

Bushfire Assessment Report

Lots A & B DP312912, 55-53 Donnison Street West, Gosford

Prepared for

Christian Charles & Shane Zarafa

Final / February 2021

DOCUMENT STATUS

Project Particula	rs			
Project Name	Bushfire Assess	Bushfire Assessment Report: Lots A & B DP312912, 55-53 Donnison Street West, Gosford		
Job Number	21001	21001		
Client	Christian Charle	Christian Charles & Shane Zarafa		
Status	Draft	Draft		
Version	Date	Prepared by	Details	
V1	8/2/2021	SF/MD/ES	Draft for client review	
V2	22/2/2021	SF/MD/ES	Final for submission	

Approval for use:

Matt Doherty - Director

22 February 2021

This report has been prepared in accordance with Planning for Bushfire Protection 2019 and certifies the development conforms to the specifications and requirements of S4.14 of the Environmental Planning and Assessment Act 1979.

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Finally, the implementation of the measures and recommendations forwarded within this report would contribute to the amelioration of the potential impact of any bushfire upon the development site, but they do not and cannot guarantee that the area will not be affected by bushfire at some time.

EXECUTIVE SUMMARY

MJD Environmental has been engaged by Christian Charles & Shane Zarafa to prepare a Bushfire Assessment Report (BAR) to accompany a Development Application (DA) for a multi-storey residential development at 53-55 Donnison Street West, Gosford, on lots A & B DP312912 (hereafter referred to as *the Site*).

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal, and to outline the minimum mitigative measures which would be required in accordance with *Planning for Bush Fire Protection 2019* (PBP), as adopted through the *Environmental Planning & Assessment Amendment* (Planning for Bush Fire Protection) *Regulation 2020*.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BPM) will be appropriate, this assessment adheres to the methodology and procedures outlined in PBP (2019) via assessment of acceptable solutions as outlined in Chapters 7 & 8 of PBP (2019).

Under PBP (2019) Section 8.2.2 *Multi-Storey residential development,* issues specific to multi-storey residential developments must be considered to ensure that the design of a building and its warning and suppression system adequately address bushfire risk. These specific issues are addressed in this report.

This assessment has been made based on the bushfire hazards in and around the site at the time of site inspection and report production (February 2021).

The assessment found that hazard vegetation types occur within 140m of the site. The primary risk is from the forest-class vegetation located uphill to the North of the Site. Adjacent to this forest-class hazard vegetation is an area of open canopy containing exotics & native regrowth that forms a Woodland-class hazard vegetation as per Table A1.9 of PBP (2019). The slope under the primary hazard vegetation is upslope. This hazard and associated slope have been assessed as having the greatest effect on bushfire behaviour to determine required separation distances from the hazard.

In summary, the following key recommendations have been generated to enable the proposal to comply with PBP (2019).

- The following APZ will be required in perpetuity:
 - 24m from the Forest hazard to the North & North-West. The APZ is provided by Donnison St West.
- With due consideration to the separation distance from the hazard (situated outside the site to north), the building is to be constructed to a BAL-29 standard over the northern and western elevation and entire roofline. The eastern and southern elevation is to be constructed to BAL-19.
- Access complies with PBP 2019. The site benefits from dual street frontage will be provided to the proposed development from Batley Street.
- Services are to be provided and connected to the site in accordance with PBP (2019) as summarised and assessed in Chapter 3, Section 3.3 of this report.
- Careful consideration of future site landscaping and ongoing fuel management must occur to minimise the potential impact of bushfire on the site.

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GLOSSARY OF TERMS AND ABBREVIATIONS

Term/ Abbreviation	Meaning	
APZ	Asset Protection Zone	
AS2419-2005	Australian Standard – Fire Hydrant Installations	
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas	
BAR	Bushfire Assessment Report	
BCA	Building Code of Australia	
BC Act	Biodiversity Conservation Act 2016	
BMP	Bush Fire Management Plan	
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)	
BPL	Bush Fire Prone Land	
BPLM	Bush Fire Prone Land Map	
BPM	Bush Fire Protection Measures	
DoE	Commonwealth Department of the Environment	
DPI Water	NSW Department of Primary Industries – Water	
EPA Act	NSW Environmental Planning and Assessment Act 1979	
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999	
FDI	Fire Danger Index	
FMP	Fuel Management Plan	
ha	hectare	
IPA	Inner Protection Area	
LGA	Local Government Area	
LLS Act	Local Land Services Act 2013	
OPA	Outer Protection Area	
OEH	NSW Office of Environment and Heritage	
PBP or PBP (2019)	Planning for Bushfire Protection 2019	
RF Act	Rural Fires Act 1997	
RF Regulation	Rural Fires Regulation	
RFS	NSW Rural Fire Service	
TSC Act	NSW Threatened Species Conservation Act 1995 (as repealed)	

1 Introduction

MJD Environmental has been engaged by Christian Charles & Shane Zarafa to prepare a Bushfire Assessment Report (BAR) to accompany a Development Application (DA) for a multi-storey residential development at 53-55 Donnison Street West, Gosford, of Lots A & B DP312912 (hereafter referred to as *the Site*).

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal, and to outline the minimum mitigative measures which would be required in accordance with *Planning for Bush Fire Protection 2019* (PBP), as adopted through the *Environmental Planning & Assessment Amendment* (Planning for Bush Fire Protection) *Regulation 2020*.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BPM) will be appropriate, this assessment adheres to the methodology and procedures outlined in PBP (2019) via assessment of acceptable solutions as outlined in Chapters 7 & 8 of PBP (2019). Under PBP (2019) Section 8.2.2 *Multi-Storey residential development*, issues specific to multi-storey residential developments must be considered to ensure that the design of a building and its warning and suppression system adequately address bushfire risk. These specific issues are addressed in **Section 3.6** of this report.

This assessment has been made based on the bushfire hazards in and around the site at the time of site inspection and report production (29th January 2021).

1.1 Aims & Objectives

This BAR addresses the aims and objectives of PBP 2019, being:

- Afford buildings and their occupants protection from exposure to a bushfire;
- Provide for a defendable space to be located around buildings;
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;
- Ensure that appropriate operational access and egress for emergency service personnel and occupants is available;
- Provide for ongoing management and maintenance of bushfire protection measures; and
- Ensure that utility services are adequate to meet the needs of firefighters.

1.2 Site Particulars

Locality The site is located in Gosford

Land Title Lot A DP312912 & lot B DP312912

LGA Central Coast City Council

Area 0.116ha (approx. 1156 m²)

Zoning The Site is zoned R1 – General Residential (NSW Planning & Environment

2021). Land to the North is zoned RE1 -Public Recreation.

Boundaries The Site is bound to the East by Batley Street, and to the North by Donnison

Street West & properties adjoining the street. North beyond these dwellings is Waterview Park. To the West and South of the Site are established residential

dwellings.

Current Land Use The Site (Lot B) is currently occupied by a single-storey residential dwelling

and managed garden vegetation. Lot A is currently undeveloped, occupied

only by some shipping containers.

Topography The site is characterised by a slight slope running downhill to the South. The

highest point is the Northern boundary, at 38m ASL.

Climate / Fire History The site lies within a geographical area with a Forest Fire Danger Index (FFDI) rating of 100. The site is classified as being affected Vegetation Buffer from Category 1 Vegetation on the Bushfire Prone Land Map (DPE 2020). Refer to **Figure 2**. The proposal is situated within the buffer from category 1 bushfire

vegetation.

Environment & Cultural Significance

A search of the AHIMS register has been completed on the 8 February 2021 and confirmed that there are no recorded Aboriginal sites or places on or near the site. The proposal will require only continuation of current land management practices, without impacting native vegetation communities. Therefore it is considered that the proposal will have minimal impact on

matters of environmental or cultural significance.

1.3 Description of Proposal

The proposed development involves a development of a multi-storey residential apartment building over lots A & B DP312912.

The 7 story residential apartment building with 2 levels of basement is generally composed of masonry stone, brickwork and solid white extrusions contrast with darker elements used for window shading and awnings.

Refer to **Appendix A** for plans of the proposal.

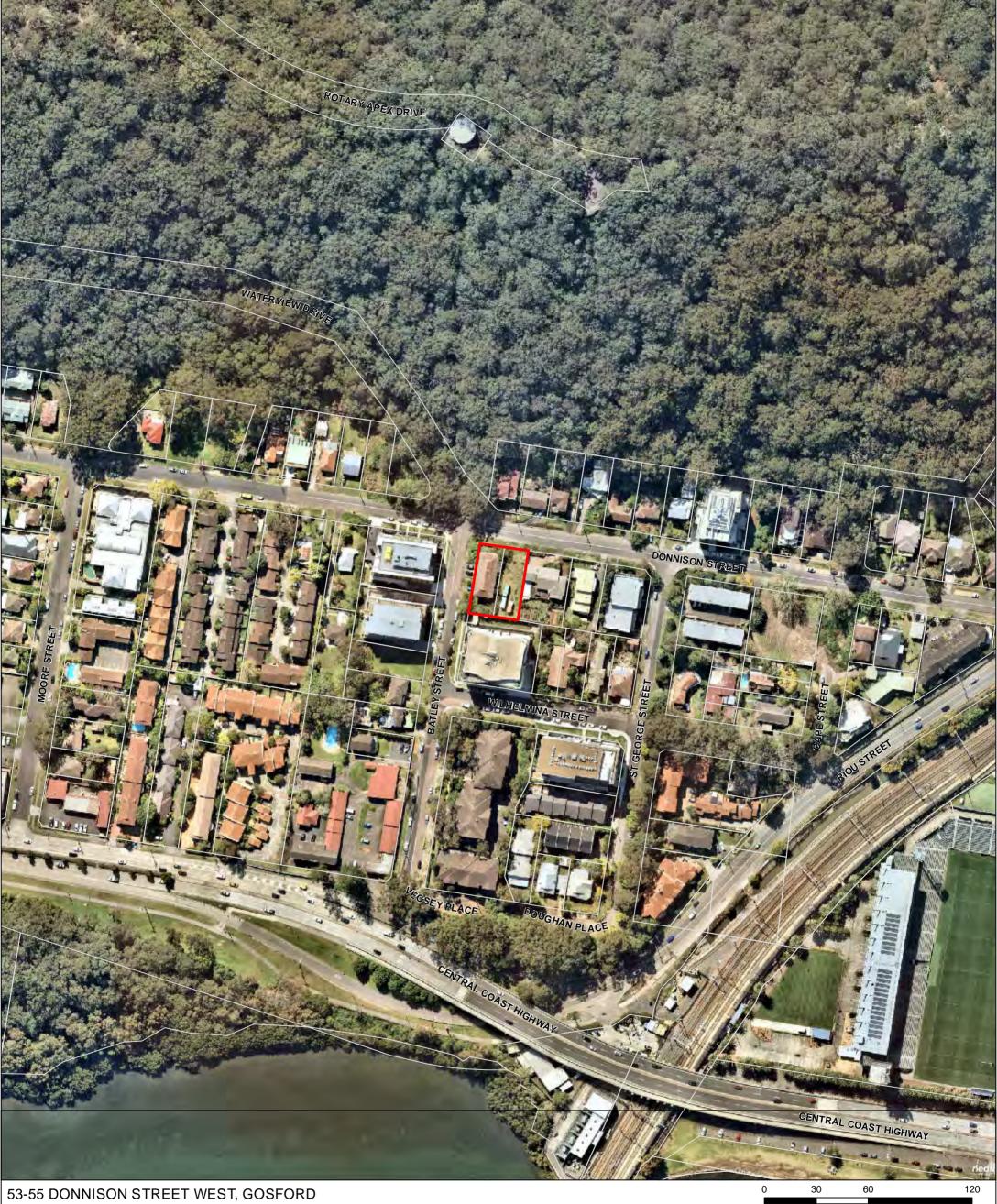
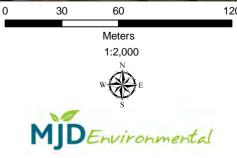


FIGURE 1: SITE LOCATION

Legend

Subject Site

Cadastral Boundaries



Aerial: NearMap (2020) | Data: MJD Environmental (2021), NSW Spatial Services (2020) | Datum/Projection: GDA 2020 MGA Zone 56 | Date: 19/01/2021| Version 1 | GIS\21001 - 53-55 Donnison Street W, Gosford | This plan should not be relied upon for critical design dimensions.



Legend

Subject Site

Slope Classification Buffer (100m)

Vegetation Classification Buffer (140m)

Cadastral Boundaries

Bush Fire Prone Vegetation

Category 1

Category 2

BFPV Buffer

1:1,500





Aerial: NearMap (2020) | Data: MJD Environmental (2021), NSW Spatial Services (2020) | Datum/Projection: GDA 2020 MGA Zone 56 | Date: 19/01/2021 | Version 1 | GIS\21001 - 53-55 Donnison Street W, Gosford | This plan should not be relied upon for critical design dimensions.

2 Bushfire Hazard Analysis

2.1 Vegetation Assessment

Methodology

The vegetation in and around the site, to a distance of 140m, has been assessed in accordance with PBP 2019. This assessment has been made via a combination of:

- on-site vegetation classification aided by GPS; and
- aerial photo interpretation;
- reference to regional community vegetation mapping (including Greater Hunter and Keith).

These vegetation communities have been classified for bushfire purposes into structure and formation using the system adopted by Keith (2004) and using Figure A1.2 of PBP (2019) with due regard to Appendix 1 of PBP (2019).

Vegetation within nearby freehold land (Lots 5 & 6 DP 758466) adjoining the forest hazard have been assessed under A1.9 *Exotic Vegetation* of PBP (2019) as a dwelling has been demolished and the Site colonised by Lantana & Privet. Despite some large Eucalypts on the boundary, the canopy is largely open and the prevalence of exotic vegetation results in a Woodland vegetation classification as per Table A1.9.

The extent of vegetation on land to the Sites north was aided by GPS, where waypoints have been taken at the south side of each trunk at the edge of the vegetation and on the edge of the two tracks (refer to Photo 2).

Refer to Photos 1 to 4 for vegetation observed in and around the Site during site inspection.

Vegetation Classification

Vegetation classification has been presented in Table 1 below and Figure 3.

Table 1 Vegetation Classification

Direction	Description	Vegetation Classification
North	Wet Sclerophyll Forest	Forest
North-West	Disturbed vegetation on freehold land. Predominantly exotics.	Woodland
East	Established residential dwellings and managed land	Low threat
South	Established residential dwellings and managed land	Low threat
West	Established residential dwellings and managed land	Low threat

Site Photos



Photo 1 – View to East from within Waterview Park entrance.



Photo 2 – View to North, showing tracks to North and to North-West.



Photo 3 – View to South from within Waterview park. Gate visible to left of frame.



Photo 4 – View to North-West from Site's Northern boundary, hydrants adjacent to site.

2.2 Slope Assessment

Methodology

In accordance with PBP (2019), an assessment of the slope was conducted throughout the site (where a hazard is present) and for a distance of 100m around the site in the hazard direction. Both the average slope and maximum slopes were considered to determine the level of gradient which will most significantly influence fire behaviour on the site. The slope was measured using a laser inclinometer and confirmed via Digital Elevation Model-derived 1m contours.

Slope assessment was assisted by:

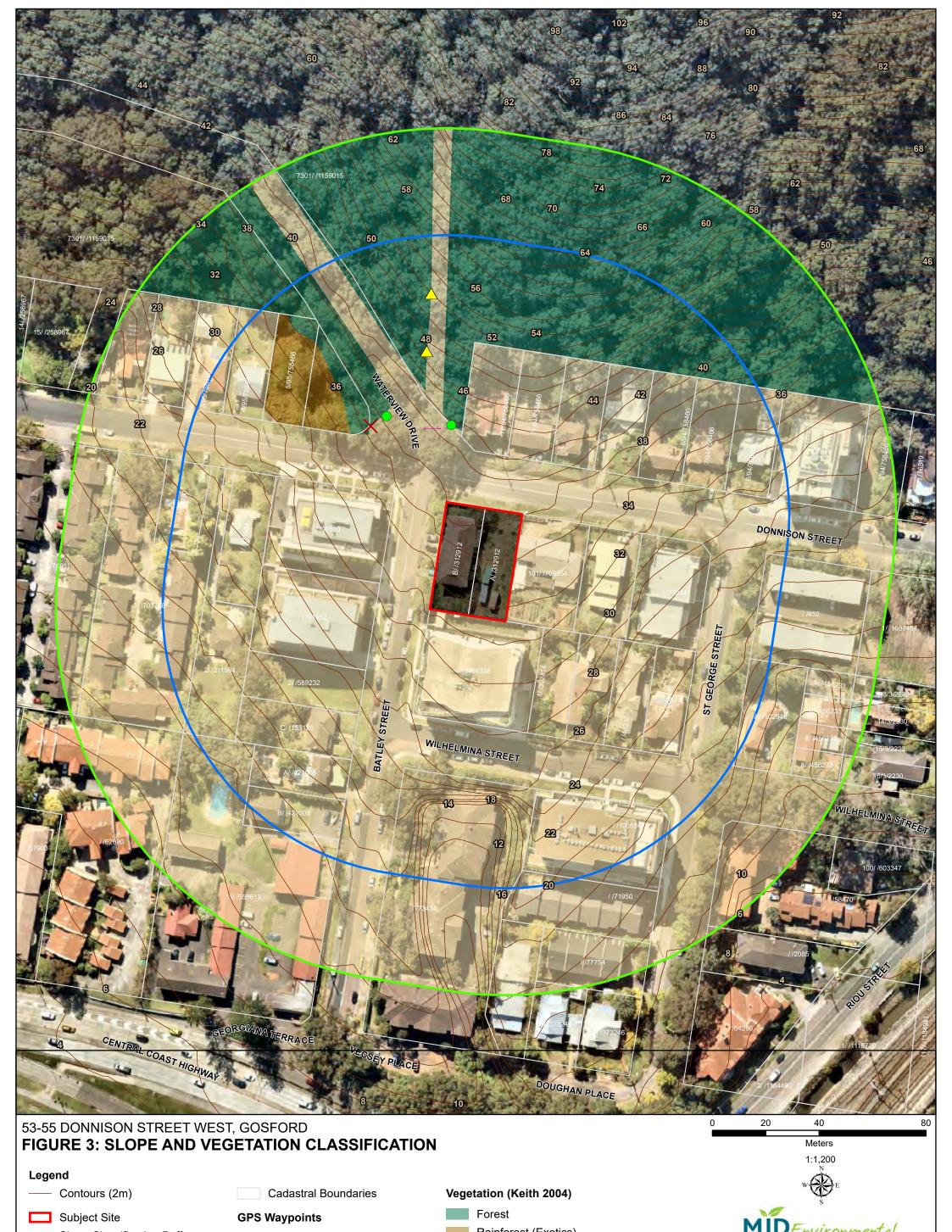
- Preparation of elevation model based on state contour data;
- Preparation of slope assessment based on NSW 1m contours; and
- On-site slope classification.

Effective Slope

The slope class under the bushfire hazard within 100m is presented in **Table 2** below and **Figure 3**.

Table 2 Slope Class

Direction	Vegetation Classification	Slope Class
North	Forest.	Upslope
North-West Woodland		0-5° Downslope



Slope Classification Buffer (100m)

Vegetation Classification Buffer (140m)

Vegetation Classification Buffer (140m)

Forest Edge

Managed Land

Development Footprint

Aerial: NearMap (2020) | Data: MJD Environmental, ELK (2021), NSW Spatial Services (2020) | Datum/Projection: GDA (2020) MGA Zone 56 | Date: 8/02/2021 | Version 1 | GIS\21001 - 53-55 Donnison Street W, Gosford | This plan should not be relied upon for critical design dimensions.

3 Bushfire Protection Measures

PBP sets out a suite of BPMs and criteria that require consideration and assessment for applicable proposals on bushfire prone land in order to provide an adequate level of protection to new developments.

The measures required to be assessed are listed below and discussed throughout this chapter:

- Asset Protection Zones (APZ)
- Bushfire Attack Levels (BAL) set out in PBP 2019
- Access
- Services Water supply, Gas and Electricity
- Landscaping and Fuel Management
- Emergency Management

3.1 Asset Protection Zone

An APZ is a buffer zone between the hazard and buildings that is progressively managed to minimise bushfire hazard (fuel loads and reduce potential radiant heat levels, flame, ember and smoke attack) PBP (2019), in order to mitigate risk to life and asset. Where a forest or woodland vegetation classification has been determined, an APZ can consist of two areas being:

- 1) Inner Protection Area (IPA) The IPA extends from the edge of the development/ buildings to the OPA. The IPA aims to provide defendable space and reduce potential for direct or spontaneous ignition by providing a heavily reduced or fuel free zone.
- 2) Outer Protection Area (OPA) The OPA is located adjacent to the hazard. Within the OPA any trees and shrubs should be maintained in a manner such that the vegetation is not continuous in order to reduce flame length and fire intensity. A properly managed OPA can aid in ember attack by filtering embers and slowing the fires rate of spread.

An APZ can include the following:

- Lawns:
- discontinuous gardens;
- swimming pools;
- driveways;
- detached garages;
- open space / parkland;
- car parking; and
- cycleway and formed walkways.

3.1.1 Determining APZs

The site lies within the Central Coast Council LGA and therefore is assessed under an FFDI (Forest Fire Danger Index) rating of 100. As per Table 7.4a and Table A1.12.2 within PBP (2019), the acceptable solution setbacks have been calculated based on the bushfire hazard analysis presented in Chapter 2. Notably, as the proposal is for residential development, performance criteria for APZs is satisfied if radiant heat levels 29kW/m² or less are experienced at the building or in this case suitable area exists to establish a dwelling at BAL-29 or lower exposure. Refer to **Table 3** below and **Figure 4** for the required APZ.

The required APZ has been presented in **Table 3** and **Figure 4**.

Table 3 Required APZ (PBP 2019)

Direction of Hazard	Vegetation Classification	Slope Class	APZ
North	Forest	Upslope	24m
North-West	Woodland	0-5° Downslope	16m

3.1.2 Determining BAL

By considering the bushfire hazard analysis outcomes presented in Chapter 2, Table A1.12.5 of Appendix 1 of PBP (2019) was applied to the vegetation classification and slope analysis to calculate the required BAL based on separation from the hazard for the site. Refer to **Table 4** and **Figure 5**.

Refer to Table 4 below and Figure 5 for the required BAL.

Table 4 Required BAL (PBP 2019)

Direction of Hazard	Vegetation Classification	Slope Class	APZ	Separation Distance (m)	BAL
North	Forest	Upslope	24m	<18 18-<24 24-<33 33-<45 45-<100	BAL-FZ BAL-40 BAL-29 BAL-19 BAL-12.5
North-West	Woodland	0-5° Downslope	16m	<12 12-<16 16-<23 23-<32 32-<100	BAL- FZ BAL-40 BAL-29 BAL-19 BAL-12.5

With due consideration to the separation distance from the hazard (situated outside the site to north), the building is to be constructed to a **BAL-29** standard over the northern and western elevation and entire roofline. The eastern and southern elevation is to be constructed to **BAL-19**.



53-55 DONNISON STREET WEST, GOSFORD

FIGURE 5: REQUIRED ASSET PROTECTION ZONE (PBP 2019)

Legend

---- Proposed Layout

Subject Site

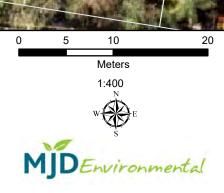
Cadastral Boundaries

Required Asset Protection Zone

Vegetation (Keith 2004)

Forest

Rainforest (Exotics)



Aerial: NearMap (2020) | Data: MJD Environmental, ELK (2021), NSW Spatial Services (2020) | Datum/Projection: GDA 2020 MGA Zone 56 | Date: 8/02/2021 | Version 1 | GIS\21001 - 53-55 Donnison Street W, Gosford | This plan should not be relied upon for critical design dimensions.



53-55 DONNISON STREET WEST, GOSFORD

FIGURE 5: REQUIRED BUSHFIRE ATTACK LEVELS (PBP 2019)

Legend

— Proposed Layout

Subject Site

Cadastral Boundaries

Vegetation (Keith 2004)

Forest

Rainforest (Exotics)

Required Bushfire Attack Levels

PBP 2019

BAL-29

BAL-19 BAL-12.5

Aerial: NearMap (2020) | Data: MJD Environmental, ELK (2021), NSW Spatial Services (2020) | Datum/Projection: GDA 2020 MGA Zone 56 | Date: 8/02/2021 | Version 1 | GIS\21001 - 53-55 Donnison Street W, Gosford | This plan should not be relied upon for critical design dimensions.

3.2 Access

In the event of a serious bushfire threat to the proposed development, it will be essential to ensure that adequate ingress/ egress and the provision of defendable space are afforded in the residential development design with due regard to the requirements of Table 7.4a, and Appendix 3 of PBP (2019).

Direct driveway access to the Site will occur from Batley Street to the West. A bushfire hazard does not occur to the site's immediate West and therefore all egress in the case of a bushfire will be away from the hazard.

The Performance Criteria for access are;

- Firefighting vehicles are provided with safe, all-weather access to structures
- The capacity of access roads is adequate for firefighting vehicles
- There is appropriate access to water supply.

The above criteria have been met via acceptable solutions listed in Table 7.4a, as;

- Property access roads are existing public roads on dual frontage to the north and west. Both roads are two-wheel drive, all-weather roads.
- The capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.
- An existing hydrant is provided at the front of site on Donnison St West (refer to Photo 1).

The proposed property access is appropriate for the intended development.

Refer to **Appendix A** for Site Plan showing access.

3.3 Services – Water, Electricity, Gas

The site is to be developed in accordance with the PBP (2019) acceptable solutions for services listed in **Table 5**.

The proposal is able to satisfy these requirements given:

- The Site will be connected to reticulated water supply
- The Site will be connected to the existing power service available
- Gas supply is available and shall be provided within the Site in accordance with the provisions of PBP (2019).

Table 5 Acceptable solutions for services (Table 7.4a of PBP 2019)

Performance Criteria	Acceptable Solutions
The intent may be achieved where:	
Water SuppliesAdequate water supplies are provided for firefighting purposes.	 reticulated water is to be provided to the development where available; a static water supply is provided where no reticulated water is available.
 water supplies are located at regular intervals; and 	 fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2005;
	 hydrants are not located within any road carriageway; and
	 reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.

Performance	Criteria	Acceptable Solutions
 flows and pressure are 		 fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.
 the integrity of the wate 	r supply is maintained.	 all above-ground water service pipes are metal, including and up to any taps.
 a static water supply is firefighting purposes in reticulated water is not 	areas where	 where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d; a connection for firefighting purposes is located
Development Type	Water Requirements	within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve fitted to the outlet;
Residential lots (<1000m²)	5,000L/lot	 ball valve and pipes are adequate for water flow and are metal;
Rural-residential lots (1000-10,000m²)	10,000L/lot	 supply pipes from tank to ball valve have the same bore size to ensure flow volume;
Large rural/lifestyle lots (>10,000m²)	20,000L/lot	 underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
Multi-dwelling housing (including dual	5,000L/dwelling	 a hardened ground surface for truck access is supplied within 4m;
occupancies) Table 5.3d PBP 2019		 above-ground tanks are manufactured from concrete or metal;
		 raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959);
		 unobstructed access can be provided at all times;
		 underground tanks are clearly marked;
		 tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters;
		 all exposed water pipes external to the building are metal, including any fittings;
		 where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and
		 are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and
		 fire hose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2005.
Electricity Services • location of electricity services	ces limits the possibility	 where practicable, electrical transmission lines are underground.
 location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings 		 where overhead electrical transmission lines are proposed:
		 lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and
		 no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.

Performance Criteria	Acceptable Solutions
 Gas services location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings. 	 reticulated or bottled gas is installed and maintained in accordance with AS/NZ 1596:2014 The storage and handling of LP Gas, and the requirements of relevant authorities. Metal piping is to be used.
	 all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;.
	connections to and from gas cylinders are metal.
	 polymer-sheathed flexible gas supply lines are not used; and
	 above-ground gas service pipes are metal, including and up to any outlets.

3.4 Landscaping & Fuel Management

All future landscaping on the site should be designed and managed to minimise impact of bushfire based on the principles set out in PBP (2019) being:

- Prevent flame contact / direct ignition on the dwelling;
- Provide a defendable space for property protection;
- Reduce fire spread;
- Deflect and filter embers;
- Provide shelter from radiant heat; and
- Reduce wind speed.

In this manner, consideration should be given to species selection, planting location, flammability and size at maturity to ensure discontinuous canopy/ structure both vertically and horizontally to ensure the above principles are met. Ongoing fuel management across the site as part of the maintenance regime should give due consideration to Appendix 4 Asset Protection Zone Requirements of PBP (2019) which provides guidance on maintenance activities to assist in achieving the landscape principles.

Table 6 Acceptable solutions for Landscaping (Table 7.4a of PBP 2019)

Performance Criteria	Acceptable Solutions
The intent may be achieved where:	
Landscaping landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	 landscaping is in accordance with Appendix 4 of PBP 2019 - Asset Protection Zone Requirements"; and fencing is constructed in accordance with section 7.6; "all fences in bush fire prone areas should be made of either hardwood or non-combustible material. However, in circumstances where the fence is within 6m of a building or in areas of BAL-29 or greater, they should be made of non-combustible material only."

The proposed development meets performance criteria as;

 APZs are provided in accordance with Tables A1.12.2 managed in accordance with the requirements of Appendix 4.

3.5 Emergency Management

Any fire within the site would be attended in the first instance by Fire and Rescue NSW - Gosford Station, approximately 2.5km South-East of the site. Fire and Rescue NSW - Wyoming Station is a similar distance, 2.3kms North-East of the Site.

To assist emergency response from the NSW RFS and/or NSW Fire and Rescue, site access is to comply with the provisions set out in PBP (2019) and all hydrants be readily accessible and clearly marked.

3.6 Multi-storey residential development considerations

Issue	Specific Concern	Technical Considerations	Comment
Population	Impact on existing community and infrastructure	What capacity does the existing infrastructure have to allow evacuation of existing and proposed residents in the event of a bush fire?	The site has dual frontage to the north and west. Existing road infrastructure (Batley St) allows evacuation of existing and proposed residents in the event of a bush fire in a direction away from fire hazard vegetation (downhill to the South).
Location of Building	Locating on ridge tops emphasises the risk of convective plume interaction and wind related impacts.	Can the building be located away from ridge tops to areas that have a reduced bush fire exposure? If unavoidable, what is the impact on the risk to the building? Is this risk appropriate for the building and occupant numbers?	Building site is on a South-Facing hillside, not located on ridge top. Several multi-storey developments exist in the vicinity. Risk deemed appropriate.
Design Fire	Different elements of the flame could have different impacts on different levels of the building; and The whole building could be impacted by ember attack and multiple floors could be alight simultaneously	What are the flame dimensions, including the flame angle? Where is the hottest part of the flame located? How would this impact on the proposed building? How would the warning and suppression systems in the building cope with this?	The entire building must be built to the construction standard determined in Chapter 3, which includes standards for protection from ember attack. That is BAL-29 to the northern and western elevations and entire roofline. BAL-19 to the eastern and southern elevations. Fire warning and suppressions systems must be designed and installed.

Issue	Specific Concern	Technical Considerations	Comment
Egress	Elevations exposed to bush fire risk	How does the emergency evacuation procedure take account of the location of bush fire prone vegetation?	Emergency evacuation procedure must take account of bushfire prone vegetation to the North. The design response has been to ensure all vehicular access to the site occurs from Batley Street to the west. Pedestrian access is provided to the west and north of site. Evacuation routes in the case of emergency allow vehicular and/or pedestrian egress to the west onto Batley Street to the south away from the hazard. There is no requirement for residents to congregate on Donnison St West at the north of site adjacent to the hazard.
Building construction	Performance of the building façade in a bush fire scenario. Balconies may contain external features which could ignite and contribute to building ignition and fuel loads.	What wall and cladding materials are proposed and what is proposed for the openings/penetrations (i.e. windows and doors)? How does the proposed building construction deal with fire spread from the vegetation to the inside of the building? Is compliance with AS 3959 sufficient to ensure that the bush fire risk is mitigated? Is this appropriate for the design fire scenario? Are there balconies proposed? What may be stored on the balconies? Can there be restrictions on what is stored on the	Construction is to comply with AS3959. BAL has been assessed as BAL-29 to the northern and western elevations and entire roofline. BAL-19 to the eastern and southern elevations. Material specifications for the external of the building are noncombustible concrete and brick fabrication. Fire alarm system and sprinklers to be installed throughout building.

Issue	Specific Concern	Technical Considerations	Comment
		balconies due to fire risk?	
Car Parking	Lower storey car park could be subject to ember attack and high radiant heat loads.	Is the warning and suppression system designed to take account of bush fire impact? Where are exits located? Are they guiding occupants away from the car park?	Fire alarm system and sprinklers to be installed throughout building. Car park access is not to face Donnison Street West being the primary direction of fire hazard. As the site is sloping, access to Batley Street occurs below the street level of Donnison St West, thus reducing radiant heat and potential for ember attack
Other Considerations	Access for fire fighters may be restricted or challenging; and Risk implications of floor to floor fire spread.	What would this mean for fire suppression? How would warning and suppression systems take account of this? What would this mean for evacuation	Evacuation routes in the case of emergency allow vehicular and/or pedestrian egress to the west onto Batley Street to the south away from the hazard. Ingress for firefighters occurs from the north and western elevations. Defendable space occurs between the asset and hazard on Donnison St West. Evacuation management plan must account for risk of fire spread. Warning and suppression systems must be comprehensive, installed & designed by certified professionals and in accordance with relevant Australian Standards.

4 Conclusion & Recommendations

MJD Environmental has been engaged by Christian Charles & Shane Zarafa to prepare a Bushfire Assessment Report (BAR) to accompany a Development Application (DA) for a multi-storey residential development at 53-55 Donnison Street West, Gosford, on Lots A & B DP312912 (hereafter referred to as *the Site*).

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal, and to outline the minimum mitigative measures which would be required in accordance with *Planning for Bush Fire Protection 2019* (PBP), as adopted through the *Environmental Planning & Assessment Amendment* (Planning for Bush Fire Protection) *Regulation 2020*.

In order to determine whether the proposed development is bushfire-prone, and if so, which setbacks and other relevant Bush Fire Protection Measures (BPM) will be appropriate, this assessment adheres to the methodology and procedures outlined in PBP (2019) via assessment of acceptable solutions as outlined in Chapters 7 & 8 of PBP (2019).

Under PBP (2019) Section 8.2.2 *Multi-Storey residential development,* issues specific to multi-storey residential developments must be considered to ensure that the design of a building and its warning and suppression system adequately address bushfire risk. These specific issues are outlined in Section 3.6 of this report.

This assessment has been made based on the bushfire hazards in and around the site at the time of site inspection and report production (February 2021).

The assessment found that hazard vegetation types occur within 140m of the site. The primary risk is from the forest-class vegetation located uphill to the North of the Site. Adjacent to this forest-class hazard vegetation is an area of open canopy containing exotic regrowth following the demolition of a dwelling that forms a Woodland-class hazard vegetation as per Table A1.9 of PBP (2019). The slope under the primary hazard vegetation is upslope. This hazard and associated slope have been assessed as having the greatest effect on bushfire behaviour to determine required separation distances from the hazard.

In summary, the following key recommendations have been generated to enable the proposal to comply with PBP (2019).

- The following APZ will be required in perpetuity:
 - 24m from the Forest hazard to the North & North-West. The APZ is provided by Donnison St West.
- With due consideration to the separation distance from the hazard (situated outside the site to north), the building is to be constructed to a BAL-29 standard over the northern and western elevation and entire roofline. The eastern and southern elevation is to be constructed to BAL-19.
- Access complies with PBP 2019. The site benefits from dual street frontage will be provided to the proposed development from Batley Street.
- Services are to be provided and connected to the site in accordance with PBP (2019) as summarised and assessed in Chapter 3, Section 3.3 of this report.
- Careful consideration of future site landscaping and ongoing fuel management must occur to minimise the potential impact of bushfire on the site.

5 Bibliography

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NSW Rural Fire Service (2019). *Planning for Bushfire Protection – A Guide for Councils, Planners, Fire Authorities, and Developers.*

NSW Rural Fire Service (2002). *Circular 16/2002: Amendments to the Rural Fires Act 1997 – hazard reduction and planning requirements.*

Standards Australia (2018). AS 3959 – 2018: Construction of Buildings in Bushfire-prone Areas.

Appendix A Plan of Proposal

DEVELOPMENT APPLICATION ARCHITECTURAL DOCUMENTATION 19074

Residential Flat Building - 53-55 Donnison Street, West Gosford SNZHoldings + Australian Luxury Living

SCHEDU	SCHEDULE OF DRAWINGS		
DA000	COVER PAGE		
DA010	SITE ANALYSIS		
DA011	SITE ANALYSIS		
DA020	DEMOLITION PLAN		
DA030	SITE PLAN		
DA040	MASSING PERSPECTIVE 01		
DA041	MASSING PERSPECTIVE 01 W/ ENVELOPE		
DA042	MASSING PERSPECTIVE 02		
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DA050	RENDERED PERSPECTIVE 01		
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DA100	BASEMENT 2		
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DA120	GROUND FLOOR		
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DA140	SECOND FLOOR		
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DA301	EASTERN ELEVATION		
DA302	SOUTHERN ELEVATION		
DA303	WESTERN ELEVATION		
DA350	EXTERNAL FINISHES		
DA400	SECTION A-A		
DA401	SECTION B-B		

SCHEDULE OF DRAWINGS		
DA900	EXTERNAL SHADOW DIAGRAMS	
DA901	EXTERNAL SHADOW DIAGRAMS	
DA905	WINTER SOLSTICE STUDY SHEET 1	
DA906	WINTER SOLSTICE STUDY SHEET 2	
DA910	GROUND FLOOR INTERNAL SOLAR DIAGRAMS	
DA911	FIRST FLOOR INTERNAL SOLAR DIAGRAMS	
DA912	SECOND FLOOR INTERNAL SOLAR DIAGRAMS	
DA913	THIRD FLOOR INTERNAL SOLAR DIAGRAMS	
DA914	FOURTH FLOOR INTERNAL SOLAR DIAGRAMS	
DA915	FIFTH FLOOR INTERNAL SOLAR DIAGRAMS	
DA916	SIXTH FLOOR INTERNAL SOLAR DIAGRAMS	
DA970	FSR CALCULATION	



SUBJECT SITE



SITE LOCATION

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Α	Issue for DA	30.10.20

Residential Flat Building

53-55 Donnison Street West Gosford

Client SNZHoldings +
Australian Luxury Living

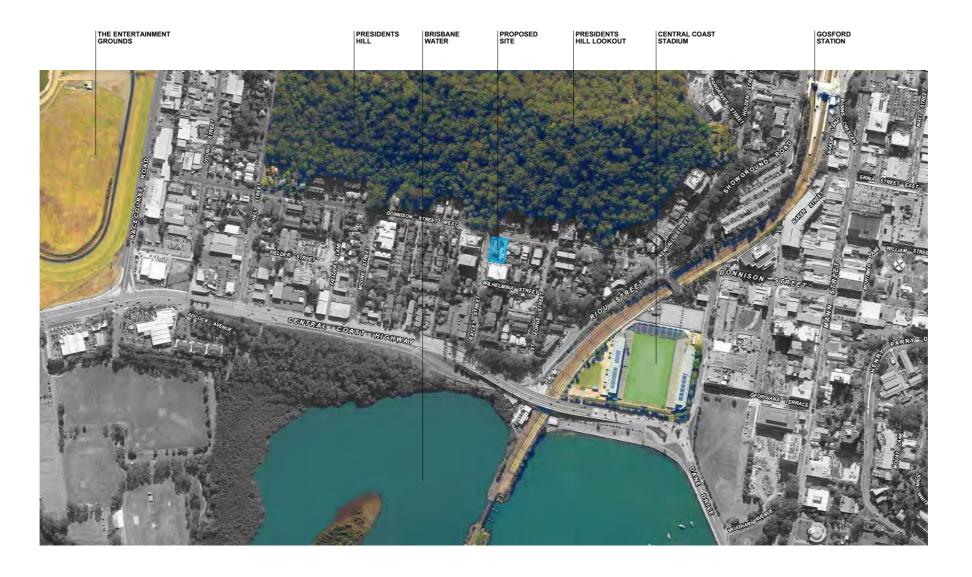
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SITE ANALYSIS

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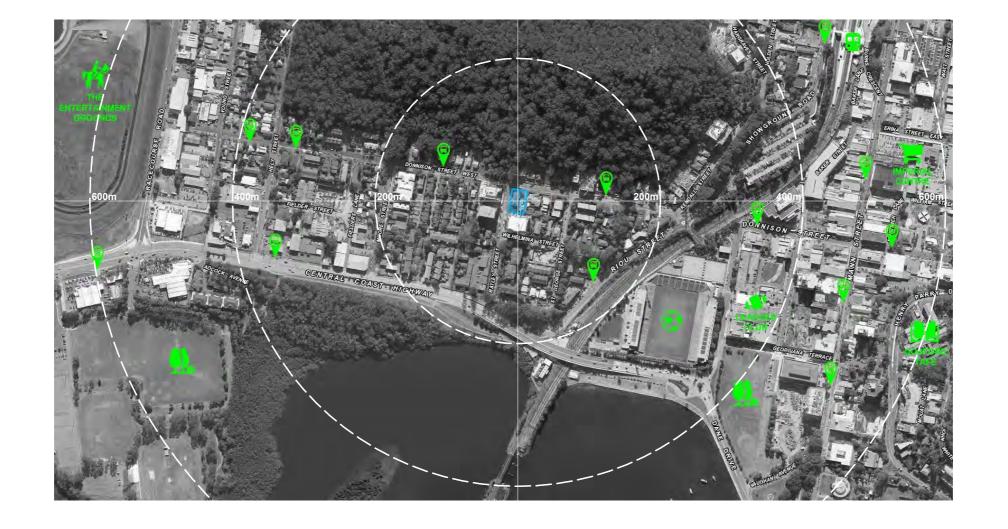
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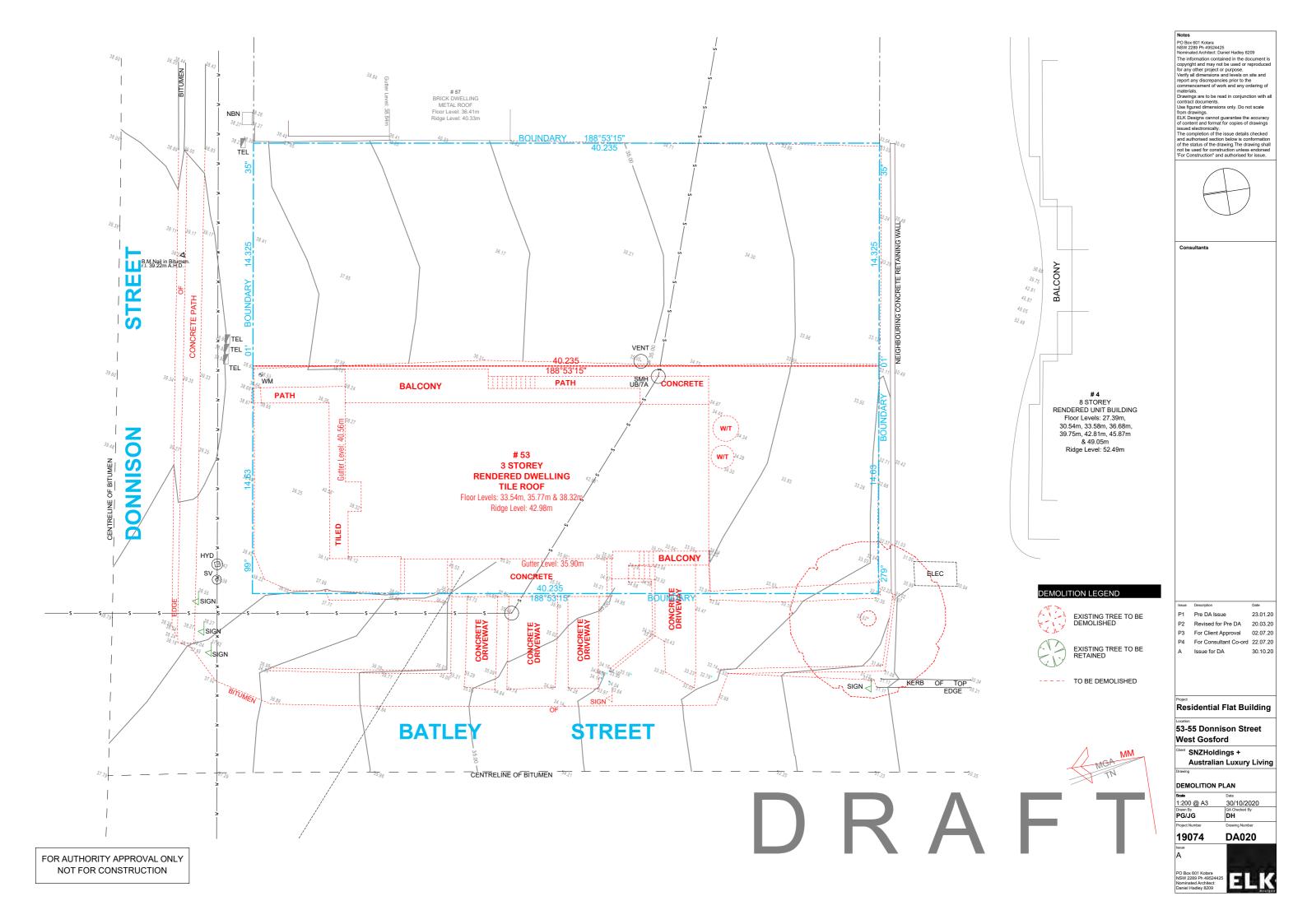
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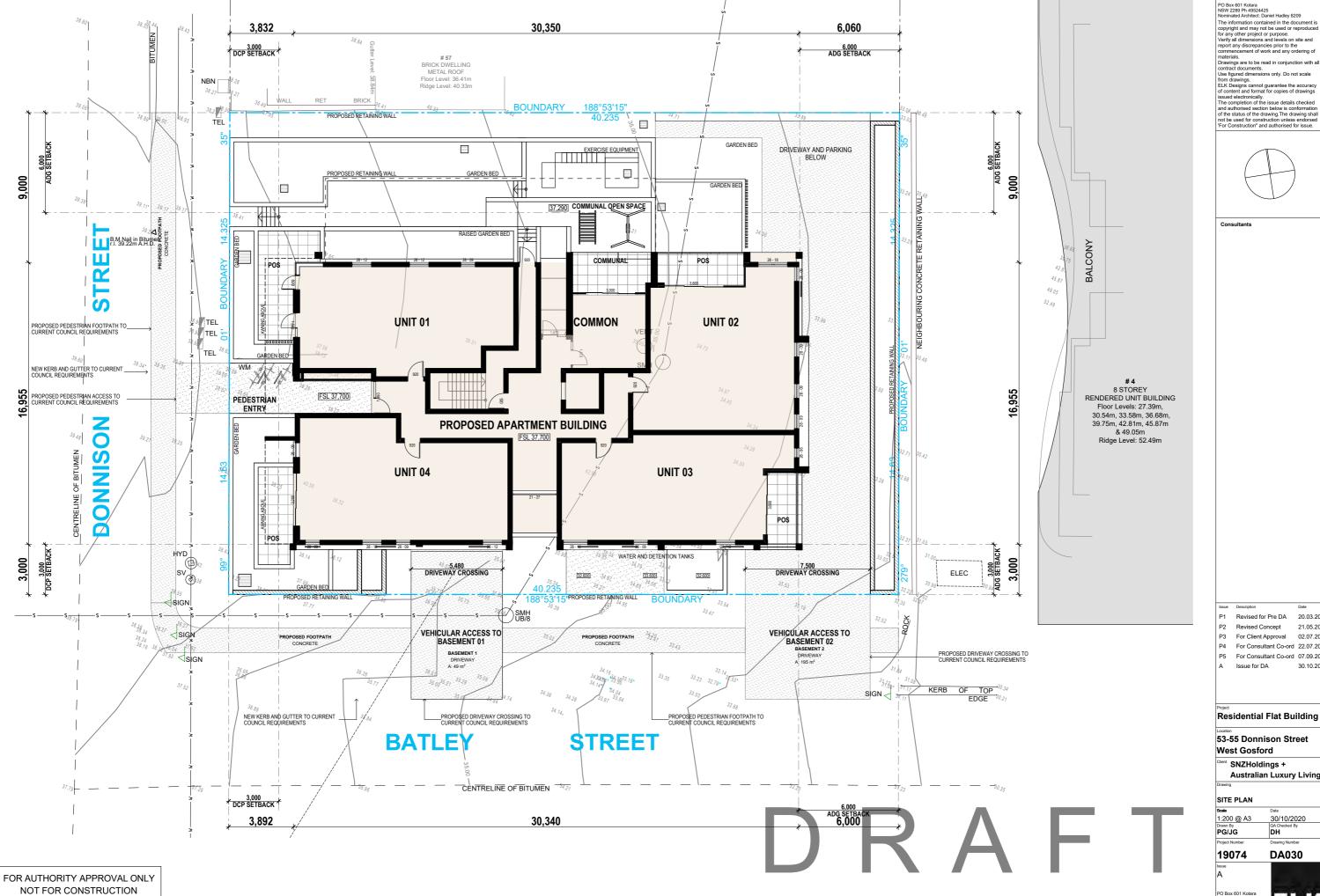
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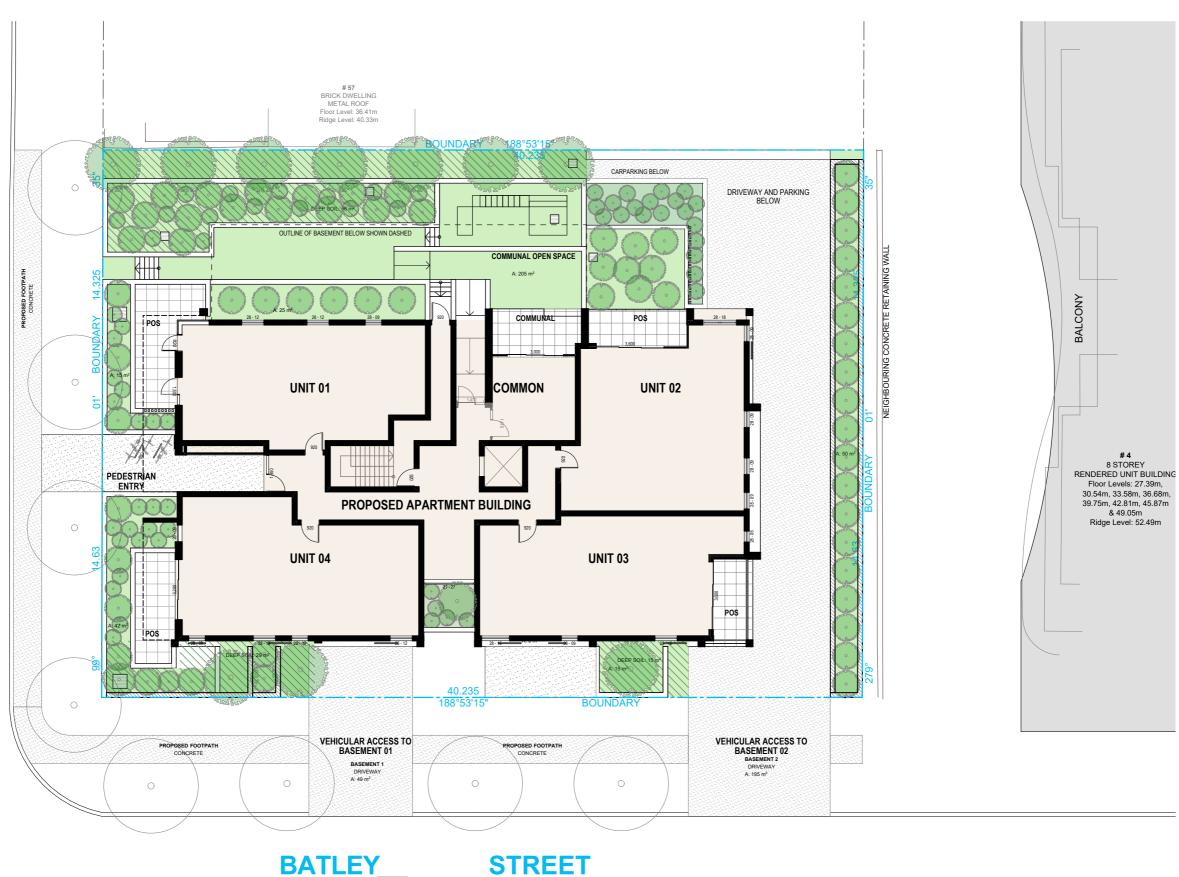
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53-55 Donnison Street

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CALCULATED LANDSCAPED AREAS DEEP SOIL AREAS PRIVATE OPEN SPACE INDICATIVE PLANTING INDICATIVE NEW STREET TREES FOR AUTHORITY APPROVAL ONLY NOT FOR CONSTRUCTION

SITE COVERAGE LEGEND

FOOTPRINT

PROPOSED BUILDING FOOTPRINT

EXISTING BUILDING

STREET

DONNISON

Built Area: Deep Soil: 16% Landscape: 32% total area 188m² total area 378m² Hardstand areas some 3m deep areas included

1. PLEASE REFER TO CONSULTING ENGINEERS DRAWINGS FOR STORMWATER DETAILS

2. FOR ROADWAY, DRIVEWAY AND RETAINING WALL DESIGN & LEVELS REFER TO CIVIL ENGINEERS DOCUMENTATION

3. FOR LANDSCAPE DESIGN & FENCE LOCATIONS REFER TO LANDSCAPE DESIGNERS DOCUMENTATION

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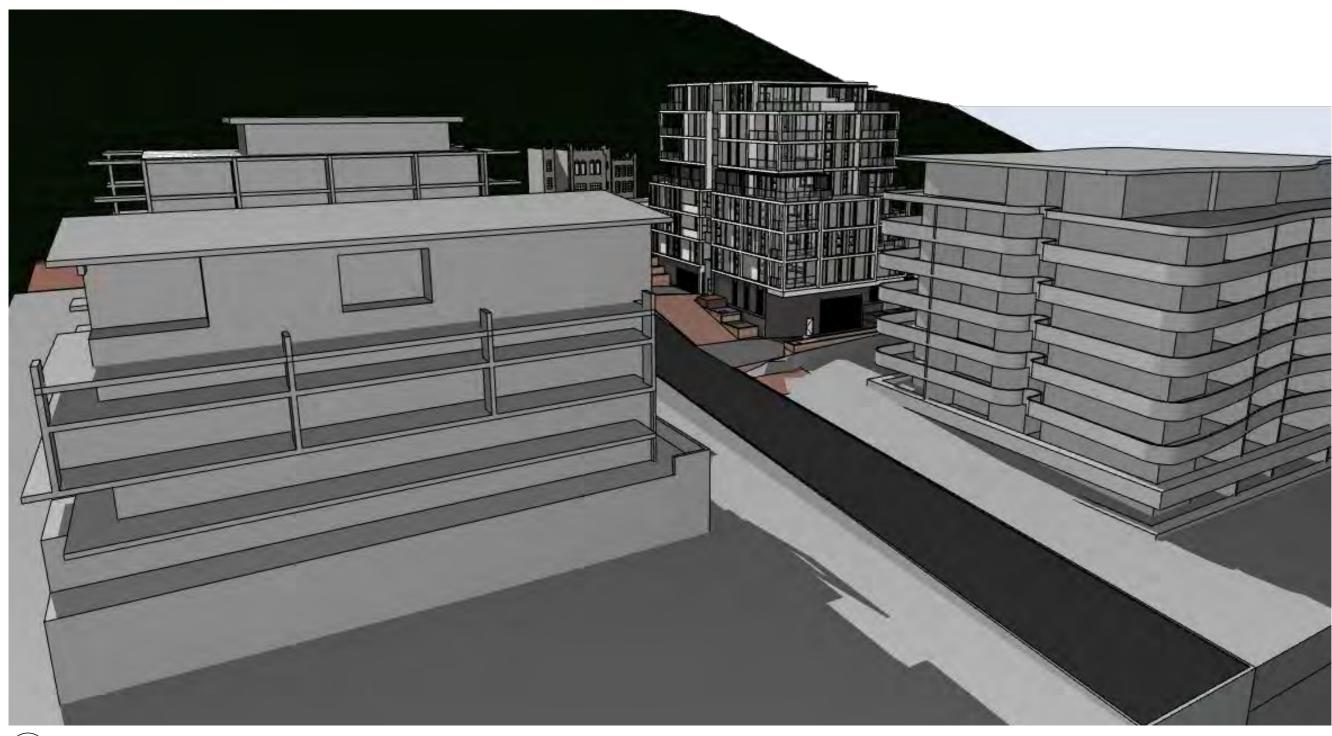
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SITE COVERAGE PLAN		
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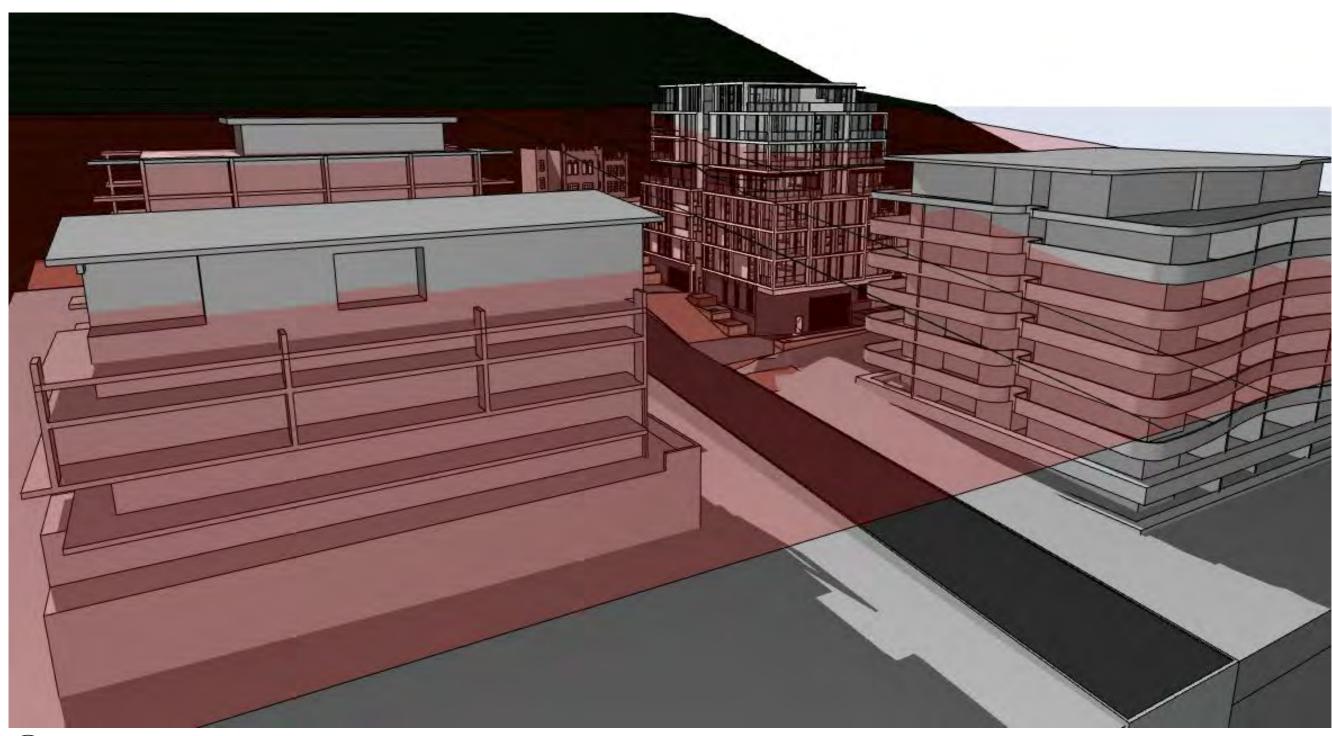
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Residential Flat Building

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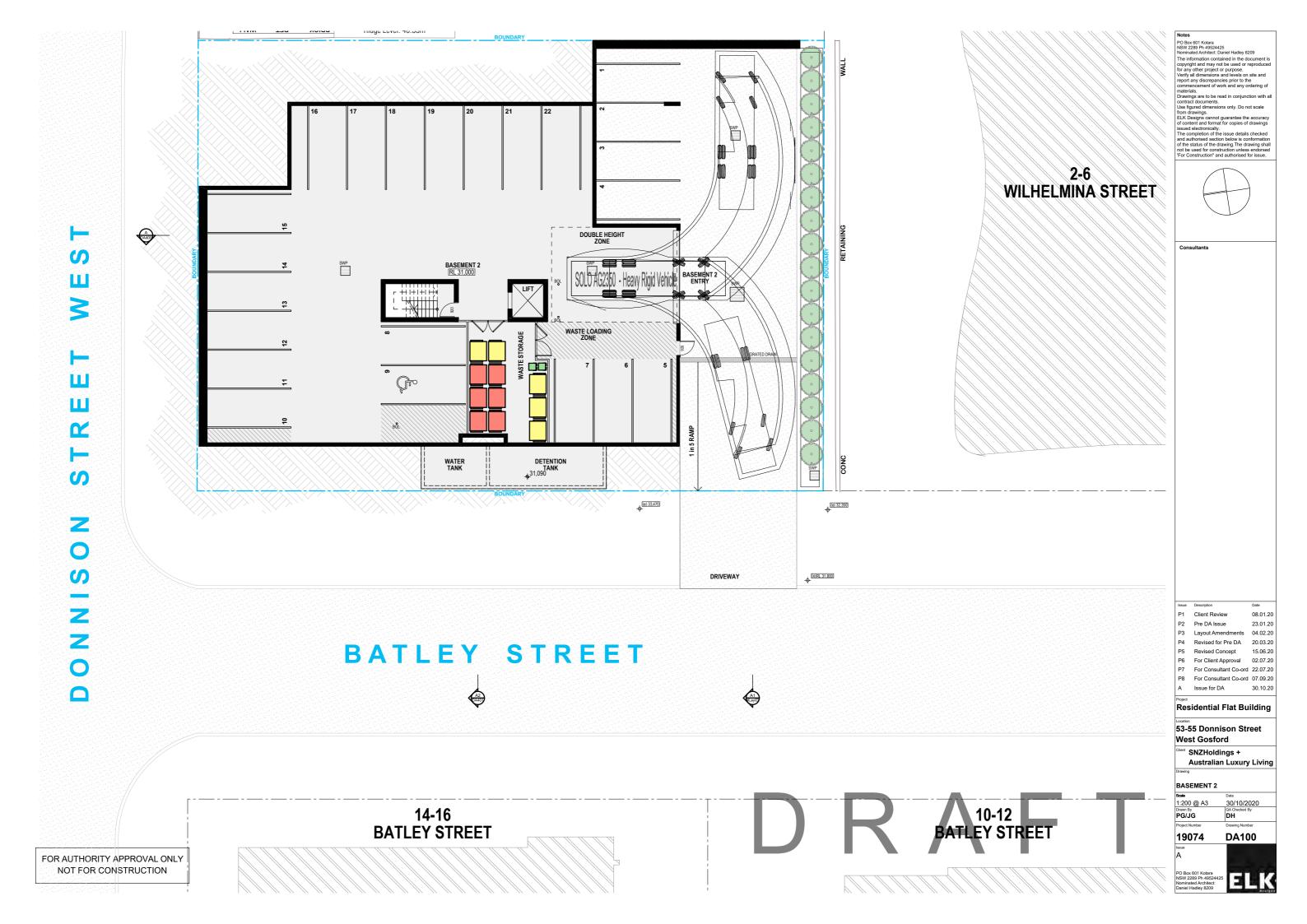
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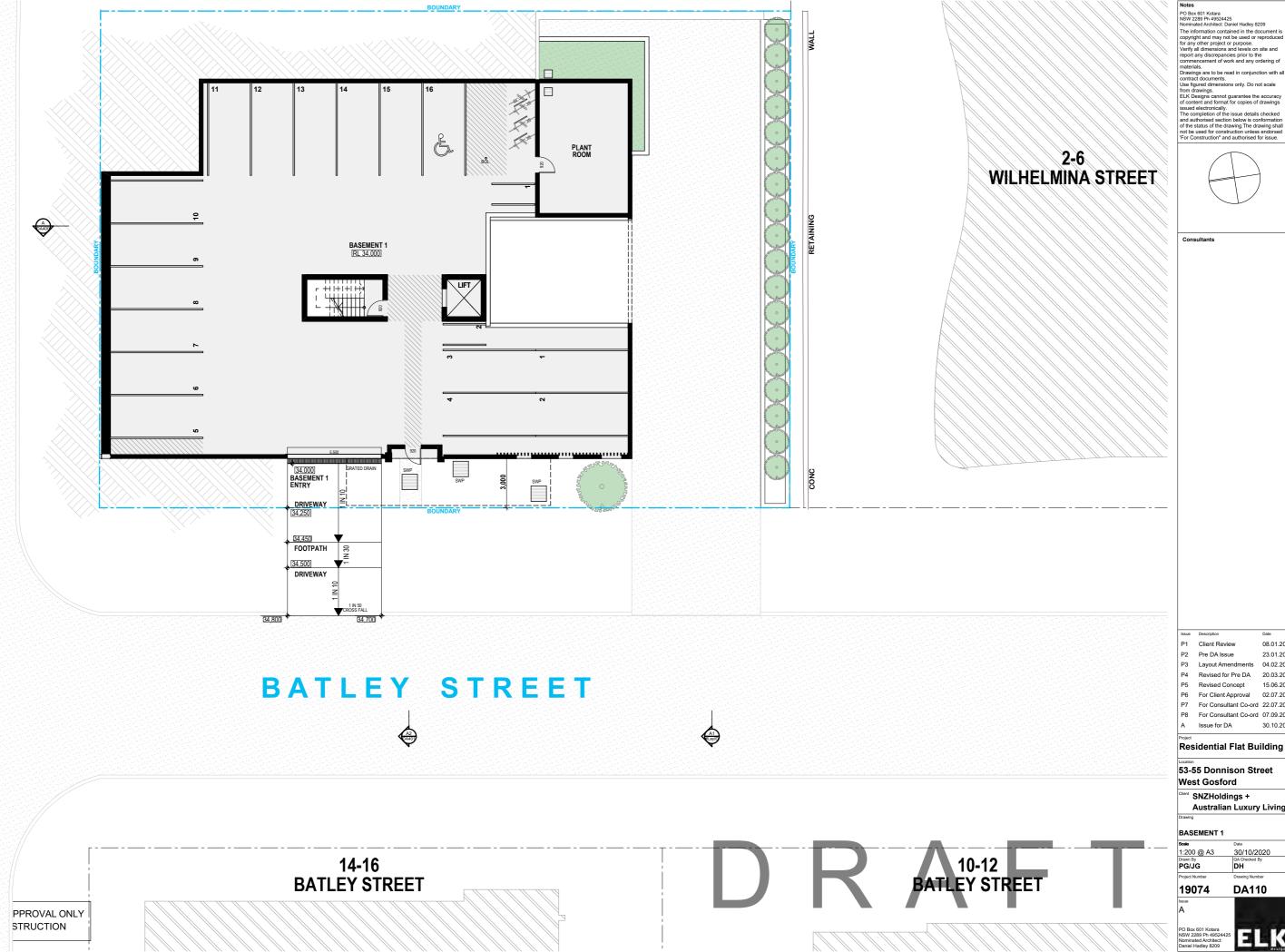
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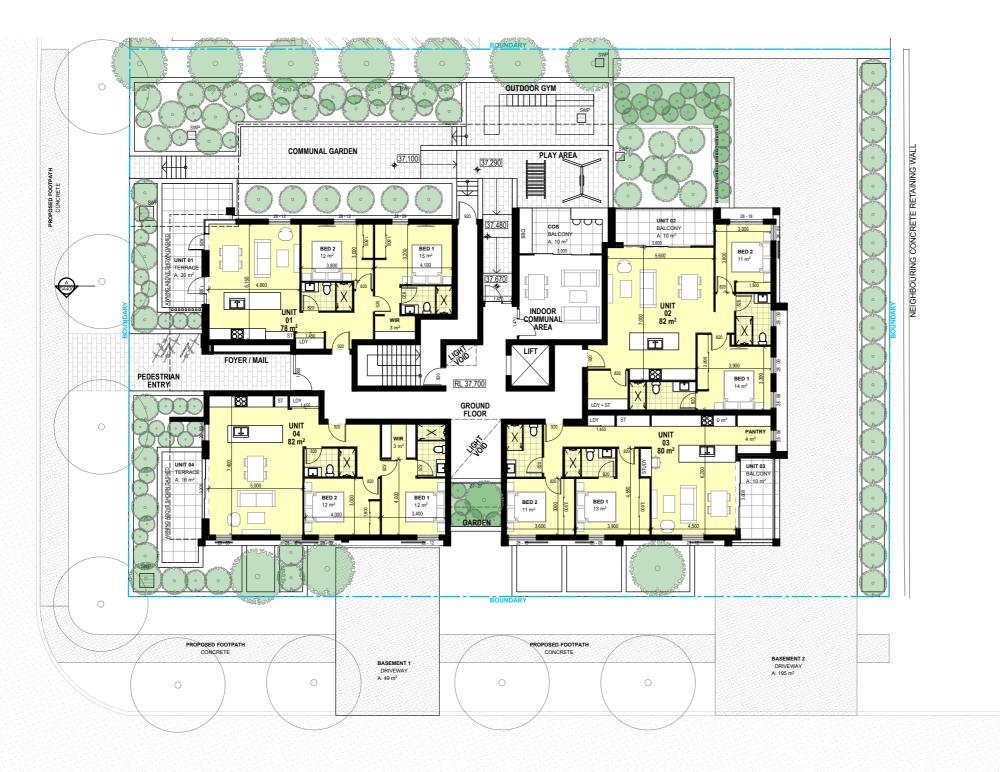
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2-6 WILHELMINA STREET

#4 8 STOREY RENDERED UNIT BUILDING Floor Levels: 27.39m, 30,54m, 33.58m, 36.68m, 39.75m, 42.81m, 45.87m & 49.05m Ridge Level: 52.49m

P3 Layout Amendments 04.02.20 P4 Revised for Pre DA 20.03.20 P5 Revised Concept 15.06.20 P6 Unit Mix Options 20.06.20 P7 For Client Approval 02.07.20 P8 For Consultant Co-ord 22.07.20 P9 For Consultant Co-ord 07.09.20 P10 Final Consult. Co-ord ##.10.20

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53-55 Donnison Street West Gosford

Issue for DA

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GROUND FLOOR

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BATLEY STREET





14-16 BATLEY STREET

10-12 **BATLEY STREET**

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Residential Flat Building

53-55 Donnison Street West Gosford

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FIRST FLOOR

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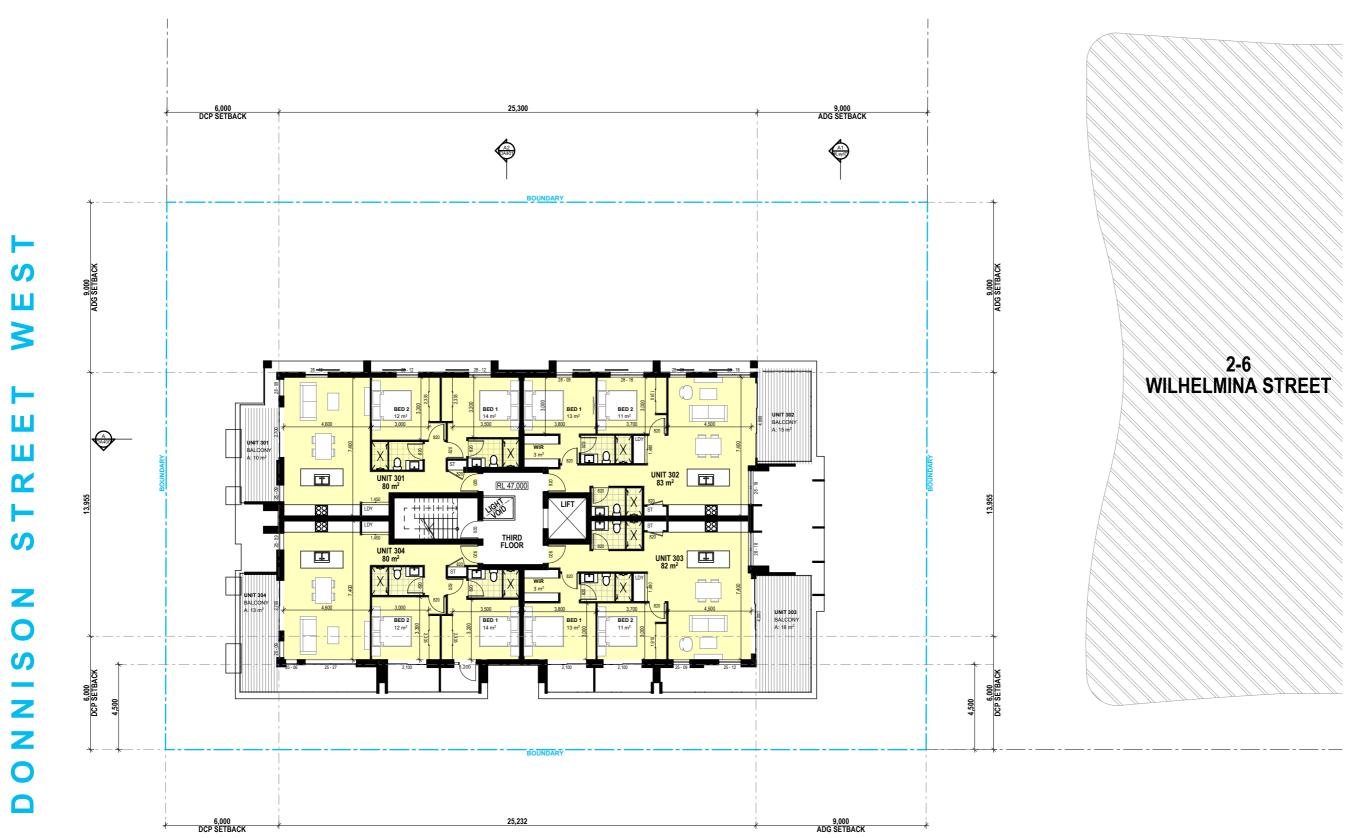
Residential Flat Building

53-55 Donnison Street West Gosford

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Residential Flat Building

53-55 Donnison Street West Gosford

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THIRD FLOOR

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Residential Flat Building

53-55 Donnison Street West Gosford

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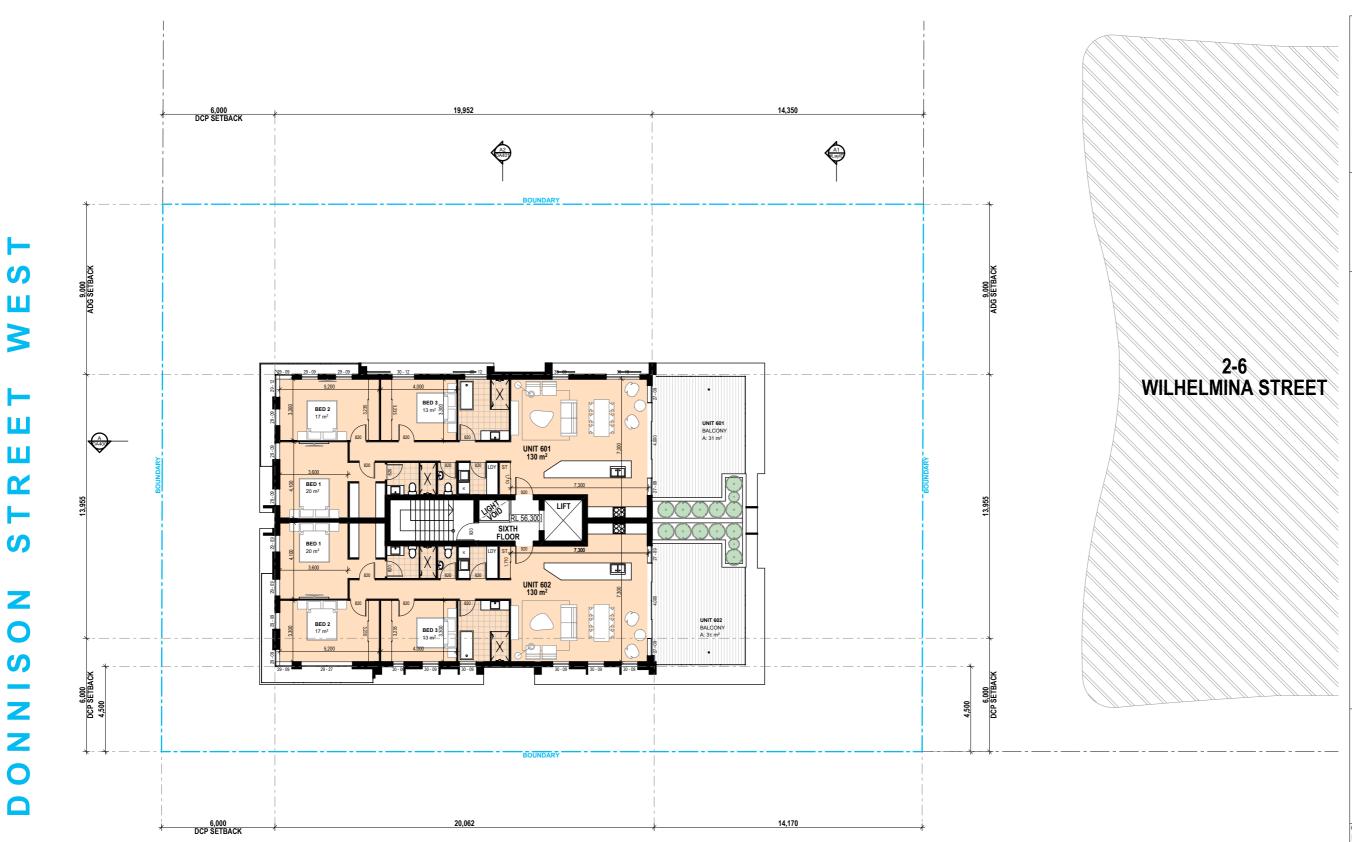
Residential Flat Building

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P1 Client Review 08.01.20 P2 Pre DA Issue 23.01.20 P3 Layout Amendments 04.02.20 P4 Revised for Pre DA 20.03.20 P5 Revised Concept 15.06.20 P6 Unit Mix Options 20.06.20 P7 For Client Approval 02.07.20 P8 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

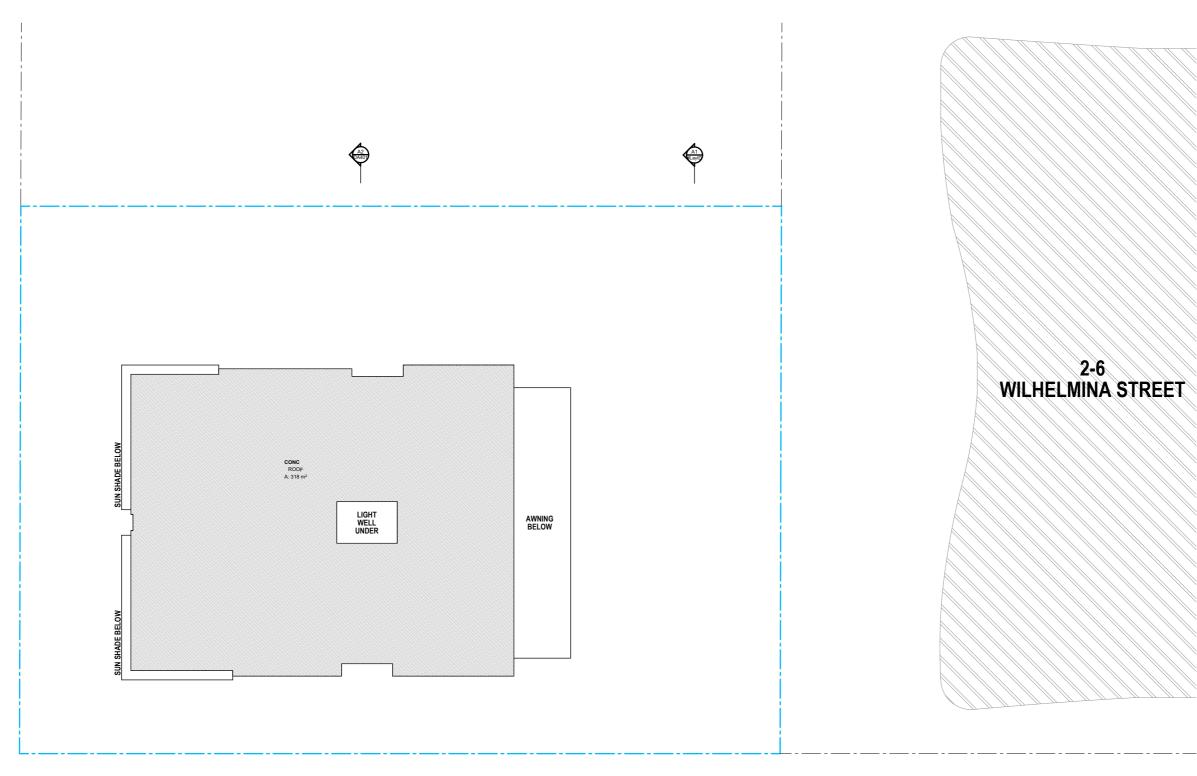
53-55 Donnison Street West Gosford

[™] SNZHoldings + Australian Luxury Living

SIXTH FLOOR

Scale	Date
1:200 @ A3	30/10/2020
Drawn By	QA Checked By
PG/JG	DH

19074



P1 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20 53-55 Donnison Street

Residential Flat Building

West Gosford

™ SNZHoldings + Australian Luxury Living

ROOF PLAN

Scale
1:200 @ A3
Drawn By
PG/JG
Project Number 30/10/2020 QA Checked By DH







2. REFER TO CONSULTING ENGINEERS DRAWINGS FOR STORMWATER DETAILS 3. FOR ROADWAY, DRIVEWAY AND RETAINING WALL DESIGN & LEVELS REFER TO CIVIL ENGINEERS DOCUMENTATION Issued electronically. The completion of the issue details checked and authorised section below is conformation of the status of the drawing. The drawing shall not be used for construction unless endorsed "For Construction" and authorised for issue. 4. DOWNPIPE POSITIONS ARE INDICATIVE ONLY, POSITION OF DOWNPIPES TO BE CONFIRMED BY BUILDER. 5. FOR LANDSCAPE DESIGN & FENCE LOCATIONS REFER TO LANDSCAPE DESIGNERS DOCUMENTATION 5 3 - 5 5 D O N N I S O N S T R E E T 16 BATLEY STREET 56 300 TH FLOOR 53 200 T 50 100 DURTH FLOOR 47 000 V BATLEY STREET P1 Revised for Pre DA 20.03.20 P2 For Client Approval 02.07.20 P3 For Consultant Co-ord 22.07.20

FOR AUTHORITY APPROVAL ONLY NOT FOR CONSTRUCTION

57 DONNISON STREET

21.50m HEIGHT PROPOSED ____

18m HEIGHT LIMIT

ELEVATION NOTES

1. REFER TO EXTERNAL FINISHES FOR SELECTED MATERIALS AND COLOURS

Issue for DA 30.10.20

Residential Flat Building

53-55 Donnison Street West Gosford

SNZHoldings + **Australian Luxury Living**

NORTHERN ELEVATION

30/10/2020 PG/JG DH



ELEVATION NOTES

- 1. REFER TO EXTERNAL FINISHES FOR SELECTED MATERIALS AND COLOURS
- 2. REFER TO CONSULTING ENGINEERS DRAWINGS FOR STORMWATER DETAILS
- 3. FOR ROADWAY, DRIVEWAY AND RETAINING WALL DESIGN & LEVELS REFER TO CIVIL ENGINEERS DOCUMENTATION
- 4. DOWNPIPE POSITIONS ARE INDICATIVE ONLY, POSITION OF DOWNPIPES TO BE CONFIRMED BY BUILDER.
- 5. FOR LANDSCAPE DESIGN & FENCE LOCATIONS REFER TO LANDSCAPE DESIGNERS DOCUMENTATION

report any discrepancies prior to the commencement of work and any ordering of materials.

Drawings are to be read in conjunction with all contract documents. Use figured dimensions only. Do not scale from drawings.

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Residential Flat Building

30.10.20

P1 Revised for Pre DA 20.03.20 P2 For Client Approval 02.07.20 P3 For Consultant Co-ord 22.07.20

Issue for DA

53-55 Donnison Street West Gosford

SNZHoldings + Australian Luxury Living

EASTERN ELEVATION

30/10/2020 PG/JG DH

ELEVATION NOTES

- 1. REFER TO EXTERNAL FINISHES FOR SELECTED MATERIALS AND COLOURS
- 2. REFER TO CONSULTING ENGINEERS DRAWINGS FOR STORMWATER DETAILS
- 3. FOR ROADWAY, DRIVEWAY AND RETAINING WALL DESIGN & LEVELS REFER TO CIVIL ENGINEERS DOCUMENTATION
- 4. DOWNPIPE POSITIONS ARE INDICATIVE ONLY, POSITION OF DOWNPIPES TO BE CONFIRMED BY BUILDER.
- 5. FOR LANDSCAPE DESIGN & FENCE LOCATIONS REFER TO LANDSCAPE DESIGNERS DOCUMENTATION



30.10.20

report any disclepanices prior to the commencement of work and any ordering of materials.

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Residential Flat Building

53-55 Donnison Street West Gosford

Issue for DA

SNZHoldings + Australian Luxury Living

SOUTHERN ELEVATION

1:2	00 @ A3	30/10/2020	J
Draw		QA Checked By	
PG	/JG	DH	
Proje	ct Number	Drawing Number	_

19074 DA302





ELEVATION NOTES

- 1. REFER TO EXTERNAL FINISHES FOR SELECTED MATERIALS AND COLOURS
- 2. REFER TO CONSULTING ENGINEERS DRAWINGS FOR STORMWATER DETAILS
- 3. FOR ROADWAY, DRIVEWAY AND RETAINING WALL DESIGN & LEVELS REFER TO CIVIL ENGINEERS DOCUMENTATION
- 4. DOWNPIPE POSITIONS ARE INDICATIVE ONLY, POSITION OF DOWNPIPES TO BE CONFIRMED BY BUILDER.
- 5. FOR LANDSCAPE DESIGN & FENCE LOCATIONS REFER TO LANDSCAPE DESIGNERS DOCUMENTATION

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P1 Revised for Pre DA 20.03.20 P2 For Client Approval 02.07.20 P3 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

53-55 Donnison Street West Gosford

SNZHoldings + Australian Luxury Living

30/10/2020 QA Checked By PG/JG DH







DARK TINTED **GLASS BALUSTRADES**



ALUMINIUM GLAZING



PERFORATED METAL SCREENING





GREEN WALL



BURNT SIENNA ANODISE OR SIM



PGH CREVOLE OR SIM





ALUMINIUM EXTRUDED FINS



STACKED STONE CLADDING



STACKED NATURAL STONE OR SIM



COLORBOND MONUMENT



EXPRESSED SLAB EDGE CONCRETE



LIGHT COLOURED **FACEBRICK**

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commencement of work and any ordering of materials.

To a materials are to be read in conjunction with all contract documents. Use figured dimensions only. Do not scale from drawings.

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P1 Revised for Pre DA 20.03.20 P2 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

53-55 Donnison Street West Gosford

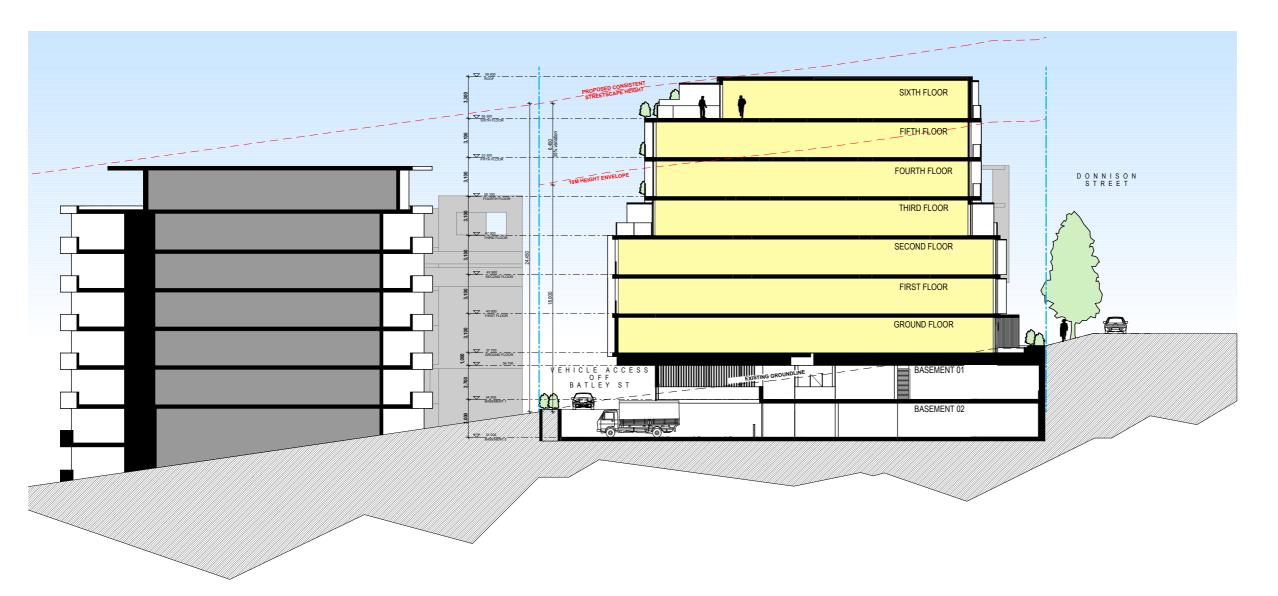
SNZHoldings + Australian Luxury Living

EXTERNAL FINISHES

PG/JG DH

19074





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SECTION AA

1:300

report any discrepancies prior to the commencement of work and any ordering of materials.

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P1 Client Review 08.01.20 P2 Pre DA Issue 23.01.20 P3 Revised for Pre DA 20.03.20 P4 For Client Approval 02.07.20 P5 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

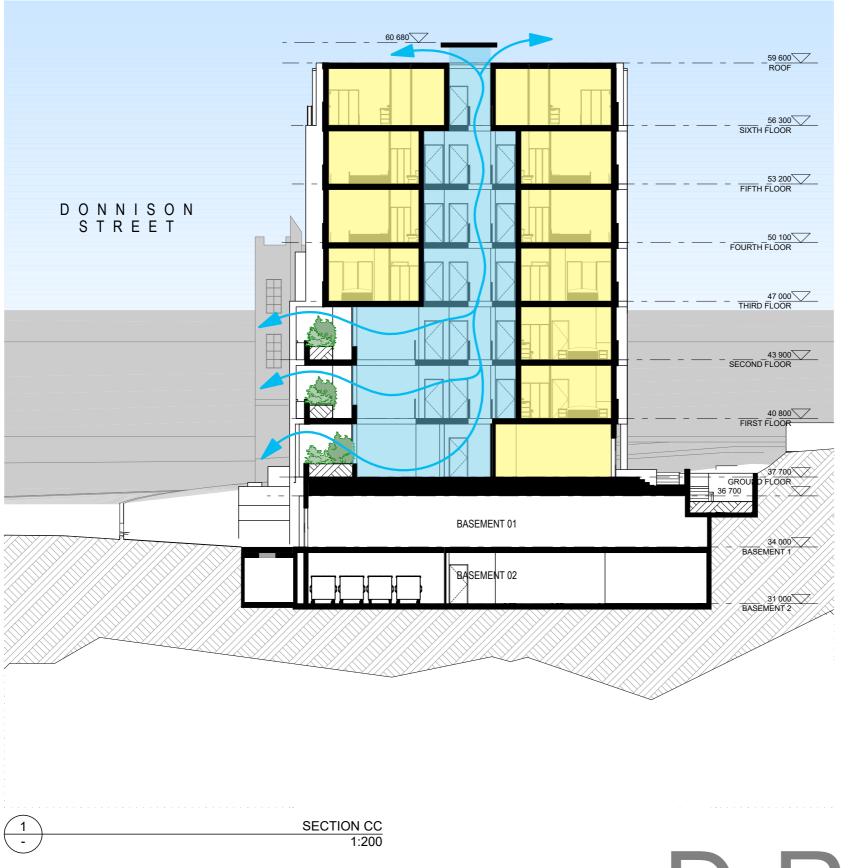
53-55 Donnison Street West Gosford

SNZHoldings + Australian Luxury Living

SECTION A-A

30/10/2020 QA Checked By 1:300 @ A3 Drawn By PG/JG DH





report any discrepances prior to the commencement of work and any ordering of materials.

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Consultants

P1 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

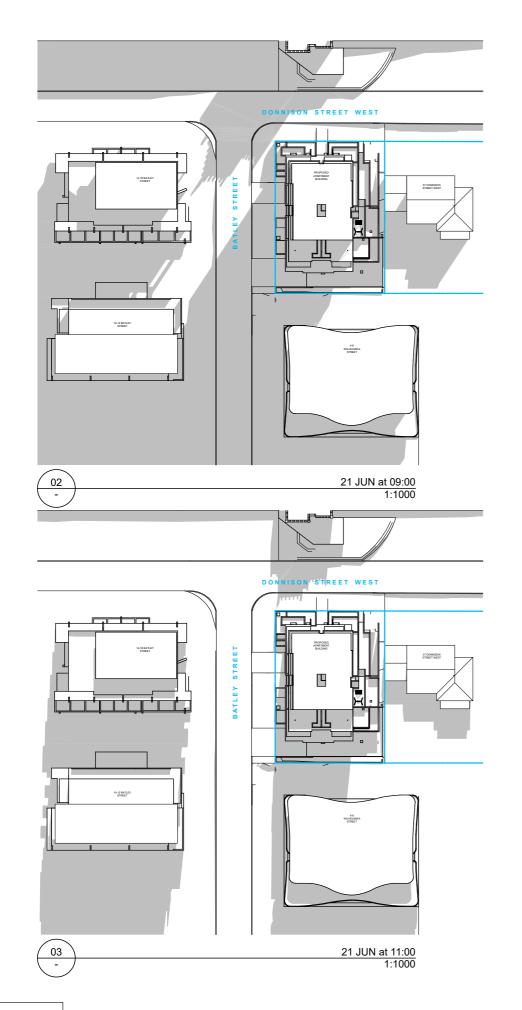
53-55 Donnison Street West Gosford

SNZHoldings + Australian Luxury Living

SECTION B-B

Scale 1:200 @ A3 Drawn By PG/JG 30/10/2020 QA Checked By **DH**

19074 DA401



DONNISON STREET WEST 02 21 JUN at 10:00 1:1000 DONNISON STREET WEST 04

Notes
PO Box 601 Kotara
NSW 2289 Ph 49524425
Normated Architect: Daniel Hadley 8209
The information contained in the document is copyright and may not be used or reproduced for any other project or purpose.
Verify all dimensions and levels on site and report any discrepancies prior to the commencement of work and any ordering of materials.
Drawings are to be read in conjunction with all contract documents.
Use figured dimensions only. Do not scale from drawings.
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The completion of the issue details checked and authorised section below is conformation of the status of the drawing. The drawing shall mot be used for construction unless endorsed For Construction and authorised for issue. Issue for DA

Residential Flat Building

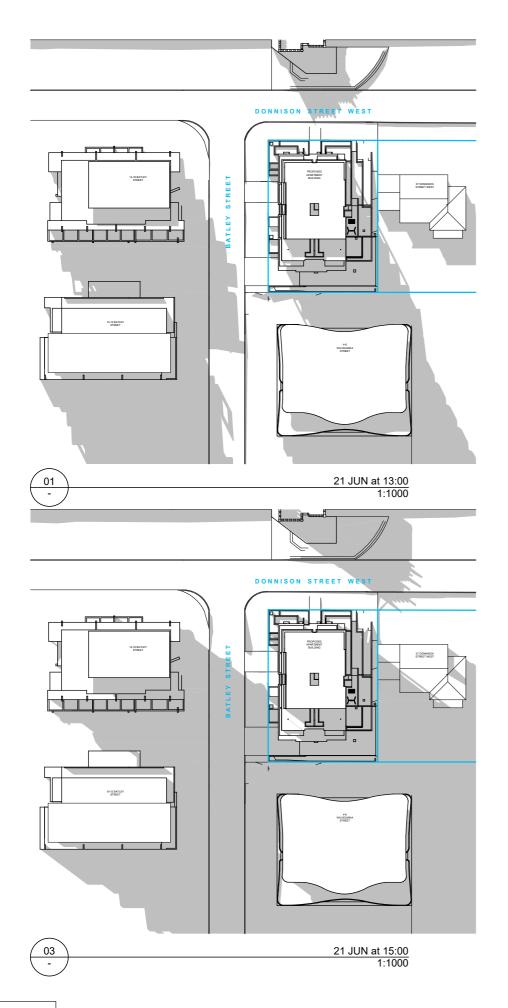
30.10.20

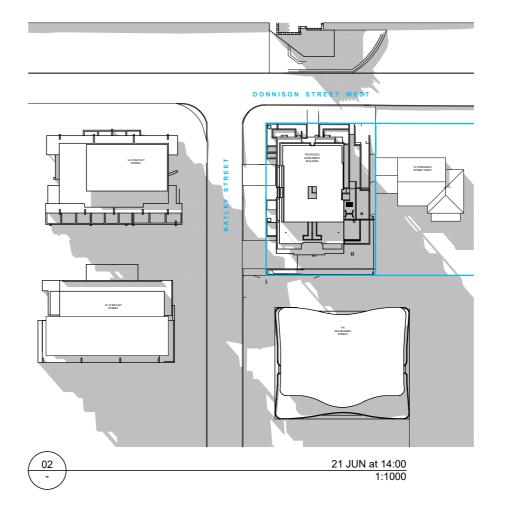
53-55 Donnison Street West Gosford

> ™ SNZHoldings + Australian Luxury Living

EXTERNAL SHADOW
DIAGRAMS

1:1000 @ A3 30/10/2020 QA Checked By PG/JG DH





DRAFT

commencement of work and any ordering of materials.

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The completion of the issue details checked and authorised section below is conformation of the status of the drawing. The drawing shall not be used for construction unless endorsed For Construction and authorised for instructions and authorised for instructions.

usue Description Date
A Issue for DA 30.10.20

Residential Flat Building

53-55 Donnison Street West Gosford

Client SNZHoldings +
Australian Luxury Living

Drawing
EXTERNAL SHADOW
DIAGRAMS

19074 DA901

D Box 601 Kotara SW 2299 Ph 49524425 ominated Architect: aniel Hadley 8209



9am JUNE 21



11am JUNE 21

FOR AUTHORITY APPROVAL ONLY NOT FOR CONSTRUCTION



10am JUNE 21



P1 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

53-55 Donnison Street West Gosford

™ SNZHoldings + Australian Luxury Living

WINTER SOLSTICE STUDY
SHEET 1

@ A3
Drawn By
PG/JG

DH





1pm JUNE 21



3pm JUNE 21

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P1 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

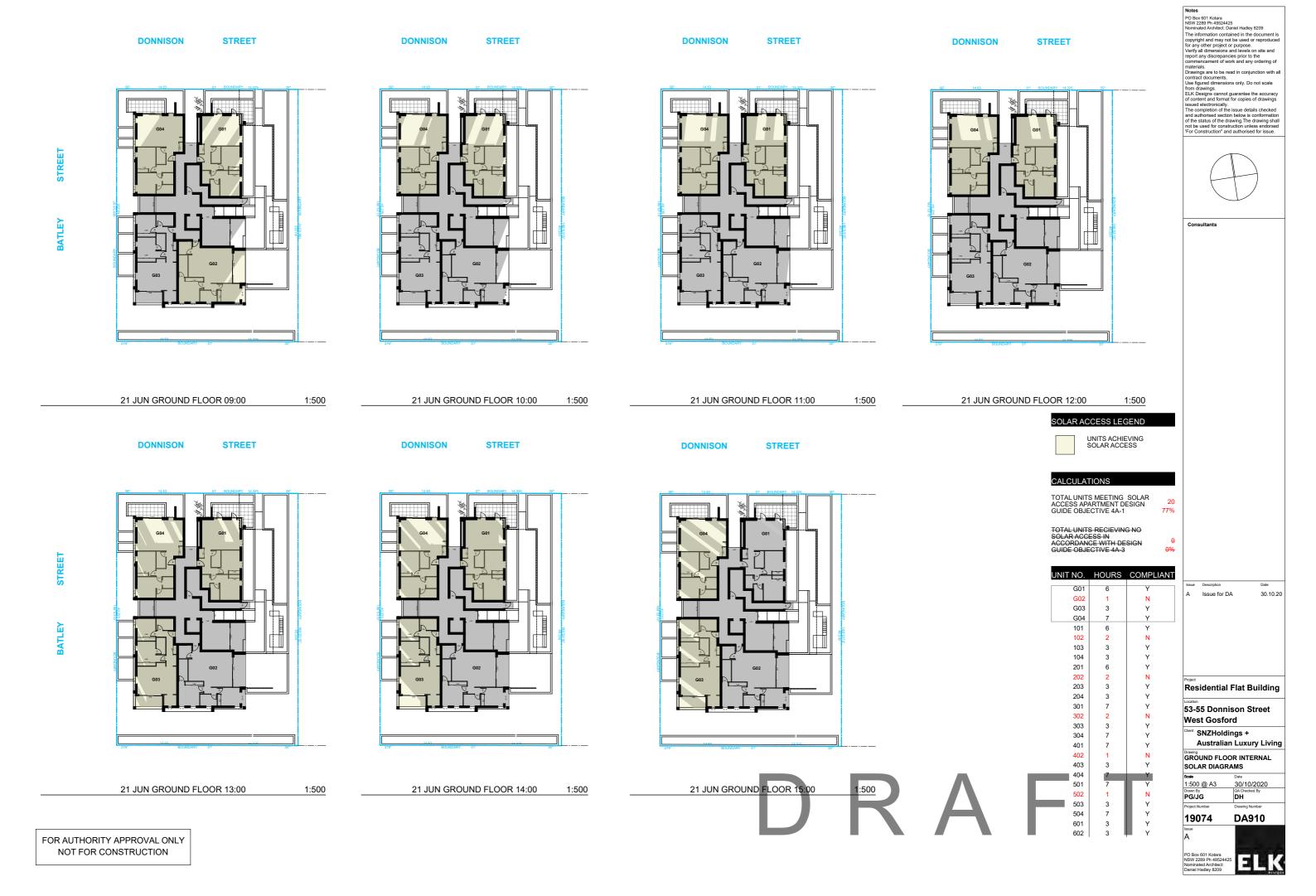
53-55 Donnison Street West Gosford

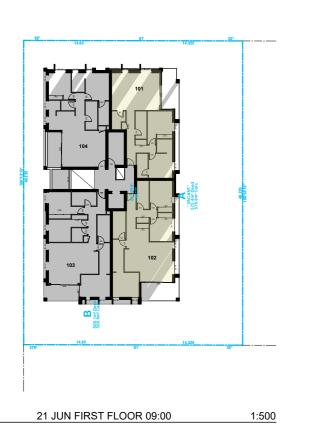
SNZHoldings + Australian Luxury Living

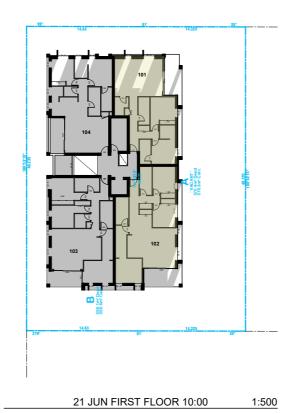
WINTER SOLSTICE STUDY
SHEET 2

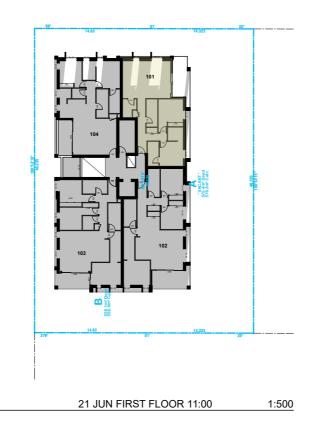
@ A3 Drawn By PG/JG DH

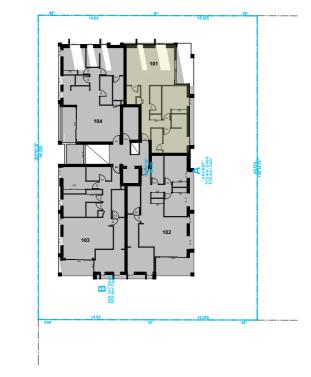




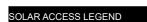








21 JUN FIRST FLOOR 12:00



1:500



UNITS ACHIEVING SOLAR ACCESS

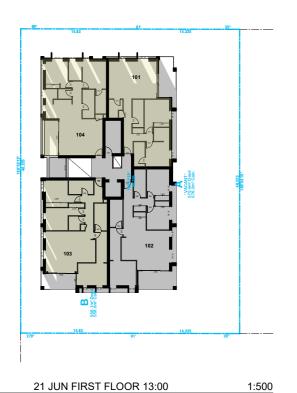
CALCULATIONS

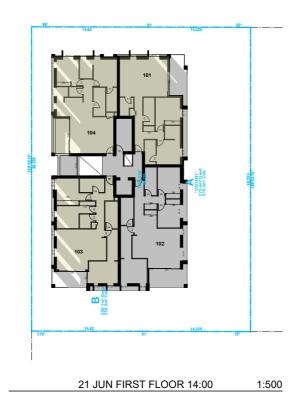
TOTAL UNITS MEETING SOLAR ACCESS APARTMENT DESIGN GUIDE OBJECTIVE 4A-1

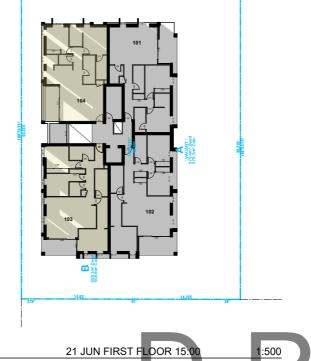
TOTAL UNITS RECIEVING NO SOLAR ACCESS IN ACCORDANCE WITH DESIGN GUIDE OBJECTIVE 4A-3

0	
0%	

UNIT NO.	HOURS	COMPLIANT
G01	6	Y
G02	1	N
G03	3	Y
G04	7	Y
101	6	Y
102	2	N
103	3	Y
104	3	Y
201	6	Y
202	2	N
203	3	Y
204	3	Y
301	7	Y
302	2	N
303	3	Y
304	7	Y
401	7	Y
402	1	N
403	3	Y
404	7	Y
501	7	Y
502	1	N
503	3	Y
504	7	Y
601	3	Y







Residential Flat Building 53-55 Donnison Street

30.10.20

report any discrepancies prior to the commencement of work and any ordering of materials.

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West Gosford

Issue for DA

™ SNZHoldings + Australian Luxury Living

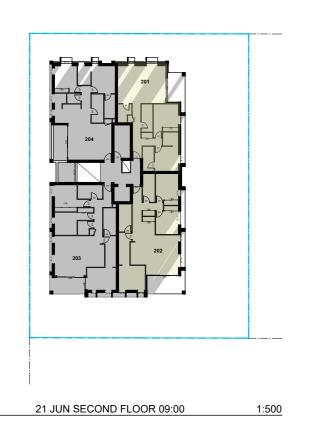
FIRST FLOOR INTERNAL SOLAR DIAGRAMS

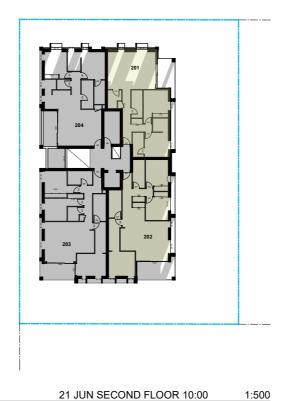
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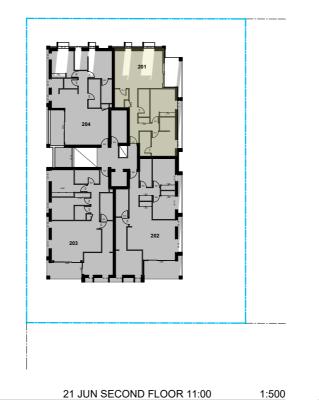
PG/JG DH

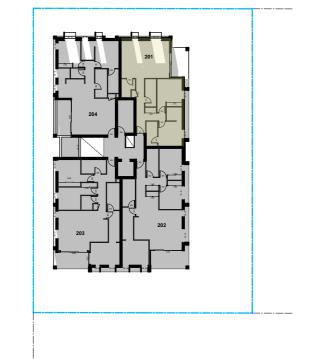
19074

DA911









21 JUN SECOND FLOOR 12:00

report any discrepancies prior to the commencement of work and any ordering of materials.

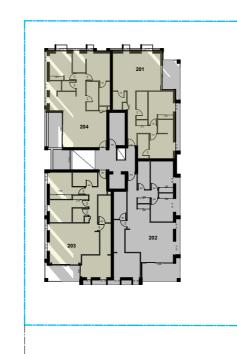
Drawings are to be read in conjunction with all contract documents.

Use figured dimensions only. Do not scale from drawings.

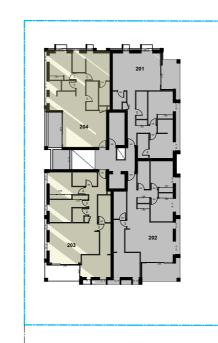
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21 JUN SECOND FLOOR 13:00 1:500



21 JUN SECOND FLOOR 14:00 1:500



21 JUN SECOND FLOOR 15:00

TOTAL UNITS MEETING SOLAR ACCESS APARTMENT DESIGN GUIDE OBJECTIVE 4A-1 TOTAL UNITS RECIEVING NO SOLAR ACCESS IN ACCORDANCE WITH DESIGN GUIDE OBJECTIVE 4A-3

CALCULATIONS

SOLAR ACCESS LEGEND

UNITS ACHIEVING SOLAR ACCESS

1:500

UNIT NO.	HOURS	COMPLIANT
G01	6	Y
G02	1	N
G03	3	Y
G04	7	Y
101	6	Y
102	2	N
103	3	Y
104	3	Y
201	6	Y
202	2	N
203	3	Y
204	3	Y
301	7	Y
302	2	N
303	3	Y
304	7	Y
401	7	Y
402	1	N
403	3	Y
404	7	Y
501	7	Y
502	1	N
503	3	Y
504	7	Y
601	3	Y

30.10.20 Issue for DA

Residential Flat Building

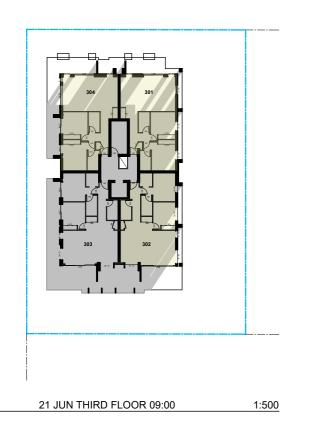
53-55 Donnison Street West Gosford

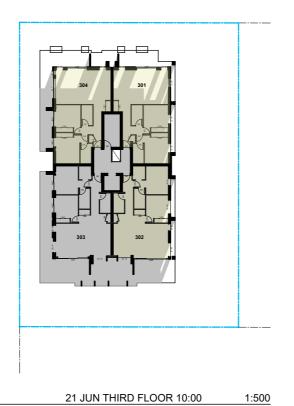
SNZHoldings + **Australian Luxury Living**

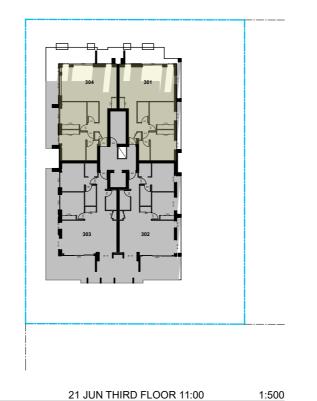
SECOND FLOOR INTERNAL

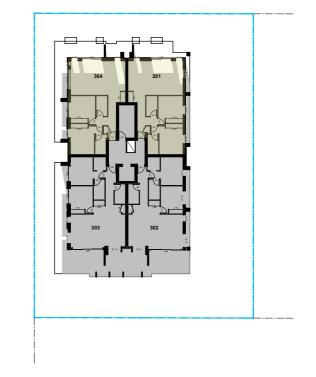
SOLAR DIAGRAMS

1:500 @ A3 30/10/2020 PG/JG DH









21 JUN THIRD FLOOR 12:00



SOLAR ACCESS LEGEND

UNITS ACHIEVING SOLAR ACCESS

1:500

CALCULATIONS

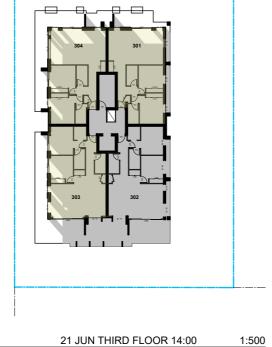
TOTAL UNITS MEETING SOLAR ACCESS APARTMENT DESIGN GUIDE OBJECTIVE 4A-1

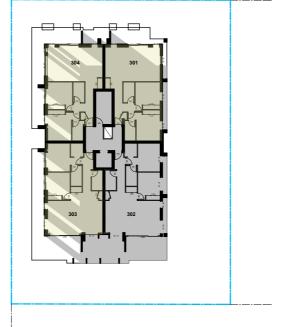
TOTAL UNITS RECIEVING NO SOLAR ACCESS IN ACCORDANCE WITH DESIGN GUIDE OBJECTIVE 4A-3

	١T	COMPLI	HOURS	Ю.
e Description	Issue	Υ	6	301
Issue for DA	Α	N	1	302
		Υ	3	303
		Υ	7	304
		Υ	6	01
		N	2	02
		Υ	3	03
		Υ	3	04
		Υ	6	01
x	Projec	N	2	02
sidential FI	Re	Υ	3	03
on	Locati	Υ	3	04
-55 Donnisc		Y	7	01
est Gosford		N	2	02
	Client	Υ	3	03
SNZHolding Australian L	_ _	Y	7	04
	Drawi	Y	7	01
RD FLOOR IN	THI	N	1	02
LAR DIAGRAN	so	Y	3	03
00 @ A3 3	Scale 1.E/	Y	7	04
	Drawr	Y	,	01



1:500





21 JUN THIRD FLOOR 15:00

FOR AUTHORITY APPROVAL ONLY NOT FOR CONSTRUCTION

21 JUN THIRD FLOOR 13:00

Flat Building

30.10.20

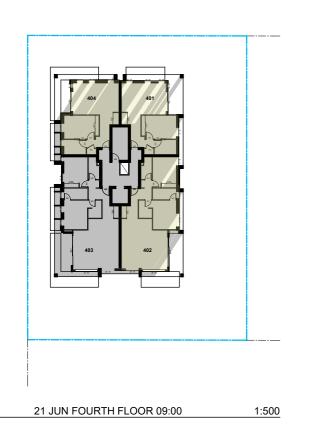
son Street

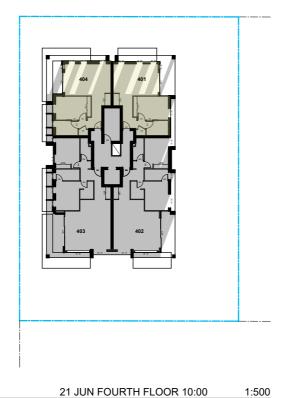
ngs + **Luxury Living**

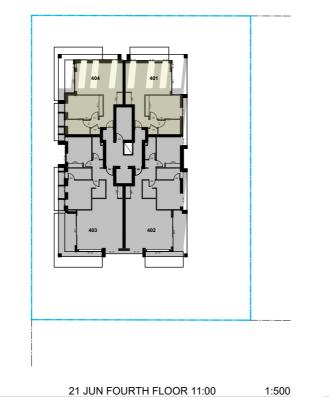
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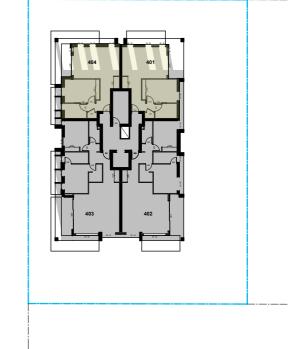
PG/JG **DA913**

19074

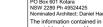








21 JUN FOURTH FLOOR 12:00



commencement of work and any ordering of materials.

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SOLAR ACCESS LEGEND UNITS ACHIEVING SOLAR ACCESS

1:500



UNIT NO.

402

403

404 501

> 503 504

601

3

CALCULATIONS

TOTAL UNITS MEETING SOLAR ACCESS APARTMENT DESIGN GUIDE OBJECTIVE 4A-1

TOTAL UNITS RECIEVING NO SOLAR ACCESS IN ACCORDANCE WITH DESIGN GUIDE OBJECTIVE 4A-3

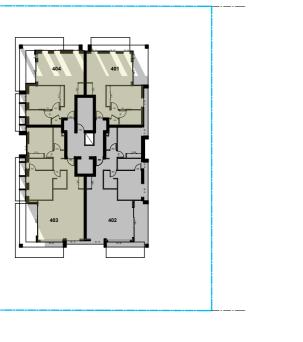
T NO.	HOURS	COMPLIANT			
G01	6	Y	Issue	Description	Date
G02	1	N	XX	XXXX	XX.XX.XX
G03	3	Y			
G04	7	Y			
101	6	Y			
102	2	N			
103	3	Y			
104	3	Y			
201	6	Y			
202	2	N	Project		
203	3	Y	Res	idential FI	at Building
204	3	Y	Location		
301	7	Y		55 Donnisc	n Street
302	2	N		st Gosford	
303	3	Y			
304	7	Y	'	SNZHolding	
401	7	Y	1	Australian L	uxury Living

FOURTH FLOOR INTERNAL

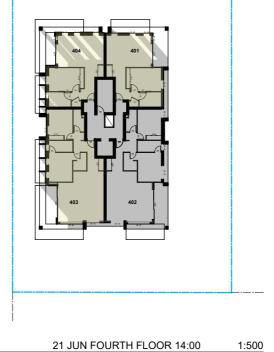
SOLAR DIAGRAMS

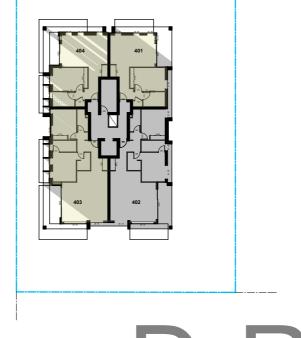
1:500 @ A3 30/10/2020 PG/JG DH

19074 **DA914**



1:500

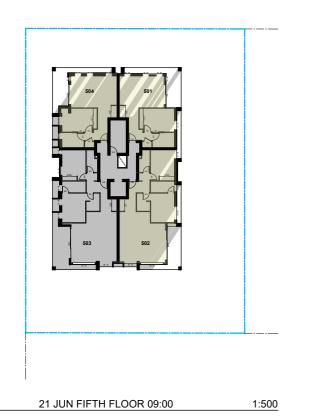


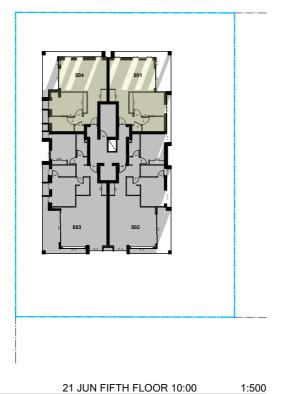


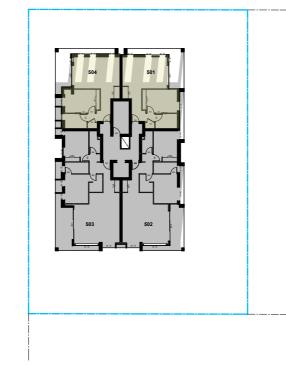
21 JUN FOURTH FLOOR 15:00

FOR AUTHORITY APPROVAL ONLY NOT FOR CONSTRUCTION

21 JUN FOURTH FLOOR 13:00

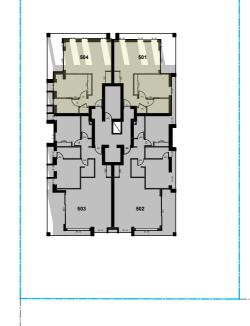






21 JUN FIFTH FLOOR 11:00

1:500



21 JUN FIFTH FLOOR 12:00

1:500

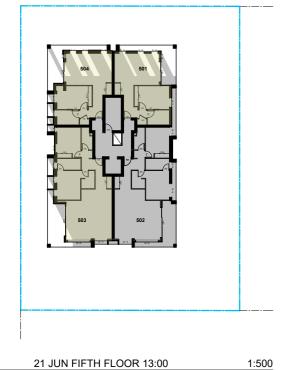
SOLAR ACCESS LEGEND UNITS ACHIEVING SOLAR ACCESS

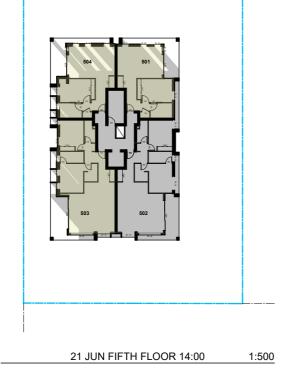
CALCULATIONS

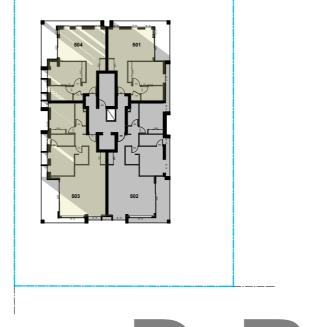
TOTAL UNITS MEETING SOLAR ACCESS APARTMENT DESIGN GUIDE OBJECTIVE 4A-1

TOTAL UNITS RECIEVING NO SOLAR ACCESS IN ACCORDANCE WITH DESIGN GUIDE OBJECTIVE 4A-3

UNIT NO.	HOURS	COMPLIANT
G01	6	Υ
G02	1	N
G03	3	Y
G04	7	Y
101	6	Y
102	2	N
103	3	Y
104	3	Y
201	6	Y
202	2	N
203	3	Y
204	3	Y
301	7	Y
302	2	N
303	3	Y
304	7	Y
401	7	Y
402	1	N
403	3	Y
404	7	Y
501	7	Y
502	1	N
503	3	Y
504	7	Y
601	3	Y







21 JUN FIFTH FLOOR 15:00

Residential Flat Building 53-55 Donnison Street West Gosford ™ SNZHoldings + Australian Luxury Living

Issue for DA

30.10.20

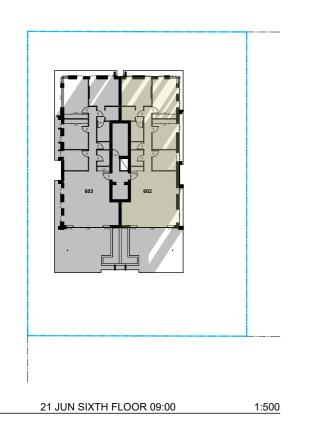
Notes
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NSW 2299 Ph 49524425
Nominated Architect: Daniel Haddly 8209
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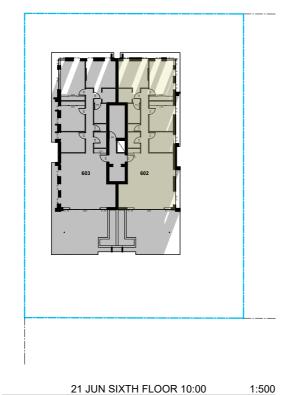
FIFTH FLOOR INTERNAL SOLAR DIAGRAMS

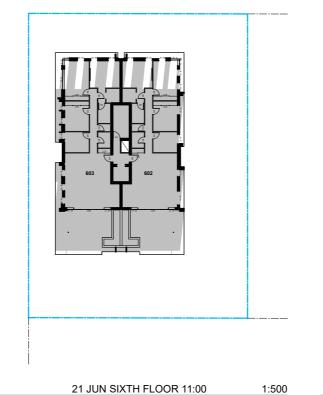
1:500 @ A3 30/10/2020

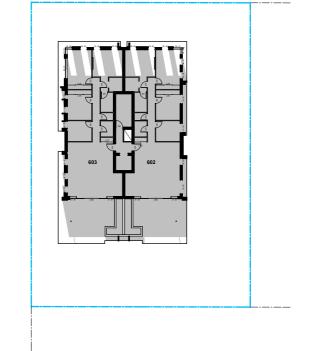
PG/JG DH DA915

19074









21 JUN SIXTH FLOOR 12:00

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CALCULATIONS

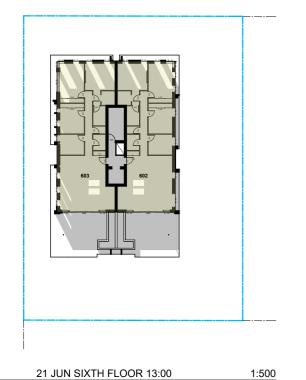
TOTAL UNITS MEETING SOLAR ACCESS APARTMENT DESIGN GUIDE OBJECTIVE 4A-1

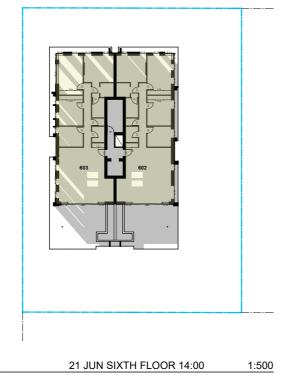
SOLAR ACCESS LEGEND

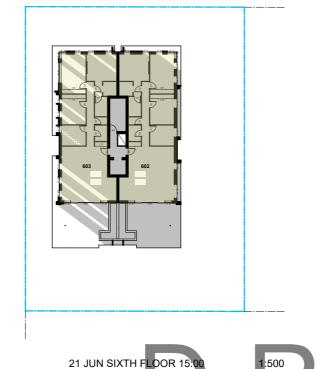
TOTAL UNITS RECIEVING NO SOLAR ACCESS IN ACCORDANCE WITH DESIGN GUIDE OBJECTIVE 4A-3

1:500

UNIT NO.	HOURS	COMPLIANT	
G01	6	Y	Iss
G02	1	N	Α
G03	3	Y	
G04	7	Y	
101	6	Y	
102	2	N	
103	3	Y	
104	3	Y	
201	6	Y	
202	2	N	Proj
203	3	Y	R
204	3	Y	Loc
301	7	Y	53
302	2	N	w
303	3	Y	Clie
304	7	Y	Cile
401	7	Y	
402	1	N	Drar SI
403	3	Y	S
404	7	Y	Sca
501	7	Y	1:4 Dra
502	1	N	P
503	3	Y	Proj
504	7	Y	1
601	3	Y	







Residential Flat Building 33-55 Donnison Street West Gosford ent SNZHoldings +

Issue for DA

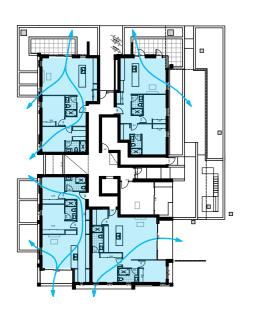
Australian Luxury Living

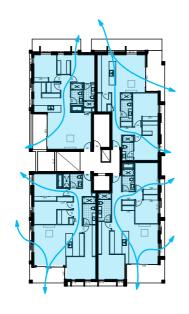
30.10.20

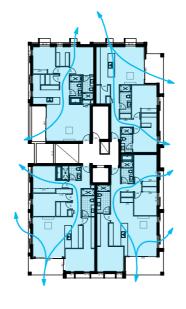
SIXTH FLOOR INTERNAL SOLAR DIAGRAMS

30/10/2020

PG/JG DH 19074 **DA916**







CROSS VENTILATION LEGEND

UNITS ACHIEVING FULL CROSS VENTILATION



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CALCULATIONS

SINGLE ASPECT

2:1 WIDTH TO DEPTH RATIO **FULL CROSS VENTILATION**

TOTAL UNITS MEETING NATURAL VENTILATION APERTMENT DESIGN GUIDE OBJECTIVE 4B-3

SIXTH FLOOR

100%

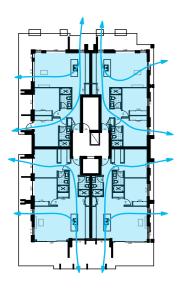
GROUND FLOOR

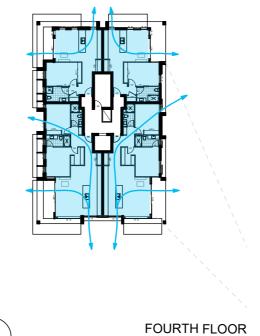


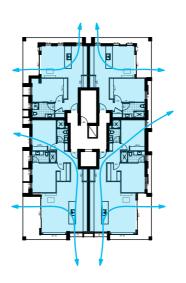
FIRST FLOOR

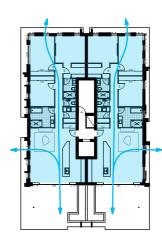


SECOND FLOOR









30.10.20 Issue for DA

Residential Flat Building

53-55 Donnison Street West Gosford

SNZHoldings +

Australian Luxury Living CROSS VENTILATION

DIAGRAMS

30/10/2020 1:500 @ A3 PG/JG DH

19074

DA950

FIFTH FLOOR

FOR AUTHORITY APPROVAL ONLY NOT FOR CONSTRUCTION



THIRD FLOOR

Sediment and erosion control

All erosion and sediment control measures to be installed prior to site disturbance.

The project manager to inform all contractors and sub-contractors of their obligations under the erosion and sediment control plan. $\frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left(\frac{1}{2} \int_{-\infty}^{\infty} \frac{$

Topsoil from all areas that will be disturbed to be stripped and stockpiled at the nominated site.

All sediment control structures to be inspected by site supervisor after each rainfall event for structural damage and all trapped sediment to be removed to a nominated stockpile site.

Sediment and erosion control shall be effectively maintained at all times during the course of construction and shall not be removed until the site has been stabilised or landscaped to the superintendent's

A single all weather access way will be provided at the front of the property consisting of 50-75 aggregate or similar material at a minimum thickness of 150 laid over needle-punched geotextile fabric and constructed prior to commencement of works.

The contractor shall ensure that no spoil or fill encroaches upon adjacent areas for the duration of works.

The contractor shall ensure that kerb inlets and drains receiving stormwater shall be protected at all times during development. Kerb inlet sediment traps shall be installed along the immediate vicinity along the street frontage.

Sediment fencing shall be secured by post (where metal star pickets are used plastic safety caps shall be used) at 3000 intervals with geotextile fabric embedded 200 in soil.

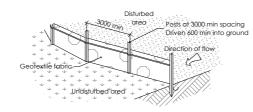
All topsoil stripped from the site and stockpiled does not interfere with drainage lines and stormwater inlets and will be suitably covered with an impervious membrane material and screened by sediment fencing.

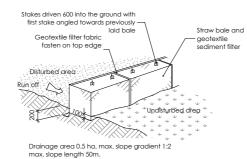
Soil conservationPrior to commencement of construction provide 'sediment fence,' 'sediment trap' and washout area to ensure the capture of water borne material generated from the site.

Maintain the above during the course of construction, and clear the 'sediment trap after each storm.

Sediment trap 1000×1000 wide 500 deep pit, located at the lowest point to the trap

Provide sediment fence on down slope boundary as shown on plan. Fabric to be buried below ground at lower edge.



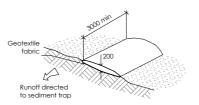


to be 1800 x 1800 allocated for the washing of tool and equipment



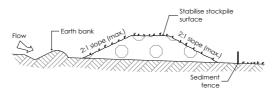
Vehicle access to site

Vehicle access to the building site should be restricted to a single point so as to reduce the amount of soil deposited on the street pavement.



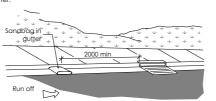
Building material stockpiles

All stockpiles of building material such as sand and soil must be protected to prevent scour and erosion. they should never be placed in the street gutter where they will wash away with the first rainstorm.



Sandbag kerb sediment trap

In certain circumstances extra sediment trapping may be needed in the street



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P1 For Consultant Co-ord 22.07.20 Issue for DA 30.10.20

Residential Flat Building

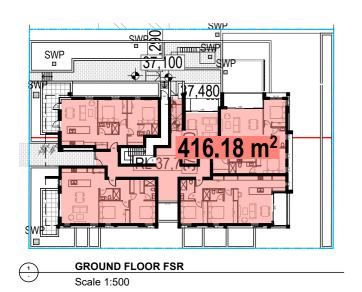
53-55 Donnison Street West Gosford

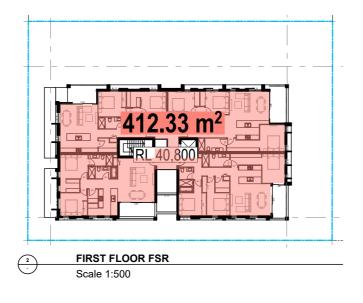
SNZHoldings + Australian Luxury Living

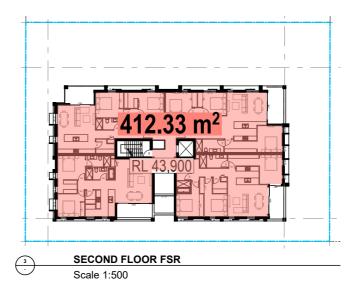
SEDIMENT CONTROL

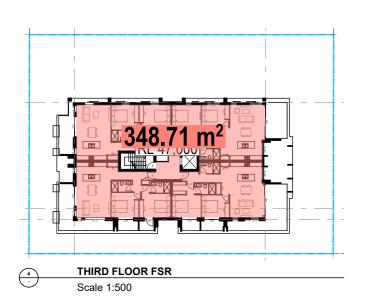
30/10/2020 PG/JG DH

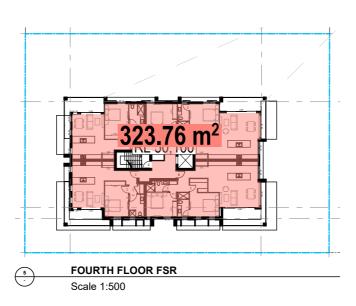
19074 **DA960**

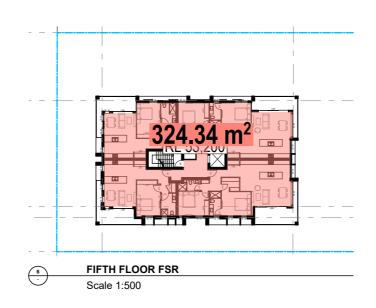


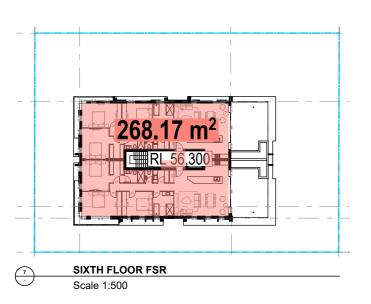












GROUND FLOOR	416
FIRST FLOOR	412
SECOND FLOOR	412
THIRD FLOOR	349
FOURTH FLOOR	324
FIFTH FLOOR	324
SIXTH FLOOR	268
	<u>2505</u>
SITE AREA	1165
FSR	2.15

DRAFT

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Consultant

Issue	Description	Date
P1	Client Review	08.01.20
P2	Pre DA Issue	23.01.20
P3	Revised for Pre DA	20.03.20
P4	Revised Concept	15.06.20
P5	For Client Approval	02.07.20
P6	For Consultant Co-ord	22.07.20
Α	Issue for DA	30.10.20

Residential Flat Building

53-55 Donnison Street West Gosford

	Client	SNZHoldings +
		Australian Luxury Livi

	FSR	CALC	CULA	TION
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1:500 @ A3	30/10/2020
PG/JG	QA Checked By DH
Project Number	Drawing Number

19074 DA970

ox 601 Kotara 2289 Ph 49524425 Jated Architect: