of the development. In addition, facilities must also be designed to prevent litter and contamination of the stormwater drainage system. The Owners Corporation must take responsibility for the management of garbage waste and recyclable material generated by the development. Arrangements must be in place in regards to the on-going management, maintenance and cleaning of all waste and recycling management facilities.	A garbage holding room is located in Basement Level 1. Detailed waste analysis is provided in the Waste Management Plan submitted with the application.	Yes
2.5.1 Garbage and Recycling	A waste storage area to store bins for garbage waste and recyclables must have sufficient space for the storage of garbage and recycling waste generated by the development. For larger developments, multiple waste storage areas may be required.	The garbage holding room in the basement level is capable of storing the required number of bins.	Yes
	Developments containing four or more storeys must be provided with a suitable system for the transportation of waste and recyclables from each storey to the waste storage area/s.	The bin storage room is located in proximity to the lifts, providing quick and easy access to the area.	Yes
	Waste chutes must be designed in accordance with the Better Practise Guide for Waste Management in Multi-Unit Dwelling (NSW DECC, 2008).	Not applicable.	N/A

Sutherland Shire DCP 2015 - Compliance Table			
	For mixed use development, separate waste storage facilities must be provided for residential and commercial uses. Each waste stream must be separated and clearly labelled. Residential waste must be kept separate from commercial waste. Adequate space must be allowed for manoeuvring bins within the bin area. The Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (NSW EPA, 2012) provides indicative waste generation rates for a wide range of commercial activities.	Not applicable.	N/A
	Grades and surfaces on the path between storage and collection areas must allow fully laden bins to be moved safely and conveniently. It is the responsibility of the Owners Corporation to present the bins on the kerb or temporary bin holding area for collection.	The bins need to be moved a limited distance in the basement on collection. Refer to the waste management plan for further details.	Yes
2.5.2 Bulky Household Waste	The development must provide a dedicated room or caged area for the storage of bulky household waste (whitegoods, mattresses, furniture etc.) awaiting collection. This area should be in addition to and adjacent to the developments waste storage area/s and the central collection area.	A 28.602m^2 bulky goods storage room is provided in Basement Level 1.	Yes
	For developments with up to and including 35 dwellings, these areas must be a minimum floor area of 4m^2 per 7 dwellings. For developments comprising of 35+ dwellings, floor space requirements and collection frequency options must addressed during the pre-application discussion with Council.	The bulky good storage area is considered suitable for the proposed development.	Yes
2.6 Collection	Waste collection procedures for a development must be carefully considered and be to the satisfaction of Council officers. Council provides three options for waste collection at multi-unit and residential flat building developments: • Kerbside Collection • Wheel in/Wheel out service • Onsite Collection	Onsite collection is proposed. Refer to the Waste Management Plan for further details.	Yes

Sutherland Shire DCP 2015 - Compliance Table			
	Table 2. provides a guideline to determine which service is appropriate for a particular development. The controls are not exclusive and the waste collection service option proposed for the development must be permitted in each control section (Development Type, Zone etc). In addition, each development will be assessed according to site specific characteristics and merit, subject to the following criteria: • Serviceability of bins • Maintaining streetscape/amenity • Traffic flow • Pedestrian safety • Occupation Health and safety for council officers		
2.6.3 On-site Collection	Onsite collection is required if: • Street frontage is located on a Classified (Roads Act 1993) or Arterial Road with a speed limit equal to or greater than 70kmh; or • Kerbside collection or councils wheel in/wheel out service does not ensure adequate traffic flow and pedestrian safety; or • The development is a mixed use development or is located within a specific precinct. • Development is being serviced by bins greater than 360L capacity. Where the site is difficult to service options for alternate waste collection options must be discussed at a pre-application discussion with Council Collection vehicles will be required to enter the property to undertake waste and recycling collection. Access to a nominated collection point/s must be designed to ensure a Heavy Rigid Vehicle (HRV) can safely access and manoeuvre within the site. The nominated collection point may be a temporary bin holding area or driveway if gradients and surfaces allow fully laden bins to be collected safely. However, manual manoeuvring of bulk bins or bins containing compacted waste should be	On-site waste collection is proposed by a Medium Rigid Vehicle (MRV). The basement is designed to accommodate the garbage collection vehicle. The garbage holding room has a sufficient size to accommodate the required number of garbage bins. Council has consented to such an arrangement on nearby sites given the difficulty of providing HRV access to sites and impacts on traffic flow on Taren Point Road. Swept path analysis has been undertaken by Greenview Consulting, confirming that the MRV can enter and exit the site in a forward direction.	On Merit

Sutherland Shire DCP 2015 - Compliance Table			
	avoided wherever possible. If transfer of bins is required, it should be no more than 3m at a maximum surface gradient of 1:30.		