

Wollongong Local Planning Panel Report | 29-May-2019

WLPP No.	Item No. 1
DA No.	DA-2018/1484
Proposal	Demolition of three (3) existing dwellings and construction of a five (5) storey residential flat building with one level of basement parking.
Property	21-23 Mercury Street and 57 Bligh Street WOLLONGONG
Applicant	MMJ Wollongong
Responsible Team	Development Assessment and Certification City Centre Team (BH)

ASSESSMENT REPORT AND RECOMMENDATION

Executive Summary

Reason for consideration by Local Planning Panel - Determination

The proposal has been referred to Local Planning Panel for determination pursuant to clause 4 of Schedule 2 of the Local Planning Panels Direction of 1 March 2018. The proposal is development to which State Environmental Planning Policy No 65 — Design Quality of Residential Apartment Development applies.

Proposal

The proposal comprises the demolition of existing dwellings and ancillary structures on site and the construction of a five-storey residential flat building incorporating 24 units over one level of basement car parking.

Permissibility

The site is zoned R1 General Residential pursuant to Wollongong Local Environmental Plan 2009. The proposal is categorised as a residential flat building and is permissible in the zone with development consent.

Consultation

The proposal was notified in accordance with Council's Notification Policy and received 12 pro-forma submissions which are discussed at section 2.7 of the assessment report.

Main Issues

- WDCP 2009 variations in relation to deep soil zone and apartment mix
- Overshadowing
- Privacy

RECOMMENDATION

It is recommended that the development application be approved subject to the recommended draft conditions of consent at **Attachment 5**

Application overview

1.1 PLANNING CONTROLS

State Environmental Planning Policies:

- SEPP No. 55 – Remediation of Land
- SEPP No.65 – Design Quality of Residential Apartment Development
- SEPP (Infrastructure) 2007
- SEPP (Building Sustainability Index: BASIX) 2004

Local Environmental Planning Policies:

- Wollongong Local Environmental Plan (WLEP) 2009

Development Control Plans:

- Wollongong Development Control Plan 2009

Other policies:

- Wollongong Development Contributions Plan 2017

1.2 DETAILED DESCRIPTION OF PROPOSAL

This application seeks consent for:

The demolition of existing dwellings and structures and removal of all trees on the site; and the construction of a five (5) storey residential flat building containing twenty-four (24) units over one level of basement car parking for 25 vehicles (20 resident spaces and 5 visitor car spaces), 8 bicycle spaces and 1 motorbike parking space.

The proposed unit mix is 7 x 1-bedroom units; 13 x 2-bedroom units, 1 x 3-bedroom units and 3 studio units. Three (3) adaptable units are provided.

Pedestrian access to the residential units is available from the Bligh street frontage via a central lobby. Vehicular access to the development is provided via a driveway off Mercury Street, located adjacent to the southern boundary of the site.

1.3 BACKGROUND

A pre-lodgement Design Review Panel (DRP) was held on 10 August 2018 followed by a pre-lodgement meeting on 5 September 2018. The second pre-lodgement suggested changes in response to the issues identified by the DRP, namely a reduction of the perceived bulk and scale as viewed from Bligh Street and potential overshadowing impacts on the adjoining RFB to the south, and the provision of secure parking and the location of the basement garage door.

The full Panel commentary is provided as **Attachment 6** and the applicant's response to the both the pre-lodgement meeting and the DRP is provided in Table form as **Attachment 7**.

The DRP reviewed the proposal post-lodgement on 24 July 2018 (**Attachment 6**).

The development history is provided below:

Application	Description	Decision	Decision Date
PL-2018/160	Residential - multi dwelling housing	Completed	Sep 24 2018
DE-2018/108	Residential unit development	Completed	Aug 10 2018

DE-2017/55	Residential Flat Building - project feasibility	Completed	Mar 29 2017
DA-2012/508	Residential - garage, pergola and fence	Approved	Jun 22 2012
DA-2010/1273	Demolition of garage, part demolish of dwelling and alterations and additions	Approved	Sep 30 2010
DA-2010/791	Proposed dual occupancy	Withdrawn	Mar 29 2011
DA-2005/1963	Demolition of two (2) dwellings and the construction of 12 x 1 bedroom units over four (4) levels with basement parking for 14 cars	Approved	Sep 6 2006
DA-1994/243	Home Employment - Accounting & Bookkeeping Service	Approved	May 16 1994
BC-1991/1324	Fibro Cottage	Approved	Oct 21 1991
BC-1991/283	Weatherboard Fibro And Galvanised Iron Cottage.	Approved	Mar 18 1991
BA-1973/2836	Laundry	Approved	Oct 26 1973
BA-1959/2536	Additions To Dwelling	Approved	Nov 18 1959
BA-1959/1323	W.B. Additions & Garage	Approved	Jul 15 1959
BA-1953/768	Garage	Approved	Sep 23 1953

1.4 SITE DESCRIPTION

The site is located at 21-23 Mercury Street and 57 Bligh Street Wollongong and the title reference is Lot C DP 421126, Lot 2 DP420963 and Lot B DP 363316.

The site has an area of 1481m² is irregular in shape. Notably Lot 2 has a handle which is proposed to be utilised as common open space with the built form being restricted to the lower part of the site. The site has a fall of approximately 5m from the rear of the site to the corner of Mercury and Bligh Streets.

Adjoining development is as follows:

- North: 3 storey RFB on northern side of Bligh Street
- East: 4 storey RFB (No. 30 Bligh Street)
- South: 4 storey RFB (No. 28 Mercury Street)
- West: Single storey dwellings in Mercury Street

The site currently contains three (3) individual (single storey) dwellings with associated outbuildings and ancillary structures. There are two dwellings with primary frontage to Mercury Street and one dwelling with primary frontage to Bligh Street.

The immediate locality is characterised by a mixture of single dwelling houses and RFBs. The site is on the western perimeter of the Wollongong City Centre and is in close proximity to Wollongong Hospital and Wollongong Railway Station.

Mercury Street forms the boundary between the R1 – General Residential zone and the R2 – Low Density Residential zone.

Property constraints

Council records identify the land as being impacted by the following constraints:

- Acid sulphate soils: Class 5

There are no restrictions on the title.

1.5 SUBMISSIONS

The application was notified between 7 December 2018 to 8 January 2019 in accordance with WDCP 2009 Appendix 1: Public Notification and Advertising. This included a notice in The Advertiser. 12 submissions were received. 10 of the submissions are in the form of a pro-forma letter. The issues identified are discussed below.

Concern	Comment
1. View loss	The concern regarding view loss is not considered substantial. The applicant has submitted a view loss analysis that demonstrates that distant views to the escarpment are not adversely affected.
2. Overshadowing	The applicant has submitted a detailed solar access analysis. Ground floor units centrally located on the northern side of No. 25 Mercury Street (4 storey RFB) are significantly affected however this is considered largely unavoidable given the east-west orientation of the site. Any form of development would impact the property to the south. It is noted that ground floor units are currently overshadowed by existing vegetation along the common boundary between the two properties. (See further detailed comments on solar access and overshadowing below)
3. Loss of privacy	In compliance with the DRP's suggestion the bedroom windows of the south facing units have been re-orientated east/west via accentuated angled façade walls to rooms. This together with privacy screen to the south facing balconies and ADG compliant setbacks is considered sufficient to address potential privacy impacts.
4. Traffic	The additional traffic generated by the development is not considered to have significant impacts. Council's traffic engineer has not raised any concerns in relation to traffic impacts.
5. Parking	The proposed development provides parking for 24 cars in a basement car parking area. This is compliant with the parking requirements of the ADG.
6. Construction impacts	Construction impacts are proposed to be controlled by conditions of consent to minimise impacts on adjacent streets and neighbouring residential properties.

Solar Access and Overshadowing

The solar access report submitted with the application (**Attachment 8**) acknowledges that overshadowing on the southern neighbour is significant, and any attempt to protect complying solar access for the northern façade of No.25 Mercury Street between 9am and 3pm on 21 June would effectively sterilise development on the subject site.

The solar access report confirms that 18 out of the proposed 24 units (75%) receive 2 hours direct sunlight to the principal living space at the winter solstice and that only one unit of the adjoining RFB (3/25 Mercury Street) fails to retain 2 hours of sunlight on June 21. This reduction in percentage

terms is 11.1% (1 out of 9 units) which would satisfy the ADG requirement. In addition, the adjoining development does not currently receive the required hours of solar access and the reduction is no more than 20% (Objective 3B-2 of the ADG).

1.6 CONSULTATION

1.6.1 INTERNAL CONSULTATION

Council's Geotechnical, Stormwater, Traffic, Landscape, Environment officers have reviewed the application and have provided satisfactory referrals. These include recommended conditions of consent which are included as part of **Attachment 5**

Design Review Panel (DRP)

The proposal was reviewed by the DRP on 24 July 2018 (**Attachment 6**). In summary the Panel raised the following concerns regarding the proposal:

- Ensure a better interface with the streetscape in terms of levels to reduce the visual prominence of the building on the lowest corner
- Improve street interface to provide passive surveillance along both street frontages
- Better articulate the building mass to break down its perceived volume. Consider ensuring all neighbouring apartments receive the minimum solar access should be an outcome of this articulation
- Consider how landscape can help connect the building to the streetscape
- Reposition the lobby entry to provide pedestrian access off Bligh Street
- Consider the use of redirected windows in place of privacy screens to achieve privacy to neighbouring properties
- Introducing sustainability measures

On 5 April 2019 the applicant submitted amended plans and written responses to the matters raised by the DRP. Council officers have reviewed the amended plans and written responses and considers that these have appropriately addressed the issues raised by the DRP.

The development as amended is considered to exhibit design excellence as required by Clause 7.18 of Wollongong Local Environmental Plan (LEP) 2009 and responds appropriately to the design quality principles of SEPP 65.

1.6.2 EXTERNAL CONSULTATION

Endeavour Energy

Endeavour Energy raised some concerns about the proximity of the Bligh Street pedestrian entry to low voltage overhead power lines to the road verge / roadway and in relation to proposed tree planting under the power lines.

Council's landscape officer has advised that the proposed species are acceptable regarding the power lines and the applicant has provided evidence that they have made a preliminary application to Endeavour Energy regarding power supply to service the development. If the development is granted consent standard conditions are proposed to ensure the applicant obtains the relevant approvals from Endeavour Energy in relation to meeting its statutory requirements.

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

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

Council records do not indicate any historic use that would contribute to the contamination of the site. Council's Environmental Officer has reviewed the proposal and found it satisfactory. A desktop audit reveals that site has been historically occupied by residential land uses with no known historic use that would contribute to the contamination of the site. The proposal does not comprise a change of use and further investigation of potential contamination is considered to be unwarranted. No concerns are raised in regard to contamination as relates to the intended residential use of the land. The site is suitable for the proposed development regarding clause 7 of this policy subject to conditions.

2.1.2 STATE ENVIRONMENTAL PLANNING POLICY NO 65—DESIGN QUALITY OF RESIDENTIAL APARTMENT DEVELOPMENT

The development meets the definition of a 'RFB' as it is more than 3 storeys and comprises more than 4 dwellings and accordingly the provisions of SEPP 65 apply. The application is accompanied by a statement by a qualified designer in accordance with Clauses 50(1A) & 50(1AB) of the Environmental Planning and Environment Regulation 2000.

The proposal has been considered by Council's Design Review Panel in accordance with Clause 28 and Schedule 1.

Schedule 1 is discussed below pursuant to clause 28(2)(a) of the Policy.

Principle 1: Context and neighbourhood character

The proposal has been designed to provide a quality single use residential building that responds to and utilises the advantages of its context within the Wollongong City Centre. The proposal is considered to appropriately respond Principle 1 by:

- Providing strong frontages to both Mercury & Bligh Streets.
- Locating the entry in direct sight from the street to maintain and create an appropriate address to the street for the various users of the building.
- A design which reflects the desired future character of the area.
- Siting the building so it responds to its location, specific topographic situation and the varying environmental conditions of the site.

These responses result in a building form and articulation that contributes to the streetscape. The proposal is consistent with the desired future character of the area as identified through the development standards and controls applicable to the land.

Principle 2: Built form and scale

An appropriate bulk and scale of the development was established after extensive urban design analysis. The proposal is considered to appropriately respond to Principle 2 as follows:

- The proposed building is appropriate in terms of its bulk and height. Its overall height remains within the maximum permissible height for the area. The height and scale of the proposal provides an appropriate response to the locality. The design will complement the future development of the area and future character of the precinct.
- It has distributed the gross floor area in a way that improves a better outcome in terms of:
 - The proposal addresses the street frontage with good scale and articulation

- The building responds to the future desired character of the area as outlined in the planning controls
- The building is well proportioned for the site and surrounding context
- Effective vertical articulation of the form creates distinct elements
- Detailed facades incorporate distinctive elements as panels, brickwork, louvres and cladding
- The bulk and scale of the building is appropriate and is the result of good urban design principles.
- Provides strong articulation and scale.
- The proposed built form creates a variety of passive and active landscaped courts
- The communal open spaces are located to capture good solar access.
- Appropriately sized balconies to provide good amenity.
- Building contributes to the quality of the streetscape
- The apartments are clearly articulated and robust in terms of internal amenity and achieve good solar access and ventilation.

Principle 3: Density

The density of the development complies with the maximum FSR and building height permitted for the site. The development is not of a scale that is expected to place unreasonable strain on local infrastructure. Contributions applicable to the development will go towards local infrastructure and facilities. The site is well situated with regard to existing public open space and services and residents will enjoy good amenity.

Principle 4: Sustainability

The proposal is considered acceptable regarding sustainable design as follows: -

- A BASIX Certificate has been provided indicating minimum requirements are met.
- A Site Waste Management and Minimisation Plan have been provided indicating appropriate management and disposal of materials from the demolished dwellings.
- The development has been appropriately designed with regard to solar access and natural ventilation.
- The proposal will not have any impacts on any heritage items or environmentally sensitive areas.
- The proposal is an efficient use of land in a location that is close to services, employment and public open space.

Principle 5: Landscape

The proposal provides suitable landscaped areas and communal open space that will improve the amenity of the occupants, soften the appearance of the development from adjoining properties and the public domain and offer opportunities for some urban habitat and infiltration of stormwater. Street tree planting is indicated on the landscape plan.

Principle 6: Amenity

The proposal meets the minimum requirements for solar access, private and communal open space, storage, visual and acoustic privacy, access and the like for future occupants of the development.

The proposal addresses principle 7 by providing:

- Good access to public transport, retail, open space and community facilities/service's needs. The proposal is within walking proximity to North Wollongong Train Station and the numerous bus stops linking residents to the greater region.
- Close proximity to medical precinct;
- Privacy buffers by the selection of landscape species, use of privacy screens and appropriate building separation from neighbouring buildings existing and potential.
- Direct solar access to apartments and providing adequate building separation.

- Natural and cross-ventilation by limiting single aspect apartments. Windows are located to catch breezes from dominant wind directions in summer mornings and afternoons.
- Adaptability of apartments by providing 10% adaptable units.
- Accessible units have been provided with an additional 2 silver level units also provided. Apartments designed with large living and dining areas that achieve solar access, opening onto generous balconies with views and enhancing passive surveillance and outlook;
- Bedrooms that have been designed to accommodate queen size or two single beds with generous wardrobes/storage space and good amount of common open space on the ground level with amenities and BBQ areas that will be well landscaped.

There are no unreasonable off-site impacts on nearby properties are expected. The development provides for compliant building separation distances and is not of excessive bulk or scale. In terms of solar access and overshadowing impacts, the shadow diagrams submitted with the application indicate some unavoidable loss of solar access to northern façade of No.25 Mercury Street.

Principle 7: Safety

The proposal is satisfactory regarding the principles of crime prevention through environmental design:

- The residential entry is well located in high activity and visibility areas.
- Constant passive surveillance maintained;
- Access lobby is well lit;
- Secure carparking spaces have been provided
- Swipe card access to all areas including basement
- Separate visitor and residential / retail parking spaces
- Access to common open space on the landscaped podium and roof levels will be restricted to residents and their visitors using a pre-programmed card or other proprietary system.
- Recessed areas have been minimized.
- External areas will be well lit with clear line of sight from active frontages

Principle 8: Housing diversity and social interaction

The proposal addresses principle 9 by providing:

- Range of apartment mix, design and size (including studio, 1, 2 and 3 bed and adaptable types) will accommodate a range of prices for sale. This ensures a diverse range of people from differing social groups.
- Development will add an optimum density to the existing residential population.
- It is anticipated that there will be no negative impacts on existing social groups or other housing in the area
- Beneficial economic impact to the area and nearby businesses
- A safe and well serviced landscaped communal space on the ground level and facilities for residential use
- Large well accessed common areas for a range of uses.
- A provision of 10% accessible apartments
- Additional population to the area and enhances community identity and activation of the street frontage;
- An increase in the residential population to the immediate area by the development.
- Clear access into and within the complex to optimise use of adjacent public and private amenities
- The proposal includes good access to the common area and good visual links to surrounds.
- The proposal becomes an example of good building form.

Principle 9: Aesthetics

- The proposed massing achieves a balance between large and small elements, solid and void,
- built and natural parts, horizontal/vertical and consistent principal of solid structural frame and panel and glass infill.
- Balconies have solid and clear glazing in response to the levels in the building
- The base is modulated with respect of the scale of the street and content
- Detailed facades with distinct louvres, panels and cladding.
- Colours used are responsive to the base, middle and top elements.
- The vertical arrangement of panels, vertical and horizontal articulation elements containing glass and cladding all contribute to a modulated façade.
- Modulated facade / balconies to street frontage
- Use of separate proportions to break down the scale of the building

Apartment Design Guide

The proposal is satisfactory regarding the objectives of the Apartment Design Guide (ADG). An assessment of the application against the ADG is contained within **attachment 3** to this report. The DRP has reviewed the proposal and their comments have informed the scheme now recommended for approval.

2.1.3 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

The application was required to be referred to Endeavour Energy under Clause 45(1) as the development is adjacent to existing electricity infrastructure (overhead wires). Endeavour Energy raised concerns about the proximity of the Bligh Street pedestrian entry to low voltage overhead power lines to the road verge / roadway and in relation to proposed tree planting under the power lines. Subject to recommendations and comments, these concerns can be reasonably addressed through conditions of consent.

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

The proposal is BASIX affected development to which this policy applies. In accordance with Schedule 1, Part 1, 2A of the Environmental Planning and Assessment Regulation 2000, a BASIX Certificate has been submitted in support of the application demonstrating that the proposed scheme achieves the BASIX targets. The BASIX certificate was issued no earlier than 3 months before the date on which the development application was lodged.

2.1.5 WOLLONGONG LOCAL ENVIRONMENTAL PLAN 2009

Clause 1.4 Definitions

Part 2 Permitted or prohibited development

Clause 2.2 – zoning of land to which Plan applies

The zoning map identifies the land as being zoned R1 General Residential.

Clause 2.3 – Zone objectives and land use table

The objectives of the zone are as follows:

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

The proposal is satisfactory regarding the above objectives.

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

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

The proposal is categorised as a **Residential Flat Building** as defined below and is permissible in the zone with development consent.

Clause 1.4 Definitions

Residential Flat Building means a building containing 3 or more dwellings, but does not include an attached dwelling or multi dwelling housing.

Part 4 Principal development standards relevant to the proposal

Clause 4.3 Height of buildings

The proposed building height of 15.68m does not exceed the maximum of 16m permitted for the site.

Clause 4.4 Floor space ratio

Maximum FSR permitted for the zone: 1.5:1

Site area: 1481m²

GFA: 1947.5m²

FSR: $1947.5/1481 = 1.32:1$

Part 7 Local provisions – general

Clause 7.1 Public utility infrastructure

The development is already serviced by electricity, water and sewerage.

Clause 7.3 Flood planning area

The land is identified as being flood affected, the design has taken this into account and Council's stormwater engineer has reviewed the proposal and provided conditions.

7.5 Acid Sulfate Soils

Council records identify the land as being impacted by Class 5 acid sulphate soils. The proposed works involve excavation to RL-3.5. An Acid Sulfate Soils Management Plan has been submitted and assessed as satisfactory in terms of the monitoring and treatment of Acid Sulfate Soils.

7.6 Earthworks

Earthworks associated with the proposal are essentially excavation for basement car parking. Council's Geotechnical engineer has advised that soils in the area are known to comprise deep soft sediments and high ground water. Excavation will require geotechnical advice and guidance to ensure adjoining properties are not adversely impacted upon by uncontrolled settlements. Appropriate conditions of consent have been recommended.

Clause 7.14 Minimum site width

In accordance with Clause 7.14(2), consent must not be granted for development for the purposes of a RFB unless the site area on which the development is to be carried out has a dimension of at least 24 metres. The site complies in this respect, with a street frontage width of 24.9m to Mercury Street and 42.6m to Bligh Street.

7.18 Design Excellence

This clause applies to land within the Wollongong City Centre and states that:

(3) Development consent must not be granted to development to which this clause applies unless, in the opinion of the consent authority, the proposed development exhibits design excellence.

In considering any development within the City Centre Council is required to consider whether the proposed development exhibits design excellence. In determining the design excellence of the development the following matters must be considered:

- (a) whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,*
- (b) whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain,*
- (c) whether the proposed development detrimentally impacts on view corridors,*
- (d) whether the proposed development detrimentally overshadows an area shown distinctively coloured and numbered on the Sun Plane Protection Map,*
- (e) how the proposed development addresses the following matters:*
 - (i) the suitability of the land for development,*
 - (ii) existing and proposed uses and use mix,*
 - (iii) heritage issues and streetscape constraints,*
 - (iv) the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,*
 - (v) bulk, massing and modulation of buildings,*
 - (vi) street frontage heights,*
 - (vii) environmental impacts such as sustainable design, overshadowing, wind and reflectivity,*
 - (viii) the achievement of the principles of ecologically sustainable development,*
 - (ix) pedestrian, cycle, vehicular and service access, circulation and requirements,*
 - (x) Impact on, and any proposed improvements to, the public domain.*

The proposed RFB has been assessed in relation to the above criteria. The proposed development is situated in a locality which is undergoing redevelopment with several RFBs replacing older, single dwelling houses. The subject development complies with the development controls within the R1 General Residential Zone in terms of FSR and height.

The proposed development has been reviewed by the Design Review Panel and considered acceptable subject to a revised design to better relate to the street levels. Amended plans are considered to have achieved this and the proposal is of an appropriate scale to adjacent development.

Adequate setbacks and window orientation protect privacy to adjoining development and there is not considered to be any significant adverse impacts either in terms of privacy, or view loss. Solar access to the centrally located ground floor units of the adjacent development at 25 Mercury street is affected particularly during the morning and early afternoon hours in mid-winter however this is considered largely unavoidable. The proposal has an appropriate degree of articulation and utilises high quality building materials to ensure it provides a pleasing presentation to the street.

Having regard to the above it is considered that the proposed dwelling meets the relevant requirements of Clause 7.18 in terms of design excellence.

Part 8 Local provisions—Wollongong city centre

Clause 8.1 Objectives for development in Wollongong city centre

The objectives of this Part and (in so far as it relates to the Wollongong city centre) clause 7.18 are as follows:

- (a) to promote the economic revitalisation of the Wollongong city centre,*

- (b) *to strengthen the regional position of the Wollongong city centre as a multifunctional and innovative centre that encourages employment and economic growth,*
- (c) *to protect and enhance the vitality, identity and diversity of the Wollongong city centre,*
- (d) *to promote employment, residential, recreational and tourism opportunities within the Wollongong city centre,*
- (e) *to facilitate the development of building design excellence appropriate to a regional city,*
- (f) *to promote housing choice and housing affordability,*
- (g) *to encourage responsible management, development and conservation of natural and man-made resources and to ensure that the Wollongong city centre achieves sustainable social, economic and environmental outcomes,*
- (h) *to protect and enhance the environmentally sensitive areas and natural and cultural heritage of the Wollongong city centre for the benefit of present and future generations.*

The proposed RFB meets the above objectives particularly objectives d), e) and f) by providing a high quality residential development which contributes to the housing choice available within the city centre.

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

Not applicable

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

2.3.1 WOLLONGONG DEVELOPMENT CONTROL PLAN 2009

CHAPTER A1 – INTRODUCTION

The development has been assessed against the relevant chapters of WDCP2009 and found to be satisfactory. A full compliance table can be found at **attachment 3** to this report; only the variations are discussed below in relation to Deep Soil Zone (clause 2.7 of Chapter D13 Wollongong City Centre) Housing Choice and Mix (clause 6.7 of Chapter D13 Wollongong City Centre). The applicant has provided 'justification statements' as required by Chapter A1 of the DCP which are contained in the SEE.

8 Variations to development controls in the DCP

Clause 2.7 – Deep soil zone (DSZ)

This clause requires that the DSZ comprises no less than 15% of the total site area preferably provided in one continuous block with minimum dimension of 6m.

The application provides minimum 6m wide deep soil zone extending along the rear western boundary of the site, which has an area of 234m² and therefore equates to 13.76% of the site. The applicant notes that the requirements of the ADG differ from WDCP2009, being 7% with a minimum depth of 3m, as the applicable control, rather than the DCP standard.

Even though Council has been applying the ADG standard as a minimum, the development exceeds this and on this basis the variation is considered acceptable.

Clause 6.2 – Housing Choice Mix

This clause states that to achieve a mix of living styles, sizes and layouts within each residential development, the following mix of units should be provided:

- Studio and one bedroom units - not be less than 10% of the total mix of units
- Three or more bedroom units - not be less than 10% of the total mix of units, and

The proposed development contains only one three-bedroom unit. This represents 4% of the total units. The majority of units include one (1) and two (2) bedroom units, representing 29% and 54% of the unit mix respectively.

The applicant has argued that the proposed development includes a combination of one (1), two (2) and three (3) bedroom apartments and that this responds to the needs of students and health workers looking for accommodation in the immediate vicinity of the site. The development will provide additional housing supply in response to the projected need for 14,600 new homes in the Wollongong LGA, as identified within the *Illawarra - Shoalhaven Regional Plan 2015*.

The location of the site near Wollongong Hospital is likely to attract tenants who are hospital employees and, in this regard, a higher proportion of one-bedroom units is appropriate.

2.3.2 WOLLONGONG CITY WIDE DEVELOPMENT CONTRIBUTIONS PLAN 2018

The estimated cost of works is >\$100,000 (\$6,484,000) and a levy of 1% is applicable under this plan as the threshold value is \$100,000. An additional 1% levy is applicable as the site is located within the city centre.

Section 4.15(1)(a)(iia) Any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under Section 7.4

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

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

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

Conditions of consent are recommended with regard to demolition.

93 Fire safety and other considerations

Not applicable

94 Consent authority may require buildings to be upgraded

Not applicable

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

There are not expected to be any unreasonable adverse environmental impacts on either the natural or built environments or any adverse social or economic impacts in the locality.

This is demonstrated through the following:

- The proposal is satisfactory with regard to the applicable planning controls as detailed in the body of this report.
- Issues raised in submissions following notification would not preclude the development.
- Internal and external referrals are satisfactory subject to appropriate conditions of consent

Context and Setting:

The proposal is appropriate with regard to its context with regard to matters including overshadowing, privacy concerns, bulk, scale, height and setbacks. The development will result in some overshadowing of the adjoining dwellings to the immediate south of the site, as expected. This

is not however considered unacceptable given the circumstances of the case as the development is within the allowable height and FSR for the site and having regard to the orientation of the land.

Context and neighbourhood character have been addressed above in relation to SEPP 65 and the development is acceptable in this regard. It is noted that the area is one in transition and whilst the development may not reflect the scale and design of current developments nearby, it does reflect the character of more recent development including that approved for the neighbouring site and is acceptable with regard to the desired future character of the neighbourhood reflected in the applicable planning controls.

In summary, the proposal has been assessed regarding the amenity impacts from the development, the zoning, permissible height and FSR for the land, and existing and future character of the area, and is compatible with the local area.

Access, Transport and Traffic:

The proposal is satisfactory with regard to carparking, access and traffic matters.

Public Domain:

The proposal will not have an adverse impact on the public domain. Appropriate conditions of consent are recommended to address required public domain works.

Utilities:

The proposal is not envisaged to place an unreasonable demand on utilities supply. Existing utilities are likely to be capable of augmentation to service the proposal. If approved, conditions should be imposed on the consent requiring the developer to make appropriate arrangements with the relevant servicing authorities prior to construction.

The plans make provision for a pad mounted substation within the north-eastern corner of the allotment adjacent to the street frontage. The location indicated on the plans is acceptable.

Heritage:

No impact on any heritage items.

Other land resources:

The proposal is considered to contribute to orderly development of the site and is not envisaged to impact upon any valuable land resources.

Water:

The site is presently serviced by Sydney Water's reticulated water and sewerage services. It is expected that these services can be extended/ augmented to meet the requirements of the proposed development. The proposal is not envisaged to involve unreasonable water consumption. The BASIX certificates provided in relation to the residential units demonstrate compliance with the water efficiency targets contained within the BASIX SEPP.

Soils:

It is expected that, with the use of appropriate erosion and sedimentation controls during construction, soil impacts will not be unreasonably adverse. Conditions are recommended.

Air and Microclimate:

The proposal is not expected to have any negative impact on air or microclimate.

Flora and Fauna:

There is minimal existing vegetation on the site. The landscape plan makes provision for landscaping within the deep soil zone and within other landscaped areas throughout the development as well as street tree planting.

Waste:

Conditions are proposed that an appropriate receptacle be in place for any waste generated during the construction and compliance with the site waste management and minimisation plan provided with the DA.

Energy:

The proposal is not envisaged to have unreasonable energy consumption. The BASIX certificates provided demonstrate compliance with the energy efficiency and thermal comfort targets of the BASIX SEPP.

Noise and vibration:

A condition will be attached to any consent granted that nuisance be minimised during any construction, demolition, or works.

Natural hazards:

There are no natural hazards affecting the site that would prevent the proposal other than the site as being flood affected and acid sulphate soil affected (Class 3). Appropriate conditions of consent have been recommended.

Technological hazards:

There are no technological hazards affecting the site that would prevent the proposal.

Safety, Security and Crime Prevention:

This application does not result in any opportunities for criminal or antisocial behaviour.

Social Impact:

No adverse social impacts are considered likely to arise from the proposed development.

Economic Impact:

The proposal is not expected to create any negative economic impact.

Site Design and Internal Design:

The application does not result in any departures from development standards and changes to the design have been carried out in response to the DRP comments. Conditions are proposed that all works are to be in compliance with the Building Code of Australia.

Construction:

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

Cumulative Impacts:

The proposal is not expected to have any negative cumulative impacts.

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

Does the proposal fit in the locality?

The proposal is considered appropriate with regard to the zoning of the site and is not expected to have any negative impacts on the amenity of the locality or adjoining developments.

Are the site attributes conducive to development?

There are no site constraints that would prevent the proposal.

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

Refer to part 1.5 of this report.

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

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

3 CONCLUSION

This application has been assessed as satisfactory having regard to the Heads of Consideration under Section 4.15 of the Environmental Planning and Assessment Act 1979. The proposed development is permissible with consent and has regard to the objectives of the zone and is consistent with the applicable provisions of the relevant planning instruments including Wollongong LEP 2009 and SEPP 65, ADG, Council DCPs, Codes and Policies. The design of the development is appropriate regarding the controls outlined in these instruments.

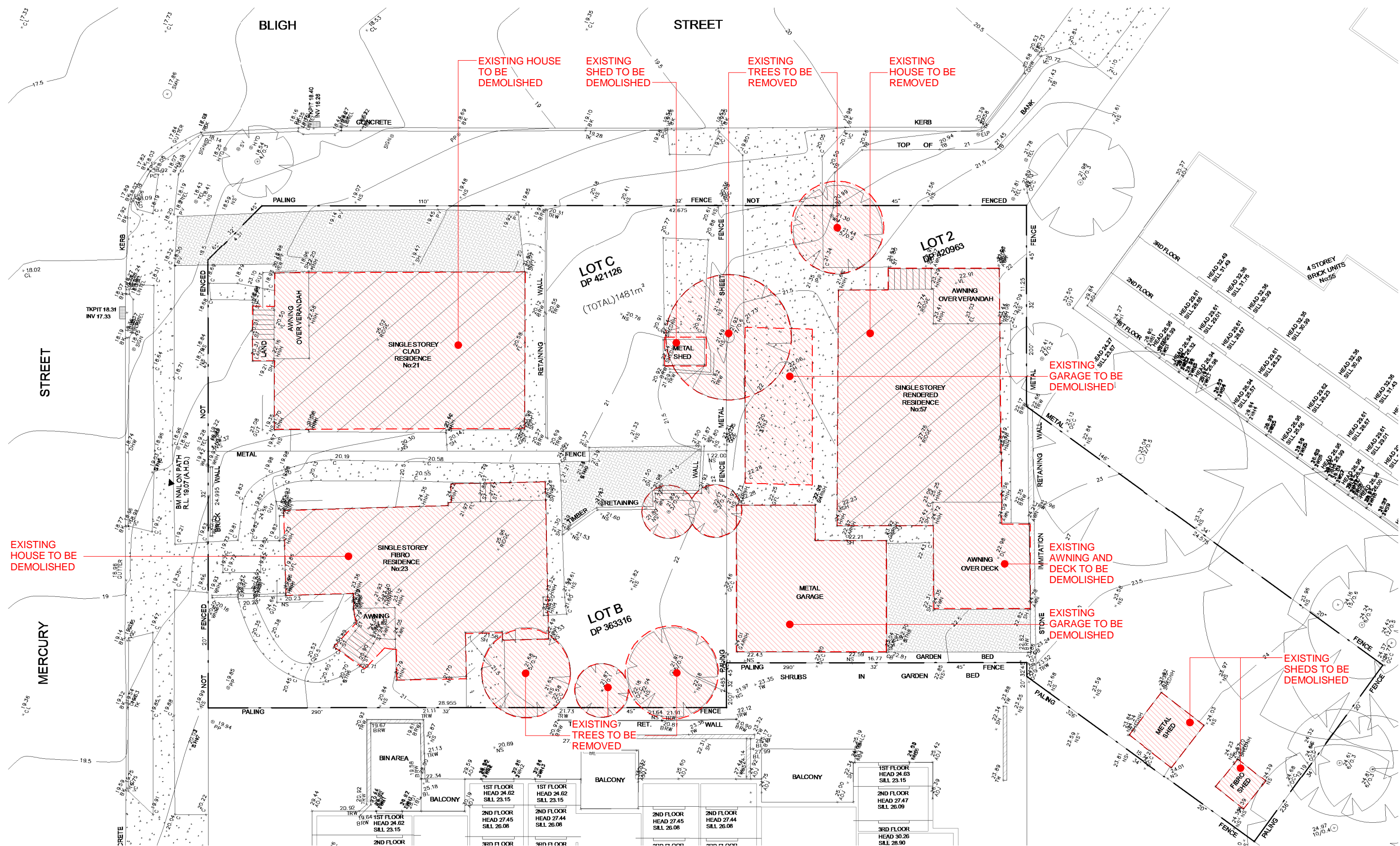
The proposal involves variations to minimum site width, access requirements and overshadowing under WDCP2009. Variation request statements have been submitted and assessed as reasonable. Internal referrals are satisfactory, and submissions have been considered in the assessment. It is considered that the proposed development has otherwise been designed appropriately given the nature and characteristics of the site and is unlikely to result in significant adverse impacts on the character or amenity of the surrounding area.

4 RECOMMENDATION

It is recommended that the development application be approved subject to the draft conditions of consent at Attachment 5.

5 ATTACHMENTS

- 1 Plans
- 2 Aerial photograph and WLEP 2009 zoning map
- 3 Apartment Design Guide Assessment
- 4 Wollongong DCP 2009 Assessment
- 5 Draft conditions
- 6 Design Review Panel notes
- 7 Applicants response to Pre DA Meeting and DRP Comments
- 8 Solar Access, Cross-Ventilation and Overshadowing Impact – Consultant’s Report



DEMOLITION PLAN

1 : 200
SURVEY SUPPLIED BY NEW WAY SURVEYING

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Z	27.03.2019	ADDITIONAL INFORMATION

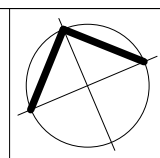
DISCLAIMER
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Legend:	
RB01	RENDERED BRICKWORK
FB01	FACE BRICKWORK
BL	BLOCKWORK
CL01	CLADDING
RW	RETAINING WALL
S	STONework
R	ROOF
DP	DOWNPIPES
TB	TIMBER BATTENS
D	DOOR
GD	GARAGE DOOR
SLD	SLIDING DOOR
BFD	BI-FOLD DOOR
SLW	SLIDING WINDOW
FW	FIXED WINDOW
OB	OBSCURE WINDOW
AW	AWNING WINDOW
WH	WINDOW HOOD
LV	LOUVRES
RWT	RAINWATER TANK
P	POST
T	TIMBER FLOORS
CT	CERAMIC TILES
CPT	CARPET
PC	POLISHED CONCRETE
SP	FEATURE SCREENING



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Nominated Architect:
Robert Gizzi (Reg. 8286)



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DRAWING NAME:	DEMOLITION PLAN	SCALE:	1 : 200	Rev.	Z
		QA:	RG		

CARPARKING CALCULATIONS

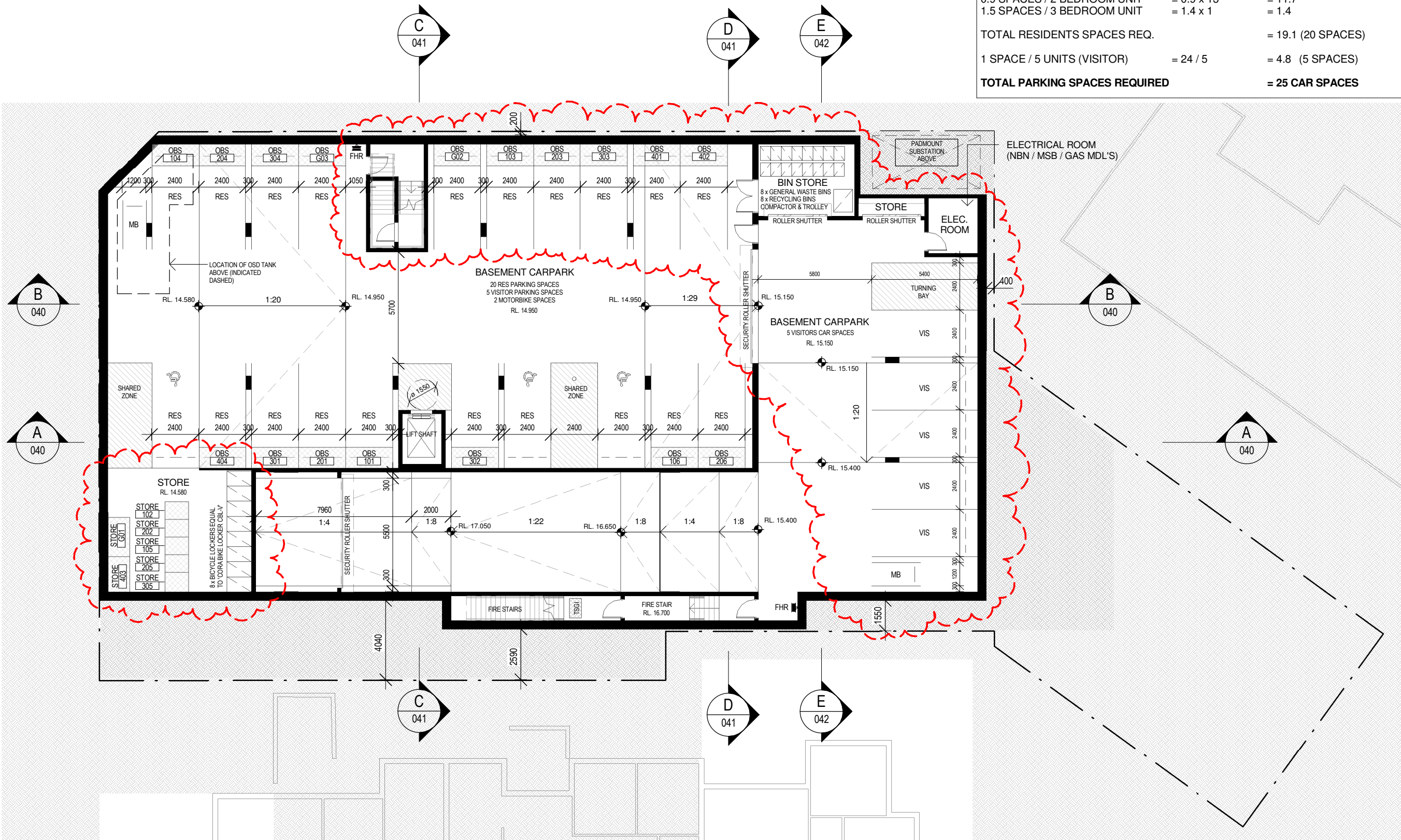
RTA GUIDE

0.6 SPACES / STUDIO	= 0.6 x 3	= 1.8
0.6 SPACES / 1 BEDROOM UNIT	= 0.6 x 7	= 4.2
0.9 SPACES / 2 BEDROOM UNIT	= 0.9 x 13	= 11.7
1.5 SPACES / 3 BEDROOM UNIT	= 1.4 x 1	= 1.4

TOTAL RESIDENTS SPACES REQ. = 19.1 (20 SPACES)

1 SPACE / 5 UNITS (VISITOR) = 24 / 5 = 4.8 (5 SPACES)

TOTAL PARKING SPACES REQUIRED = 25 CAR SPACES



BASEMENT FLOOR PLAN

1 : 200

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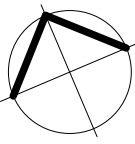
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FB02 FACE BRICKWORK	R ROOF	FW FIXED WINDOW	T TIMBER FLOORS
FB01 FACE BRICKWORK	DP DOWNPIPES	OB OBSCURE WINDOW	CT CERAMIC TILES
BL BLOCKWORK	TB TIMBER BATTENS	AW AWNING WINDOW	CPT CARPET
CL01 CLADDING	D DOOR	SK SKYLIGHT	PC POLISHED CONCRETE
CL02 CLADDING	GD GARAGE DOOR	WH WINDOW HOOD	SP FEATURE SCREENING
RW RETAINING WALL	SLD SLIDING DOOR	LV LOUVRES	
	BFD BI-FOLD DOOR	RWT RAINWATER TANK	



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DRAWING NAME:	BASEMENT FLOOR PLAN	SCALE:	1 : 200	Rev.	AA
		QA:	RG		

1 : 200

REF.	DATE	AMENDMENT
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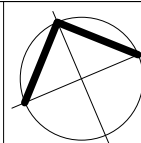
DISCLAIMER

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F801	FACE BRICKWORK	DP	DOWNPIPES	OB	OBSCURE WINDOW	CT	CERAMIC TILES
F802	FACE BRICKWORK	TB	TIMBER BATTENS	AW	AWNING WINDOW	CPT	CARPET
BL	BLOCKWORK	D	DOOR	SK	SKYLIGHT	PC	POLISHED CONCRETE
CL1	CLADDING	GD	GARAGE DOOR	WH	WINDOW HOOD	SP	SPESHUE SCREENING
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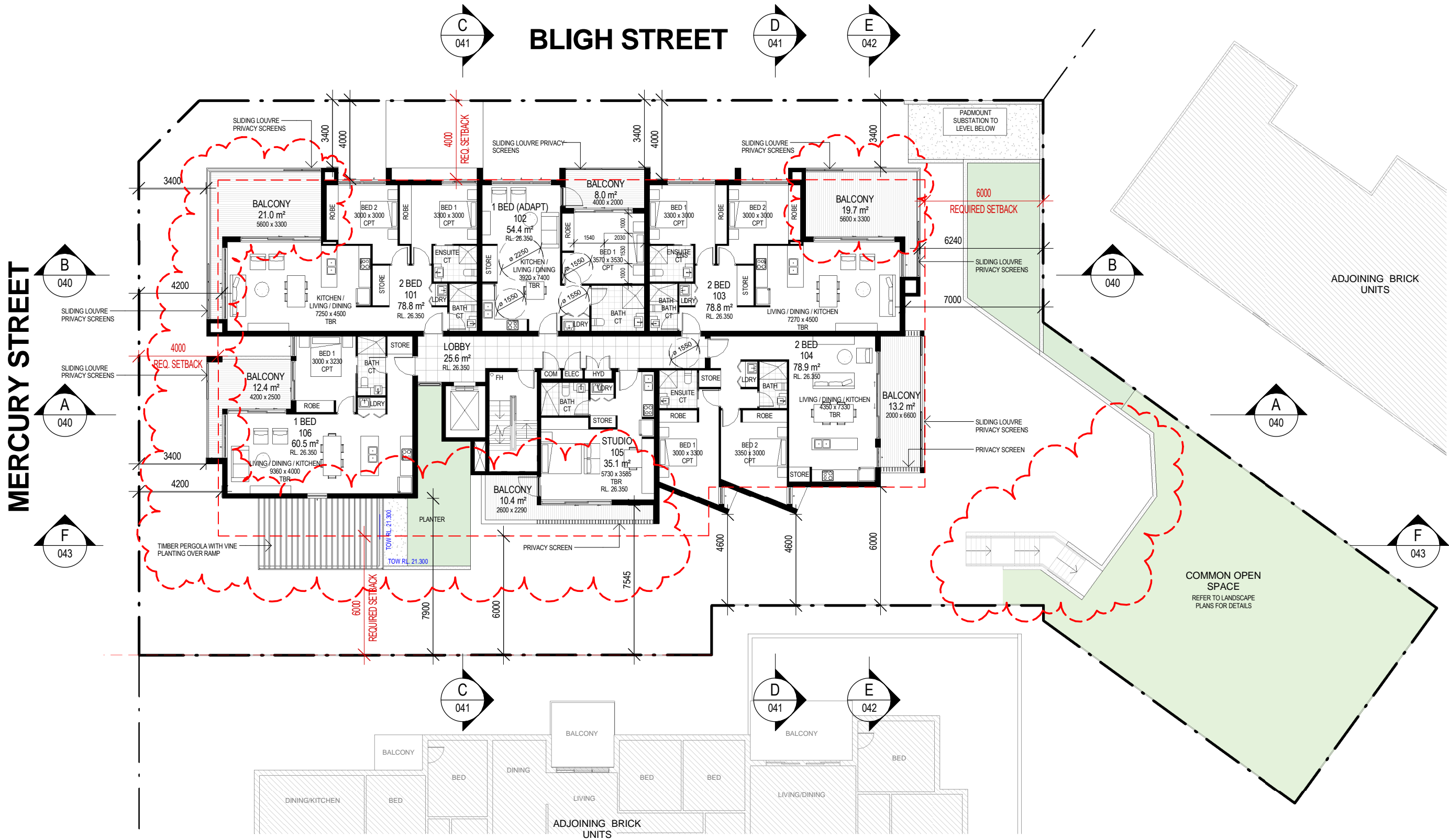
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DRAWING NAME:	GROUND FLOOR PLAN	SCALE:	1 : 200	DWG No.	Rev.
		QA:	RG	023	Z



LEVEL 1 & 2 FLOOR PLAN - TYPICAL

1 : 200

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Legend:	
RB01 RENDERED BRICKWORK	S STONework
RB02 RENDERED BRICKWORK	R ROOF
FB01 FACE BRICKWORK	DP DOWNPIPES
FB02 FACE BRICKWORK	TB TIMBER BATTENS
BL BLOCKWORK	D DOOR
CL01 CLADDING	GD GARAGE DOOR
CL02 CLADDING	SLS SLIDING DOOR
RW RETAINING WALL	BFD BI-FOLD DOOR

SLW SLIDING WINDOW	P POST
FW FIXED WINDOW	T TIMBER FLOORS
OB OBSCURE WINDOW	CT CERAMIC TILES
AW AWNING WINDOW	CPT CARPET
SK SKYLIGHT	PC POLISHED CONCRETE
WH WINDOW HOOD	SP FEATURE SCREENING
LV LOUVRES	
RWT RAINWATER TANK	

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ADDRESS:	21-23 MERCURY ST & 57 BLIGH ST, WOLLONGONG, NSW DP421126 & DP363316 & DP420963	DRAWN:	NT	DWG No.	024
DRAWING NAME:	TYPICAL LEVEL 1 & 2 FLOOR PLANS	SCALE:	1 : 200	Rev.	Z
		QA:	RG		

MERCURY STREET

BLIGH STREET

ADJOINING BRICK UNITS

ADJOINING BRICK UNITS

LEVEL 3 FLOOR PLAN

1 : 200

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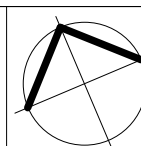
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FB02 FACE BRICKWORK	TB TIMBER BATTENS	AW AWNING WINDOW	CPT CARPET
BL BLOCKWORK	D DOOR	SK SKYLIGHT	PC POLISHED CONCRETE
CL01 CLADDING	GD GARAGE DOOR	WH WINDOW HOOD	SP FEATURE SCREENING
CL02 CLADDING	SLD SLIDING DOOR	LV LOUVRES	
RW RETAINING WALL	BFD BI-FOLD DOOR	RWT RAINWATER TANK	

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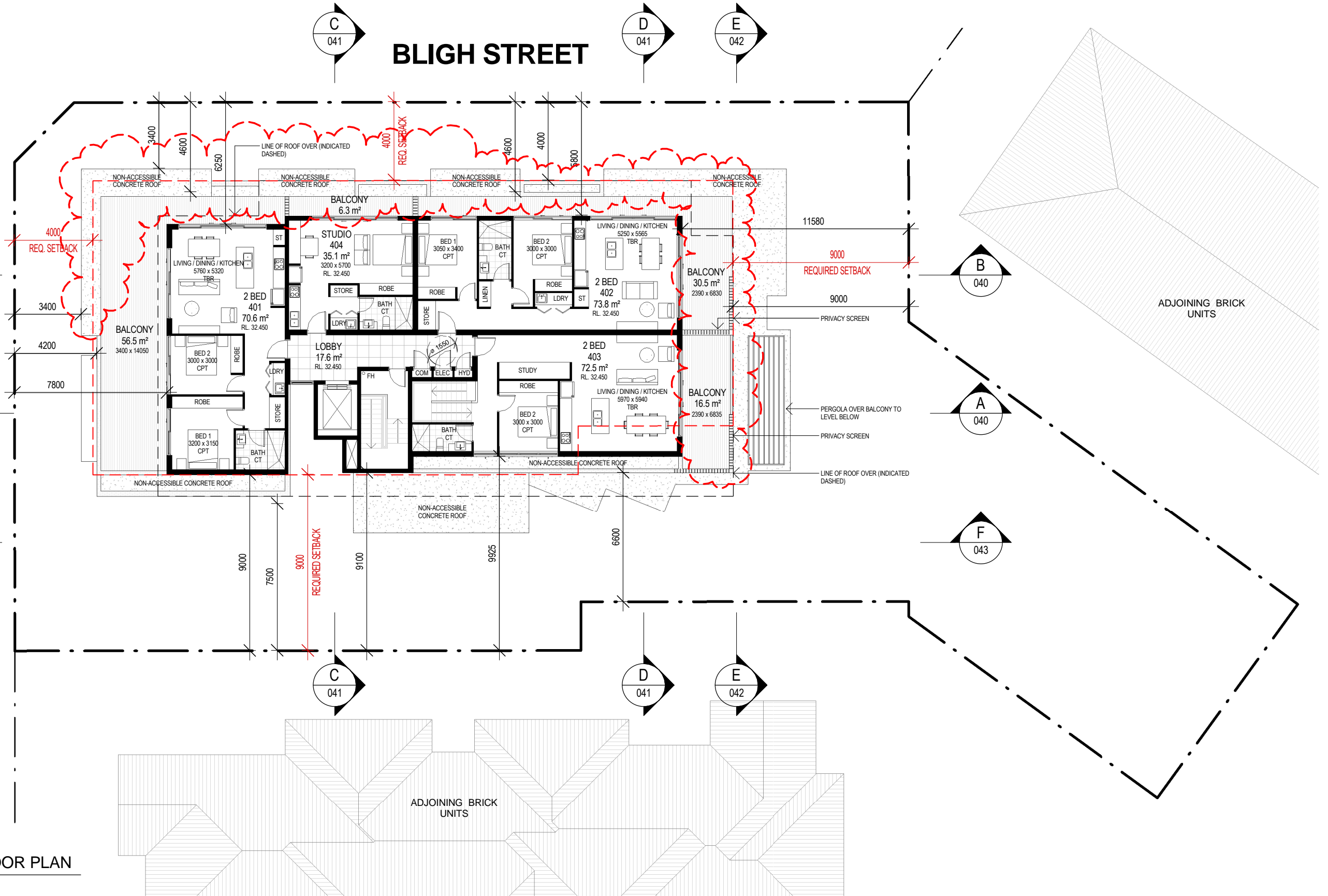


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		QA:	RG		

MERCURY STREET

BLIGH STREET



LEVEL 4 FLOOR PLAN

1:200

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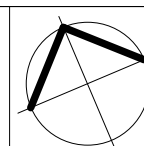
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FB02 FACE BRICKWORK	TB TIMBER BATTENS	AW AWNING WINDOW	CPT CARPET
BL BLOCKWORK	D DOOR	SK SKYLIGHT	PC POLISHED CONCRETE
CL01 CLADDING	GD GARAGE DOOR	WH WINDOW HOOD	SP FEATURE SCREENING
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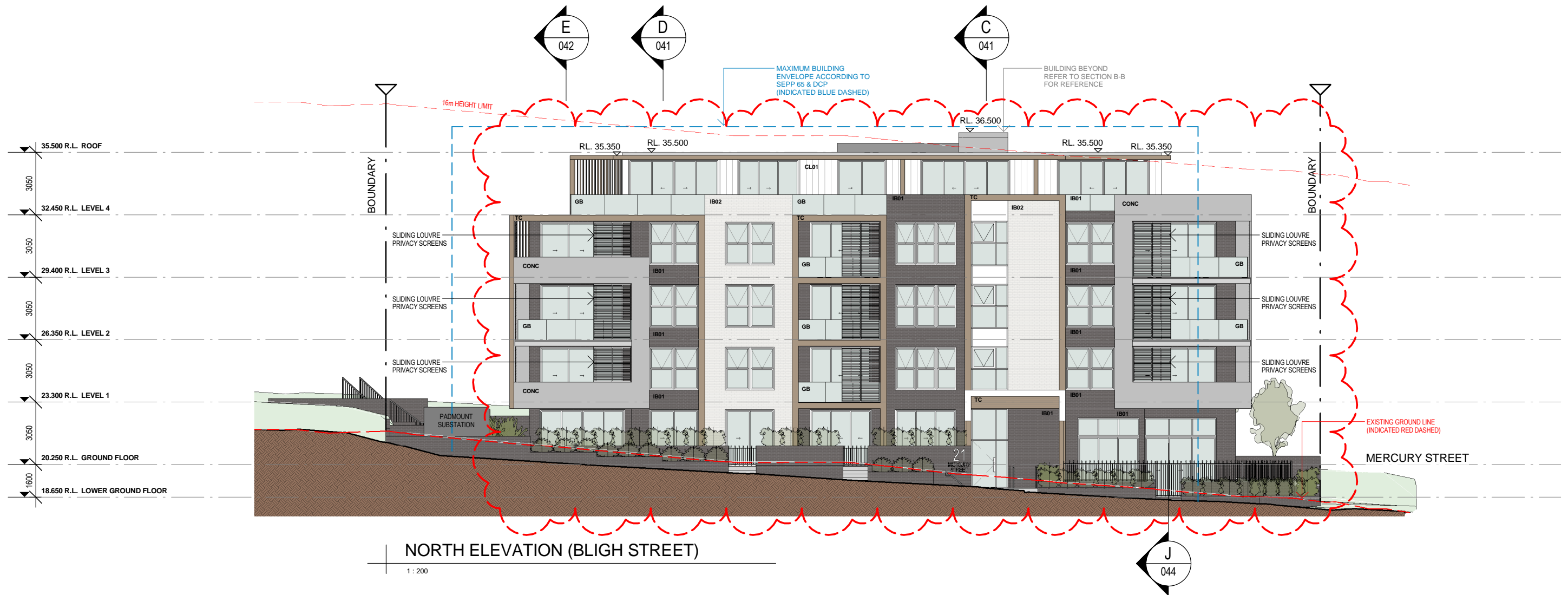
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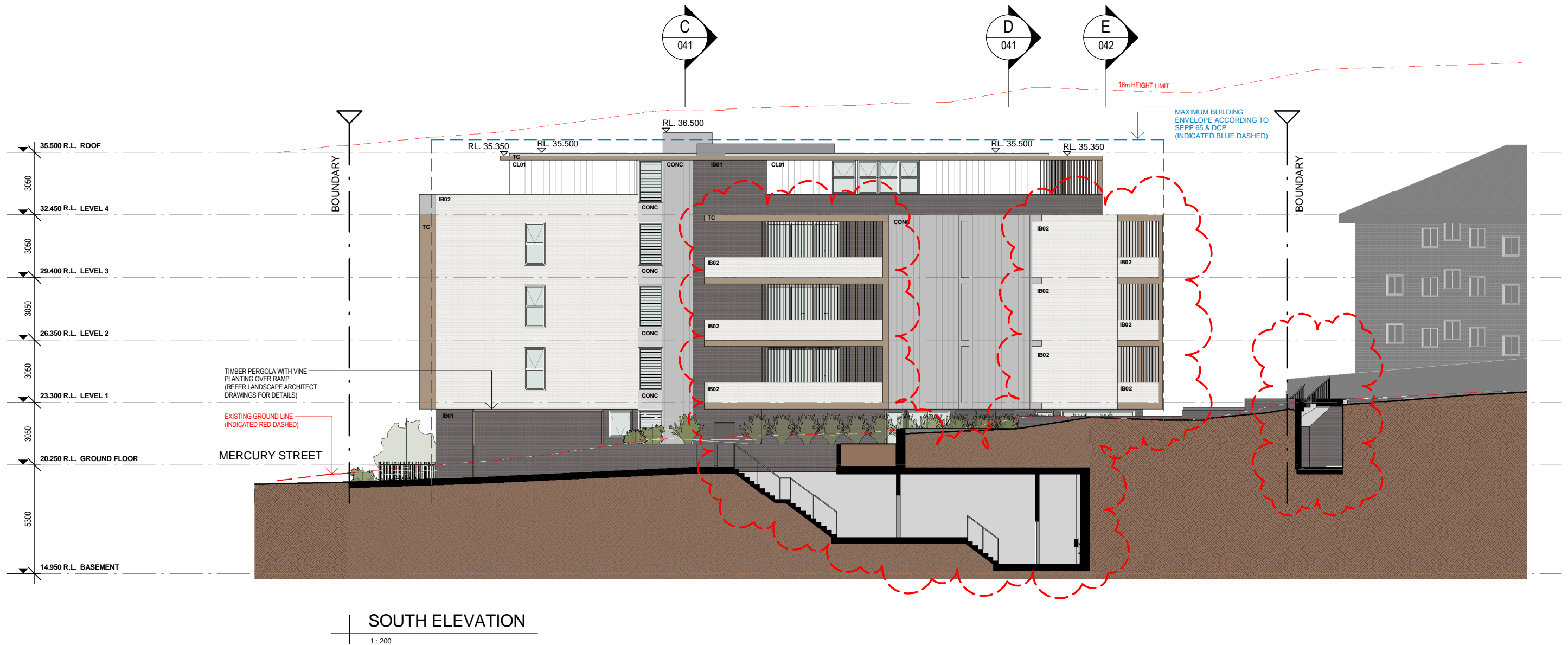
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DRAWING NAME:	LEVEL 4 FLOOR PLAN	SCALE:	1:200	Rev.	Z
		QA:	RG		



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REF. Z	DATE 27.03.2019	AMENDMENT ADDITIONAL INFORMATION	Legend: RB01 RENDERED BRICKWORK RB02 RENDERED BRICKWORK FB01 FACE BRICKWORK FB02 FACE BRICKWORK BL BLOCKWORK CL01 CLADDING CL02 CLADDING RW RETAINING WALL S STONework R ROOF DP DOWNPIPES TB TIMBER BATTENS D DOOR GD GARAGE DOOR SLD SLIDING DOOR BFD BI-FOLD DOOR SLW SLIDING WINDOW FW FIXED WINDOW OB OBSCURE WINDOW AW AWNING WINDOW SK SKYLIGHT WH WINDOW HOOD LV LOUVRES RWT RAINWATER TANK P POST T TIMBER FLOORS CT CERAMIC TILES CPT CARPET PC POLISHED CONCRETE SP FEATURE SCREENING	DWA DESIGN WORKSHOP AUSTRALIA	Wollongong 81a Princes Highway, Fairy Meadow NSW 2519 Tel: (02) 4227 1661 Email: info@designworkshop.com.au Web: www.designworkshop.com.au	Sydney Level 10, 6 Mount Olympus Boulevard, Wolli Creek NSW 2205 Nominated Architect: Robert Gizzi (Reg. 8286)	CLIENT: AZZURRI CONCRETE RESIDENTIAL DEVELOPMENT ADDRESS: 21-23 MERCURY ST & 57 BLIGH ST, WOLLONGONG, NSW DP421126 & DP363316 & DP420963 DRAWING NAME: ELEVATIONS	DATE: FEB 2018 DRAWN: AK / NT SCALE: 1 : 200 QA: RG	PROJECT No. 1712 DWG No. Rev. 032 Z
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CONCRETE FINISH

CONCRETE FINISH

INLAY BRICK PANELS

INLAY BRICK PANELS

TIMBER / CLADDING

TIMBER / CLADDING

LEGEND

CL01 CLADDING - TYPE 1
CONC CONCRETE FINISH
GB GLAZED BALUSTRADE
IB01 IN BRICK PANELS - TYPE 1
IB02 IN BRICK PANELS - TYPE 2
TC TIMBER CLADDING

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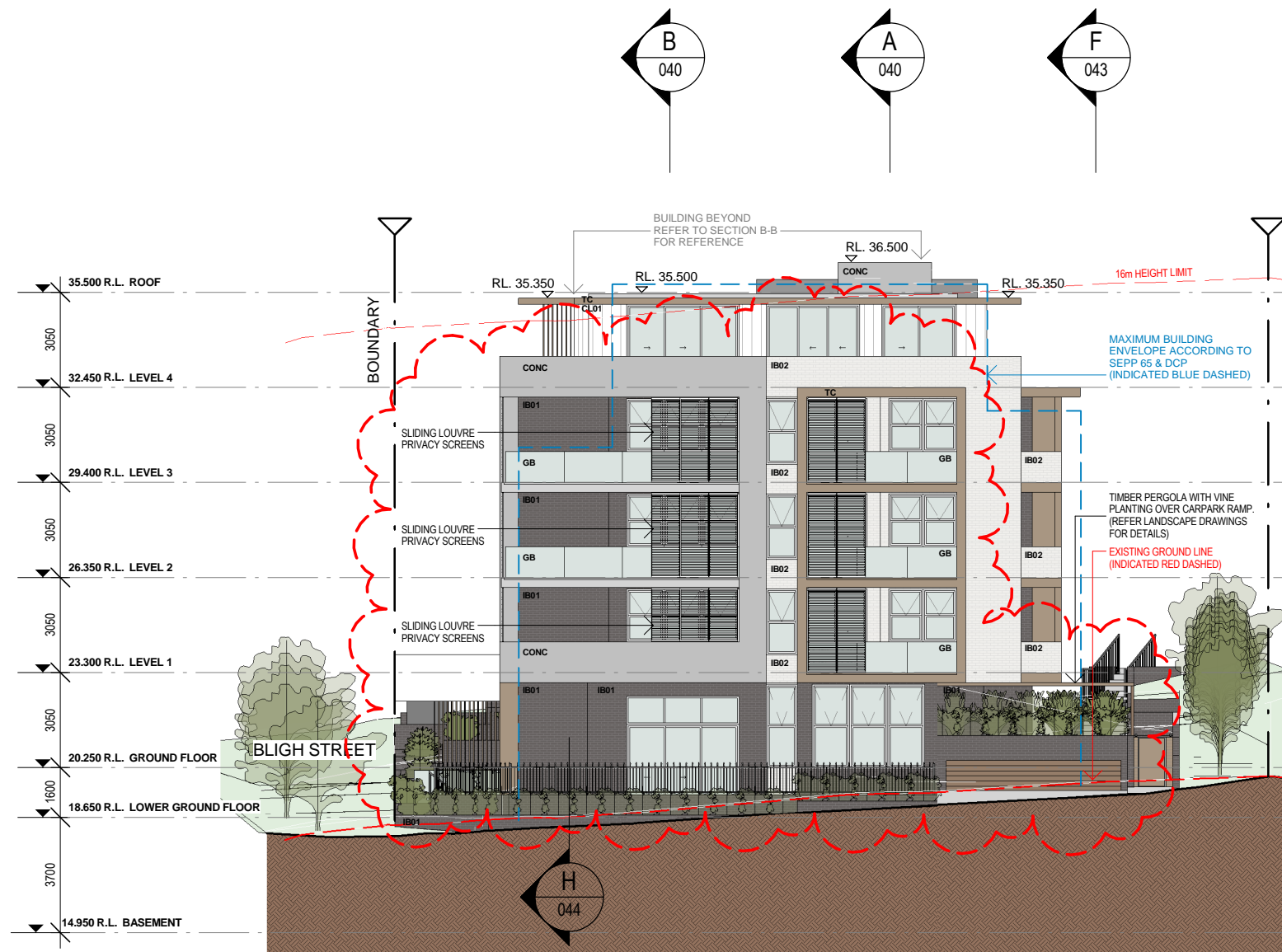
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			FB01 FACE BRICKWORK	DP	DOWNPIPES	OB	OBSCURE WINDOW	CT	CERAMIC TILES						ADDRESS:	21-23 MERCURY ST & 57 BLIGH ST, WOLLONGONG, NSW 2205	SCALE:	1 : 200	DWG No.	Rev.
			FB02 FACE BRICKWORK	TB	TIMBER BATTENS	AW	AWNING WINDOW	CPT	CARPET											
			BL BLOCKWORK	D	DOOR	SK	SKYLIGHT	PC	POLISHED CONCRETE											
			CL01 CLADDING	GD	GARAGE DOOR	WH	WINDOW HOOD	SP	FEATURE SCREENING						EMail:	info@designworkshop.com.au	Nominated Architect:			
			CL02 CLADDING	SLD	SLIDING DOOR	LV	LOUVRES								Web:	www.designworkshop.com.au	Robert Gizzi (Reg. 8286)			
			RW RETAINING WALL	BFD	BI-FOLD DOOR	RWT	RAINWATER TANK								DRAWING NAME:	ELEVATIONS	QA:	RG	031	Z
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ADDITIONAL INFORMATION



WEST ELEVATION (MERCURY STREET)

1 : 200

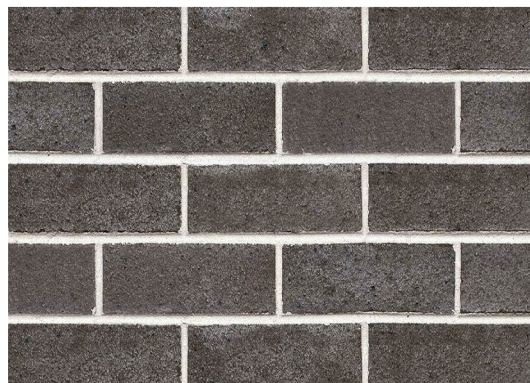


EAST ELEVATION

1 : 200



CONCRETE FINISH



INLAY BRICK PANELS



TIMBER / CLADDING

LEGEND

- CL01 CLADDING - TYPE 1
- CONC CONCRETE FINISH
- GB GLAZED BALUSTRADE
- IB01 IN BRICK PANELS - TYPE 1
- IB02 IN BRICK PANELS - TYPE 2
- TC TIMBER CLADDING

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FB02	FACE BRICKWORK	TB	TIMBER BATTENS	AW	AWNING WINDOW
BL	BLOCKWORK	D	DOOR	SK	SKYLIGHT
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RW	RETAINING WALL	BFD	BI-FOLD DOOR	RWT	RAINWATER TANK

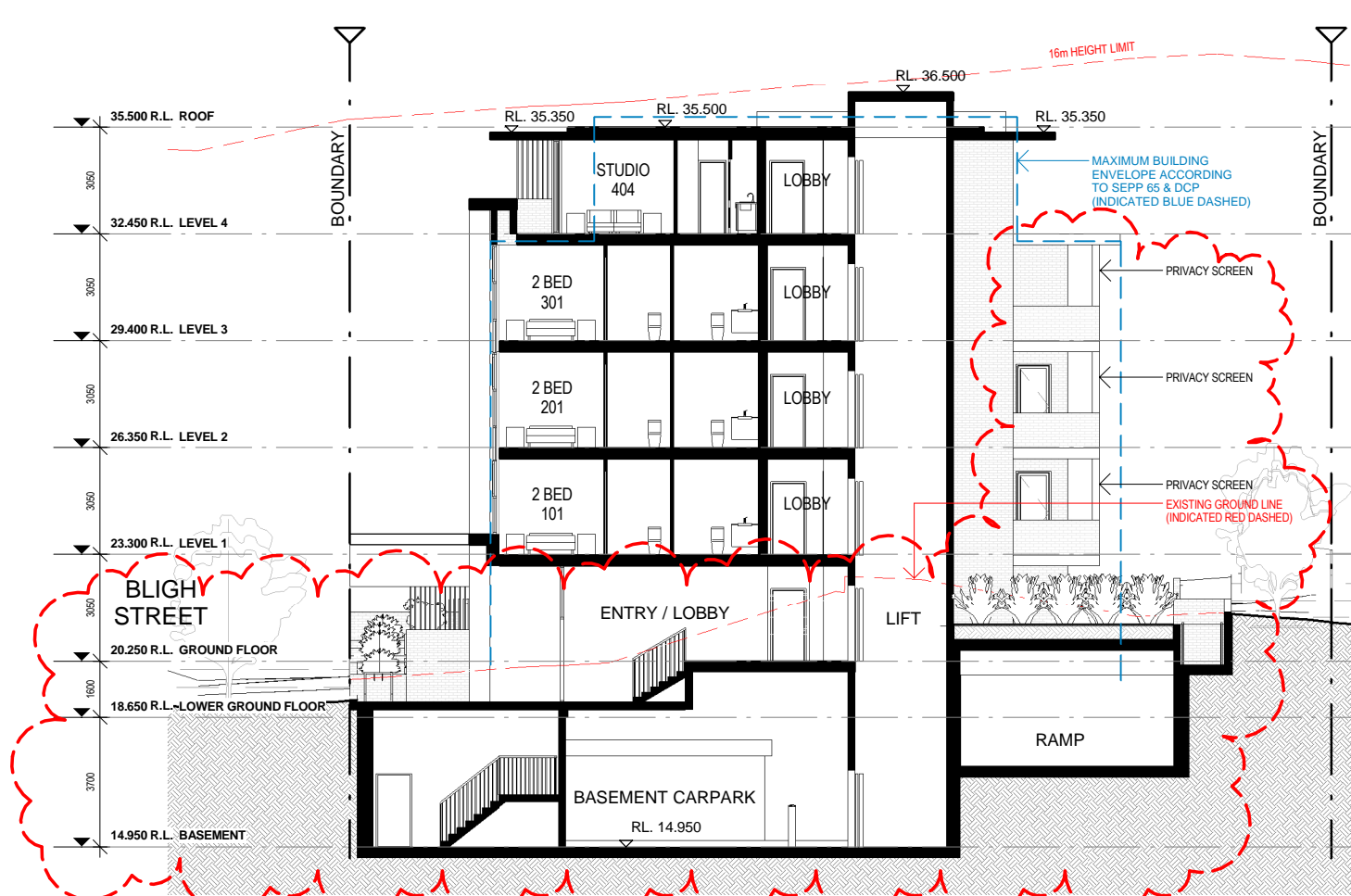
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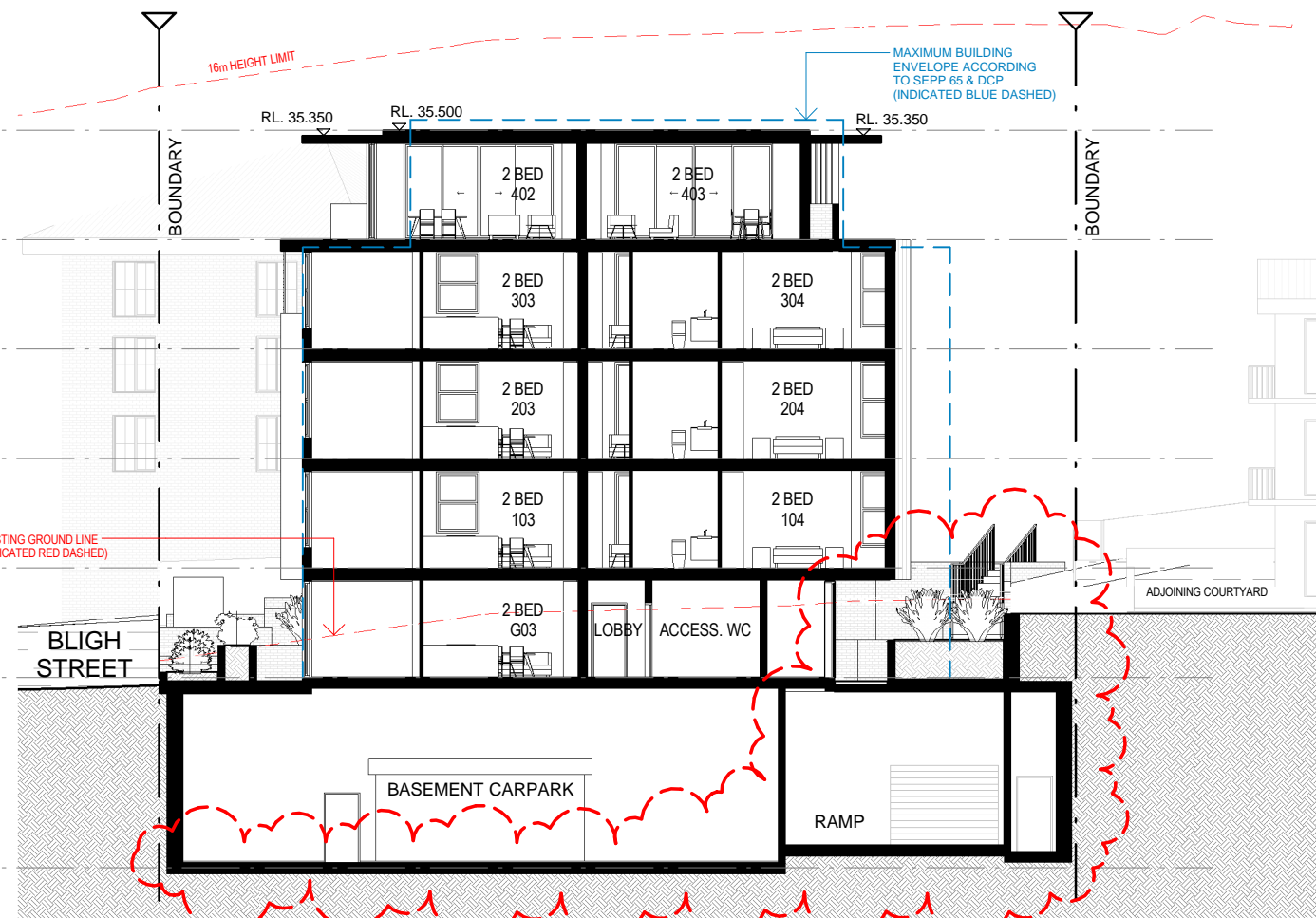
ADDITIONAL INFORMATION

CLIENT:	AZZURRI CONCRETE RESIDENTIAL DEVELOPMENT	DATE:	FEB 2018	PROJECT No.	1712
ADDRESS:	21-23 MERCURY ST & 57 BLIGH ST, WOLLONGONG, NSW DP421126 & DP363316 & DP420963	DRAWN:	AK / NT	DWG No.	030
DRAWING NAME:	ELEVATIONS	SCALE:	1 : 200	Rev.	Z
		QA:	RG		



SECTION C-C

1 : 200



SECTION D-D

1 : 200

DISCLAIMER

Subject to: full site survey, measurements are preliminary, discussions and meetings with authorities, approval from authorities, relevant consultant information as per council DA requirements. Feasibility completed based on information provided by client. All parking and ramps to traffic engineers details.

REF.	DATE	AMENDMENT
Z	27.03.2019	ADDITIONAL INFORMATION
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Legend:

RB01	RENDERED BRICKWORK	S	STONEWORK	SLW	SLIDING WINDOW	P	POST
RB02	RENDERED BRICKWORK	R	ROOF	FW	FIXED WINDOW	T	TIMBER FLOORS
FB01	FACE BRICKWORK	DP	DOWNPipes	OB	OBSCURE WINDOW	CT	CERAMIC TILES
FB02	FACE BRICKWORK	TB	TIMBER BATTENS	AW	AWNING WINDOW	CPT	CARPET
BL	BLOCKWORK	D	DOOR	SK	SKYLIGHT	PC	POLISHED CONCRETE
CL01	CLADDING	GD	GARAGE DOOR	WH	WINDOW HOOD	SP	FEATURE SCREENING
CL02	CLADDING	SLD	SLIDING DOOR	LV	LOUVRES		
RW	RETAINING WALL	BFD	BI-FOLD DOOR	RWT	RAINWATER TANK		

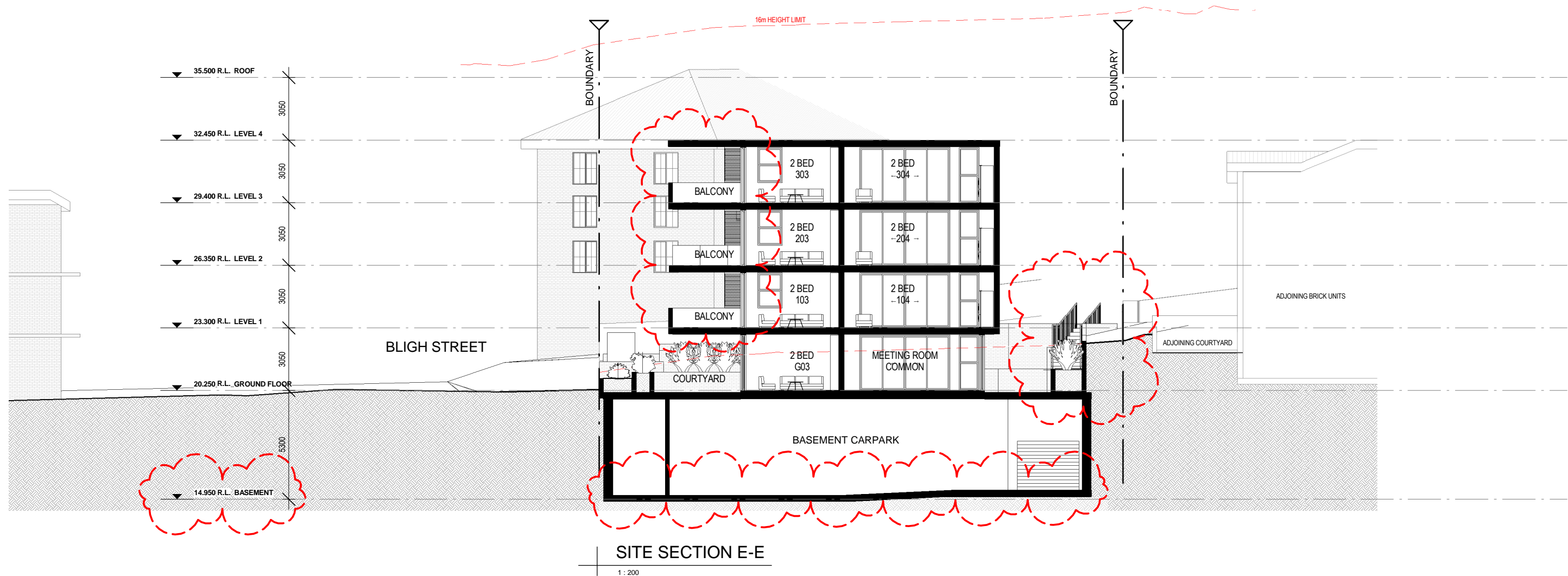
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Level 10, 6 Mount
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Robert Gizzi (Reg. 8286)

ADDITIONAL INFORMATION

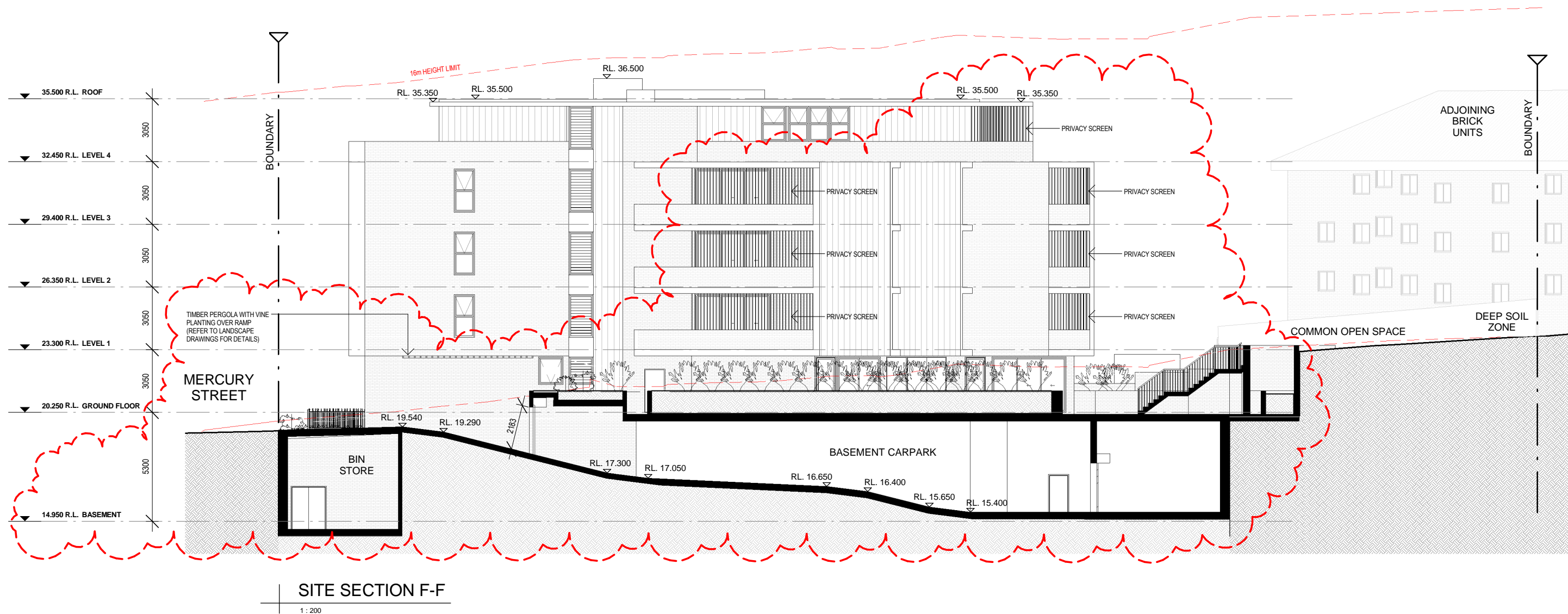
CLIENT:	AZZURRI CONCRETE RESIDENTIAL DEVELOPMENT	DATE:	FEB 2018	PROJECT No.	1712
ADDRESS:	21-23 MERCURY ST & 57 BLIGH ST, WOLLONGONG, NSW DP421126 & DP363316 & DP420963	DRAWN:	NT	DWG No.	041
DRAWING NAME:	SECTION	SCALE:	1 : 200	Rev.	Z
		QA:	RG		



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REF. DATE AMENDMENT		Legend:										Wollongong		Sydney		CLIENT:	AZZURRI CONCRETE	DATE: FEB 2018	PROJECT No.			
Z	27.03.2019	ADDITIONAL INFORMATION	RB01 RENDERED BRICKWORK	S STONEWORK	SLW SLIDING WINDOW	P POST	T TIMBER FLOORS					81a Princes Highway, Fairy Meadow NSW 2519		Level 10, 6 Mount Olympus Boulevard, Wolli Creek NSW 2205		ADDRESS:	21-23 MERCURY ST & 57 BLIGH ST, WOLLONGONG, NSW	DRAWN: NT	1712			
			RB02 RENDERED BRICKWORK	R ROOF	FW FIXED WINDOW	T CERAMIC TILES	CT CARPET					Tel: (02) 4227 1661		Nominated Architect: Robert Gizzi (Reg. 8286)		DP421126 & DP363316 & DP420963		SCALE: 1 : 200	DWG No.	Rev.		
			FB01 FACE BRICKWORK	DP DOWNPIPES	OB OBTUSE WINDOW	PC POLISHED CONCRETE	SP FEATURE SCREENING					Email: info@designworkshop.com.au						QA: RG	042	Z		
			FB02 FACE BRICKWORK	TB TIMBER BATTENS	AW AWNING WINDOW																	
			BL BLOCKWORK	D DOOR	SK SKYLIGHT																	
			CL01 CLADDING	GD GARAGE DOOR	WH WINDOW HOOD																	
			CL02 CLADDING	SLD SLIDING DOOR	LV LOUVRES																	
			RW RETAINING WALL	BFD BI-FOLD DOOR	RWT RAINWATER TANK																	
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ADDITIONAL INFORMATION



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All parking and ramps to traffic engineers details.

REF.	DATE	AMENDMENT	Legend:										<div>DWA</div> <div>DESIGN WORKSHOP AUSTRALIA</div>		Wollongong		Sydney		CLIENT:		AZZURRI CONCRETE RESIDENTIAL DEVELOPMENT		DATE:	FEB 2018	PROJECT No.	
Z	27.03.2019	ADDITIONAL INFORMATION	RB01	RENDERED BRICKWORK	S	STONework	SLW	SLIDING WINDOW	P	POST	T	TIMBER FLOORS			81a Princes Highway, Fairymead NSW 2519		Level 10, 6 Mount Olympus Boulevard, Wollongong NSW 2205		ADDRESS:		21-23 MERCURY ST & 57 BLIGH ST, WOLLONGONG, NSW DP421126 & DP363316 & DP420963		DRAWN:	NT	1712	
			FB01	FACE BRICKWORK	DP	DOWNPIPES	OB	OBSCURE WINDOW	CT	CERAMIC TILES	CPT	CARPET			Tel: (02) 4227 1661		Nominated Architect: Robert Gizzi (Reg. 8286)				SCALE:		1 : 200	DWG No. Rev.		
			FB02	FACE BRICKWORK	TB	TIMBER BATTENS	AW	AWNING WINDOW	SP	POLISHED CONCRETE																
			BL	BLOCKWORK	D	DOOR	SK	SKYLIGHT	LV	LOUVRES																
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			RW	RETAINING WALL	BFD	BI-FOLD DOOR																				
DISCLAIMER																			DRAWING NAME:		SITE SECTION		QA:	RG	043 Z	
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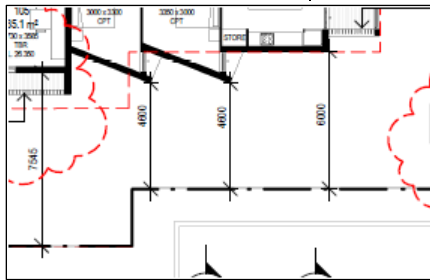
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Level 10, 6 Mount
Olympus Boulevard,
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Nominated Architect:
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ADDITIONAL INFORMATION

Figure 2 - Zoning Map

ATTACHMENT 3 – Apartment Design Guide Assessment
ADG compliance table

Key SEPP 65 standards			
	Required	Proposed	Compliance
3A Site Analysis	<p>Site analysis is an important part of the design process and should be undertaken at the outset of a project to inform the design principles.</p> <p>Development proposals need to illustrate that design decisions are based on careful analysis of the site conditions and relationship to the surrounding context.</p>	<p>Site analysis plan, survey plan and written analysis is provided as part of the development application</p> <p>Proposal is considered to adequately respond to the site typography, neighbouring properties and the desired future context of the area.</p>	Yes
3B Orientation	<p>Orientation is the position of a building and its internal spaces in relation to its site, the street, the subdivision and neighbouring buildings. Building orientation influences the urban form of the street and building address. Designing the site layout to maximise northern orientation is an important consideration, but it must be balanced with:</p> <ul style="list-style-type: none"> • responding to desired streetscape character • promoting amenity for both the proposed development and neighbouring properties • providing for the enjoyment of significant views • retaining trees and locating open spaces • responding to the topography and contextual constraints such as overshadowing and noise. 	<p>The development has been orientated to maximise solar access to living spaces and minimise overshadowing to adjacent building. The building has a good orientation for solar along a west-east axis to capture the northern sun. The orientation also allows most apartments to capture views of the escarpment.</p> <p>The building has been designed to respond to the surrounding streetscape and provides adequate solar access.</p>	Yes
3C Public Domain Interface	<p>The public domain interface is the transition area between the apartment building, its private or communal space at the street edge and the public domain.</p> <p>The interface of the development contributes to the quality and character of the street. Subtle variations through planting and</p>	<p>Clear differentiation between public and private spaces has been provided</p>	Yes

	fencing can create an attractive and active public domain with a pedestrian scale.		
3D Communal and public open space	Communal open space (COS) has a minimum area equal to 25% of the site. Minimum of 50% direct sunlight to the principal usable part of the COS for a min of 2 hours between 9am- 3pm mid winter	Required: 25% x 1481m ² = 370m ² Provided: 400.5m ²	Yes
3E Deep soil zones	650m ² - 1,500m ² - 3m Deep soil zone (7% of site area)	Deep soil zone (min 3m wide) provided = 191.5m ² = 12.9% of site area	Yes
3F Visual privacy (separation distances from buildings to the side and rear boundaries)	Up to 12m (4 storeys) - 6m (habitable rooms & balconies) 3m (non – habitable rooms) Up to 25m (5-8 storeys) – 9m (habitable rooms & balconies) 4.5m (non – habitable rooms)	All setbacks comply except for minor intrusions on levels 1-3 where windows are oriented away from adjoining property to south. (See below)	Substantial compliance
			
3J Bicycle and car parking (Nominated regional centres; Wollongong, Warrawong, Dapto)	RMS Guidelines – 0.6 spaces per 1 bed unit 0.9 spaces per 2 bed unit 1.4 spaces per 3 bed unit 1 space per 5 units (visitors) Chapter E-3 of WDCP 2009 (City Centre) 0.75 per <70m ² Unit = 6.75 1 per 70-110m ² unit = 13 1.25 per >110m ² unit = 0 0.2 spaces per unit visitor = 4.8 Spaces	(0.6x10)+(0.9x13)+(1.4x1)+(24/5) = 23.9 (24) spaces 9 x 0.75 = 6.75 13 x 1 = 13 0 x 1.25 = 0 24/0.2 = 4.8 Total = 24.55 Provided: 25 spaces	Yes
4A Solar and daylight access	Living rooms and private open space, 2 hours direct sunlight in mid-winter to 70% of units.	The proposed development has been orientated to maximise	Yes

	Units receiving no direct sun light between 9am and 3pm mid-winter 15% maximum	the northern, eastern and north-western aspect and meets the minimum requirements for SEPP 65. The layout of units and window location provides satisfactory daylight access. The solar access report submitted with the application (Refer to Attachment 8) confirms that 18 out of the 24 units (75%) receive 2 hours direct sunlight to the principal living space at the winter solstice and that only one unit of the adjoining RFB (3/25 Mercury Street) fails to retain 2hrs of sunlight on June 21. The reduction of units meeting the 2 hour requirement is 1 out of 9 units (11.1%) which complies with the ADG which nominates a 20% reduction as acceptable (Objective 3B-2).	
4B Natural ventilation	60% of units to be naturally cross ventilated in the first nine storeys of the building. Overall depth of a cross-over or cross-through apartment does not exceed 18m.	The natural ventilation requirements have been addressed as follows: Open plan unit layouts have been designed to maximise natural ventilation. 70.8% of units have been designed to achieve cross ventilation through habitable areas.	Yes
4C Ceiling heights	Habitable rooms 2.7m Non-habitable 2.4m	Minimum floor to ceiling height of 2.7m is provided to the main living areas and habitable rooms.	Yes
4D Apartment size	Studio 35m ²	All apartments meets	Yes

and layout	1 bedroom 50m ² 2 bedroom 70m ² 3 bedroom 90m ²	minimum size requirements	
4E Private open space and balconies	Studio apartments 4m ² - depth N/A 1 bedroom apartments 8m ² min depth 2m depth 2 bedroom apartments 10m ² min depth 2m 3+ bedroom apartments 12m ² min depth 2.4m	All apartments meet minimum balcony requirements	Yes
4F common circulation spaces	The maximum number of apartments off a circulation core on a single level is eight. For buildings of 10 storeys and over, the maximum number of apartments sharing a single lift is 40.	No more than 6 apartments accessed of a circulation core.	Yes
4G Storage	Studio apartments 4m ³ 1 bedroom apartments 6m ³ 2 bedroom apartments 8m ³ 3+ bedroom apartments 10m ³	Storage requirements are met with a combination of storage spaces within units and in basement.	Yes

Part 4 – Designing the building - Configuration

		Compliance
4K Apartment mix <u>Objective 4K-1</u> <i>A range of apartment types and sizes is provided to cater for different household types now and into the future</i> Design guidance - The apartment mix is appropriate, taking into consideration the location of public transport, market demands, demand for affordable housing, different cultural/social groups - Flexible apartment configurations are provided to support diverse household types and stages of life <u>Objective 4K-2</u> <i>The apartment mix is distributed to suitable locations within the building</i> Design guidance	- A variety of apartment types is provided Unit mix is generally appropriate for the local market. Although only 1 x 3 bedroom unit is provided, a range of Studio, 1, and 2 bedroom units is also provided. 3 units are (approx. 10%) are provided as adaptable units. An additional 2 units are classified as Silver Level Livable Housing Australia rated. The 3 bedroom unit is	Substantial compliance

<p>- Larger apartment types are located on the ground or roof level where there is potential for more open space and on corners where more building frontage is available</p>	<p>provided at ground level.</p>	
<p>4L Ground floor apartments</p> <p><u>Objective 4L-1</u> <i>Street frontage activity is maximised where ground floor apartments are located</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - Direct street access should be provided to ground floor apartments - Activity is achieved through front gardens, terraces and the facade of the building. - Ground floor apartment layouts support small office home office (SOHO) use to provide future opportunities for conversion into commercial or retail areas. In these cases provide higher floor to ceiling heights and ground floor amenities for easy conversion <p><u>Objective 4L-2</u> <i>Design of ground floor apartments delivers amenity and safety for residents</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - The design of courtyards should balance the need for privacy of ground floor apartments with surveillance of public spaces. Design solutions include: <ul style="list-style-type: none"> • elevation of private gardens and terraces above the street level by 1-1.5m (see figure 4L.4) • landscaping and private courtyards • window sill heights that minimise sight lines into apartments • integrating balustrades, safety bars or screens with the exterior design - Solar access should be maximised through: <ul style="list-style-type: none"> • high ceilings and tall windows • trees and shrubs that allow solar access in winter and shade in summer 	<p>Ground floor units have access to street.</p> <p>There are two ground floor units with garden terraces. Large private open space planting and terrace areas have been provided to each unit located to the northern boundary. A single unit has both a screened street-front garden terrace and large a side north facing terrace area.</p> <p>Extensive landscaping is provided in the design to the podium level units.</p>	<p>Yes</p>

<p>4M Facades</p> <p><u>Objective 4M-1</u> <i>Building facades provide visual interest along the street while respecting the character of the local area</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - To ensure that building elements are integrated into the overall building form and façade design - The front building facades should include a composition of varied building elements, textures, materials, detail and colour and a defined base, middle and top of building. - Building services should be integrated within the overall facade - Building facades should be well resolved with an appropriate scale and proportion to the streetscape and human scale. - To ensure that new developments have facades which define and enhance the public domain and desired street character. <p><u>Objective 4M-2</u> <i>Building functions are expressed by the facade</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - Building entries should be clearly defined 	<p>Appropriate building materials, textures and colours have been included in the design to offer visual contrast within the stepped form of the building. Colours and textures complement each other, and integrate well with adjacent residential buildings. The façade has been designed to reduce the visual bulk of the building.</p> <p>Building entry is clearly defined</p>	<p>Yes</p>
<p>4N Roof design</p> <p><u>Objective 4N-1</u> <i>Roof treatments are integrated into the building design and positively respond to other street</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - Roof design should use materials and a pitched form complementary to the building and adjacent buildings. <p><u>Objective 4N-2</u> <i>Opportunities to use roof space for Roof design is acceptable Yes residential accommodation and open space are maximised</i></p>	<p>The low-key roof design is appropriate as it relates to the desired built form and minimises overshadowing and visual impact.</p> <p>Rooftop services elements are limited to the lift overrun only, and integrated into the overall roof and building</p>	<p>Yes</p>

<p>Design guidance</p> <ul style="list-style-type: none"> - Habitable roof space should be provided with good levels of amenity. - Open space is provided on roof tops subject to acceptable visual and acoustic privacy, comfort levels, safety and security considerations <p><u>Objective 4N-3</u> <i>Roof design incorporates sustainability features</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - Roof design maximises solar access to apartments during winter and provides shade during summer 	<p>design by the selection of equal finishes.</p>	
<p>4O Landscape design</p> <p><u>Objective 4O-1</u> <i>Landscape design is viable and sustainable</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - Landscape design should be environmentally sustainable and can enhance environmental performance - Ongoing maintenance plans should be prepared <p><u>Objective 4O-2</u> <i>Landscape design contributes to the streetscape and amenity</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - Landscape design responds to the existing site conditions including: <ul style="list-style-type: none"> • changes of levels • views • significant landscape features 	<p>Landscape design is satisfactory. Satisfies relevant provisions and is satisfactory to Council's landscape Section</p>	<p>Yes</p>
<p>4P Planting on Structures</p> <p><u>Objective 4P-1</u> <i>Appropriate soil profiles are provided</i></p> <p>Design guidance</p> <ul style="list-style-type: none"> - Structures are reinforced for additional saturated soil weight - Minimum soil standards for plant sizes should be provided in accordance with Table 5 <p><u>Objective 4P-2</u></p>	<p>Large areas of suitable and sustainable native and indigenous mass planting are included in the design. This includes raised planters to the ground level podium; ground level garden terrace units; top floor unit; common areas;</p>	<p>Yes</p>

<p>Minimal planting on structure proposed; most landscaping will occur in the ground N/A <i>Plant growth is optimised with appropriate selection and maintenance</i> Design guidance - Plants are suited to site conditions</p> <p><u>Objective 4P-3</u> <i>Planting on structures contributes to the quality and amenity of communal and public open spaces</i> Design guidance - Building design incorporates opportunities for planting on structures. Design solutions may include:</p> <ul style="list-style-type: none"> • green walls with specialised lighting for indoor green walls • wall design that incorporates planting • green roofs, particularly where roofs are visible from the public domain • planter boxes 	<p>entrance courtyard and to the front elevation.</p> <p>An extensive deep soil zone for mass planting is also provided in addition to areas planted on a structure.</p>	
<p>4Q Universal design</p> <p><u>Objective 4Q-1</u> <i>Universal design features are included in apartment design to promote flexible housing for all community members</i></p> <p>Design guidance - A universally designed apartment provides design features such as wider circulation spaces, reinforced bathroom walls and easy to reach and operate fixtures</p> <p><u>Objective 4Q-2</u> <i>A variety of apartments with adaptable designs are provided</i></p> <p>Design guidance - Adaptable housing should be provided in accordance with the relevant council policy</p> <p><u>Objective 4Q-3</u> <i>Apartment layouts are flexible and accommodate a range of lifestyle needs</i></p> <p>Design guidance</p>	<p>Adaptable units proposed satisfy relevant requirements</p>	<p>Yes</p>

- Apartment design incorporates flexible design solutions		
<p>4R Adaptive reuse</p> <p><u>Objective 4R-1</u> <i>New additions to existing buildings are contemporary and complementary and enhance an area's identity and sense of place</i></p> <p>Design Guidance - Contemporary infill can create an interesting dialogue between old and new, adding to the character of a place</p> <p><u>Objective 4R-2</u> <i>Adapted buildings provide residential amenity while not precluding future adaptive reuse</i></p>	Adaptable units proposed within the development to satisfy relevant criteria	Yes
<p>4S Mixed use</p> <p><u>Objective 4S-1</u> <i>Mixed use developments are provided in appropriate locations and provide active street frontages that encourage pedestrian movement</i></p> <p>Design guidance - Mixed use development should be concentrated around public transport and centres - Mixed use developments positively contribute to the public domain.</p> <p><u>Objective 4S-2</u> <i>Residential levels of the building are integrated within the development, and safety and amenity is maximised for residents</i></p> <p>Design guidance - Residential circulation areas should be clearly defined. - Landscaped communal open space should be provided at podium or roof levels</p>	N/A. residential use only proposed	N/A

<p>4T Awnings and signage</p> <p><u>Objective 4T-1</u> <i>Awnings are well located and complement and integrate with the building design</i></p> <p>Design guidance - Awnings should be located along streets with high pedestrian activity and active frontages</p> <p><u>Objective 4T-2</u> <i>Signage responds to the context and desired streetscape character</i></p> <p>Design guidance - Signage should be integrated into the building design and respond to the scale, proportion and detailing of the development</p>	<p>NIL</p>	<p>N/A</p>
<p>Part 4 – Designing the building - Performance</p> <p>Compliance</p> <p>4U Energy efficiency</p> <p><u>Objective 4U-1</u> <i>Development incorporates passive environmental design</i></p> <p>Design guidance - Adequate natural light is provided to habitable rooms (see 4A Solar and daylight access)</p> <p><u>Objective 4U-2</u> <i>Development incorporates passive solar design to optimise heat storage in winter and reduce heat transfer in summer</i></p> <p>Design Guidance - Provision of consolidated heating and cooling infrastructure should be located in a centralised location</p> <p><u>Objective 4U-3</u> <i>Adequate natural ventilation minimises the need for mechanical ventilation</i></p>	<p>Compliant. Compliant solar access, ventilation. Satisfies BASIX requirements</p>	<p>Yes</p>

<p>4V Water management and conservation</p> <p><u>Objective 4V-1</u> <i>Potable water use is minimised</i></p> <p><u>Objective 4V-2</u> <i>Urban stormwater is treated on site before being discharged to receiving waters</i> Design guidance - Water sensitive urban design systems are designed by a suitably qualified professional</p> <p><u>Objective 4V-3</u> <i>Flood management systems are integrated into site design</i></p> <p>Design guidance - Detention tanks should be located under paved areas, driveways or in basement car parks</p>	<p>Satisfies BASIX requirements Water sensitive urban design report submitted and considered satisfactory.</p>	<p>Yes</p>
<p>4W Waste management</p> <p><u>Objective 4W-1</u> <i>Waste storage facilities are designed to minimise impacts on the streetscape, building entry and amenity of residents</i></p> <p>Design guidance - Common waste and recycling areas should be screened from view and well ventilated</p> <p><u>Objective 4W-2</u> <i>Domestic waste is minimised by providing safe and convenient source separation and recycling</i></p> <p>Design guidance - Communal waste and recycling rooms are in convenient and accessible locations related to each vertical core - For mixed use developments, residential waste and recycling storage areas and access should be separate and secure from other uses - Alternative waste disposal, such as composting, can be incorporated into the design of communal open space areas</p>	<p>Appropriate arrangements proposed. Compliant acceptable waste storage rooms</p>	<p>Yes</p>

<p>4X Building maintenance</p> <p><u>Objective 4X-1</u> <i>Building design detail provides protection from weathering</i></p> <p>Design guidance - Design solutions such as roof overhangs to protect walls and hoods over windows and doors to protect openings can be used.</p> <p><u>Objective 4X-2</u> <i>Systems and access enable ease of maintenance</i></p> <p>Design guidance - Window design enables cleaning from the inside of the Building</p> <p><u>Objective 4X-3</u> <i>Material selection reduces ongoing maintenance costs easily cleaned surfaces that are graffiti resistant</i></p>	<p>Acceptable</p>	<p>Yes</p>
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ATTACHMENT 4 – Wollongong DCP 2009 Assessment

CHAPTER A2 – ECOLOGICALLY SUSTAINABLE DEVELOPMENT

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

Generally speaking, the proposal is considered to be consistent with the principles of Ecologically Sustainable Development as follows [DETAIL MEASURES APPLICABLE]:

- (a) Greenhouse gas emissions will be reduced.
- (b) Potable water use will be reduced.
- (c) Development can adapt to climate change.
- (d) Waste will be reduced.
- (e) Recycling of waste and use of products from recycled sources will be increased.
- (f) Energy that is used will be renewable and low carbon.
- (g) Indoor environmental quality is improved.
- (h) The environmental impacts from building materials will be reduced through reduction, reuse and recycling of materials, resources and building components.
- (i) Biodiversity values are improved.

CHAPTER B1 – RESIDENTIAL DEVELOPMENT

4.0 General Residential controls

<i>Controls/objectives</i>	<i>Comment</i>	<i>Compliance</i>
<u>4.8 Building Character and Form</u> Design, height and siting of a new dwelling-house or secondary dwelling must respond to its site context New dwelling-houses within established residential areas should be sympathetic with the existing character of the immediate locality. All residential buildings must be designed with building frontages and entries clearly addressing the street frontage. Where garages are proposed on the front elevation they must be articulated from the front façade.	The application has been considered against the requirements of SEPP 65 and the ADG and is considered to be satisfactory. The main entry is clearly defined and addresses the street.	Yes
<u>4.9 Fences</u> Fences must be constructed to allow natural flow of stormwater or runoff. Fences within front and secondary building lines should be mainly constructed of transparent fence materials. Any fence or related retaining wall within the front setback from the primary road frontage must be a max 1.2m in height	No front fence proposed. Side boundary fencing to be conditioned to not restrict flow of stormwater.	

<p><u>4.16 View sharing</u></p> <p>To protect and enhance view sharing, significant view corridors</p> <p>A range of view sharing measures to be considered for building design</p>	<p>The proposed building is considered to be suitable for the site and will not unreasonably impact on significant views.</p>	<p>Yes</p>
<p><u>4.17. Retaining walls</u></p> <p>To ensure well designed retaining walls that are structurally sound</p>	<p>Retaining walls are located at the lowest point on the corner of Bligh Street and Mercury Street. These are well integrated with the landscape design</p>	<p>Yes</p>

6 Residential flat buildings

Controls/objectives	Comment	Compliance
<p><u>6.2 Minimum Site Width Requirement</u></p> <p>Minimum 24m site width required</p>	<p>Site width exceeds the 24m minimum width requirement for residential flat buildings.</p>	<p>Yes</p>
<p><u>6.5 Built Form</u></p> <p>The design, height and siting of the development must respond to its context.</p>	<p>Satisfactory as discussed above in relation to SEPP 65 design principles</p>	<p>Yes</p>
<p><u>6.6 Visual privacy</u></p> <p>New building should be sited to maximise visual privacy between buildings without compromising access to sunlight and natural ventilation.</p>	<p>Refer to ADG Assessment</p>	<p>Yes</p>
<p><u>6.7 Acoustic privacy</u></p> <p>Noise transmission should be reduced between apartments.</p>	<p>Refer to ADG Assessment</p>	<p>Yes</p>
<p><u>6.8 Car Parking Requirements</u></p>	<p>Refer to E3 Car Parking, Access, Servicing/Loading Facilities and Traffic Management.</p>	<p>Yes</p>
<p><u>6.9 Basement Car Parking</u></p> <p>Where parking is within a basement level, basement car park to not impact upon landscaping and deep soil zone requirements</p> <p>The podium roof must not be greater than 1.2m in height.</p> <p>Ventilation structures / openings / exhausts for basements must be orientated away from windows of habitable rooms;</p> <p>The visual impact of basement walls must be minimised through the use of design.</p>	<p>Basement design is satisfactory with regard to deep soil zone.</p> <p>There are no concerns in relation to the basement and associated podium.</p> <p>Visual impact of basement walls reduced through landscaping.</p>	<p>Satisfactory</p>

<p>Basements must be protected from inundation from 100 year flood level.</p> <p><u>6.10 Access Requirements</u></p> <p>Any driveway servicing a residential development is to be setback a minimum of 1.5m from any boundary.</p> <p>Driveways are to be a maximum of 6m in width.</p> <p>Driveway crossovers must be designed in accordance with Council's standard vehicle entrance designs.</p> <p>Sufficient manoeuvrability must be provided to allow vehicles to enter and leave the site in a forward direction without the need for more than a single point turn.</p> <p><u>6.15 Adaptable Housing</u></p> <p>10% of all dwellings (or at least one dwelling) must be designed to be capable of adaptation for disabled or elderly residents</p> <p><u>6.16 Access for People with a Disability</u></p> <p>The provision of continuous path of travel is required to the development to ensure equitable access for all people including people with a disability</p> <p><u>6.17 Apartment Size and Layout Mix for Larger Residential Flat Building Developments</u></p> <p>Studio/ 1 bedroom units must not be less than 10% of the total mix of units</p> <p>Three or more bedroom units must not be less than 10% of the total mix of units</p>	<p>Site is not flood affected.</p> <p>The proposed driveway is 4m from southern side boundary and sufficient landscaping is provided.</p> <p>The driveway width is 6m.</p> <p>Council's Traffic Engineer has provided a satisfactory referral.</p> <p>3 units are adaptable units (U102, 202 and 302), which equates to more than 12.5% of the total number of units.</p> <p>3 disabled persons' car parking spaces are provided to support the adaptable units. An Accessibility Report accompanied the DA and confirms compliance with the relevant legislative requirements.</p> <p>Access certification has been submitted in support of the application, stating the proposal complies with AS4299. Three (3) adaptable units are proposed, in addition to accessible parking within the basement</p> <p>Lift access is provided to all levels.</p> <p>Refer Apartment Design Guide for apartment sizes.</p>	<p>Satisfactory</p> <p>Satisfactory</p> <p>Satisfactory</p>
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CHAPTER D13 – WOLLONGONG CITY CENTRE

2 Building form

<i>Objectives/controls</i>	<i>Comment</i>	<i>Compliance</i>
<u>2.1 General</u>		
<u>2.2 Building to street alignment and street setbacks</u> Building line or setback from street alignment -4m minimum setback (balconies may project by up to 600mm, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level).	4m min. setback (balconies projecting by up to 600mm, with the cumulative width of all balconies at that level, being no more than 50% of the horizontal width of the building façade, measured at that level)	Yes
<u>2.3 Street frontage heights in commercial core</u>	Not in a commercial area	N/A
<u>2.4 Building depth and bulk</u> -900m ² max. floor plate above 12m in height -18m max. building depth (excl. balconies)	<900m ² max floor plate above 12 m in height <18m max building depth (excl. balconies)	Yes
<u>2.5 Side and rear building setbacks and building separation</u> -9m min. side and rear setback to habitable rooms with openings and balconies -4.5 m min. side and rear setbacks to non-habitable rooms and habitable rooms without openings	Setbacks comply with the requirements of the ADG which takes precedence over Council's DCP.	Appropriate setbacks provided.
<u>2.6 Mixed used buildings</u>	Not applicable	N/A
<u>2.7 Deep soil zone</u> 15% site area with 6m min. dimension	-10% site area with 1.2m min. dimension	No (complies with ADG requirement and is considered acceptable)
<u>2.8 Landscape design</u> -Landscape plan to address Chapter E6 of DCP	Landscape plan has been assessed by Council's Landscape officer and is considered to satisfactorily address	Yes

<i>Objectives/controls</i>	<i>Comment</i>	<i>Compliance</i>
	Chapter E6 requirements.	

3 Pedestrian amenity

<i>Objectives/controls</i>	<i>Comment</i>	<i>Compliance</i>
<u>3.2 Permeability</u>		
<u>3.3 Active street frontages</u>		
Residential developments are to provide a clear street address and direct pedestrian access off the primary street front, and allow for residents to overlook all surrounding streets.	The apartments have a clear street address and have balconies and/or primary living areas overlooking the street frontages.	Yes
Provide multiple entrances for large developments including an entrance on each street frontage.	Direct pedestrian access to the development is provided from Bligh Street to a lobby area at ground level. This was location was preferred by the DRP.	
<u>3.4 Safety and security</u>		
	Natural surveillance will be available from balconies and living areas which are oriented towards the street. There is a legible and secure common entry area and secure basement access.	Yes
<u>3.6 Vehicular footpath crossings</u>		
1 vehicle access point only (including the access for service vehicles and parking for non-residential uses within mixed use developments) will be generally permitted	1 entry point only proposed to Mercury Street. Driveway crossing width is 6m.	Yes
Double lane crossing with a maximum width of 5.4 metres may be permitted		
Doors to vehicle access points are to be roller shutters or tilting doors fitted behind the building façade.	The roller shutter location is set back from the street frontage.	
Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing. No service ducts or pipes are to be visible from the street.		
<u>3.7 Pedestrian overpasses, underpasses and encroachments</u>	N/A	N/A

<p>3.8 Building exteriors</p> <p>Adjoining buildings are to be considered in the design of new buildings</p> <p>Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings.</p> <p>Gardens on the top of setback areas or buildings are encouraged</p> <p>Articulate facades so that they address the street and add visual interest.</p> <p>Highly reflective finishes and curtain wall glazing are not permitted above ground floor level.</p> <p>materials sample board and schedule is required to be submitted with applications for development over \$1 million.</p> <p>The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building</p>	<p>The development has been designed to reflect the desired future character for the locality as outlined in the applicable planning controls and more contemporary development in the local area. It is noted that the proposal has been reviewed by the DRP who were generally supportive subject to some plan amendments which have now been included on the amended plans.</p> <p>Balconies and/or terraces are provided to all units.</p> <p>The building is appropriately articulated and a colour & material schedule has been provided.</p> <p>The lift overrun and services are integrated into the overall building design.</p>	<p>Yes</p>
<p>3.10 Views and view corridors</p> <p>Existing views (shown in Figure 3.12) are to be protected to an extent that is practical. Align buildings to maximise view corridors between buildings</p>	<p>The building does not adversely affect views to the escarpment.</p>	<p>Yes</p>

4 Access, parking and servicing

<i>Objectives/controls</i>	<i>Comment</i>	<i>Compliance</i>
<p>4.1 General</p> <p>4.2 Pedestrian access and mobility</p> <p>Main building entry points should be clearly visible from primary street frontages and enhanced with awnings, signage or high quality architectural features</p> <p>Disabled persons' car parking and facilities must comply with the relevant Australian Standard</p> <p>Must feature at least one main pedestrian entrance with convenient barrier-free access to at least the ground floor.</p> <p>Must provide continuous access paths of travel from all public roads and spaces as well as unimpeded internal access.</p>	<p>Pedestrian entry is clearly visible from Bligh Street.</p> <p>The ground level is clearly defined with high quality finishes.</p> <p>Disabled persons' access to and within the building are compliant along with the required disabled persons car parking.</p>	<p>Yes</p>

<p>Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours in accordance with Council's Public Domain Technical Manual.</p>		
<p><u>4.3 Vehicular driveways and manoeuvring areas</u></p>	<p>Driveways and manoeuvring areas are compliant and considered acceptable by Council's Traffic Engineer</p>	<p>Yes</p>
<p><u>4.4 On-site parking</u></p> <p>On-site parking is to be accommodated underground, or otherwise integrated into the design of the building.</p>	<p>Basement parking provided – refer to Chapter E3 assessment below.</p>	<p>Yes</p>
<p><u>4.5 Site facilities and services</u></p> <p><i>Mail boxes</i> – provide in an accessible location adjacent to the main entrance; integrated into a wall where possible and be constructed of materials consistent with the appearance of the building.</p> <p>Letterboxes to be secure and of sufficient size <i>Communication structures, air conditioners and service vents</i> - locate satellite dish and telecommunication antennae, air conditioning units, ventilation stacks and any ancillary structures in an appropriate manner.</p>	<p>A suitable location for letter boxes is provided that meets the requirements of the DCP.</p> <p>No rooftop ancillary structures or services shown on the plans though these could be integrated onto the roof without being obtrusive</p>	<p>Yes</p>

5 Environmental management

<i>Objectives/controls</i>	<i>Comment</i>	<i>Compliance</i>
<p><u>5.1 General</u></p>		
<p><u>5.2 Energy efficiency and conservation</u></p>	<p>The proposal is not expected to result in significant energy consumption. BASIX certificates submitted indicate the BASIX targets are satisfied by the proposal</p>	<p>Yes</p>
<p><u>5.3 Water conservation</u></p>	<p>The proposal is not expected to result in significant water consumption. BASIX certificates submitted indicate the BASIX targets are satisfied by the proposal</p>	<p>Yes</p>

<u>5.4 Reflectivity</u>	No concerns are raised in regards to material reflectivity. Conditions are recommended.	Yes, with conditions
<u>5.5 Wind mitigation</u>	No concerns are raised in this regard. Wind impact statement not required	Yes
<u>5.6 Waste and recycling</u>	Waste management arrangements are satisfactory	Yes

CHAPTER E1: ACCESS FOR PEOPLE WITH A DISABILITY

The proposed development generally complies with the relevant provisions contained within this Chapter and a Statement of Compliance/Access Report has been prepared by Accessible Building Solutions to address Access for People with a Disability. The report addresses the requirements of the BCA, relevant Australian Standards, *SEPP 65* and Council's DCP provisions.

CHAPTER E2: CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

<i>Control/objective</i>	<i>Comment</i>	<i>Compliance</i>
<u>3.1 Lighting</u>	No lighting shown and not considered necessary having regard to the configuration of the building. It is likely that some lighting will be provided at the main entrance to the building and within the car park	Yes
<u>3.2 Natural surveillance and sightlines</u>	Opportunities for natural surveillance of Corrimal Street will be readily available from the ground level terrace areas and balconies above.	Yes
<u>3.3 Signage</u>	No signage is proposed in this application.	Yes
<u>3.4 Building design</u>	Building is appropriately designed with regard to CPTED principles	Yes
<u>3.5 Landscaping</u>	Landscaping treatment proposed is appropriate having regard to CPTED matters and to the nature of the building.	Yes
<u>3.6 Public open space and parks.</u>	N/A	N/A
<u>3.7 Community facilities and public amenities</u>	N/A	N/A

CHAPTER E3: CAR PARKING, ACCESS, SERVICING/LOADING FACILITIES AND TRAFFIC MANAGEMENT**Residential flat buildings**

In accordance with Objective 3J-1 of the ADG, on land zoned, or sites within 400m of lands zoned, B3 or B4 in a nominated regional centre, the minimum car parking requirement for residents and visitors is set out in the RMS's Guide to Traffic Generating Development.

Using the RMS Guide, the development requires 28 residential car parking spaces and 6 visitor spaces. The proposal complies with this requirement,

	<i>Rate</i>	<i>Required</i>	<i>Provided</i>	<i>Compliance</i>
<i>i. Car parking</i>				
Resident:	See RMS Guide	18	20	Y
Visitor:	See RMS Guide	5	5	Y
TOTAL		23	25	Y
<i>ii. Bicycle parking</i>				
Resident:		8	8	Y
Visitors:		2	0	N
TOTAL				Y
<i>iii. Motorbike</i>				
		2	2	Y

CHAPTER E6: LANDSCAPING

The landscape plans has been reviewed by Council's Landscape Officer and is satisfactory subject to conditions.

CHAPTER E7: WASTE MANAGEMENT

The applicant has submitted a Site Waste Minimisation and Management Plan as required by the DCP. This plan deals with demolition and construction waste as well as ongoing waste management associated with the occupation of the development. Bins will be stored within a common bin storage area in the basement and will be moved to the street for collection by the standard domestic waste collection service. The plan has been reviewed by Council's Traffic Section and is satisfactory with regard to ongoing waste management.

CHAPTER E9 HOARDINGS AND CRANES

If the application were to be approved, it is recommended that conditions be imposed requiring the developer to liaise with WorkCover in relation to the use of any hoardings or cranes.

CHAPTER E12 GEOTECHNICAL ASSESSMENT

The application has been reviewed by Council's Geotechnical Engineer in relation to site stability and the suitability of the site for the development. Appropriate conditions have been recommended.

CHAPTER E14 STORMWATER MANAGEMENT

The proposal has been considered by Council's Stormwater Engineer in relation to the requirements of Chapter E14. Council's Stormwater Officer has reviewed the application and initially raised a number of concerns which have since been resolved.

CHAPTER E15 WATER SENSITIVE URBAN DESIGN

A Water Sensitive Urban Design Report has been submitted and is considered satisfactory by Council's Environment Officer. Appropriate conditions of consent are recommended.

CHAPTER E19 EARTHWORKS (LAND RESHAPING WORKS)

Excavation is proposed to give effect to the proposed basement car park. No concerns are raised in relation to the earthworks proposed when considered with regard to the requirements of this DCP chapter.

CHAPTER E21 DEMOLITION AND HAZARDOUS BUILDING MATERIALS MANAGEMENT

The applicant has submitted a Site Waste Minimisation and Management Plan as required by the DCP. This plan deals with demolition and construction waste and indicates that there may be some hazardous materials, most likely asbestos, within the existing dwellings to be demolished. These will be appropriately disposed of by an appropriately qualified contractor.

If approved, conditions of consent will be required to be imposed in relation to the appropriate handling, storage and disposal of demolition wastes including any hazardous materials. This would include the requirement to comply with AS1901.

CHAPTER E22 SOIL EROSION AND SEDIMENT CONTROL

Conditions of consent are recommended in regard to appropriate sediment and erosion control measures to be in place during works.

ATTACHMENT 5 – Draft Conditions

Approved Plans and Specifications

- 1 The development shall be implemented substantially in accordance with the details and specifications set out on Project No 1712 Drawing 006-Z, 022-AA-Z, 023-Z to 026-Z, 030-Z to 032-Z and 040-Z to 043-Z dated 27 March 2019 prepared by Design Workshop Australia and any details on the application form, and with any supporting information received, except as amended by the conditions specified and imposed hereunder.

General Matters

2 Geotechnical

- a All work is to be in accordance with the geotechnical recommendations contained in the report dated 8 November 2018 by Douglas Partners.
- b No disturbance of ground is to occur beyond site boundaries. A minimum buffer between site boundaries and the construction of retaining structures is to be recommended by the geotechnical consultant to ensure adjoining property is not adversely impacted upon by this development.
- c A dilapidation report is required for all structures located within the zone of influence of the proposed earthworks as determined by the geotechnical consultant.
- d All excavations need to be supported during and after construction particularly to protect adjoining property with nearby existing development.
- e Retaining wall design is not to include anchors extending on to adjoining property without the written consent of the adjoining property owner.
- f Hard bedrock where encountered will be difficult to excavate. Alternative excavation methods should be considered to minimise noise and vibration.
- g An earthworks plan is to be developed by the geotechnical consultant prior to start of earthworks.
- h All recommendations of the geotechnical consultant in their geotechnical report dated 8 November 2018 are to be accommodated in the earthworks plan.
- i Foundation systems are to be designed for Class P soils with all footings to be founded within the underlying weathered bedrock as recommended by the geotechnical consultant.
- j All earthworks including drainage, retaining wall and footing construction is to be subject to geotechnical supervision as defined in Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Developments. Where necessary amendments are to be made to the designs during construction based on supplementary geotechnical advice given during the supervision to ensure that the completed works accommodates all encountered geotechnical constraints.
- k All excavations for foundations are to be inspected by the geotechnical consultant and certified that the ground has been suitably prepared for the placement of footings.

3 Building Work - Compliance with the Building Code of Australia

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

4 Occupation Certificate

An Occupation Certificate must be issued by the Principal Certifying Authority prior to occupation or use of the development. In issuing an Occupation Certificate, the Principal Certifying Authority must be satisfied that the requirements of section 6.9 of the Environmental Planning and Assessment Act 1979, have been complied with as well as all of the conditions of the Development Consent.

5 Tree Retention/Removal

The developer shall retain the existing tree(s) indicated on the Landscape Plans by Taylor Brammer Landscape Architects dated 20 November 2018 and the Arboricultural Impact Assessment by Naturally Trees dated 21 November 2018 consisting of tree(s) numbered T5 and T6 (street trees), as well as the trees located on the adjacent site on the common boundary of 55 Bligh Street and 25 Mercury Street, Wollongong.

Any branch pruning, which has been given approval, must be carried out by a qualified arborist in accordance with Australian Standard AS4373-2007.

All tree protection measures are to be installed in accordance with Australian standard AS4790-2009 Protection of Trees on development Sites.

All recommendations in the Arboricultural Impact Assessment by Naturally Trees dated 21 November 2018 to be implemented including and not restricted to: remedial tree pruning, deadwooding, fencing and signage, sediment buffer, stem protection, establishing tree protection zones and watering and root hormone application if required.

This consent permits the removal of trees numbered T1 - T4 and T7 - T12 as indicated on the indicated on the Landscape Plans by Taylor Brammer Landscape Architects dated 20 November 2018 and the Arboricultural Impact Assessment by Naturally Trees dated 21 November 2018 No other trees shall be removed without prior written approval of Council.

6 Stormwater Quality Management

- a The stormwater treatment system must achieve pollutants and nutrients removal minimum: GP – 90%, TSS – 80%, TP – 55% and TN – 40%.
- b It is the responsibility of strata management to maintain the stormwater filtration system.

Prior to the Issue of the Construction Certificate

7 Flows from Adjoining Properties

Flows from adjoining properties shall be accepted and catered for within the site. Finished ground and top of retaining wall levels on the boundary shall be no higher than the existing upslope adjacent ground levels. The above requirements must be clearly shown on construction certificate plans prior to the release of the construction certificate.

8 Basement Waterproofing

Full engineering details of the proposed wall around the basement car park shall be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate. These shall include construction details indicating that no ingress of stormwater is possible into the basement levels other than from sub-soil drainage, vehicle wash water and runoff from the driveway that drains towards the basement. This applies to any proposed openings such as doors, ventilation louvres or fire access stairways.

9 Pump System

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

10 Present Plans to Sydney Water

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

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

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

11 Section 73 Compliance Certificate

A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water Corporation. Application must be made through an authorised Water Servicing Coordinator. Please refer to the “Builders and Developers” section of the web site www.sydneywater.com.au then search to “Find a Water Servicing Coordinator”. Alternatively, telephone 13 20 92 for assistance.

Following application, a “Notice of Requirements” will advise of water and sewer infrastructure to be built and charges to be paid. Please make early contact with the Coordinator, since building

of water/sewer infrastructure can be time consuming and may impact on other services and building, driveway or landscape design.

The Notice of Requirements must be submitted to the Principal Certifying Authority prior to issue of the Construction Certificate.

12 Endeavour Energy Requirements

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

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

13 Telecommunications

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

14 Car Parking and Access

The development shall make provision for a total of 25 car parking spaces (including 3 spaces capable of adaption for people with disabilities), 2 motorcycle parking spaces, 8 secure (Class B) bicycle spaces and five (5) visitor spaces (Class C). This requirement shall be reflected on the Construction Certificate plans. Any change in above parking numbers shown on the approved DA plans shall be dealt with via a section 4.55 modification to the development. The approved car parking spaces shall be maintained to the satisfaction of Council, at all times.

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

16 The depth and location of all services (ie gas, stormwater, water supply, sewer, electricity, telephone, traffic lights, etc), as well as Council's existing stormwater infrastructure, shall be ascertained and reflected on the Construction Certificate plans and supporting documentation.

17 Details of Proposed Pit and Pipeline

Details of the proposed connecting pipeline to Council's existing gully pit, crossing the road reserve, shall be provided in conjunction with the detailed drainage design for the site. Connection is to be made in accordance with Wollongong City Council Standard Drawings. This requirement shall be reflected on the Construction Certificate plans and supporting documentation

18 Landscaping

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

19 Flow paths must be free from mulching or vegetation with significant debris potential. Certification from a suitably qualified and experienced landscape designer and drainage consultant must be submitted to the Principal Certifying Authority prior to the release of the Construction Certificate, confirming that the landscape plan and the drainage plan are compatible.

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

21 **Tree Protection and Management**

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

- a Installation of Tree Protection Fencing - Protective fencing shall be 1.8 metre cyclone chainmesh fence, with posts and portable concrete footings. Details and location of protective fencing must be indicated on the architectural and engineering plans to be submitted to the Principal Certifying Authority prior to release of the Construction Certificate.
- b Mulch Tree Protection Zone: Areas within a Tree Protection Zone are to be mulched with minimum 75 mm thick 100% recycled hardwood chip/leaf litter mulch.
- c Irrigate: Areas within the Tree Protection Zone are to be regularly watered in accordance with the arborist's recommendations.

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

The submission of engineering plans and supporting documentation of all proposed retaining walls greater than 1m to the Principal Certifying Authority for approval prior to the issue of the Construction Certificate. The retaining walls shall be designed by a suitably qualified and experienced civil and/or structural engineer. The required engineering plans and supporting documentation shall include the following:

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

- 23 Bicycle parking facilities must have adequate weather protection and provide the appropriate level of security as required by the current relevant Australian Standard AS2890.3 - Bicycle Parking Facilities. This requirement shall be reflected on the Construction Certificate plans.

24 **Property Addressing Policy Compliance**

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

25 **Footpath Paving City Centre**

The developer is responsible for the construction of footpath paving for the entire frontage of the development. The type of paving for this development shall be in accordance with the Wollongong City Council Public Domain Technical Manual. Both street frontages are classified as Residential Streets.

A nominal two percent (2%) minimum one percent (1%), maximum two and a half percent (2.5%) cross fall to be provided from property line to back of kerb. Any changes of level, ramps or stairs and associated tactile markers and handrails are to be contained within the property boundary.

The driveway entry threshold from the property boundary line to the face of kerb is to match the footpath material and be designed to withstand predicted traffic loadings.

The driveway threshold finish within property boundary line is to contrast with driveway entry.

The footpath and driveway entry on the council property must be installed to the satisfaction of WCC Manager of Development Engineering.

A Landscape Plan is to be submitted to Council for approval prior to the issue of the Construction Certificate showing proposed paving, footpath design levels, street tree details and location of all services.

26 **Street Trees City Centre**

The developer must address the street frontage by installing street tree planting. The number and species for this development are two (2) *Melaleuca delacourii* for Mercury Street and four (4) *Tristanopsis laurina* 'Luscious' for Bligh Street, 200 litre container size in accordance with AS 2303:2015 Tree stock for landscape use. Tree pit detailing is to be in accordance with the Wollongong City Council Public Domain Technical Manual. Dial Before You Dig must be consulted prior to any excavation on site. Pot holing must be carried out to determine service location. Location of street tree plantings to be sited to ensure no conflict occurs with street light poles.

Tree pits must be adequately mulched, plants installed and tree guard/staking/tree grille/edging installed to the satisfaction of WCC Manager of Development Engineering.

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

27 **Roofwater Drainage**

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

28 **Stormwater Drainage Design**

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

- a Be prepared by a suitably qualified civil engineer in accordance with Chapter E14 of Wollongong City Council's Development Control Plan 2009, Subdivision Policy, conditions listed under this consent, and generally in accordance with the Ground Floor Concept Stormwater Layout, reference no. 18113_SW3, revision D, prepared by ATB Consulting Engineers and dated 27 March 2019.
- b Include details of the method of stormwater disposal. Stormwater from the development must be piped to Council's existing gully pit on Bligh Street.
- c Engineering plans and supporting calculations for the stormwater drainage system are to be prepared by a suitably qualified engineer and be designed to ensure that stormwater runoff from upstream properties is conveyed through the site without adverse impact on the development or adjoining properties. The plan must indicate the method of disposal of all stormwater and must include rainwater tanks, existing ground levels, finished surface levels on all paved areas, estimated flow rates, invert levels and sizes of all pipelines.
- d Overflow paths shall be provided to allow for flows of water in excess of the capacity of the pipe/drainage system draining the land, as well as from any detention storage on the land. Blocked pipe situations with 1 in 100 year ARI events shall be incorporated in the design.

Overflow paths shall also be provided in low points and depressions. Each overflow path shall be designed to ensure no entry of surface water flows into any building and no concentration of surface water flows onto any adjoining property. Details of each overflow path shall be shown on the detailed drainage design.

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

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

- a Must be prepared by a suitable qualified engineer in accordance with Chapter E14 of the Wollongong DCP 2009.
- b Must include details of the Site Storage Requirement (SSR) and Permissible Site Discharge (PSD) values for the site in accordance with Section 12.2.4 of Chapter E14 of the Wollongong DCP2009.
- c The OSD facility must be designed to withstand the maximum loadings occurring from any combination of traffic (with consideration to residential and heavy vehicles), hydrostatic, earth, and buoyancy forces. Details must be provided demonstrating these requirements have been achieved.
- d The OSD facility shall incorporate a minimum 900mm x 900mm square lockable grate for access and maintenance purposes, provision for safety, debris control screen, and a suitably graded invert to the outlet to prevent ponding.
- e Must include discharge control calculations (i.e. orifice/weir calculations) generally in accordance with Section 12.2.6 and 12.5.4 of Chapter E14 of the Wollongong DCP2009.
- f Details of the orifice plate including diameter of orifice and method of fixing shall be provided.
- g Must include details of a corrosion resistant identification plaque for location on or close to the OSD facility. The plaque shall include the following information and shall be installed prior to the issue of the occupation certificate:
 - The structure is an OSD facility, being part of the stormwater drainage network, and is not to be tampered with.
 - Identification number DA-2018/1484.
 - Any specialist maintenance requirements.
- h Must include a maintenance schedule for the OSD system, generally in accordance with Chapter E14 of the Wollongong DCP2009.

30 **Designated Overland Flow Paths**

Details of each overland flow path located on the site shall be provided with the detailed drainage design. Each overland flow path shall be capable of catering for the 1 in 100 year storm event flows from the contributing catchment area, and where required, direct these flows to Mercury Street. The overland flow path shall be free of any vegetation and/or structures that are likely to impede natural overland flow, or make provision for such obstructions, so there will be no adverse stormwater impacts upon the subject land and adjoining properties. Full Manning's calculations shall be provided on the capacity of each overland flow path. These requirements shall be reflected on the Construction Certificate plans and supporting documentation.

31 **Retaining Wall on Common Boundary**

Retaining wall on common boundary must be located wholly within the property, including footings and agricultural drainage lines. Construction of retaining walls or associated drainage work along common boundaries must not compromise the structural integrity of any existing structures.

The maximum height of a retaining wall located within 900mm of the adjoining boundary shall be 600mm unless approved within this Development Application.

32 **Council Footpath Reserve Works**

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

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

33 **Dilapidation Survey**

A dilapidation survey and report shall be submitted to the Principal Certifying Authority.

The dilapidation survey and report shall accurately reflect the condition of existing public and private infrastructure in the adjacent street(s) fronting the lots.

The report shall outline measures for the protection of existing public and private infrastructure during the works.

Any damage to infrastructure items and relics which is caused by the developer shall be repaired to the satisfaction of the Principal Certifying Authority prior to the issue of a Certificate of Practical Completion for Subdivision works.

34 **External Finishes – Residential Apartment Building**

The residential apartment building shall be constructed of a masonry or brick wall construction with colour finishes as per the approved schedule of finishes. This requirement shall be reflected on the Construction Certificate plans and supporting documentation.

35 **Integration of Rooftop Structures in Approved Building Envelope**

All rooftop or exposed structures including lift rooms, plant rooms together with air conditioning units, ventilation and exhaust systems are to be integrated within the approved rooftop envelope. This requirement shall be reflected on the Construction Certificate plans.

36 **Excavation and Retaining Structures adjacent to Public Road**

The design of all permanent and temporary retaining structures within the zone of influence of any Council assets including the road pavement, stormwater pipes and pits, must be provided to Wollongong City Council and the Principal Certifying Authority prior to the issue of the Construction Certificate. The design must be prepared in accordance with the RMS Technical direction GTD 2012/001, by a qualified Civil Engineer, NPER 3 accreditation with the Institute of Engineers Australia and experienced in structural design. The plan must clearly show that all components of the retaining structure and associated drainage is wholly located within the subject site. The design must be supported by:

- A geotechnical report prepared in accordance with the requirements of the RMS Technical direction GTD 2012/001.
- A dilapidation survey of the existing Council infrastructure.
- Details of the proposed monitoring program for the excavation and retaining structures, and relevant threshold actions prepared in accordance with RMS Technical direction GTD 2012/001.

37 **Ground Anchors**

Permanent ground anchors are not permitted within the road reserve. Temporary ground anchors can only be used where the Road Authority has provided written confirmation to the applicant for their use. Temporary anchors must be designed in accordance with RMS Technical Direction GTD 2012/001.

38 **Details of Proposed Pit and Pipeline**

Details of the proposed connecting pipeline to the Council pit, within the existing drainage system shall be provided in conjunction with the detailed drainage design for the site. Connection is to be made in accordance with Wollongong City Council Standard Drawings. This requirement shall be reflected on the Construction Certificate plans and supporting documentation.

39 **Construction Environmental Management Plan**

Prior to the release of a Construction Certificate or the commencement of any works at the site, a detailed Construction Environmental Management Plan (CEMP) prepared by a suitably qualified person shall be submitted to the Principal Certifying Authority and Council (in the event Council is not the Principal Certifying Authority for its records). The CEMP shall include (but not be limited to) the following details:

- plan of proposed demolition materials and construction storage areas;
- parking for construction workers during the demolition and construction phases;
- the type of materials/plant/equipment to be transported to and stored at the site and how it is to be transported and stored;
- timing of delivery of materials;
- the proposed access points to the site during demolition and construction; and
- address all environmental aspects of the development's demolition and construction phases including site dewatering and groundwater management, erosion and sediment control; dust suppression and noise and waste management.
- unexpected finds and soil disposal classification protocol.

40 **Development Contributions**

Pursuant to Section 4.17 of the Environmental Planning and Assessment Act 1979 and the Wollongong City-Wide Development Contributions Plan (2018), a monetary contribution of \$64,840.00 (subject to indexation) must be paid to Council towards the provision of public amenities and services, prior to the release of any associated Construction Certificate.

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

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

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

Where:

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

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

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

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

The following payment methods are available:

METHOD	HOW	PAYMENT TYPE
Online	http://www.wollongong.nsw.gov.au/applicationpayments Your Payment Reference: 1057713	<ul style="list-style-type: none"> • Credit Card
In Person	Wollongong City Council Administration Building - Customer Service Centre Ground Floor 41 Burelli Street, WOLLONGONG	<ul style="list-style-type: none"> • Cash • Credit Card • Bank Cheque
PLEASE MAKE BANK CHEQUE PAYABLE TO: Wollongong City Council (Personal or company cheques are not accepted)		

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

Prior to the Commencement of Works

41 Sign – Supervisor Contact Details

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

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

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

42 Temporary Toilet/Closet Facilities

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

Each toilet provided must be:

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

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

43 Enclosure of the Site

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

44 Demolition Works

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

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

45 Demolition Notification to Surrounding Residents

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

46 Consultation with SafeWork NSW – Prior to Asbestos Removal

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

- 47 **Contaminated Roof Dust**
Any existing accumulations of dust in ceiling voids and wall cavities must be removed prior to any demolition work commencing. Removal must take place by the use of an industrial vacuum fitted with a high efficiency particulate air (HEPA) filter.
- 48 **Supervising Arborist – Tree Inspection and Installation of Tree Protection Measures**
Prior to the commencement of any demolition, excavation or construction works, the supervising arborist must certify in writing that tree protection measures have been inspected and installed in accordance with the arborist's recommendations and relevant conditions of this consent.
- 49 **Certification from Arborist - Adequate Protection of Trees to be Retained**
A qualified arborist is required to be engaged for the supervision of all on-site excavation or land clearing works. The submission of appropriate certification from the appointed arborist to the Principal Certifying Authority is required which confirms that all trees and other vegetation to be retained are protected by fencing and other measures, prior to the commencement of any such excavation or land clearing works.
- 50 **Works in Road Reserve – Major Works**
Any occupation, use, disturbance or work on the footpath or road reserve for construction purposes, which is likely to cause an interruption to existing pedestrian and/or vehicular traffic flows requires Council consent under Section 138 of the Roads Act 1993.
- The application form for Works within the Road Reserve – Section 138 Roads Act can be found on Council's website. The form outlines the requirements to be submitted with the application, to give approval to commence works under the roads act. It is advised that all applications are submitted and fees paid, 5 days prior to the works within the road reserve are intended to commence. An application must be submitted must be obtained from Wollongong City Council's Development Engineering Team prior to any works commencing where it is proposed to carry out activities such as, but not limited to, the following:
- a Digging or disruption to footpath/road reserve surface;
 - b Loading or unloading machinery/equipment/deliveries;
 - c Installation of a fence or hoarding;
 - d Stand mobile crane/plant/concrete pump/materials/waste storage containers;
 - e Pumping stormwater from the site to Council's stormwater drains;
 - f Installation of services, including water, sewer, gas, stormwater, telecommunications and power;
 - g Construction of new vehicular crossings or footpaths;
 - h Removal of street trees;
 - i Carrying out demolition works.
- Restoration must be in accordance with the following requirements:
- a All restorations are at the cost of the Applicant and must be undertaken in accordance with Council's standard document, "Specification for work within Council's Road reserve".
 - b Any existing damage within the immediate work area or caused as a result of the work/occupation, must also be restored with the final works.
- 51 **Notification to SafeWork NSW**
The demolition licence holder who proposes demolition of a structure or part of a structure that is loadbearing or otherwise related to the physical integrity of the structure that is at least six metres in height, involving load shifting machinery on a suspended floor, or involving the use of explosives must notify SafeWork NSW in writing at least five (5) calendar days before the work commences.

During Demolition, Excavation or Construction

- 52 **Copy of Consent to be in Possession of Person carrying out Tree Removal**
The applicant/developer must ensure that any person carrying out tree removal/vegetation clearance is in possession of this development consent and/or the approved landscape plan, in

respect to the trees/vegetation which have/has been given approval to be removed in accordance with this consent.

53 **Restricted Hours of Construction Work**

The developer must not carry out any work, other than emergency procedures, to control dust or sediment laden runoff outside the normal working hours, namely, 7.00 am to 5.00 pm, Monday to Saturday, without the prior written consent of the Principal Certifying Authority and Council. No work is permitted on public holidays or Sundays.

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

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

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

54 **Asbestos – Removal, Handling and Disposal Measures/Requirements Asbestos Removal by a Licensed Asbestos Removalist**

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

55 **Asbestos Waste Collection, Transportation and Disposal**

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

56 **Provision of Waste Receptacle**

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

57 **Provision of Taps/Irrigation System**

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

58 **Screen Planting**

To mitigate impact to adjoining dwelling a continuous hedge is to be established along the common boundaries for the length of property boundaries.

Recommended species:

- i. *Viburnum tinus*.
- ii. *Syzygium australe* "Aussie Southern".

Minimum spacing 900mm.

Minimum pot size 75 lt.

A further list of suitable suggested species may be found in Wollongong Development Control Plan 2009 – Chapter E6: Landscaping.

59 **Podium Planting**

All podium planting areas are to have a waterproofing membrane that can provide a minimum 10 year warranty on product. Protective boarding is to be installed to protect membrane from damage.

All podium planting areas to be provided with an adequate drainage system connected to the stormwater drainage system. The planter box is to be backfilled with free draining planter box soil mix.

If selected mulch is decorative pebbles/gravel, the maximum gravel pebble size is 10mm diameter

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

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

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

61 **Pipe Connections**

All pipe connections to existing stormwater drainage systems within the road reserve shall be constructed flush with the pit wall in accordance with good engineering practice. The developer shall ensure that the condition of the existing stormwater drainage system is not compromised and that the service life of the existing stormwater drainage system is not reduced as a result of the connection.

62 **Water Sensitive Urban Design**

Stormwater leaving the site shall comply with water quality objectives of WDCP 2009 Chapter E15 for Gross Pollutants, Total Suspended Solids, Total Nitrogen and Total Phosphorus. A filtration system is to be installed as per Section 4.3 of the Water Sensitive Urban Design Report prepared by ATB Consulting dated 27 March 2019.

Prior to the Issue of the Occupation Certificate

63 The developer must make compensatory provision for the trees required to be removed as a result of the development. In this regard, ten 100 litre container mature plant stock shall be placed along the property boundaries of the site. The suggested species are Illawarra escarpment species.

64 **Completion of Landscape Works**

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

65 **Drainage**

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

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

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

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

basins and surfaces designed to temporarily detain stormwater as well as all surfaces graded to direct stormwater to those structures.

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

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

67 **Retaining Wall Certification**

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

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

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

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

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

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

70 **Completion report for excavation adjacent to a Public Road**

A report must be provided to Wollongong City Council and Principal Certifying Authority, prepared by a qualified Civil Engineer, NPER 3 accreditation with the Institute of Engineers Australia and experienced in structural design that:

- Certifies that all proposed retaining structures within the zone of influence of any Council assets including the road pavement, stormwater pipes and pits was constructed in accordance with the approved plans prepared in accordance to RMS Technical direction GTD 2012/001.
- Certifies that the monitoring of the site was carried out in accordance with the requirements of RMS Technical direction GTD 2012/001.
- Provides a post construction dilapidation survey.

71 **Works-as-Executed Plans – Works within Council Land**

The submission of a Works-As-Executed (WAE) plan for works within Council land must be submitted to Councils Development Engineering Manager for assessment, prior to the release of the occupation Certificate. The Works-As-Executed plans shall be certified by a registered surveyor indicating that the survey is a true and accurate record of the works that have been constructed. The Works-As-Executed dimensions and levels must also be shown in red on a copy of the approved Construction Certificate plans. The Works-As-Executed (WAE) plans must include:

- Final locations and levels for all works associated with the development within Council land.
- the plan(s) must include but not be limited to the requirements stated in Chapter E14 of the Wollongong DCP 2009.

Completion of Engineering Works

The completion of all engineering works within Council's road reserve or other Council owned or controlled land in accordance with the conditions of this consent and any necessary work to make the construction effective must be to the satisfaction of Council's Manager Development Engineering. The total cost of all engineering works shall be fully borne by the applicant/developer and any damage to Council's assets shall be restored in a satisfactory manner, prior to the issue of the Occupation Certificate.

ATTACHMENT 6**Wollongong Design Review Panel
Meeting minutes and recommendations DE-2018/108**

Date	24 July 2018
Meeting location	Wollongong City Council Administration Offices
Panel members	(Chair) Marc Deuschle (Member) Tony Tribe (Member) Karla Castellanos
Apologies	Pier Panozzo - City Centre & Major Development Manager
Council staff	Brad Harris - Development Project Officer
Guests/ representatives of the applicant	Robert Gizzi - Design Workshop Australia Luke Rollinson Martin Morris & Jones Nathan Tyerman -- Design Workshop Australia Mario D'Angola – Contiki Constructions Gary Lamana - Contiki Constructions
Declarations of Interest	
Item number	1
DE number	DE-2018/108
Determination pathway	SEPP 65 – Pre-DA stage
Property address	21 Mercury Street Wollongong
Proposal	Residential Flat Building
Applicant or applicant's representative address to the design review panel	
Background	The site was Inspected by the Panel on 24 July 2018
Design quality principals SEPP65	
Context and Neighbourhood Character	<p>The proposal is located in a suburban neighbourhood on a prominent sloping corner site fronting both Mercury Street and Bligh Street, Wollongong. The neighbourhood is zoned R1 General Residential and the surrounding built form consists predominantly of residential homes and some older RFBs. The RFB immediately to the south of the subject site pre-dates the ADG and it presents habitable rooms and balconies overlooking the common boundary without the recommended ADG separation distance. Generally low walls separate the grassed public verge from the front gardens of the dwellings. The overall landscape character of the street is devoid of any significant vegetation. Due to its corner location, the proposal will be highly visible on approach from both streets.</p> <p>Any development on this site must respond to a site analysis in accord with ADG Appendix 1 identifying the problems and opportunities arising from its existing context, contribute to the enhancement of the landscape/streetscape character as well as setting an appropriate pattern of development for the future. Key contextual issues to be addressed which would inevitably impact on achievable density and height would include appropriate streetscape and neighbouring amenity (solar access and privacy).</p>
Built Form and Scale	The proposed building consists of 5 levels of residential apartments and a single partly subterranean level of carparking (the north-eastern corner substantially protrudes above the ground plane). A 4m setback is proposed on both street frontages, which is a reduction on the predominant street setback on the rest of the street. 6m are proposed on the southern and western boundaries which comply with the recommended ADG side setbacks.

	<p>The building envelope and massing appears to be determined by a simplistic interpretation of regulatory standards, setbacks, heights rather than a response to the immediate context. Both street facades present as continuous massing and the Panel felt, given the site's significant slope from west to east, that responding to this slope should be reflected in the built form. Particularly this should be achieved where the building interfaces with the ground plane and perimeter verge. The terraced walls immediately adjacent to the grassed public verge are quite high and do not feel appropriate, or consistent with the treatment of other properties in the area, particularly given the visual prominence of this development on its corner position.</p> <p>In any amending proposal attempts should be made to soften the interface with the public domain, provide level garden courtyards and connect the built form, especially at the corner, closer to the ground. This may be achieved by lowering the building.</p>
Density	<p>The proposal includes the amalgamation of three parcels, two fronting Mercury Street and one deeper block fronting Bligh Street. The density of the development appears high with each level maximizing the available volume. This is the result of the Applicant's attempt to locate the corresponding GFA generated by three sites generally onto the two front ones. As the site is constrained in its ability to locate any built form toward the rear pan-handle, the proposed massing struggles to create an articulated and sculpted form in what is in essence two and a half lots.</p> <p>The irregular and narrow land-locked portion is effectively undevelopable. This constraint has resulted in a proposal concentrating bulk and height on the regular shaped portion of the site with significant streetscape and neighboring amenity implications. Unless these can be satisfactorily addressed, the proposal is considered over-development of the site.</p> <p>Whilst an effort has been made to visually breakdown the mass with material and colour variation; it is the Panel's opinion that the architectural expression emphasises the horizontal planes rather than creating a more vertical and 'fine grained' articulation. Greater verticality should be introduced to break the over-dominance of the horizontal banding. The material and colour variation do little to address these core issues.</p>
Sustainability	<p>Specific sustainability strategies were not discussed at the meeting, however it is acknowledged that the development achieves the required levels of solar access and cross ventilation.</p> <p>Deep soil is allowed for at the rear of the development permitting the establishment of a consolidated landscape able to mature to full size.</p> <p>Measures such as solar panels are strongly encouraged to help meet sustainability objectives – a building of this scale is expected to include ESD initiatives.</p> <p>Planters on upper levels and the communal GF landscape should all be irrigated and rainwater should be harvested from the development itself to service WCs and landscape.</p>

	<p>The panel strongly recommends the proposal to:</p> <ul style="list-style-type: none"> • Introduce rainwater harvesting • Introduce the use of solar panels • Use a selection of low embodied-energy materials to reduce the overall green footprint • The demolition of materials and removal of waste materials to comply with state and local government standards • Introduce measures to reduce the dependency on artificial lighting and mechanical ventilation
Landscape	<p>Generally the landscape can be divided into three sections, the streetscape interface, the upper level balconies and the GF communal open space. Overall the species selection is appropriate. All areas should be irrigated with rainwater harvested from the development.</p> <p>As discussed in other sections, the streetscape interface must aim to lower the visual impact and massing of the development and bring it in line with the existing neighbourhood. Lowering the walls, reducing the number of walls, sloping the planting to remove walls should all be considered in concert with recommendations to adjust the built form itself. Trees are shown in this zone but the Panel has concerns for their success given the planting volume is substantially reduced by its division into several beds instead of forming one contiguous planting volume.</p> <p>Upper level planters are shown on the architectural drawings but are not included within the landscape plans. It was explained by the proponent during the meeting that these would become the responsibility of the owners. Given that the development is relying on them to enhance its appearance, and is relying on residents rather than strata to maintain them, they should be planted with a variety of hardy, low-water tolerant and aesthetically attractive species. It must be demonstrated how they will be maintained over time either through design or use of by-laws.</p> <p>Small slivers of landscape on the ground floor, such as that adjacent to the stepping stone path beside the carpark ramp are unlikely to succeed unless carefully considered – details should be provided to demonstrate these will be viable and have adequate soil volume to succeed.</p> <p>Overall the GF COS shows a variety of functions allowing for a reasonable amount of passive and active recreation. The immediate surrounds of the internal communal rooms should be reviewed so that all space has a function that complements the internal use and vice versa. Show indicative furniture to indicate use.</p> <p>The gym looking out onto a garden as opposed to a usable space would be better for users of each. Narrow dead-end pathways such as to the east of the meeting room should be avoided. Perhaps the BBQ/outdoor kitchen is better suited to beside the meeting room.</p> <p>Given there is a 3m height difference between the lowest and highest portions of COS, consideration should be given to minimising the impact of the currently proposed wall between them, by introducing a mid-level space and considering ramps to some if not all spaces.</p>

	<p>The landscape plan needs to consider and show all levels - currently it appears that the upper lawn and gardens slope at ~1:10 which is not as per the indicative section (again no levels shown) and may not be usable as intended.</p> <p>The Panel is concerned with the extent of exposure of the vehicular ramp when viewed from the public domain, but also with regards to its hard edge against the adjacent property to the south. The panel strongly recommends for this ramp to be encapsulated into the building footprint, be made narrower and be moved away from the common boundary to create a landscape buffer between the vehicular access and the adjacent property.</p> <p>Landscape proposals should include all works up to the back of kerb. The zero setback of the basement demands particular consideration of appropriate street trees.</p>
Amenity	<p>The proponent acknowledged that the neighbouring central ground floor apartment to the south will lose all its sun mid-winter. This major adverse amenity impact needs to be addressed in the design.</p> <p>The Panel felt that the corner of the development could achieve a better interaction with the streets it fronts. It was suggested that by bringing the lobby entry off Bligh Street, between G01 and G02, an at-grade connection could be achieved for residents and could allow for a subtle step in the built form enabling the courtyards on the NW corner of the development to drop closer to street level. This would remove the need for a stair and especially the chairlift which is not an ideal entry experience.</p> <p>The addition of communal facilities at ground level are commended but could be reviewed to allow better connection with the outdoor space and better privacy for users of both the internal/external facilities. Consider reversing the gym and WC to allow gym users a private outlook over gardens.</p> <p>The Panel felt that the living/dining spaces, especially on the top floor apartments were too small to meet their required function. Indicative furniture layouts should be added to check and indicate they are of suitable size and arrangement.</p> <p>10% of units need to be adaptable/accessible – this needs to be demonstrated.</p> <p>The proponent is to confirm that all bedrooms are of at least the minimum requirements - some appear to be smaller than allowed. Room dimensions should be indicated.</p> <p>Plans are to include storage to ADG standards and cross ventilation of units needs to be demonstrated.</p> <p>The effectiveness of proposed 'Flexbrick' screening needs to be demonstrated in terms of privacy and daylight access. An adjustable shutter/screen system should be considered.</p> <p>The Panel is of the opinion that louvered windows to achieve privacy are not a superior outcome to redirected views away from the common boundary in the form of Aalto windows as these</p>

	achieve high levels of privacy whilst also providing an unfiltered view. The redirection of outlooks is especially critical for areas of the building that face the property to the south and its open balconies.
Safety	<p>The possibility of good passive surveillance has been achieved on Bligh Street by having courtyards at the approximate level of the street for the upper portion of the frontage. This same treatment should be achieved on the lower portion of Bligh Street and also on Mercury Street, especially given that the main pedestrian travel will be along Mercury Street.</p> <p>A second egress from the carpark is needed. The proponent suggested this may become an engineered solution with only a single egress. The reduction of the ramp width needs to be supplemented with the provision of a security grille for improved territorial enforcement.</p>
Housing Diversity and Social Interaction	Given the current makeup of the surrounding area, this development provides a variety of dwelling sizes appropriate to the adjoining neighbourhood. However, better solutions should be found for the social interaction between courtyards and the street desired at the ground level.
Aesthetics	<p>The panel felt that the carpark entry should be addressed more thoroughly and integrated into the built form rather than being a cut open to the sky. Encapsulating the carpark entry and looking into ways to minimise its impact (reducing width, length) should be undertaken. Location of the secure entry door must be considered from both an aesthetic and CPTED perspective. A minimum 1metre wide landscaped strip should be provided between the driveway and the southern boundary.</p> <p>‘Flexbrick’ screening has been proposed as a solution to privacy issues. The product does achieve an aesthetic quality of filtered light/shadow; however it is not accepted as a solution where privacy must be achieved. In these cases, where privacy is required to be addressed, views should be redirected not screened. See also ‘Amenity’.</p> <p>The perception of bulk and scale needs to be reduced with a greater verticality or preferably the reduction in the perceived length of the building.</p>
Design Excellence WLEP2009	
Whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved	Pending the address of advice above this proposal has the potential to attain design excellence. However the Panel has grave reservations whether design excellence is achievable without due consideration of basic neighbouring amenity ie preserving a minimum reasonable standard of solar access.
Whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain,	As discussed above, careful consideration should be given to the interface with the public domain, especially the proposal’s contribution to the landscape character of the street and the usability of the front setback for the benefit of the ground level apartments.
Whether the proposed development detrimentally	No evidence was provided on existing views available from the neighbouring property to the south that will be affected by the

impacts on view corridors,	current proposal. In the case of a compliant development, the Tenacity principles require the response to the question as to whether a more skilful design can assist in mitigating the level of view loss.
Whether the proposed development detrimentally overshadows an area shown distinctively coloured and numbered on the Sun Plane Protection Map,	Shadow analysis indicates only one apartment on site to immediate south is impacted whereby it will receive no sun. All other apartments will receive minimum 2hrs as per ADG. Whilst the Panel considers that the level of overshadowing corresponds to that of a compliant envelope on site, the Panel encourages the Applicant to explore ways in which the impact can be further mitigated.
How the development addresses the following:	
the suitability of the land for development,	The use and typology of building complies with Council's controls.
existing and proposed uses and use mix	See above.
heritage issues and streetscape constraints,	No heritage issues are evident on site.
the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,	<p>Whilst this proposal does not present a tower form, there are issues generated from its location to the north of an existing development. The proposal complies with the recommended ADG separation distance; however, the location of a vehicular diving ramp on a substantial portion of that setback facing Mercury Street creates significant visual, acoustic and environmental impacts to the neighbouring property. Setbacks and separation distances between buildings are meant for the provision of vegetative buffering and visual relief.</p> <p>Privacy issues arising from the adjacent site's non-compliance with the recommended ADG separation distances equally impacts both properties and whilst the Applicant complies with the separation guidelines, the onus is on the Proponent to mitigate privacy issues with the redirection of outlooks and windows. High level or screened windows are not a superior outcome as they would limit the levels of outlook for future residents.</p> <p>The Panel strongly recommends the Applicant to pay close attention to the interface areas with the adjacent property.</p>
bulk, massing and modulation of buildings	As discussed above, greater emphasis should be given to vertical articulation in an effort to reduce the perception of bulk and scale and the apparent length of building.
street frontage heights	The proposal complies with the overall building height; however, a cascading built form that responds better to the site's topography will be considered a better response for this site.
environmental impacts such as sustainable design, overshadowing, wind and reflectivity	Not enough information has been provided to assess the proposal's ability to comply with sustainable design, wind and reflectivity.
the achievement of the principles of ecologically sustainable development	Not yet demonstrated.

pedestrian, cycle, vehicular and service access, circulation and requirements	As discussed above, the pedestrian entry lobby should be relocated from Mercury Street to Bligh Street and the prominence of the vehicular ramp reduced. Access to the rear garden through the meeting room limits the ability of a private meeting or function to take place whilst residents gain access to the rear garden from within the building common corridor. This should be reconsidered.
impact on, and any proposed improvements to, the public domain	Public domain to be included in future plans.
Key issues, further Comments & Recommendations	<p>The proposal aims at maximising the regulatory envelope. This would result in one apartment in the unit block to the south losing all its existing mid-winter solar access. Any proposal on this site should demonstrate a minimum mid-winter solar access (2hrs) to all neighbouring dwellings or, if less, no loss to what is currently available.</p> <p>In summary the Panel recommends:</p> <ul style="list-style-type: none"> • Undertaking and responding to a thorough analysis of the surrounding neighbourhood as part of all future design iterations; • Ensuring a better interface with the streetscape in terms of levels to reduce the visual prominence of the building on the lowest corner; • Better street interface to provide good passive surveillance along all street frontages; • Better articulation of the building mass to break down its perceived volume. The consideration of ensuring all neighbouring apartments receive the minimum solar access should be an outcome of this articulation; • Introducing sustainability measures as outlined; • Considering how landscape can help connect the building to the streetscapes and ensuring the proposed design allows successful growth of this landscape by providing deep soil or large contiguous volumes of soil; • Realigning the lobby entry to come off Bligh Street; • Demonstrating that all rooms comply with minimum set standards and are viable by providing dimensions and furniture layouts; • Reconsidering the use of redirected windows in place of privacy screens to achieve privacy controls to neighbouring properties; <p>however, all comments made in the report above carry equal weight and must be addressed as part of any future submission.</p>



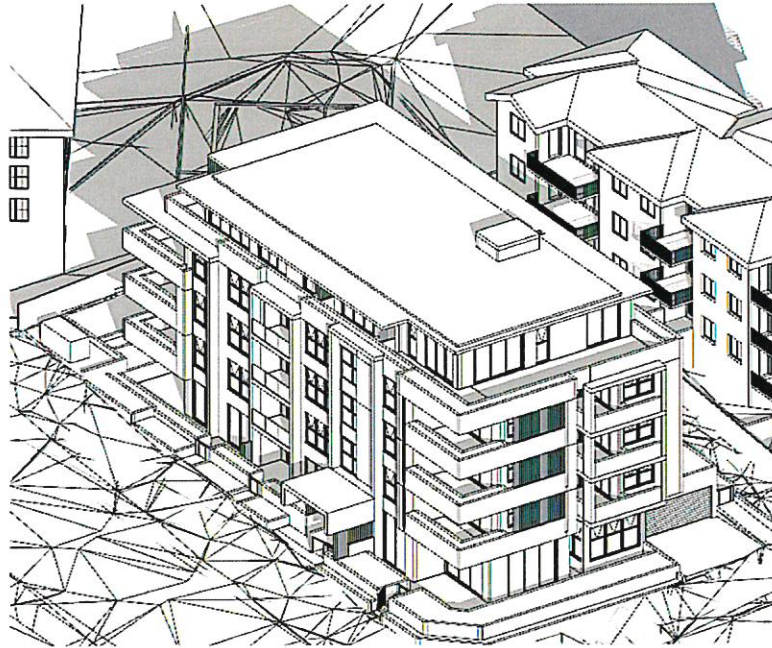
Summary of Key Issues Raised at Pre-DA and DRP		
Issue	Comments	Response
Site analysis	-Undertaking and responding to a thorough analysis of the surrounding neighbourhood as part of all future design iterations;	Further site analysis has been undertaken to better inform the locational context and design intent. Particular emphasis has been placed on those design considerations associated with streetscape levels and the interface with residential flat development immediately to the south of the subject site.
Streetscape and neighbouring amenity	-Ensuring a better interface with the streetscape in terms of levels to reduce the visual prominence of the building on the lowest corner;	The ground-level slab has now been stepped so as to lower the north-west corner unit and external private open space area, in order to get a better relationship with street at this edge. This has been achieved by ramping the basement slab also. The resulting outcome means that the landscaped gardens in the north-west corner of the site require far less retaining than that previously proposed (i.e. better interface with street levels).
	-Improvements to the street interface to provide good passive surveillance along both street frontages;	At the ground-level, all dwellings will have direct access to Bligh Street with appropriate landscaping and private open space areas (together with the internal living area orientations) overlooking the street. Along Mercury Street, the driveway into the basement has been shifted further away from the southern boundary, with additional landscaping provided along this edge.
Bulk and scale	-Better articulation of the building mass to break down its perceived volume. The consideration of ensuring all neighbouring apartments receive the minimum solar access should be an outcome of this articulation;	Further shadow analysis has been undertaken to demonstrate the impacts of overshadowing to the southern neighbouring apartments. A greater emphasis has been provided around improving interface of this edge in light of the comments made by the DRP, and hence far more landscaping has been provided at this interface. As above, the basement driveway has also been shifted further away from the adjoining properties and site level relationships improved.



Landscape	-Considering how landscape can help connect the building to the streetscapes and ensuring the proposed design allows successful growth of this landscape by providing deep soil areas or large contiguous volumes of soil;	The communal open space relationship between internal and external areas has been improved following feedback from the DRP. The gym now overlooks a nice landscaped area, while the external communal open space has now been teared in three sections to provide a better usable area for residents and visitors (i.e. better relationship at ground level as well as middle section to optimise solar access and site level relationships).
Lobby Entry	-Realigning the lobby entry to come off Bligh Street;	The ground floor lobby entry has now been re-orientated to Bligh Street as requested, which removes the need for a stair/chairlift.
Room sizes/ Dimensions	-Demonstrating that all rooms comply with minimum set standards and are viable by providing dimensions and fumiture layouts;	Room dimensions have been indicated to confirm that all bedrooms are of at least the minimum requirements.
Privacy	-Reconsidering the use of redirected windows in place of privacy screens to achieve privacy controls to neighbouring properties;	-The associated bedroom windows of those units in the southern part of the site have now been re-orientated east/west via accentuated angled façade walls to rooms as requested.
Sustainability	-Introducing sustainability measures as outlined.	-The development achieves the required levels of solar access and cross ventilation. Deep soil is allowed for at the rear of the development permitting establishment of a consolidated landscape able to mature to full-size. The panel recommends rainwater harvesting, the use of solar panels, selection of low embodied energy materials, etc.

Table 2: Summary of Key Issues Raised at Pre-DA and DRP

SUMMARY EXPERT OPINION
**SOLAR ACCESS, CROSS-VENTILATION
AND OVERSHADOWING IMPACT**



**PROPOSED RESIDENTIAL FLAT BUILDING
21-23 Mercury St & 57 Bligh St, Wollongong**

19 November 2018

STEVE KING

CONSULTANT

11 Clovelly Road Randwick NSW 2031 Australia

PHONE 0414385485

1.0 PRELIMINARIES AND SUMMARY

1.1 I have undertaken an independent evaluation of the **solar access and natural ventilation** compliance for the proposed development of apartments at 21-23 Mercury St & 57 Bligh St, Wollongong, which is the subject of a development application. I supply the following independent expert opinion.

1.3 My summary credentials and experience are at *2.0 Credentials*.

1.4 For documents on which I rely, I refer to the materials listed in *2.0 Documents*.

1.5 Solar access

I conclude that 18 units out of the total 24 (75.0%) receive a minimum 2 hours of sun to Living area glazing and POS on June 21. The ADG *Design criterion* nominates as a minimum 70%.

Two units out of the total 24 (8.3%) receive no sun, as defined by the relevant ADG *Design guidance*. The ADG nominates as a maximum 15%.

The solar access control is fully satisfied.

1.6 Cross ventilation

I conclude that 17/24 (70.8%) apartments are simply cross ventilated. The relevant *Design criterion* in the Apartment Design Guide nominates as an acceptable minimum 60%.

The proposed development fully complies for cross ventilation.

1.7 Overshadowing

The existing small residential flat building at No.25 Mercury Street relies for solar access largely on direct sun across its northern side boundary with the subject site. Consequently the 3D digital modelling confirms that between 9 AM and 3 PM on June 21 there is a significant overshadowing impact from the proposed development, on four (4) units on the lower two levels,.

However, the best available direct sun for the northern façade of No.25 is actually between 3 PM and 4 PM. If I take into account that additional late afternoon sun, I find that only one unit at No. 25 (Pt 3 of the strata plan) fails to retain a minimum of two hours direct sun to living area glazing and private open space on June 21. Assuming that existing compliance is 100% this, represents a reduction is 1/9 (11.1%) units with minimum two hours of winter sun. The ADG *Design guidance* under Objective 3B-2 nominates 20% as acceptable.

It is fair to conclude that while the overshadowing impact on the southern neighbour is significant, it is both foreseeable and reasonable.

2.0 CREDENTIALS

I have taught architectural design, thermal comfort and building services at the Universities of Sydney, Canberra and New South Wales since 1971. From 1992, I was a Research Project Leader in SOLARCH, the National Solar Architecture Research Unit at the University of NSW. Until its disestablishment in November 2006, I was the Associate Director, Centre for Sustainable Built Environments, UNSW.

My research and consultancy includes work in solar access, energy simulation and assessment for houses and multi-dwelling developments, building assessments under the NSW SEDA Energy Smart Buildings program, appropriate design and alternative technologies for museums and other cultural institutions, and asthma and domestic building design. I am the principal author of *SITE PLANNING IN AUSTRALIA: Strategies for energy efficient residential planning*, funded by the then Department of Primary Industry and Energy, and published by AGPS, and of the RAlA Environment Design Guides on the same topic.

SOLARCH/UNISEARCH were the contractors to SEDA NSW for the setting up and administration of the House Energy Rating Management Body (HMB), which accredits assessors under the Nationwide House Energy Rating Scheme (NatHERS), NSW. I was the technical supervisor of the HMB, with a broad overview of the dwelling thermal performance assessments carried out in NSW over five years. I have been a

member of the NSW BRAC Energy Subcommittee, and also a member of the AGO Technical Advisory Committee on the implementation of AccuRate, the mandated software tool under NatHERS/BASIX. I undertook the Expert Review for the NSW Department of Planning, of the comparison of NatHERS and DIY methods of compliance for Thermal Comfort under BASIX, and was subsequently a member of a three person expert panel advising on the implementation of AccuRate in BASIX.

Through UNISEARCH, NEERG Seminars and Linarch Design, I conduct training in solar access and overshadowing assessment for Local Councils. I have delivered professional development courses on topics relating to energy efficient design both in Australia and internationally. I have delivered the key papers in the general area of assessment of ventilation and solar access performance and compliance for NEERG Seminars, cited by Commissioners of the LEC. Senior Commissioner Moore cited my assistance in reframing of the Planning Principle related to solar access (formerly known as the Parsonage Principle) in *The Benevolent Society v Waverley Council [2010] NSWLEC 1082*.

I practiced as a Registered Architect from 1971-2014, and now maintain a specialist consultancy advising on sustainability and amenity in buildings, with special emphasis on solar access and natural ventilation. I regularly assist the Land and Environment Court as an expert witness in related matters.

3.0 DOCUMENTS

3.1 I base my report on the following documents issued to me by DWA architects.

(a) 'Development Application' architectural plans dated 19/11/2018:

NO.	SHEET NAME	REV.
000	COVERSHEET	T
001	LEP ANALYSIS	Q
002	REGIONAL CONTEXT	Q
003	LOCAL CONTEXT	Q
004	CONTEXTUAL ANALYSIS	Q
005	SITE SURVEY	Q
006	DEMOLITION PLAN	Q
007	PRECEDENCE	Q
010	OPTION 1 - FUTURE DEVELOPMENT CONT.	Q
011	OPTION 1 - SHADOW DIAGRAMS	Q
012	OPTION 1 - SHADOW DIAGRAMS	Q
013	OPTION 2 - FUTURE DEVELOPMENT CONT.	Q
014	OPTION 2 - FLOOR PLANS	Q
015	OPTION 2 - SHADOW DIAGRAMS	Q
016	OPTION 2 - SHADOW DIAGRAMS	Q
020	SITE PLAN / ROOF PLAN	T
021	GFA PLANS	T
022	BASEMENT FLOOR PLAN	T
023	GROUND FLOOR PLAN	T
024	TYPICAL LEVEL 1 & 2 FLOOR PLANS	T
025	LEVEL 3 FLOOR PLAN	T
026	LEVEL 4 FLOOR PLAN	T
027	STORAGE SCHEDULE	T
030	ELEVATIONS	T
031	ELEVATIONS	T
032	ELEVATIONS	T
040	SECTION	T
041	SECTION	T
042	SITE SECTION	T
043	SITE SECTION	T
044	DETAILED SECTIONS	T
050	3D PERSPECTIVES	T
050	SHADOW DIAGRAMS - WEST ELEVATION	T
051	SHADOW DIAGRAMS - WEST ELEVATION	T
052	JUNE 9 AM - 12 NOON SHADOWS	T
053	JUNE 1 PM - 3 PM SHADOWS	T
054	DECEMBER 9 AM - 3 PM SHADOWS	T

(b) Strata plan survey 25 Mercury Street Wollongong

(c) Digital copy of 3D Model prepared in Autodesk Revit software exported as file *PN1712-PL[T] - 3D View with Context.dwg*.

4.0 SITE

4.1 Site

The site is an irregular shape illustrated in Figure 1 (North to top).

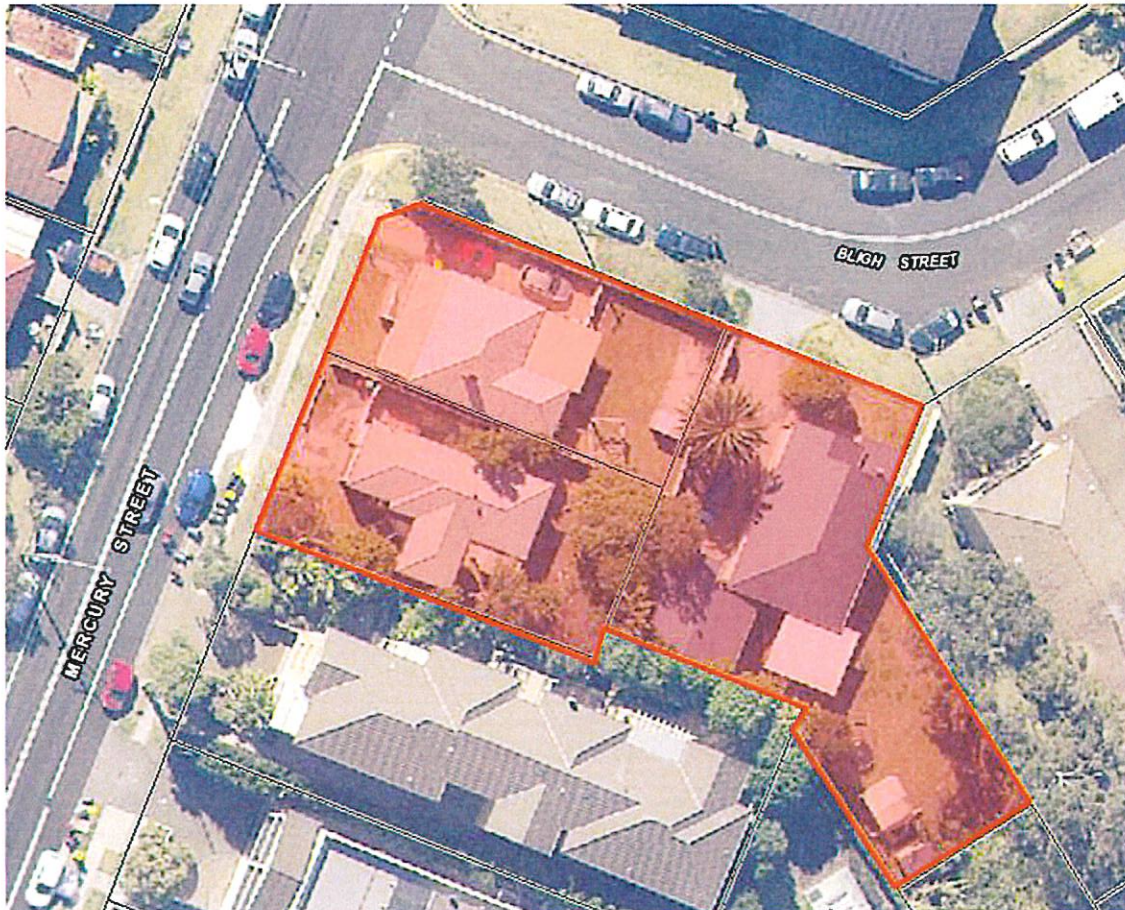


Figure 1: Aerial view of site

The site has good solar access opportunity to the two street frontages. However, any apartment which relies exclusively on the east façade for solar access is unlikely to achieve the complying minimum two hours to glazing on June 21.

There is a foreseeable overshadowing impact on the small residential flat building at No.25 Mercury Street, to the south of the subject site.

5.0 SOLAR ACCESS ANALYSIS METHODOLOGY

5.1 3D digital model

5.1.1 My review and analysis are undertaken in Trimble SketchUp software. The 3D digital model is exported from the CAD file prepared by the architects. By use of the 3D digital model, quantification of solar access takes account of all self-shading within the subject site, as well as all relevant external overshadowing.

I note that the supplied model includes surrounding developments.

5.1.2 I independently geolocated the 3D digital model and checked the direction of true north by online reference to cadastral grid north. I have spot checked a limited number of relevant heights and dimensions against the architectural drawings, and am satisfied that the model is sufficiently accurate for the purpose of solar access assessment.

5.1.3 I examine the design mainly by use of 'views from the sun'. The projection referred to as a 'View from the Sun' shows all sunlit surfaces at a given time and date. It therefore allows a very precise count of

sunlight durations on any glazing or horizontal surface, with little or no requirement for secondary calculations or interpolation. Figure 2 illustrates the technique. *Note that a 'view from the sun' by definition does not show any shadows.*

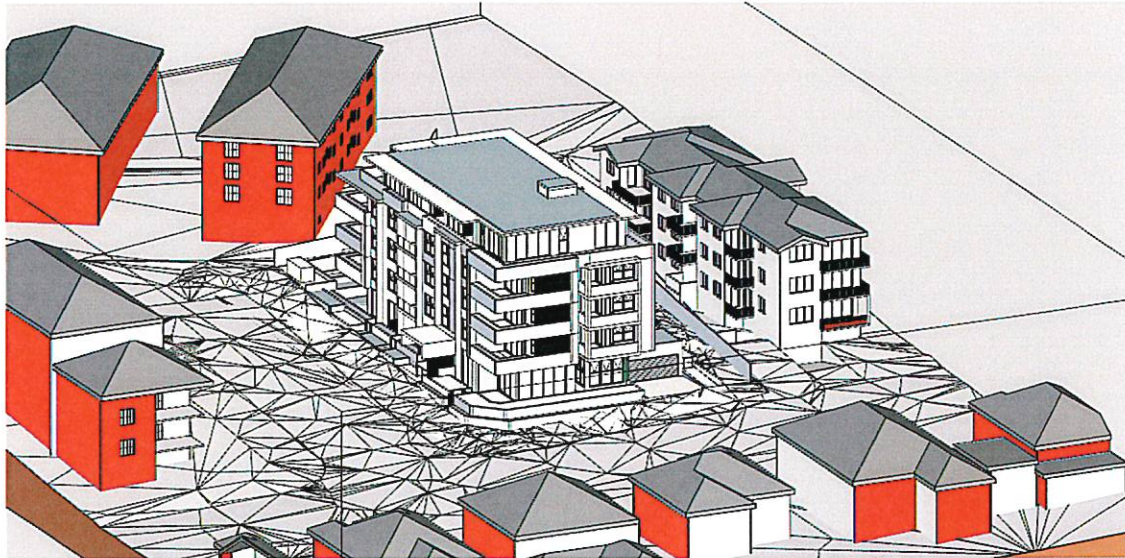


Figure 2: Geolocated detailed model in SketchUp. View from the sun at 3.00PM

I include at Appendix B copies of half-hourly views from the sun for June 21.

5.2 Characterisation of solar access compliance

For the determination of what is 'effective sunlight' for characterisation of compliance, for both glazing and private open space, I refer specifically to the application of the relevant *L+EC Planning Principle (The Benevolent Society v Waverley Council [2010] NSWLEC 1082.*

I generally ignore very large angles of incidence to the glazing surface, and small areas of sunlit glazing..

6.0 SOLAR ACCESS TO APARTMENTS

6.1 Relevant solar access standards

6.1.1 Apartment Design Guide

The Apartment Design Guide gives the following quantified recommendations:

<i>Design criteria</i>	
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
2.	In all other areas, living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid winter
3.	A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid winter

6.1.2 Local controls

I note that **Solar access (6.1) Design criteria** in the ADG are *discretionary controls* which, by virtue of Cl. 6A of SEPP65, **take precedence over these controls contained in Councils' DCPs.**

In quantifying the compliance for solar access for this application, I rely on satisfying the ADG as also satisfying the DCP.

6.2 Achieved solar access

6.2.1 Interpreting the detailed compliance table

The detailed compliance table in Appendix A records direct sun in a graphic format on the same half hourly basis as the views from the sun in Appendix B.

Table 1 summarises the projected solar access compliance of the development overall.

Total number of dwellings	24	
Units with over two hours of sun on June 21 to Living and POS 9am – 3pm	18	75.0%
Units with no sun 9am to 3pm	2	8.3%

Table 1: Summary of solar access for units

The proportion of dwellings which comply with the performance objectives for solar access amenity is 18 units from a total of 24, being 75.0%.

There are 2/24 (8.3%) dwellings which are classified as ‘no sun’ between 9 AM and 3 PM on June 21. The ADG *Design criteria* nominate as a maximum 15%.

7.0 NATURAL VENTILATION

7.1 Performance Objectives

The Apartment Design Guide gives the following *Design criteria*:

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
2.	Overall depth of a cross-over or cross-through apartment does not exceed 18m, measured glass line to glass line

7.2 Achieved cross ventilation compliance

I characterise as simply cross ventilated all corner and ‘through’ apartments with openings in two principal facades.

The overall level of cross ventilation compliance is 17/24 (70.8%). The relevant ADG *Design criteria* require a minimum of 60%.

8.0 OVERSHADOWING IMPACT

8.1 Likely overshadowing impact

Cursory inspection of the views from the sun makes clear that the only winter overshadowing impact is to the residential flat building at No. 25 Mercury Street.

8.2 Performance Objectives

The Apartment Design Guide gives generalised design guidance to minimise the overshadowing impact on other *existing* RFBs.

Objective 3B-2
Overshadowing of neighbouring properties is minimised during mid winter
Design guidance
Living areas, private open space and communal open space should receive solar access in accordance with sections 3D

Communal and public open space and 4A Solar and daylight access
Solar access to living rooms, balconies and private open spaces of neighbours should be considered
Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%
If the proposal will significantly reduce the solar access of neighbours, building separation should be increased beyond minimums contained in section 3F Visual privacy
Overshadowing should be minimised to the south or down hill by increased upper level setbacks

It can be safely inferred that the primary purpose of the *Design guidance* is to establish parity between newly proposed development and existing RFBs, when considering solar access/overshadowing impact compliance.

The *Design guidance* also makes clear that adverse overshadowing impacts are to be *expected* with progressive development in areas with RFBs as the dominant building type, and seeks to nominate a practical limit on such overshadowing impacts.

8.3 Predicted solar access/overshadowing impact

No.25 Mercury Street is located directly to the south of the subject development. Of the total nine dwellings in the building, six units rely completely on winter sun from the north, over the common side boundary with the subject development. As a consequence, four units (Pts 2, 3, 5 & 6) on the lower two levels are predicted to be overshadowed by the proposed building, for most of the day on June 21.

However, I note the views from the sun make clear that the best available winter sun for those units is in fact between 3 PM and 4 PM. See Figure 3. I therefore consider it appropriate in this instance to pay regard to that additional effective direct sun.



Figure 3 View from the sun 4 PM

Table 2 summarises the projected solar access of the existing development of the adjacent site to the south (No.25 Mercury St.).

Total number of dwellings at No.25	9	
Units with over two hours of sun on June 21 to Living and POS 9am – 3pm	5	55.6%
Units with over two hours of sun on June 21 to Living and POS 9am – 4pm	8	88.9%

Table 2: Summary of retained solar access compliance for units at No.25 Mercury St.

9.0 CONCLUSIONS

I carried out my own independent analysis and quantification of the predicted solar access and cross-ventilation for the subject building.

9.1 Solar access.

18 units out of the total 24 (75.0%) receive a minimum 2 hours of sun to Living area glazing and POS on June 21. The ADG *Design criterion* nominates as a minimum 70%. There are 2 units (8.6%) which fall into the no sun category defined by the ADG. The ADG *Design criterion* nominates as a maximum 15%

The ADG Design criteria for solar access are fully satisfied.

9.2 Cross ventilation

17/24 (70.8%) apartments are cross ventilated. The relevant Design criterion in the Apartment Design Guide nominates as an acceptable minimum 60%.

The proposed development fully complies with the relevant control for natural ventilation.

9.3 Overshadowing impact

The existing small residential flat building at No.25 Mercury Street relies for its present solar access for a six of the total nine units, exclusively on direct sun across its northern side boundary with the subject site. Consequently there is a significant overshadowing impact from the proposed development on four (4) units on the lower two levels.

It would be fair to say that any attempt to protect complying solar access for those units between 9 AM and 3 PM on June 21 would effectively sterilise reasonable development on the subject site.

On the other hand, the best available direct sun for the northern façade of No.25 is actually between 3 PM and 4 PM. To my mind, an equitable assessment of retained solar access should pay regard to this additional direct sun exposure.

If I take into account that additional late afternoon sun, I find that only one unit at No. 25 (Pt 3 of the strata plan) fails to retain a minimum of two hours direct sun to living area glazing and private open space on June 21. Conservatively assuming that existing solar access compliance at No.25 is 100%, the reduction is 1/9 (11.1%) units. The ADG *Design guidance* under Objective 3B-2 nominates 20% as acceptable.

I conclude that while the overshadowing impact on the southern neighbour is significant, it is both foreseeable and reasonable. In my considered opinion, overshadowing impact cannot be regarded as determinative in relation to this application.

APPENDIX A: DETAILED COMPLIANCE TABLE FOR 21-23 MERCURY ST & 57 BLIGH ST (SUBJECT DEVELOPMENT)

The table below shows the detailed solar access compliance status of each unit.

Level	UNIT	9	930	10	1030	11	1130	12	1230	13	1330	14	1430	15	>3 hrs 9-3	>2 hrs 9-3	No sun	POS 9-3	Glazing + POS 9-3	Cross vent
GROUND	G01	1	1	1	1	1	1	1	1	1	1	1	1	1	YES			YES	YES	YES
	G02	1	1	1	1	1	1	1	1	1	1	1	0	0	YES			YES	YES	NO
	G03	1	1	1	1	1	1	1	0	0	0	0	0	0	YES			YES	YES	YES
LEVEL 1	101	1	1	1	1	1	1	1	1	1	1	1	1	1	YES			YES	YES	YES
	102	1	1	1	1	1	1	1	1	1	1	1	0	0	YES			YES	YES	NO
	103	1	1	1	1	1	1	1	0	0	0	0	0	0	YES			YES	YES	YES
	104	1	0	0	0	0	0	0	0	0	0	0	0	0				NO		YES
	105	0	0	0	0	0	0	0	0	0	0	0	0	0			YES	NO		NO
	106	0	0	0	0	0	0	1	1	1	1	1	1	1	YES			YES	YES	YES
LEVEL 2	201	1	1	1	1	1	1	1	1	1	1	1	1	1	YES			YES	YES	YES
	202	1	1	1	1	1	1	1	1	1	1	1	0	0	YES			YES	YES	NO
	203	1	1	1	1	1	1	1	0	0	0	0	0	0	YES			YES	YES	YES
	204	1	0	0	0	0	0	0	0	0	0	0	0	0				NO		YES
	205	0	0	0	0	0	0	0	0	0	0	0	0	0			YES	NO		NO
	206	0	0	0	0	0	0	0	1	1	1	1	1	1	YES			YES	YES	YES
LEVEL 3	301	1	1	1	1	1	1	1	1	1	1	1	1	1	YES			YES	YES	YES
	302	1	1	1	1	1	1	1	1	1	1	1	0	0	YES			YES	YES	NO
	303	1	1	1	1	1	1	1	0	0	0	0	0	0	YES			YES	YES	YES
	304	1	0	0	0	0	0	0	0	0	0	0	0	0				NO		YES
	305	0	0	0	0	0	0	1	1	1	1	1	1	1	YES			YES	YES	YES
	401	1	1	1	1	1	1	1	1	1	1	1	1	1	YES			YES	YES	YES
LEVEL 4	402	1	1	1	1	1	1	1	1	1	1	1	1	1	YES			YES	YES	YES
	403	1	0	0	0	0	0	0	0	0	0	0	0	0				NO		YES
	404	1	1	1	1	1	1	1	1	1	1	1	1	1	YES			YES	YES	NO
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		24																		

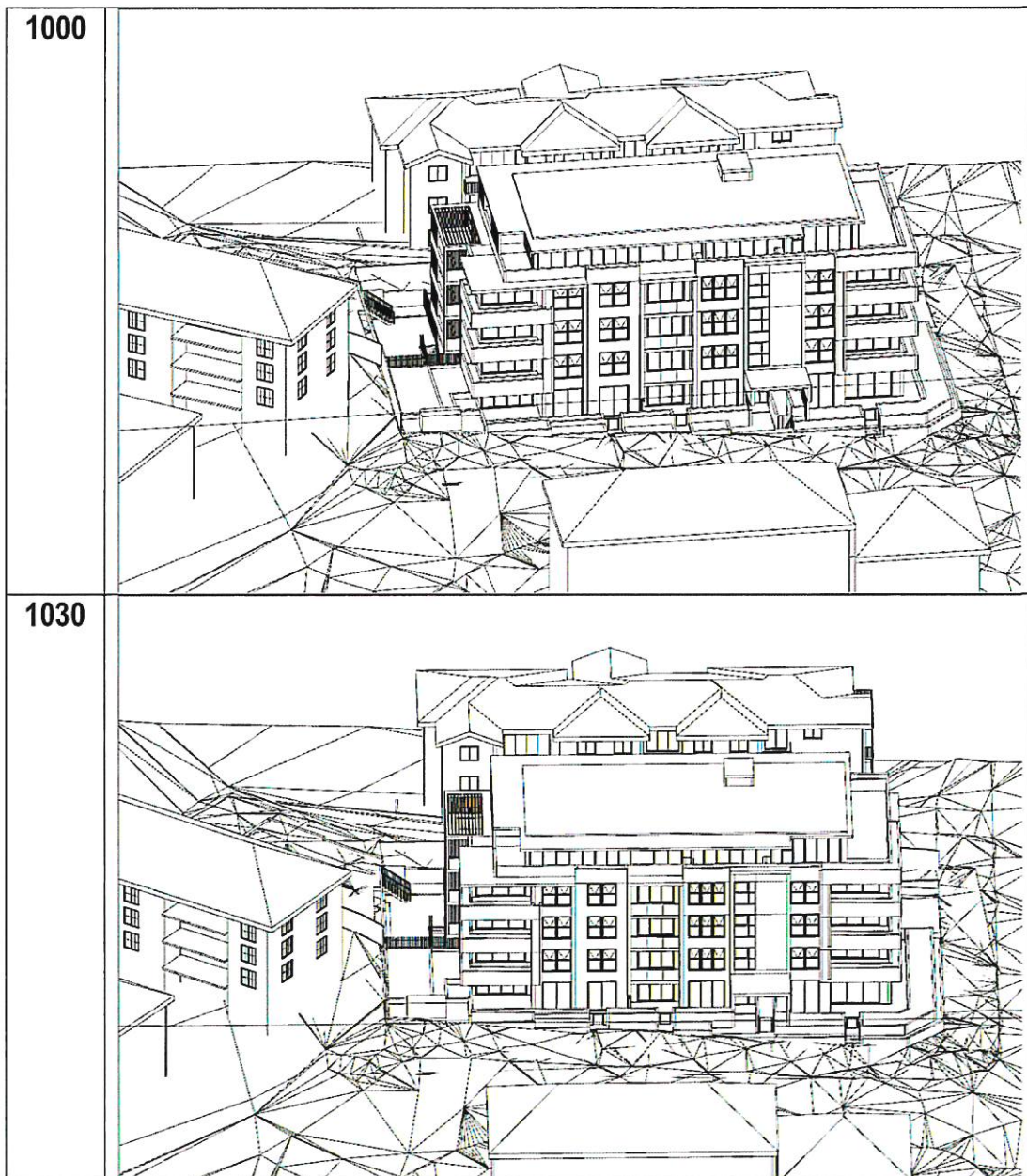
24

KEY	
L	The glazing of living area
B	Additional sun to bedroom (s)

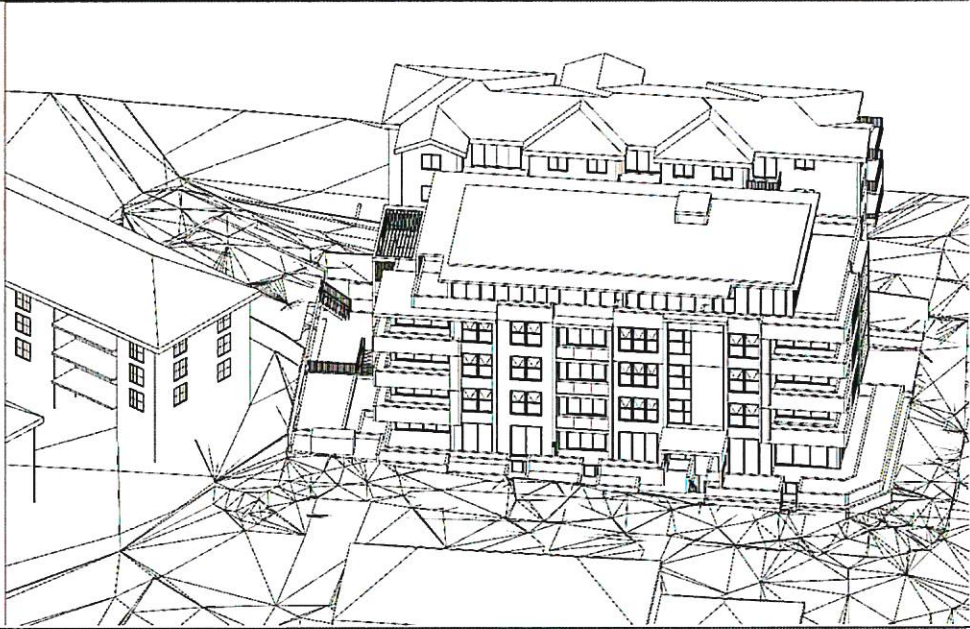
APPENDIX B: VIEWS FROM THE SUN

The table below shows the views from the sun on a half-hourly basis on June 21.

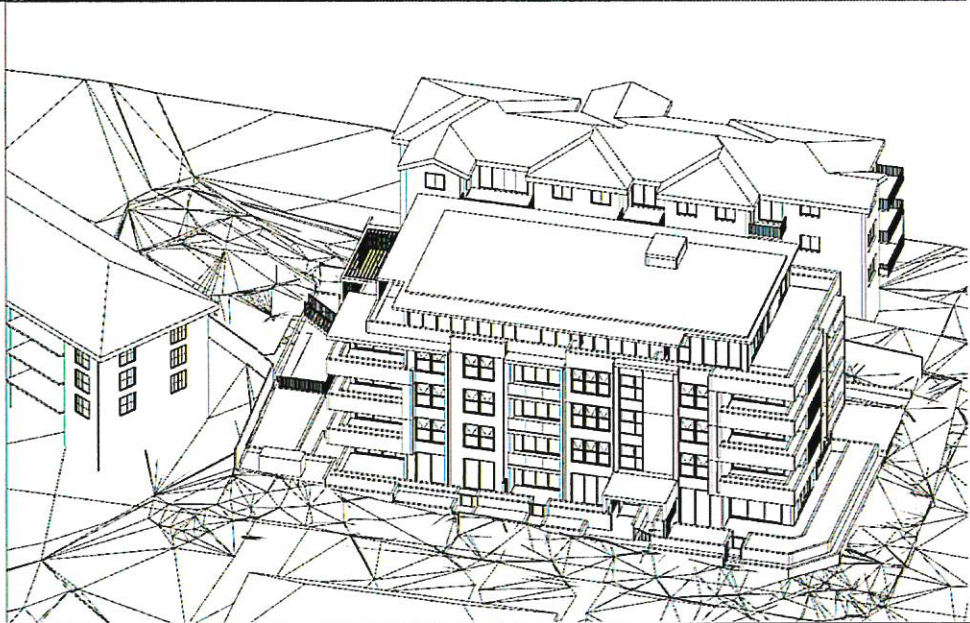
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0930	



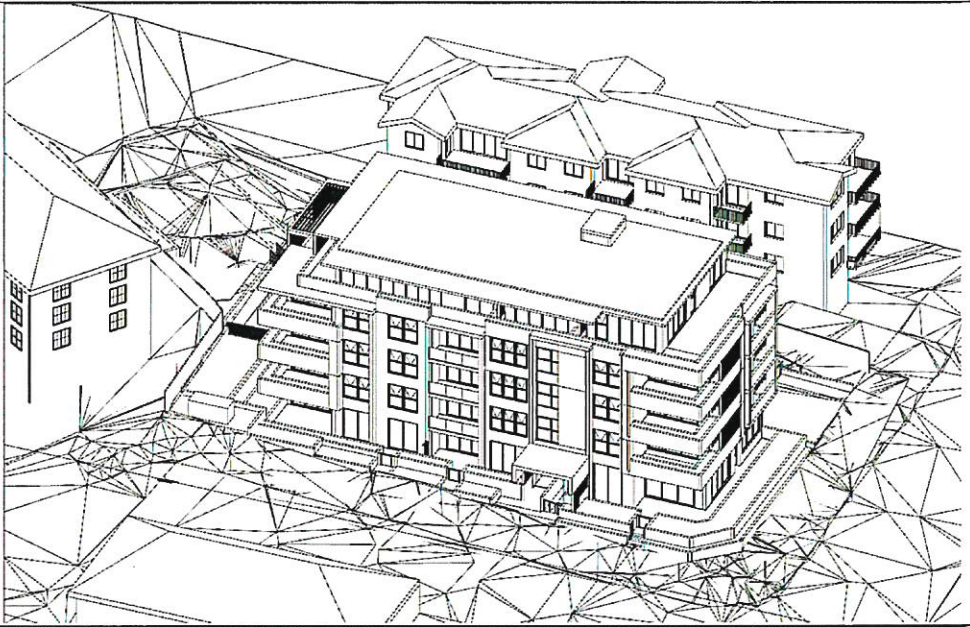
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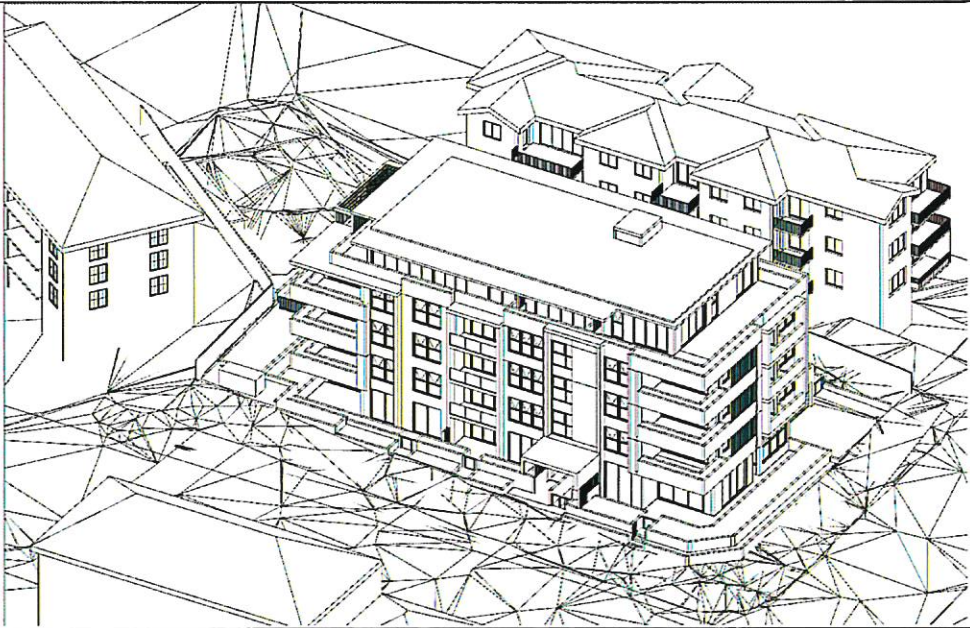
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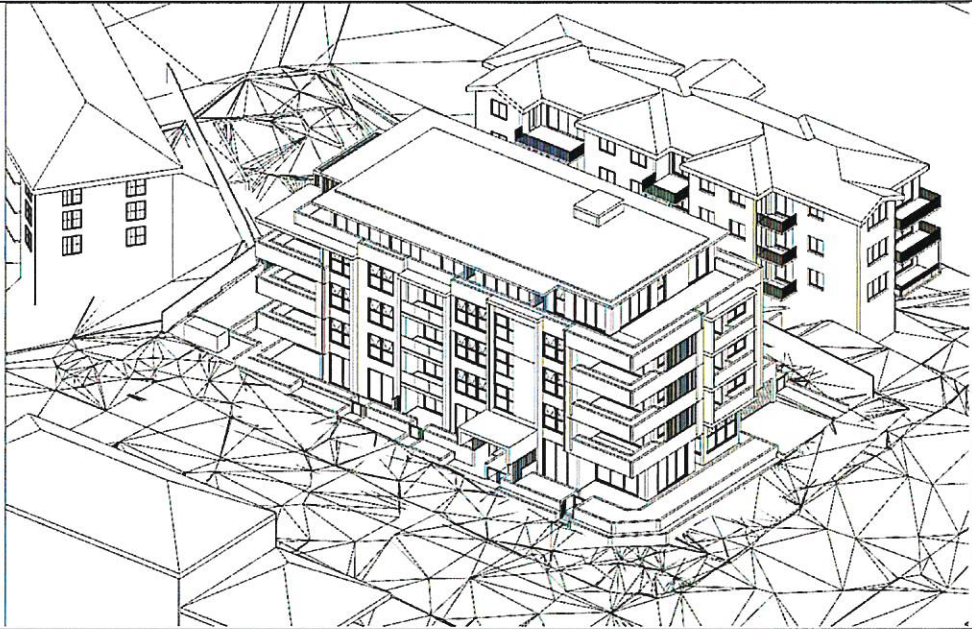
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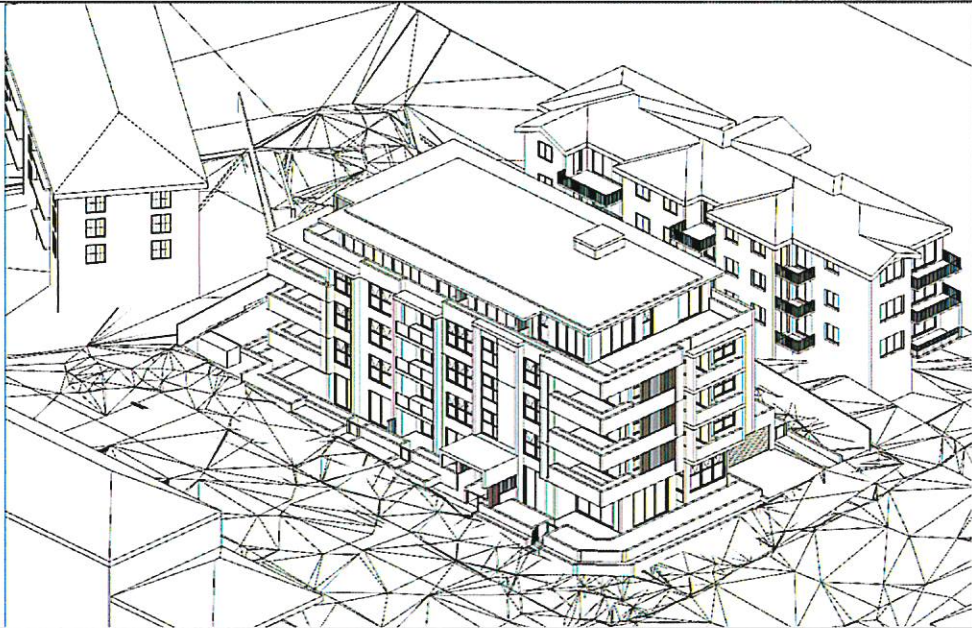
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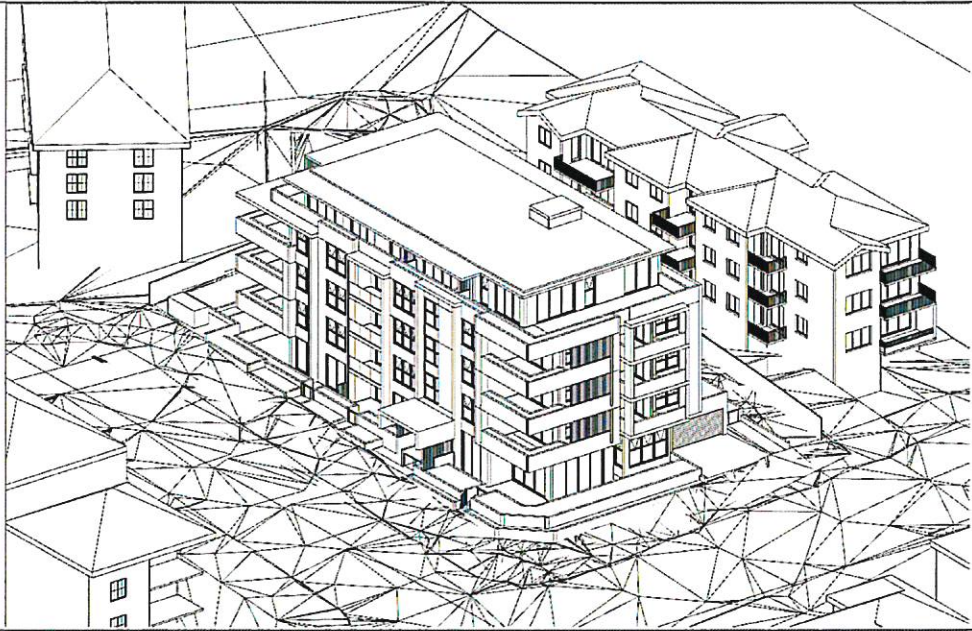
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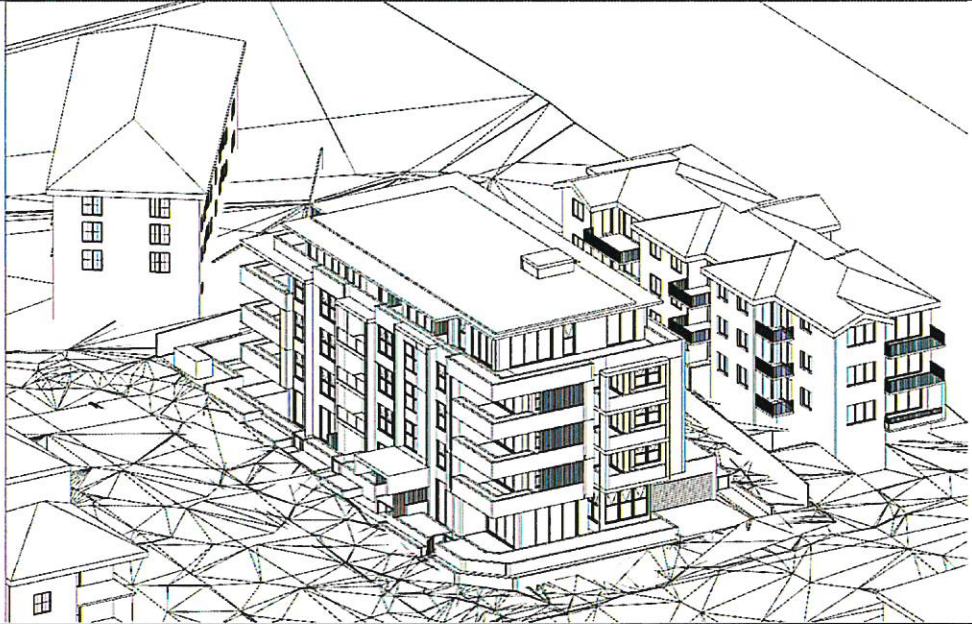
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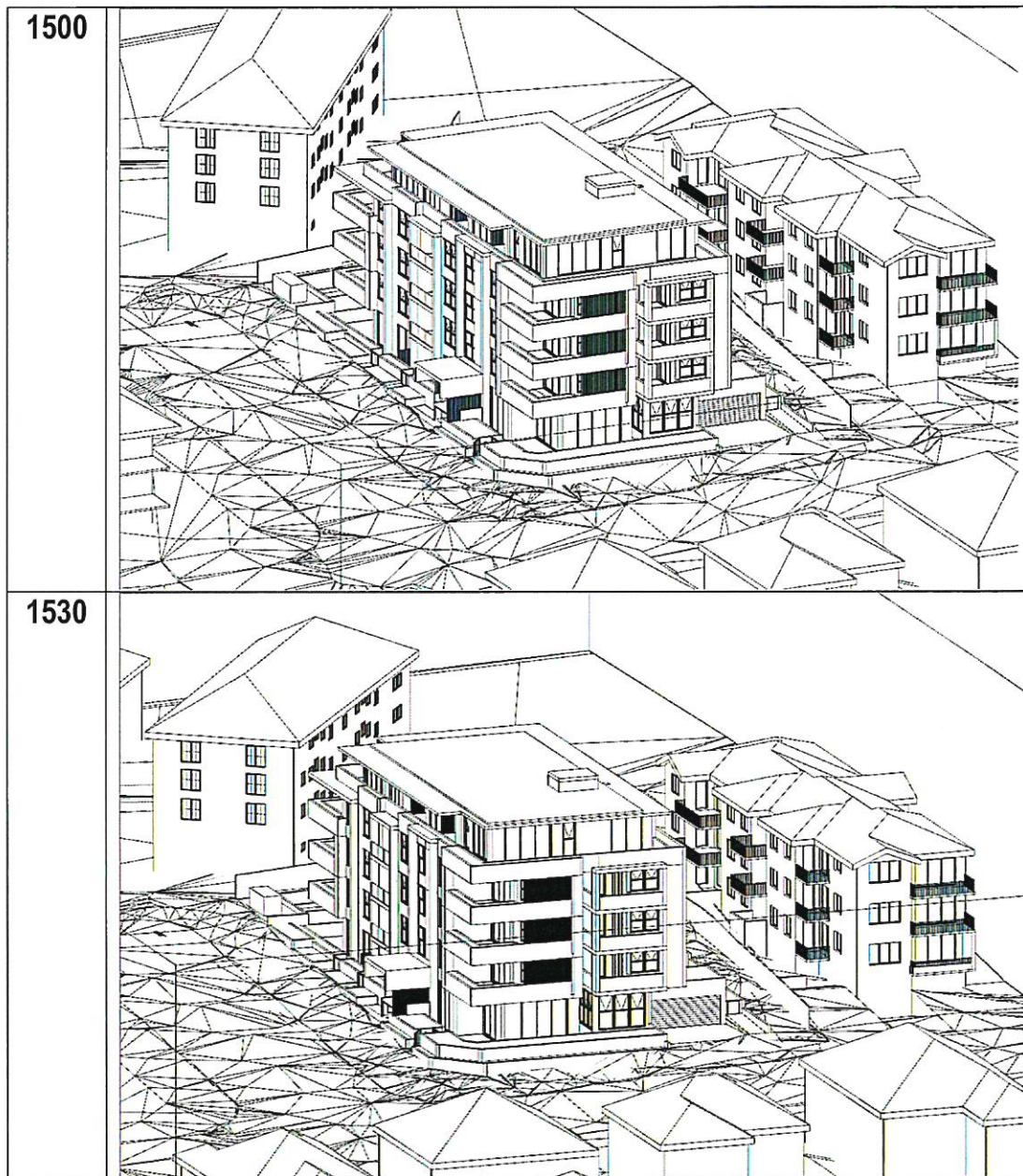


1400



1430





1600

