5 Blue Street, North Sydney

Ecologically Sustainable Design Assessment

Zurich Australian Insurance Properties Pty Ltd

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North Sydney NSW,
Australia 2060

Prepared by:

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Making Sustainability Happen

Revision Record

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R01-v1.0	4 June 2026	Shawn Sun	Dr Neihad Al-Khalidy	Dr Neihad Al-Khalidy

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Zurich Australian Insurance Properties Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

Executive Summary

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Zurich Australian Insurance Properties Pty Ltd (the Applicant) to provide a qualitative Ecologically Sustainable Design (ESD) assessment for the proposed mixed use development located at 5 Blue Street, North Sydney (the Site).

In accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs) and in support of the State Significant Development Application (SSDA) SSD-86270706, this study has been prepared in accordance with the ESD principles as defined in section 193 of the EP&A Regulation.

A detailed response to identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design of the development is summarised in the table below.

Table 1 ESD principles (as defined in section 193 of the EP&A Regulation)

Item for inclusion	Action and Report Location
(a) the precautionary principle	• In terms of Precautionary Principle, the project does not present threat of serious or irreversible environmental damage. The project conducted all required environmental studies and incorporates ESD and energy efficiency measures in the design.
(b) inter-generational equity	• Inter-generational equity, the health, diversity and productivity of the environment are enhanced for the benefit of future generations via a number of initiatives including solar access, natural cross-ventilation, daylight, building thermal mass and insulation, active energy and water efficiency, reduced waste, indoor environmental quality, etc. Refer **Section 3** for all proposed initiatives.
(c) conservation of biological diversity and ecological integrity	• From a conservation of biological diversity and ecological integrity perspective, the project satisfies all environmental and statutory provisions requirements and proposes to maintain the existing ecological structures (species and ecosystems, etc) for the site and provide additional native vegetation planting with rainwater irrigation.
(d) improved valuation, pricing and incentive mechanisms.	• Environmental goals have been established and achieved using recognised rating tools (BASIX and NatHERS). A Quantity Surveyor is proposed to be engaged to ensure that the project will remain on budget and all sustainability measures in the current study are implemented. • The proposed ESD initiatives will help to achieve significant reductions in the energy, waste and water required by the development and will deliver improved valuation and beneficial outcomes.

The development includes many ecologically sustainable design features. This report provides an overview of these features.

The following ESD and energy efficiency features are proposed to be included in the design:

- The proposed development will incorporate passive and active energy-saving measures such as operable windows to enhance natural ventilation through the apartments, where appropriate;
    - 71.4% (25 of 35) of the proposed residential units for the first nine storeys are naturally cross-ventilated. (Minimum required 60%).
- The form dictated by the site has been designed to maximise the solar access of residential units to target;
    - 61.3% (38 of 62) of apartments will achieve 2 hours solar access across the assessment window.
    - 0% of apartments will achieve 0 hours solar access across the assessment window.
- Thermal mass - Concrete slab construction is proposed for all floors throughout the development - concrete has amongst the highest thermal mass capacity of a range of common building products. The proposed development's external walls, structural internal walls, and slabs should be predominantly high thermal mass materials.
- LED energy-efficient lighting for all spaces;
- Centralised energy-efficient electric air sourced heat pump hot water systems;
- Gearless traction with variable voltage variable frequency (VVVF) motor lifts;
- Individual 1-phase air-conditioning systems for all living areas and bedrooms in the dwelling units with 4-star rating for heating and cooling requirements;
- Energy efficient clothes dryers and energy and water efficient dishwasher units to be installed within each residential dwelling.
- Provision of induction cooktop and electric oven;
- Low flow fixtures and fittings, including at least 5-star taps and 4-star shower heads;
- In addition, the project considers rainwater reuse for irrigation purposes;
- Light efficiency measures in the lobbies using time clock and motion sensors;
- Low levels of volatile organic compounds (VOC) paints and floor coverings and low formaldehyde wood products where possible;
- Use of materials with high SRI values for roofing and terrace pavements.
- The project is committed to provision for future installation of EV chargers in 100% of car parking spaces.
- The provision of bicycle storage spaces within the development is proposed to support the use of low emission transportation opportunities by the users and occupants;
- Landscaped areas are within the residential development throughout the designated communal areas. Proposed planting provides added cooling during the summer months through the leaf transpiration process and is also useful for wind amelioration;

- Plant species within the development would be predominantly indigenous species that can tolerate low water to reduce maintenance requirements;
- SLR recommends the installation of a solar PV system.
  - A 20 kW PV solar system is recommended to reduce greenhouse gas emission.
  - A 20 kW PV solar system is indicated to offset approximately 28.7 MWh/year of energy usage.
  - The estimated greenhouse gas CO2 emission saving is approximately 19.2 t.CO2/annum.
- The proposed residential development is proposed to enjoy a high level of thermal comfort gaining an average 7.5 NatHERS star rating.
- The development also meets BASIX targets in Water (Target 40) and in Energy (Target 60).

The report body contains recommendations regarding other ESD features, such as a mechanical ventilation system, domestic hot water, other appliances, and operational waste. These features are proposed to help achieve significant reductions in energy and water required by the development both in building and operation, in addition to ensuring that the residential units are pleasant spaces to reside.

It is recommended that the proposed ESD initiatives continue to be developed and implemented, and the performance benchmarks be met during the detailed design phase, as the design of building services progresses and becomes more refined.

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1.0 Introduction

This Ecologically Sustainable Design (ESD) assessment has been prepared by SLR Consulting Australia Pty Ltd (SLR) on behalf of Zurich Australian Insurance Properties Pty Ltd (**the Applicant**) to address the project-specific Secretary's Environmental Assessment Requirements (SEARs) issued the proposed State Significant Development Application (SSDA) SSD-86270706 for the proposed mixed use residential development located at 5 Blue Street, North Sydney.

The ESD report has been prepared in a standard form considering the following aspects of the development.

- Identify how ESD principles are incorporated in the design and ongoing operation of the development.
- Demonstrate how the development is proposed to meet or exceed the relevant industry-recognised building sustainability and environmental performance standards.

The initiatives suggested throughout this report have been included as opportunities for the project team to adopt ESD initiatives that provide both direct and indirect benefits to the proposed development.

1.1 Site Description

The land subject to this Scoping Report is located at 5 Blue Street, North Sydney, within the North Sydney Local Government Area (LGA).

The site is located at the southern fringe of the North Sydney Centre. The locality is at the preliminary stages of urban renewal, which will transform the North Sydney CBD and surrounds into a world class CBD, supported by a range of transport options, retail and residential uses.

Figure 1 Project Site Location



Image: Courtesy Google Maps, May 2026

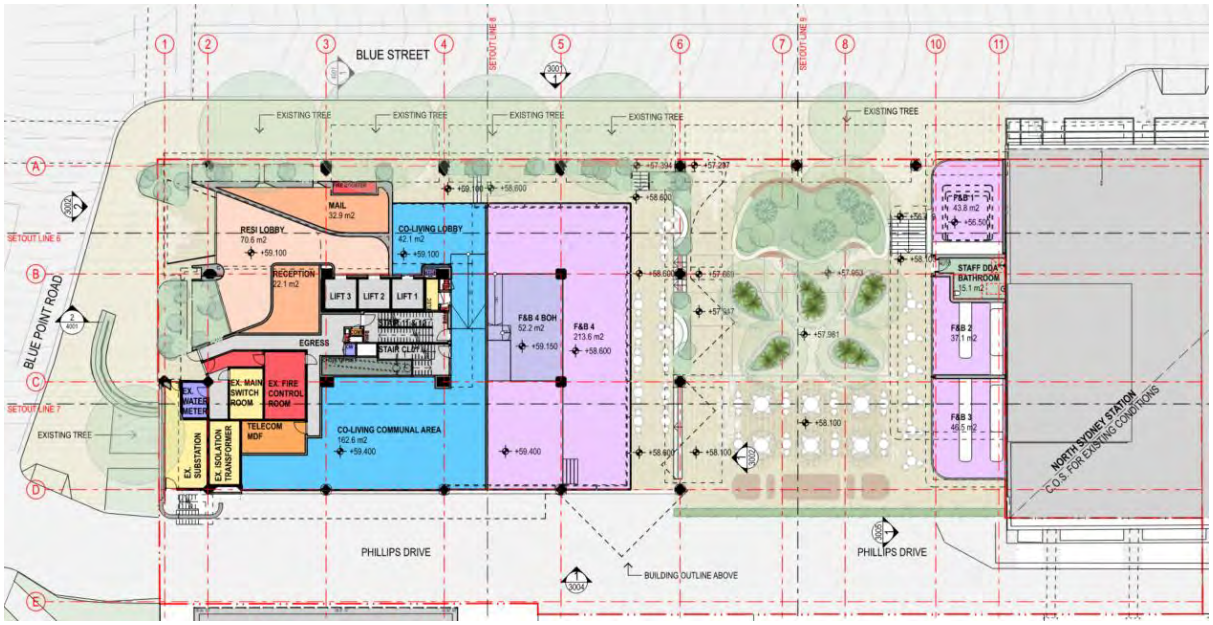
1.2 Development Description

The project at 5 Blue Street, Nortgh Sydney is proposed to comprise of:

- Demolition of the existing building and construction of a 14-storey mixed-use development including:
  - 86 Co-living apartments
  - 62 residential apartments
  - Amenity spaces for co-living and residents
  - Ground floor Retail amenity
  - Basement and above ground parking

The ground floor site plan of the proposed development is shown in Error! Reference source not found..

Figure 2 Ground Level Site Plan



2.0 Ecologically Sustainable Design

The concept of Ecologically Sustainable Development (ESD) was outlined in “Our Common Future”, the report of the 1987 United Nations World Commission on the Environment and Development (the Brundtland Commission). It defined Sustainable Development as,

“Development that meets the needs of the present without compromising the ability of future generation to meet their own needs”.

This concept was adopted within Australia in 1990 when the Council of Australian Governments endorsed a National Strategy for Ecologically Sustainable Development. The Commonwealth Government suggested the following definition for ESD in Australia:

“Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased”.

Put simply, ESD is development which aims to meet the needs of Australians today, while conserving our ecosystems for the benefit of future generations. To do this, it is necessary to develop ways of using those environmental resources which form the basis of our economy in a way which maintains and, where possible, improves their range, variety and quality.

The National Strategy for Ecologically Sustainable Development notes that there is no identifiable point where it can be said that ESD has been achieved. The strategy further states that there are two main features which distinguish an ecologically sustainable approach to development:

- We need to consider, in an integrated way, the wider economic, social and environmental implications of our decisions and actions for Australia, the international community and the biosphere; and
- We need to take a long-term rather than short-term view when taking those decisions and actions.

Ultimately ESD should lead to changes in our patterns of resource use, including improvements in the quality of our air, land and water, and in the development of new, environmentally friendly products and processes.

National Strategy for ESD Objectives and Guiding Principles are elaborated below.

The National Strategy for ESD sets its core objectives as:

- To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations.
- To provide for equity within and between generations.
- To protect biological diversity and maintain essential ecological processes and life-support systems.

The Guiding Principles of the National Strategy for ESD are documented as:

- Decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.
- Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The global dimension of environmental impacts of actions and policies should be recognised and considered.

- The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.
- The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.
- Decisions and actions should provide for broad community involvement on issues which affect them.

These guiding principles and core objectives need to be considered as a package. No objective or principle should predominate over the others. A balanced approach is required that considers all these objectives and principles to pursue the goal of ESD.

2.1 Specific Requirements for Compliance

Specifications for environmental design measures required for the proposed site are detailed below:

2.1.1 ESD Measures for Consideration

- National Construction Code 2022 – Section J requirements
- BASIX Certification for the Residential Component.
- North Sydney Development Control Plan 2009
- North Sydney Local Environmental Plan (LEP) 2013.
- The Planning Secretary's Environmental Assessment Requirements (SEARS) for State Significant Development Application (SSDA) SSD-86270706:

15. Ecologically Sustainable Development (ESD) • Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development. • Where relevant, provide an assessment of the development against the standards for non-residential development set out in Chapter 3 of *State Environmental Planning Policy (Sustainable Buildings) 2022*.	ESD Report BASIX Certificate

  - The principles of ESD in accordance with Section 193 of the EP&A Regulation, are defined in this NSW legislation as follows:

    (a) the precautionary principle,

    (b) inter-generational equity,

    (c) conservation of biological diversity and ecological integrity,

    (d) improved valuation, pricing and incentive mechanisms.

    These principles are further paraphrased and elaborated in Section 2.0 above.

- The State Environmental Planning Policy (SEPP) Sustainable Buildings
  - Non-residential spaces should target the following:
    - the minimisation of waste from associated demolition and construction, including by the choice and reuse of building materials,

- a reduction in peak demand for electricity, including through the use of energy efficient technology,
- a reduction in the reliance on artificial lighting and mechanical heating and cooling through passive design,
- the generation and storage of renewable energy,
- the metering and monitoring of energy consumption,
- the minimisation of the consumption of potable water.
- the embodied emissions attributable to the development have been quantified.
- the minimisation of the use of on-site fossil fuels.

o Residential spaces should satisfy the following-

- the embodied emissions attributable to the development have been quantified.

- Apartment Design Guidelines for residential areas
  - o 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.
  - o In all other areas, living rooms and private open spaces of at least 70% of the apartments in a building receive a minimum of 3 hours direct sunlight between 9 am and 3 pm at mid-winter.
  - o A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter.
  - o 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.

    Building depth, which support natural ventilation typically range from 10 to 18 meters.

The following section elaborates on how the above requirements are captured in the design and how the project responds to these controls.

3.0 ESD Initiatives Considered for the Proposed Development

In order to achieve a structured integrated approach to ESD, a series of indicators and strategic goals have been identified at the outset to be communicated to the design team. SLR Consulting, as the project's ESD consultant, has applied these principles to all aspects of the development ensuring a best possible ESD outcome.

ESD indicators identified for the proposed concept plan are:

- Passive design features
- Landscaping
- Building construction
- Active energy efficiency
- Water
- Transport
- Indoor environmental quality
- Operational waste management
- Renewable energy options

The following sections below outline the ESD initiatives to be committed for the proposed development.

3.1 Passive Design Features

Passive energy efficiency refers to the choice of building materials, the placement of external facades and fenestration to effectively utilise solar energy for heating when required, and minimise solar gains when appropriate, thus 'passively' reducing the artificial heating and cooling requirements of the building. While high cooling and heating loads are typical in summer and winter months respectively, a good balance of heating and cooling load reduction techniques is required to facilitate a development with efficient passive design.

3.1.1 Site Analysis and Layout

A key objective should be to optimise site conditions and minimise energy consumed for cooling and heating loads through proper selection of building orientation and internal layout. The following points are noted with respect to the siting of the proposed development.

- As opposed to new developments on the outer fringes of the city which require significant investment in new roads, sewerage, lighting and power the proposed development site will have immediate access to all of these;
- The proposed development provides a large number of units with access to daylighting;
- The proposed development provides good design to promote natural ventilation;
- The proposed development provides landscaped area and open space.

3.1.2 Solar Access

One of the objectives of energy conservation is to minimise the heating and cooling requirements of buildings. Sunlight should preferably be able to penetrate the building in winter and be excluded from the building in summer. The form dictated by the site has been designed to maximise the solar access of residential units by:

- Maximising solar exposure of every residential apartment. The height and units' layouts will allow excellent solar exposure from at least 2 directions to the majority of the apartments throughout the day, year-round.
- Ensuring that primary facade glazing is attached to all "living zone" rooms for all apartments (i.e. living room, bedrooms etc). With proper attention to design details (e.g. glazing seals), these rooms can act as highly efficient solar collectors especially during winter months.
- Incorporating deep balconies to reduce summer thermal loads on the residential units.

The Apartment Design Guide - Part 04 is relevant to the assessment of the daylight access into residential components of the project. The above guide states that:

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

The ADG acknowledges that achieving the above design criteria may not be possible on some sites. This includes:

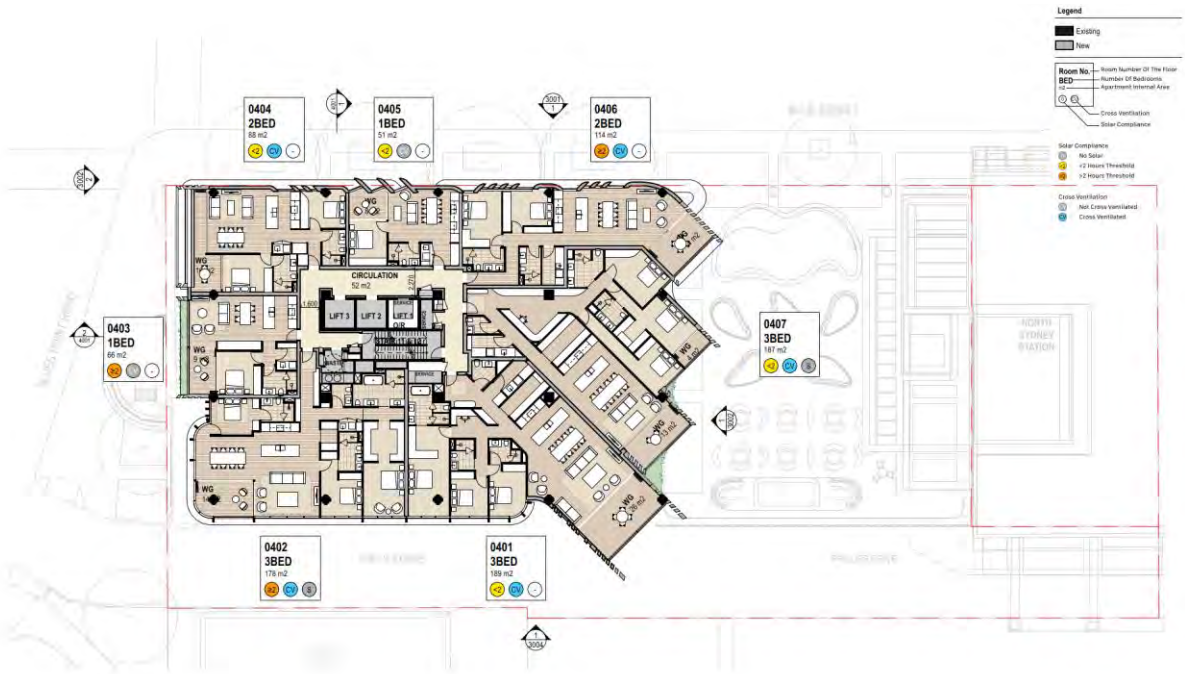
- Where greater residential amenity can be achieved along a busy road or rail line by orientating the living rooms away from the noise source.
- On south facing sloping sites
- Where significant views are orientated away from the desired aspect for direct sunlight.

The justification as to why the solar access is lower than the design criteria for this development are that many apartments have been designed to be orientated to a south/south-west manner to maximise views to Lavender Bay and Sydney CBD.

The development Class 2 apartments have been assessed by the project Architect for solar access to the site between 9.00 am and 3.00 pm on the winter solstice. The following conclusions have been reached from the solar access study:

  - 61.3% (38 of 62) of apartments will achieve 2 hours solar access across the assessment window.
  - 0% of apartments will achieve 0 hours solar access across the assessment window.

Figure 3 Level 04-08 Typical Plan including Solar Analysis



3.1.3 Natural Ventilation

Wind-induced natural ventilation works on the straightforward principle of differential pressure. If a building envelope has multiple openings and there exists a pressure difference between those openings, e.g. the wind pressure at one opening is greater than the pressure at the other openings; airflow will be pushed through the building in the direction positive to negative.

The resulting amount of airflow through the building envelope will be a function of the magnitude of the pressure differential, size of the various building openings and degree of “blockage” in between.

3.1.3.1 Residential Apartments

The most important role of natural ventilation in the context of the residential apartments is to remove accumulated heat gain during periods of overheating. In this case, ventilation is intended to achieve predicted rates of volumetric air change. Also important during the summer months is the role of ventilation in directly improving the perception of thermal comfort by occupants of a space. This is achieved when moving air aids the evaporation of perspiration by passing over the skin. If there is some air movement, most people will tolerate somewhat higher temperatures.

Heat build-up within apartments through daytime summer temperatures can be quickly purged with the availability of suitable breeze at the site.

The ADG encourages cross ventilation to be assisted by the building design. Building design should enable ventilation to be controlled, where comfort levels are maintained for the occupants during the summer and winter extremes. Locations of windows and openings within the apartment are to be suitably in line, where possible, with each other on opposite sides of the room. It is recommended that building openings be designed such that cross-ventilation is maximised, to minimise heat gain in summer.

Ventilation of building is achieved by permanent openings, windows, doors or other devices which have an aggregate opening or openable size of not less than 5% of the floor area of the ventilated room. The provision of ceiling fans for use in summer months is also encouraged.

In winter it is important to close off heated areas that need warming. The opportunity to open and close balcony doors will allow adequate control to moderate the impact of any higher than comfortable winds. It is recommended that the following initiatives are also incorporated to minimise heat leakage from the building:

- Design detailing of the glazing interface to the window framing system and the provision of adequate sealing in accordance with the National Construction Code (NCC).
- Doors leading to hallways, stairwells and non-common use areas provided with draught excluders to limit heat losses during winter months.
- Doors located throughout the development in general-use areas, such as access ways to/from the building, fitted with door closers where it is deemed that their opening will have an adverse effect on heat loss during winter.

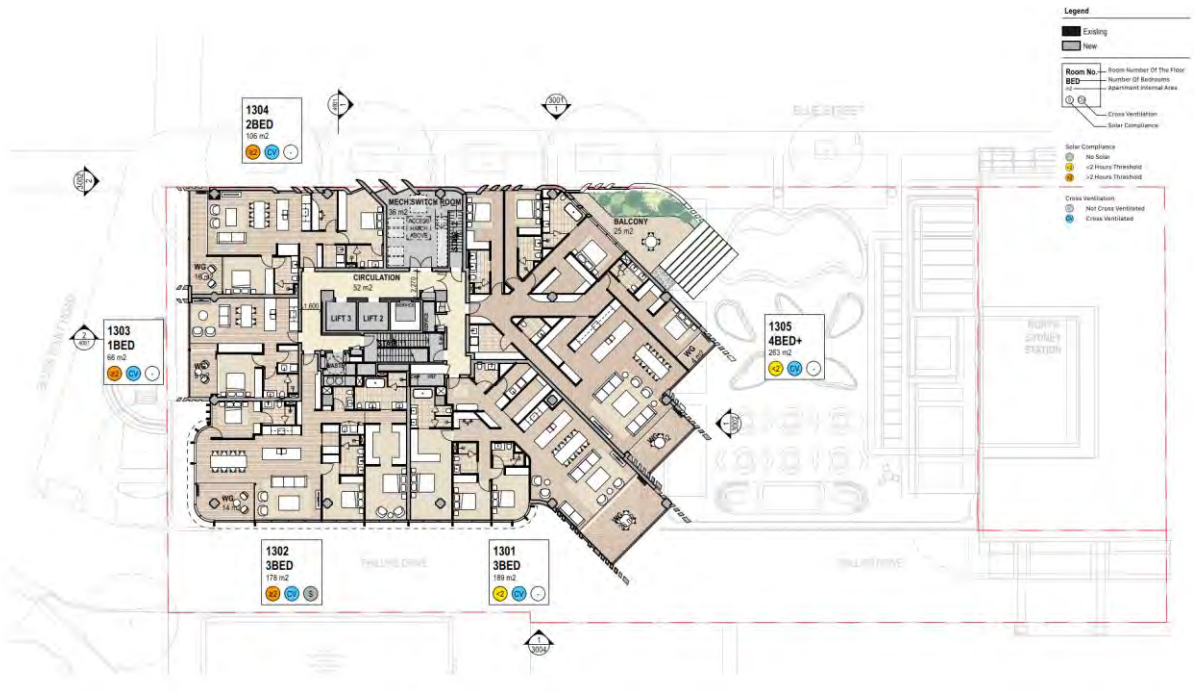
ADG specifies the following rules of thumb:

- 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.
- Building depth, which support natural ventilation typically range from 10 to 18 meters.
- Developments, which seek to vary from the minimum standards, must demonstrate how natural ventilation can be satisfactorily achieved, particularly in relation to habitable rooms.

The proposed development will incorporate passive and active energy-saving measures such as operable windows to enhance natural ventilation through the apartments, where appropriate;

  - 71.4% (25 of 35) of the proposed residential units for the first nine storeys are naturally cross-ventilated. (Minimum required 60%).

Figure 4 Level 13 Plan including Cross-Ventilation Analysis



3.2 Landscaping

The following points are noted with respect to the landscaping of the proposed development:

- The proposed landscaping plans (refer previous and below figures) show deep soil and planters. The use of trees and perimeter planting for shading is very effective in reducing the reflection of heat and light onto the building from surrounding paved areas. Planting also provides added cooling during the summer months through the leaf transpiration process.
- Most of the trees provided to the perimeter of the site will be evergreen trees, providing year-round wind, heat and solar mitigation.
- There is a combined area of over 210m2 of deep soil vegetation and garden areas, with a significant proportion of plant species to be provided deemed indigenous.

Figure 5 Level 14 Penthouse Plan showing Balcony Landscaping



3.3 Building Construction

Materials with low embodied carbon are those that require minimal energy and resources during their extraction, manufacturing, transportation, and installation processes. By choosing these materials, mixed-use projects can significantly reduce their overall carbon footprint and contribute to more sustainable construction practices.

It is recommended that the development considers the use of low embodied carbon materials such as concrete and steel with recycled content.

3.3.1 Building Massing

The proposed development will have a compact form requiring less heating and cooling than low-rise buildings that would tend to sprawl out over a site. Apartments will “share” heat with their adjacent neighbours and so gain and lose less heat to the external environment.

3.3.2 Building Materials

3.3.2.1 Walls

It is recommended that external walls are autoclaved aerated concrete (AAC) veneer or off form concrete with acoustic insulation where required. The use of this wall system is proposed to reduce the insulation required due to the inherent R value of the wall system. The insulation required will be determined by the NCC and Section J calculations.

It is recommended that intra-tenancy walls are to be lightweight plasterboard on stud or AAC panel with light steel frame and acoustic insulation where required. This is advantageous from a building life-cycle perspective, as it maximises the adaptive reuse potential when a building reaches the end of its intended use.

3.3.2.2 Roof

It is proposed to use concrete roof with plasterboard ceiling construction for all apartments throughout the building. Insulation is to be provided to roof/ceiling areas exposed to open air above. The insulation required will be determined by the NCC and Section J calculations. Waterproofing membrane will also be provided as part of the roof.

3.3.2.3 Glazing

Performance Glazing is recommended for most units, this will reduce the solar heat gain mostly on the western and eastern facades where low angle solar rays penetrate beneath shading devices. The glazing required will be determined by the NCC and Section J calculations.

3.3.2.4 Floor and Thermal Mass

Concrete slab construction is to be used for all floors throughout the development in accordance with BASIX and NCC Section J requirements. Concrete has amongst the highest thermal mass capacity among a range of common building products, as presented in the below table.

Generally, denser materials have higher mass which has the ability to store heat energy and then release it slowly to the room. This storage effectively smoothens out daily temperature variations within conditioned spaces, with corresponding reductions in both heating and cooling loads. Insulation is to be provided to floor areas exposed to open air.

Table 2 Indicative Thermal Mass Values of Various Materials

Material	Thickness (mm)	Thermal Mass (kJ/m^2.K)
Dolerite (Rock / Stone)	200	433
10-31 Solid Brick	190	410
Concrete	100	221
Concrete block	90	194
10.01 regular brick	90	151
Clay brick (3.5 kg solid + 0.5 kg mortar)	110	142
Aerated concrete block	100	50
Fibre cement sheet (compressed)	18	32
Wood flooring (hardwood)	19	25
Weatherboard (softwood)	15	16
Fibre cement sheet	6	8
Plasterboard	10	8
Glass	3	6
Expanded polystyrene (EPS-class SL)	50	1.8
Cork	6	1.6
Rockwool (batts)	50	1.5
Fibreglass (batts)	50	0.5
Air	50	0.5

3.3.3 Building Sealing

The purpose of sealing is to ensure that additional heating and cooling loads will not be introduced through building leakage.

A seal to restrict air infiltration must be fitted to each edge of an external door, operable external window or the like when serving a conditioned space in the proposed development. The seal may be a foam or rubber compressible strip, fibrous seal or the like.

The bathroom/toilet and laundry exhaust fans in the proposed development must be fitted with a sealing device such as a self-closing damper or the like.

3.3.4 Heat Island Effect Mitigation

The urban heat island (UHI) effect refers to the phenomenon where urban areas experience significantly higher temperatures than their surrounding rural regions, primarily due to human activities and the concentration of heat-absorbing surfaces like concrete and asphalt.

As cities grow and natural landscapes are replaced with buildings and roads, the heat island effect intensifies, leading to increased energy consumption, elevated emissions, and heightened health risks during heatwaves.

To mitigate this, it is recommended that light coloured roofing and wall materials of Solar Reflective Index (SRI) of 50 or more is considered for the development.

Similarly, for unshaded hardscapes and pavements, it is recommended that materials with initial SRI value of at least 39 are considered.

Figure 6 Roof Terrace Pavements with High SRI Materials



3.4 Active Energy Efficiency

Active energy efficiency is achieved by putting in place energy efficient electrical items such as air-conditioning systems, artificial lighting to reduce the energy usage of the building.

3.4.1 Mechanical Ventilation and Air Conditioning

Where mechanical ventilation is required, the use of energy efficiency measures will be fully explored during detailed design. These measures include linking mechanical ventilation to manual switching where allowable under the NCC and using individual fans rather than a common ducted ventilation system with constant operation. These initiatives will provide significant savings in energy use and associated operational energy costs of the development.

Individual 1-phase air-conditioning systems are recommended for all living areas and bedrooms in the dwelling units with 4 star rating for heating and cooling requirements.

Mechanical ventilation and air conditioning of non-residential spaces will comply with NCC Section J Energy Efficiency requirements:

- An air-conditioning unit or system must:
    - Be capable of being inactivated when the building served is not occupied; and
    - Thermostatically control the temperature of each zone or area when serving more than one zone
    - Provides the required mechanical ventilation, other than in climate zone 1 or where dehumidification control is needed, must have an outdoor air economy cycle if the total air flow rate of any airside component of an air-conditioning system is greater than or equal to the figures in Table J6D3 of NCC 2022.
    - When two or more air-conditioning systems serve the same space, they must use control sequences that prevent the systems from operating in opposing heating and cooling modes.
    - Contains more than one water heater, chiller or coil, must be capable of stopping the flow of water to those not operating; and with an airflow of more than 1000 L/s, must have a variable speed fan when its supply air quantity is capable of being varied;
- A mechanical ventilation system must be capable of being deactivated when the building or part of the building served by that system is not occupied.

3.4.2 Domestic Hot Water

Centralised energy efficient electric air sourced heat pump hot water system is recommended for water heating within the proposed development.

3.4.3 Lifts

Gearless traction with variable voltage variable frequency (VVVF) motor is recommended for lifts within the proposed development.

3.4.4 Lighting

3.4.4.1 Natural Lighting

The proposed development maximises daylighting opportunities in most units, therefore minimising the use of artificial lighting.

3.4.4.2 Artificial Lighting

Household lighting energy use in Australia is increasing due to the construction of larger homes and the installation of more light fittings per home. It is estimated that most homes could readily reduce the amount of energy they use for lighting by 50% or more.

Lighting installations require a design that properly considers the conservation of scarce energy resources. Sustainable lighting design ensures that illuminance is not excessive, that the switching arrangements are such that unnecessary illumination may be turned off and that the illumination is provided in an efficient manner.

There are additional energy losses associated with inefficient lamps and lighting losses associated with luminaries. Consequently, a lighting design which uses the most efficient lamp types and the least number of luminaries for a given design illuminance will be more efficient and usually have a lower capital cost.

It is likely that the lighting to be used within the development will incorporate LED lamps generally. It is recommended that the following lighting features be incorporated into the development to minimise energy consumption due to lighting:

- Maximise use of LED and minimise or where possible eliminate the use of halogen down lights, as LED are much more efficient than halogen lighting.
- The external lights are operated on a combination of daylights sensors and time clock.
- Use of lighting systems incorporating appropriate switching zones, time clock control and motion sensors is also proposed to optimise energy efficiency for lighting.

Furthermore, the project will comply with the NCC requirements of maximum illumination power densities.

3.4.5 Appliances

For BASIX compliance, the below measures for energy performance in residential appliances have been included:

- 3-star energy efficient dishwashers;
- 3-star energy efficient clothes dryer;
- An induction cooktop and electric oven to be installed within each residential dwelling.

3.4.6 PV Solar Green Initiatives

As the worldwide demand for fuel increases, alternative and renewable energy sources are emerging as economical and sustainable. Alternative renewable energy sources are becoming more attractive options because of increased global demand for fuels, environmental responsibility, affordability and new local, state and federal government legislations.

SLR recommends the installation of a solar PV system.

- A 20 kW PV solar system is recommended to reduce greenhouse gas emission.
- A 20 kW PV solar system is indicated to offset approximately 28.7 MWh/year of energy usage.

- The estimated greenhouse gas CO2 emission saving is approximately 19.2 t.CO2/annum.

This will be further evaluated as the design progresses.

Figure 7 PV Solar on Roof



3.4.7 Electrification and Green Power Initiative

Electrification of the proposed buildings will allow for a streamlined energy system powered increasingly by renewable sources and improves compatibility with future grid decarbonisation.

It is also recommended that a high percentage of “Greenpower” should be made available to occupants, providing the opportunity to contribute to a reduction in total greenhouse gas emissions produced by the proposed development. Greenpower is produced from environmentally friendly renewable energy sources such as solar, wind, water and biomass.

When a Greenpower product is selected by the owner, the energy supplier commits to buying a certain amount of electricity from approved new renewable energy sources. The financial accounts of Greenpower suppliers are audited independently. This makes a clear distinction between the services provided by standard energy suppliers and the more sustainable service offered through Greenpower options.

The National Greenpower website[1] states that “Australian households generate almost one-fifth of Australia's greenhouse pollution through everyday activities such as transport and household energy use”. The average household in Australia emits over seven to eight tonnes of greenhouse pollution each year through energy use alone. This is because most households source their electricity from burning coal and other fossil fuels. By choosing accredited Greenpower, up to 100% of a household's energy usage can be generated from renewable sources.

[1] http://www.greenpower.gov.au

3.5 Water

Australians use more than one million litres of freshwater per person each year (source: Green Building Council of Australia 2006).

In addition to increased water use efficiency, new developments can reduce potable water demand by residents, and visitors through the provision of an on-site alternative water supply. There are three principal forms of alternative water supply that may be considered:

- Reticulation of reclaimed water to the site
- Rainwater/stormwater storage and reuse
- Grey water storage and reuse.

It is recommended that the above types of alternate water supply be explored where applicable for use in landscape irrigation and fire services, reducing the demand for potable water.

Appropriate rainwater/stormwater tanks are recommended to be considered in the design.

3.5.1 Water Efficiency

The minimum sustainable standard for water efficient fixtures and fittings is 3 star. To achieve greater than the standard level, following water efficient fixtures and fittings are recommended for the proposed site:

- All residential kitchen and bathroom taps are 5-star;
- All shower heads are 4 star (>6 but <=7.5 L/min);
- All residential toilet flushing systems are 4 star;
- All residential dishwashers are 2-star;

Implementation of the above recommendations will assist in reducing the water consumption.

3.5.2 Landscape Irrigation

Based on international best practice guidelines, it is generally recommended that either 90% of the water requirement for landscape irrigation is sourced from on-site rainwater collection or recycled water. Alternatively, best practice would also be achieved with the installation of a water efficient irrigation system comprising subsoil drip systems and automatic timers with rainwater or soil moisture sensor control override.

The landscape design should focus on using native coastal and other drought resistant species that rely primarily on rainwater for their water needs. The following is recommended to be incorporated into the development to minimise water consumption for landscape irrigation.

- Native coastal and other drought resistant species that rely primarily on rainwater for their water needs where appropriate and possible.
- Indigenous species are recommended to comprise over 30% of the provided landscaping.

3.6 Transport

When designing a sustainable development, it is important to minimise the use of individual motorised transport where possible and thus enhance energy savings and environmental

impact through reduced fossil fuel consumption and improved regional air quality. This can be achieved by encouraging the use of energy efficient public transport that is immediately at hand, reducing car parking facilities, and providing adequate bike storage facilities to minimise the requirement for individual motorised transport.

The surrounding local context of the site is depicted below.

Figure 8 Public Transport Connections



Image: Courtesy Google Maps, May 2026

3.6.1 Commuting Using Public Transport

Developments that are within close proximity of good transport nodes with frequent service should be encouraged. The proposed building is located near mass transit and will allow more people to take public transportation to keep their automobiles off the road.

The proposed development is located near mass transit options (North Sydney Train Station and Victoria Cross Metro). The proposed development will encourage occupants and users of the development to use public transportation and minimise automobile use.

3.6.2 Provision of Car Parking

Transport emissions are one of the largest contributors of greenhouse gas emissions in Australia.

The project is committed to provision for future installation of EV chargers in 100% of car parking spaces.

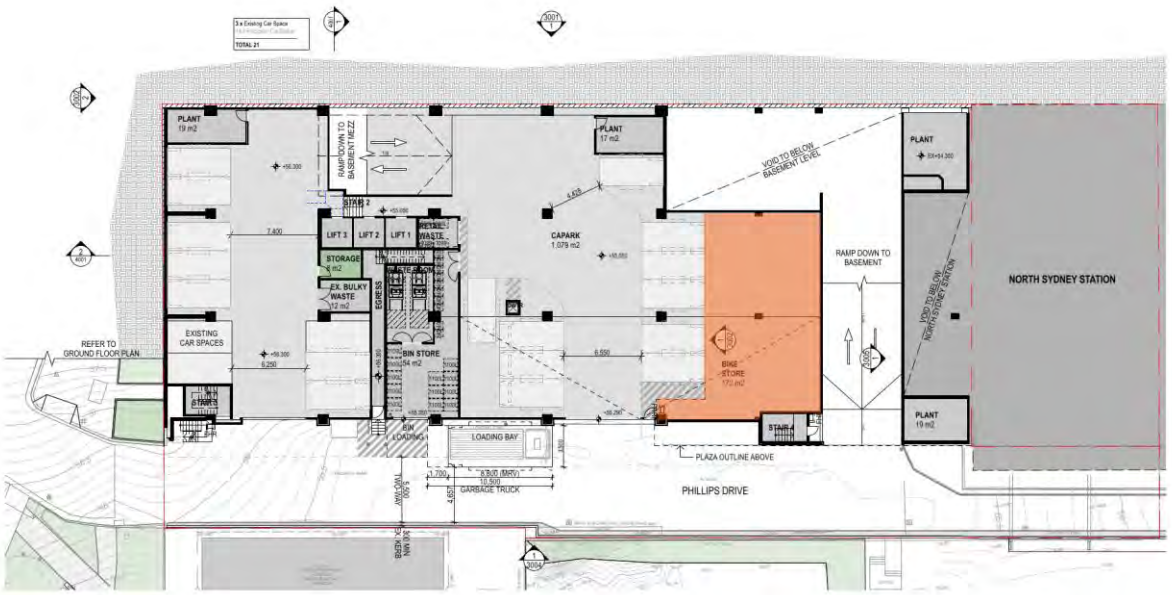
3.6.3 Facilitation of Pedestrian and Non-motorised Transport

Bike storage facilities are proposed to be included in the development to help minimise the requirement for individual motorised transport.

Sufficient recreational opportunities are easily accessible to occupants, eliminating the requirement for long-distance motorised transport for most recreational activities. This would be a positive feature of the development with regards to sustainability as this clearly avoids

greenhouse gas emissions that would otherwise have been produced if residents had to travel long distances for recreational activities.

Figure 9 Basement 2 Plan showing Cyclist Facilities



3.7 Indoor Environmental Quality

Achieving enhanced Indoor Environment Quality (IEQ) ensures that the building and building services are designed and managed to benefit the health and well-being of building occupants and visitors.

3.7.1 Asbestos

It is recommended that Asbestos identification and removal procedures be included in the site Environmental Management Plan (EMP) where required.

3.7.2 Internal Noise Levels

Internal noise levels are a significant factor in determining occupant and customer satisfaction and well-being. The aim of controlling internal noise levels is to encourage and recognise buildings that are designed to maintain internal noise levels at an appropriate level. Further information can be found in the Acoustic Report developed for the project.

3.7.3 Carbon Monoxide Monitoring and Control

Elevated carbon monoxide (CO) levels are indicative of inadequate ventilation, affecting the quality of air within an enclosed occupied space, and the health of the occupants. CO monitoring systems can detect elevated concentrations of CO and automatically adjust ventilation supply rates before indoor air quality becomes problematic.

SLR Consulting recommends investigating a CO monitoring system to the internal carpark areas where appropriate to satisfy NCC requirements.

3.7.4 Paints and Floor Coverings

SLR recommends the use of paints and floor coverings with low levels of volatile organic compounds (VOC) and low formaldehyde wood products where possible.

3.8 Waste Management

An Operational Waste and Recycling Management Plan is a minimum requirement to meet sustainable building design best practice. The Waste and Recycling Management Plan includes:

- Separate waste and recycling streams;
- Transfer of material to common storage area;
- Communal storage areas;
- Frequency of collection; and
- Signage and educational initiatives for occupants.

A Waste Management Plan is recommended to track all waste going offsite to show that at least 80% of all construction waste is re-used or recycled.

4.0 Conclusion

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Zurich Australian Insurance Properties Pty Ltd (the Applicant) to provide a qualitative Ecologically Sustainable Design (ESD) assessment for the proposed mixed use development located at 5 Blue Street, North Sydney (the Site).

In accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs) and in support of the State Significant Development Application (SSDA) SSD-86270706, this study has been prepared in accordance with the ESD principles as defined in section 193 of the EP&A Regulation.

The development includes many ecologically sustainable design features. This report provides an overview of these features.

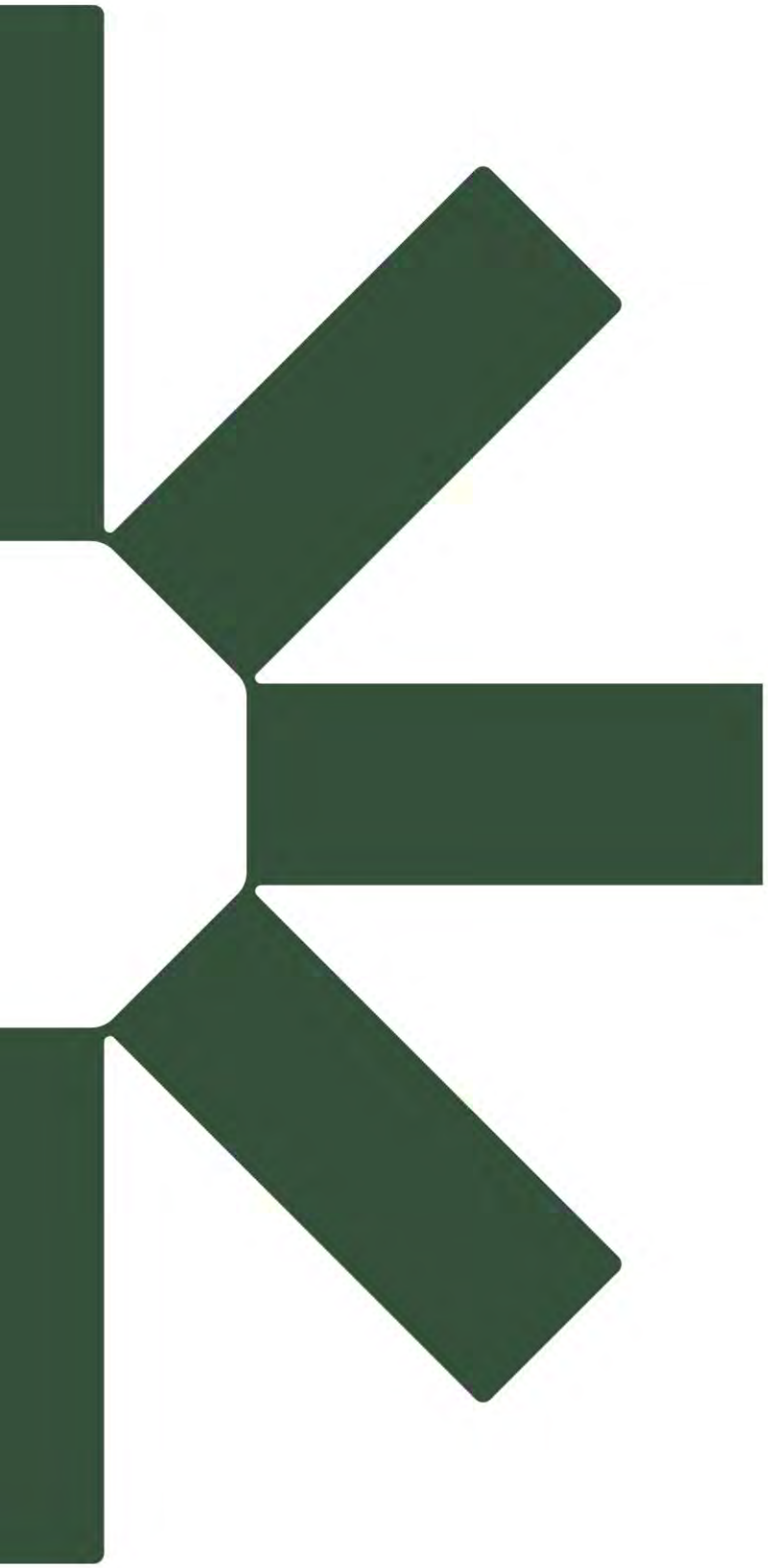
The following ESD and energy efficiency features are proposed to be included in the design:

- The proposed development will incorporate passive and active energy-saving measures such as operable windows to enhance natural ventilation through the apartments, where appropriate;
    - 71.4% (25 of 35) of the proposed residential units for the first nine storeys are naturally cross-ventilated. (Minimum required 60%).
- The form dictated by the site has been designed to maximise the solar access of residential units to target;
    - 61.3% (38 of 62) of apartments will achieve 2 hours solar access across the assessment window.
    - 0% of apartments will achieve 0 hours solar access across the assessment window.
- Thermal mass - Concrete slab construction is proposed for all floors throughout the development - concrete has amongst the highest thermal mass capacity of a range of common building products. The proposed development's external walls, structural internal walls, and slabs should be predominantly high thermal mass materials.
- LED energy-efficient lighting for all spaces;
- Centralised energy-efficient electric air sourced heat pump hot water systems;
- Gearless traction with variable voltage variable frequency (VVVF) motor lifts;
- Individual 1-phase air-conditioning systems for all living areas and bedrooms in the dwelling units with 4-star rating for heating and cooling requirements;
- Energy efficient clothes dryers and energy and water efficient dishwasher units to be installed within each residential dwelling.
- Provision of induction cooktop and electric oven;
- Low flow fixtures and fittings, including at least 5-star taps and shower heads;
- In addition, the project considers rainwater reuse for irrigation purposes;
- Light efficiency measures in the lobbies using time clock and motion sensors;
- Low levels of volatile organic compounds (VOC) paints and floor coverings and low formaldehyde wood products where possible;
- Use of materials with high SRI values for roofing and terrace pavements.

- The project is committed to provision for future installation of EV chargers in 100% of car parking spaces.
- The provision of bicycle storage spaces within the development is proposed to support the use of low emission transportation opportunities by the users and occupants;
- Landscaped areas are within the residential development throughout the designated communal areas. Proposed planting provides added cooling during the summer months through the leaf transpiration process and is also useful for wind amelioration;
- Plant species within the development would be predominantly indigenous species that can tolerate low water to reduce maintenance requirements;
- SLR recommends the installation of a solar PV system.
    - A 20 kW PV solar system is recommended to reduce greenhouse gas emission.
    - A 20 kW PV solar system is indicated to offset approximately 28.7 MWh/year of energy usage.
    - The estimated greenhouse gas CO2 emission saving is approximately 19.2 t.CO2/annum.
- The proposed residential development is proposed to enjoy a high level of thermal comfort gaining an average 7 NatHERS star rating.
- The development also meets BASIX targets in Water (Target 40) and in Energy (Target 58).

The report body contains recommendations regarding other ESD features, such as a mechanical ventilation system, domestic hot water, other appliances, and operational waste. These features are proposed to help achieve significant reductions in energy and water required by the development both in building and operation, in addition to ensuring that the residential units are pleasant spaces to reside.

It is recommended that the proposed ESD initiatives continue to be developed and implemented, and the performance benchmarks be met during the detailed design phase, as the design of building services progresses and becomes more refined.



Making Sustainability Happen

BASIX™ Certificate

Building Sustainability Index
www.planningportal.nsw.gov.au/development-and-assessment/basix

Multi Dwelling

Certificate number: 1849721M_02

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 10/09/2020 published by the Department. This document is available at www.planningportal.nsw.gov.au/definitions

Secretary
Date of issue: Friday, 05 June 2026
To be valid, this certificate must be submitted with a development application or lodged with a complying development certificate application within 3 months of the date of issue.

When submitting this BASIX certificate with a development application or complying development certificate application, it must be accompanied by NatHERS certificate U1FFLQIEEG.

Project summary	
Project name	5 Blue Street, North Sydney_02
Street address	5 BLUE STREET NORTH SYDNEY 2060
Local Government Area	NORTH SYDNEY
Plan type and plan number	Deposited Plan DP713944
Lot no.	2
Section no.	-
No. of residential flat buildings	1
Residential flat buildings: no. of dwellings	62
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Project score			
Water	✔	40	Target 40
Thermal Performance (Simulation method)	✔	Pass	Target Pass
Energy	✔	60	Target 60
Materials	✔	-91	Target n/a

Certificate Prepared by
Name / Company Name: SLR Consulting Pty Ltd
ABN (if applicable): 29001584612

Description of project

Project address	
Project name	5 Blue Street, North Sydney_02
Street address	5 BLUE STREET NORTH SYDNEY 2060
Local Government Area	NORTH SYDNEY
Plan type and plan number	Deposited Plan DP713944
Lot no.	2
Section no.	-

Project type	
No. of residential flat buildings	1
Residential flat buildings: no. of dwellings	62
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Site details	
Site area (m²)	3051
Roof area (m²)	1087
Non-residential floor area (m²)	410
Residential car spaces	73
Non-residential car spaces	0

Common area landscape	
Common area lawn (m²)	200
Common area garden (m²)	650
Area of indigenous or low water use species (m²)	0

Assessor details and thermal loads	
Assessor number	101556
Certificate number	U1FFLQIEEG
Climate zone	17

Project score			
Water	✔	40	Target 40
Thermal Performance (Simulation method)	✔	Pass	Target Pass
Energy	✔	60	Target 60
Materials	✔	-91	Target n/a

Description of project

The tables below describe the dwellings and common areas within the project

Residential flat buildings - Building1, 62 dwellings, 14 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0401	3	189	0	0	0
0405	1	51	0	0	0
0502	3	178	0	0	0
0506	2	115	0	0	0
0603	1	66	0	0	0
0607	3	187	0	0	0
0704	2	88	0	0	0
0801	3	189	0	0	0
0805	1	51	0	0	0
0902	2	115	0	0	0
1003	2	98	0	0	0
1101	3	189	0	0	0
1105	2	115	0	0	0
1203	1	66	0	0	0
1301	3	189	0	0	0
1305	4+	264	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0402	3	178	0	0	0
0406	2	115	0	0	0
0503	1	66	0	0	0
0507	3	187	0	0	0
0604	2	88	0	0	0
0701	3	189	0	0	0
0705	1	51	0	0	0
0802	3	178	0	0	0
0806	2	115	0	0	0
0903	3	187	0	0	0
1004	2	120	0	0	0
1102	3	178	0	0	0
1106	3	187	0	0	0
1204	2	106	0	0	0
1302	3	178	0	0	0
1401	4+	408	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0403	1	66	0	0	0
0407	3	187	0	0	0
0504	2	88	0	0	0
0601	3	189	0	0	0
0605	1	51	0	0	0
0702	3	178	0	0	0
0706	2	115	0	0	0
0803	1	66	0	0	0
0807	3	187	0	0	0
1001	3	189	0	0	0
1005	2	115	0	0	0
1103	2	98	0	0	0
1201	3	189	0	0	0
1205	3	157	0	0	0
1303	1	66	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0404	2	88	0	0	0
0501	3	189	0	0	0
0505	1	51	0	0	0
0602	3	178	0	0	0
0606	2	115	0	0	0
0703	1	66	0	0	0
0707	3	187	0	0	0
0804	2	88	0	0	0
0901	3	189	0	0	0
1002	3	178	0	0	0
1006	3	187	0	0	0
1104	2	120	0	0	0
1202	3	178	0	0	0
1206	3	187	0	0	0
1304	2	106	0	0	0

Description of project

The tables below describe the dwellings and common areas within the project

Common areas of unit building - Building1

Common area	Floor area (m²)
Gym area (No. 1)	167
Plant or service room (No. 1)	684
Hallway/lobby type (No. 1)	569

Common area	Floor area (m²)
Undercover car park area (No. 1)	4000
Other internal common area (No. 1)	554
Lift bank (No. 1)	-

Common area	Floor area (m²)
Garbage room (No. 1)	75
Ground floor lobby type (No. 1)	125

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building1
    - (a) Buildings
        - (i) Materials
    - (b) Dwellings
        - (i) Water
        - (ii) Energy
        - (iii) Thermal Performance
    - (c) Common areas and central systems/facilities
        - (i) Water
        - (ii) Energy

2. Commitments for multi-dwelling housing
    - (a) Dwellings
        - (i) Water
        - (ii) Energy
        - (iii) Thermal Performance and Materials

3. Commitments for single dwelling houses
    - (a) Dwellings
        - (i) Water
        - (ii) Energy
        - (iii) Thermal Performance and Materials

4. Commitments for common areas and central systems/facilities for the development (non-building specific)
    - (b) Common areas and central systems/facilities
        - (i) Water
        - (ii) Energy

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carriedout. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

1. Commitments for Residential flat buildings - Building1

(a) Buildings

(i) Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the “Floor types”, “External wall types”, “Internal wall types”, “Ceiling and roof types”, “Frames” and “Glazing” tables below.			✔
(b) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all specifications included in the tables below.		✔	
(c) The applicant must construct the floors, walls, roof, ceiling and roof, windows, glazed doors and skylights of the development in accordance with the specifications listed in the tables below. In the case of glazing, a 5% variance from the area values listed in the “Frames” and “Glazing” tables is permitted.	✔	✔	✔
(d) The applicant must show through receipts that the materials purchased for construction are consistent with the specifications listed in the below tables.			✔

Floor types			
Floor type	**Area (m2)**	**Insulation**	**Low emissions option**
garage floor, frame: suspended concrete slab	4500	-	-
floors above habitable rooms, frame: suspended concrete slab	10346.4	fibreglass batts or roll	-

External wall types				
External wall type	**Construction type**	**Area (m2)**	**Low emissions option**	**Insulation**
External wall type 1	framed (fibre cement sheet or boards),frame:light steel frame	5426	-	fibreglass batts or roll

Internal wall types			
Internal wall type	**Construction type**	**Area (m2)**	**Insulation**
Internal wall type 1	plasterboard, frame:light steel frame	7512	-
Internal wall type 2	75 mm AAC panel, frame:light steel frame	3850	fibreglass batts or roll

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	**Volume (m^3)**	**Low emissions option**
yes	850	-

Ceiling and roof types			
Ceiling and roof type	**Area (m^2)**	**Roof Insulation**	**Ceiling Insulation**
concrete - plasterboard internal, frame: light steel frame	1087	-	expanding foam

Glazing types			Frame types				
Single glazing (m^2)	**Double glazing (m^2)**	**Triple glazing (m^2)**	**Aluminium frames (m^2)**	**Timber frames (m^2)**	**uPVC frames (m^2)**	**Steel frames (m^2)**	**Composite frames (m^2)**
0	1840	0	1840	0	0	0	0

(b) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✔	✔	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✔	✔
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✔	✔
(e) The applicant must install:			
(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and		✔	✔
(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✔	✔
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✔	✔	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✔	
(g) The pool or spa must be located as specified in the table.	✔	✔	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✔	✔	✔

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	-	not specified	2 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	**Alternative water supply systems**	**Size**	**Configuration**	**Landscape connection**	**Toilet connection (s)**	**Laundry connection**	**Pool top-up**	**Spa top-up**
All dwellings	No alternative water supply	-	-	-	-	-	-	-

(ii) Energy	**Show on DA plans**	**Show on CC/CDC plans & specs**	**Certifier check**
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✔	✔	✔
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✔	✔
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✔	✔
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✔	✔
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✔	✔	✔
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must:			
(aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and		✔	
(bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✔	
(h) The applicant must install in the dwelling:			
(aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below;		✔	

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✔ ✔	✔
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✔	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	Central hot water system (No. 1)	individual fan, ducted to façade	manual switch on/off	individual fan, ducted to façade	manual switch on/off	individual fan, ducted to façade	manual switch on/off

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
All dwellings	1-phase airconditioning - ducted / 4 star (average zone)	1-phase airconditioning - ducted / 4 star (average zone)	1-phase airconditioning - ducted / 4 star (average zone)	1-phase airconditioning - ducted / 4 star (average zone)	0	no

	Individual pool			Individual spa		Appliances other efficiency measures				
Dwelling no.	Pool heating system	Pool Pump	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Dishwasher	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	-	induction cooktop & electric oven	3 star	3 star	no	no

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✔		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✔	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✔	✔
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✔	✔	✔
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✔	✔	✔
(i) The applicant must show on The plans accompanying The development application for The proposed development, The locations of ceiling fans set out in The Assessor Certificate.	✔		
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.		✔	

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
0401	23.1	4.1	27.200
0402	22.7	10.3	33.000
0403	22.6	15.4	38.000
0404	11.3	15.7	27.000

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
0405	10.5	9.6	20.100
0406	6.1	5.1	11.200
0407	18.7	3.1	21.800
0501	23.7	4.10	27.800
0502	23.3	10.3	33.600
0503	23.3	15.4	38.700
0504	11.7	15.5	27.200
0505	11	9.6	20.600
0506	6.4	5.1	11.500
0507	19.2	3.1	22.300
0601	24.3	4	28.300
0602	23.8	10.1	33.900
0603	24.1	14.9	39.000
0604	12.2	15.4	27.600
0605	11.2	9.6	20.800
0606	6.9	5.1	12.000
0607	19.6	3	22.600
0701	24.7	3.9	28.600
0702	24.2	10.1	34.300
0703	24.5	14.4	38.900
0704	12.5	15.3	27.800
0705	11.6	9.3	20.900
0706	7.1	5	12.100
0707	19.8	2.9	22.700
0801	25.3	3.9	29.200
0802	24.7	9.9	34.600
0803	15.4	8.6	24.000
0804	13	15	28.000
0805	12	9.2	21.200
0806	7.5	5.1	12.600
0807	20.2	2.9	23.100

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
0901	27.7	3.6	31.300
0902	8	6.1	14.100
0903	22.1	2.5	24.600
1001	28.1	3.6	31.700
1002	27.3	9.1	36.400
1003	24.4	9.7	34.100
1005	8.1	6.1	14.200
1006	22.5	2.5	25.000
1101	28.3	3.7	32.000
1102	27.5	9	36.500
1103	24.6	9.5	34.100
1105	8.2	6.2	14.400
1106	22.6	2.5	25.100
1201	28.6	3.6	32.200
1202	27.8	9.3	37.100
1203	18.3	7.5	25.800
1204	7	6.2	13.200
1205	6.6	5.3	11.900
1206	22.9	2.4	25.300
1301	25.9	3.7	29.600
1302	28.5	10.2	38.700
1303	19.3	7.8	27.100
1304	13.1	8.3	21.400
1305	17.3	5.9	23.200
1401	29	9.7	38.700
All other dwellings	7.9	5.7	13.600

(c) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✔	✔
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✔	✔	✔
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✔	✔	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✔	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✔	✔
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✔	✔

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✔	✔
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✔	✔
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✔	✔	✔

	Common area ventilation system		Common area lighting		
Common area	**Ventilation system type**	**Ventilation efficiency measure**	**Primary type of artificial lighting**	**Lighting efficiency measure**	**Lighting control system/ BMS**
Gym area (No. 1)	air conditioning system	time clock or BMS controlled	light-emitting diode	daylight sensors	no
Undercover car park area (No. 1)	ventilation exhaust only	carbon monoxide monitor + VSD fan	light-emitting diode	zoned switching with motion sensor	no
Garbage room (No. 1)	ventilation exhaust only	-	light-emitting diode	motion sensors	no
Plant or service room (No. 1)	no mechanical ventilation	-	light-emitting diode	motion sensors	no
Other internal common area (No. 1)	air conditioning system	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	no
Ground floor lobby type (No. 1)	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	no
Hallway/lobby type (No. 1)	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	no
Lift bank (No. 1)	-	-	light-emitting diode	connected to lift call button	no

Central energy systems	Type	Specification
Lift bank (No. 1)	gearless traction with V V V F motor	Number of levels with apartments served by a lift: 14 number of levels from the bottom of the lift shaft to the top of the lift shaft: 17 number of lifts: 3 lift load capacity: >= 1001 kg but <= 1500kg
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (a) Piping external to building: R0.75 (~32 mm); (b) Piping internal to building: R0.75 (~32 mm)

2. Commitments for multi-dwelling housing

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✔	✔	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✔	✔
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✔	✔
(e) The applicant must install: (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and		✔	✔
(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✔	✔
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✔	✔	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✔	
(g) The pool or spa must be located as specified in the table.	✔	✔	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✔	✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✔	✔	✔
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✔	✔
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✔	✔
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✔	✔	✔
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must:			
(aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and		✔	
(bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✔	
(h) The applicant must install in the dwelling:			
(aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below;		✔	
(bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and		✔	✔
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✔	
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✔	
(iii) Thermal Performance and Materials	**Show on DA plans**	**Show on CC/CDC plans & specs**	**Certifier check**
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			

(iii) Thermal Performance and Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✔		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✔	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✔	✔
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✔	✔	✔
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✔	✔	✔
(i) The applicant must show on The plans accompanying The development application for The proposed development, The locations of ceiling fans set out in The Assessor Certificate.	✔		
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.		✔	

3. Commitments for single dwelling houses

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✔	✔	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✔	✔
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✔	✔
(e) The applicant must install: (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✔ ✔	✔ ✔
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✔	✔	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✔	
(g) The pool or spa must be located as specified in the table.	✔	✔	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✔	✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✔	✔	✔
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✔	✔
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✔	✔
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✔	✔	✔
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must:			
(aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and		✔	
(bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✔	
(h) The applicant must install in the dwelling:			
(aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below;		✔	
(bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and		✔	✔
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✔	
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✔	
(iii) Thermal Performance and Materials	**Show on DA plans**	**Show on CC/CDC plans & specs**	**Certifier check**
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			

(iii) Thermal Performance and Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✔		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✔	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✔	✔
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✔	✔	✔
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✔	✔	✔
(i) The applicant must show on The plans accompanying The development application for The proposed development, The locations of ceiling fans set out in The Assessor Certificate.	✔		
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.		✔	

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✔	✔
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✔	✔	✔
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✔	✔	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✔	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✔	✔
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✔	✔

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✔	✔
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✔	✔
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✔	✔	✔

Central energy systems	Type	Specification
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 20 peak kW
Other	-	-

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✔" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✔" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✔" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).

5 Blue Street, North Sydney

NCC Section J Assessment – Deemed to Satisfy

Zurich Australian Insurance Properties Pty Ltd

118 Mount Street,
North Sydney NSW,
Australia 2060

Prepared by:

SLR Consulting Australia

SLR Project No.: 610.033915.00001

Client Reference No.: 610.033915.R02

4 June 2026

Revision: v1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	4 June 2026	Shawn Sun	Dr Neihad Al-Khalidy	Dr Neihad Al-Khalidy

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Zurich Australian Insurance Properties Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

Executive Summary

This National Construction Code (NCC) Section Energy Efficiency report has been prepared by SLR Consulting Australia Pty Ltd (SLR) on behalf of Zurich Australian Insurance Properties Pty Ltd (**the Applicant**) to address the project-specific Secretary's Environmental Assessment Requirements (SEARs) issued the proposed State Significant Development Application (SSDA) SSD-86270706 for the proposed mixed use residential development located at 5 Blue Street, North Sydney. The objective of the NCC Section J is to

- reduce energy consumption and energy peak demand;
- reduce greenhouse gas emissions; and
- improve occupant health and amenity.

The land subject to this Scoping Report is located at 5 Blue Street, North Sydney, within the North Sydney Local Government Area (LGA).

The site is located at the southern fringe of the North Sydney Centre. The locality is at the preliminary stages of urban renewal, which will transform the North Sydney CBD and surrounds into a world class CBD, supported by a range of transport options, retail and residential uses.

This report focuses solely on the NCC Section J compliance requirements for the non-residential component of the development and the associated communal spaces. These requirements are defined in Volume 1 of the 2022 National Construction Code (NCC), Section J — Energy Efficiency.

Section J contains several Deemed-to-Satisfy (DTS) subsections, each addressing a different aspect of energy efficiency performance for Class 2–9 buildings.

- J4 - Building fabric
- J5 - Building sealing
- J6 - Air-conditioning and ventilation
- J7 - Artificial light and power
- J8 - Heated water supply and swimming pool and spa pool plant
- J9 - Energy monitoring and on-site distributed energy resources

The NCC currently defines the development area as climate zone 5.

The sub classification for the proposed building is:

- Retail space – Class 6
- Co-living apartments – Class 3
- Co-living lobby and communal space – Class 3
- Shared gym and sport spaces – Class 3 (preservative design approach)

- Shared communal space – Class 3 (preservative design approach)

SLR recommends the following to the building fabrics to comply with NCC 2022 Section J:

- Roof and ceiling insulation requirements have been specified within Table 1. The total R-value of the roof system is required to be R3.7 where specified in Appendix A.

- Floor insulation requirements have been specified within Table 7. The total R-value of the floor system is required to be R2.0 where specified in Appendix B.

- Wall-glazing requirements and wall requirements have been specified within Table 4 and Table 5.

    - The total R-value of the external wall system is required to be R2.08 for external walls where specified in Appendix C.

    - The total R-value of the internal wall system is required to be R2.08 for internal walls where specified in Appendix C

This report contains requirements for building sealing, air conditioning, artificial lighting, hot water supply, and the Facilities for Energy Monitoring.

This report has provided advice about each subsection under Section J and identified how compliance with the NCC can be achieved regarding the proposed building. The architect and services designers must specify and document compliant constructions showing NCC Section J requirements are met.

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Appendices

Appendix A **NCC 2022 envelope roof/ceiling DTS requirements**

Appendix B **NCC 2022 Envelope Floor DTS Requirements**

Appendix C **Marked-up drawing for and NCC 2022 wall-glazing calculator DTS requirements external wall**

Appendix D **Glazing Calculator**

1.0 Introduction

This Section J-DTS report has been prepared by SLR Consulting Australia Pty Ltd (SLR) on behalf of Zurich Australian Insurance Properties Pty Ltd (**the Applicant**) to address the project-specific Secretary's Environmental Assessment Requirements (SEARs) issued the proposed State Significant Development Application (SSDA) SSD-86270706 for the proposed mixed use residential development located at 5 Blue Street, North Sydney. The objective of the NCC Section J is to

- reduce energy consumption and energy peak demand;
- and reduce greenhouse gas emissions; and
- and improve occupant health and amenity.

1.1 Site Description

The land subject to this Scoping Report is located at 5 Blue Street, North Sydney, within the North Sydney Local Government Area (LGA).

The site is located at the southern fringe of the North Sydney Centre. The locality is at the preliminary stages of urban renewal, which will transform the North Sydney CBD and surrounds into a world class CBD, supported by a range of transport options, retail and residential uses.

Figure 1: Project Site Location



Image: Courtesy Google Maps, May 2026

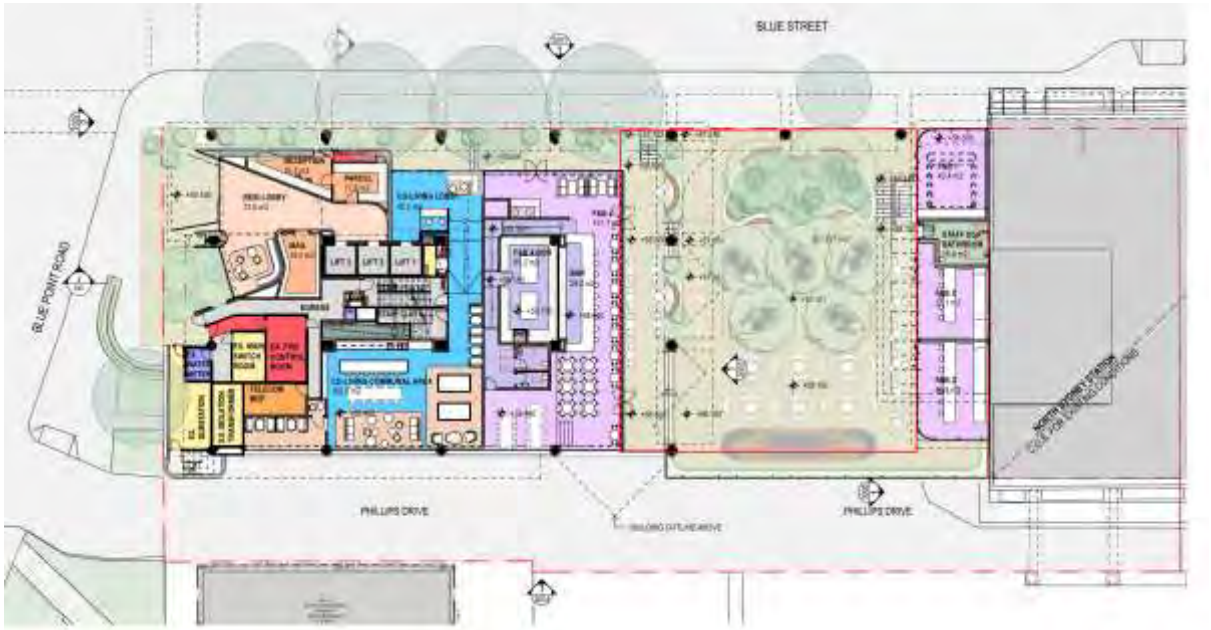
1.2 Development Description

The project at 5 Blue Street, North Sydney is proposed to comprise of:

- Demolition of the existing building and construction of a 14-storey mixed-use development including:
  - 86 Co-living apartments
  - 62 residential apartments
  - Amenity spaces for co-living and residents
  - Ground floor Retail amenity
  - Basement and above ground parking

The floor plans of the proposed development is shown in Error! Reference source not found..

Figure 2: Plan Views of the Proposed Development



Ground Floor



Level 1



Level 2



Level 3



Level 9

2.0 Building Code of Australia Energy Efficiency Requirements

Since the 2006 release of the Building Code of Australia (BCA) it is a mandatory requirement for all BCA class buildings, except Class 4 and Class 10 buildings, to achieve efficient use of energy.

This requirement has been defined in Volume 1 of the 2022 NCC under Section J and is titled *Energy Efficiency*. There subsections focus on separate aspects of energy efficiency.

- J4 - Building Fabric.
- J5 - Building Sealing.
- J6 - Air Conditioning and Ventilation Systems.
- J7 - Artificial Lighting and Power.
- J8 - Heated Water Supply and Swimming Pool and Spa Pool Plant.
- J9D3 - Facilities for Energy Monitoring.

This report will provide advice about each subsection and identify how compliance with the NCC can be achieved for these new requirements regarding the proposed development.

It shall remain the responsibility of the building designers to ensure that the installation meets the requirements of this report, and in turn the NCC.

2.1 Defining the Building Class

The sub classification for the proposed building is:

- Retail space – Class 6
- Co-living apartments – Class 3
- Co-living lobby and communal space – Class 3
- Shared gym and sport spaces – Class 3 (preservative design approach)
- Shared communal space – Class 3 (preservative design approach)

2.2 Defining the Energy Efficiency Requirements

The objective of Section J from Volume 1 of the NCC defines this section as being applicable to Class 2 to 9 buildings, other than Class 7, 8 or 9b buildings that do not have conditioned space. In this instance of the proposed development, there are requirements for compliance with Section J.

This report assumes the 2022 NCC Section J compliance for this development will be achieved through the Deemed-to-Satisfy method. In order to achieve compliance with Section J of the 2022 NCC, the proposed development must satisfy and achieve all requirements of every Deemed-to-Satisfy subsections where applicable.

2.3 Defining the BCA Climate

As the proposed development is situated within North Wollongong, NSW, parts of the NCC requirements will be based on these climate characteristics. The NCC currently defines the development area as climate zone 5 (shown in **Figure 3**).

Figure 3: Building Code of Australia Climate Zone Map



2.4 Design Documents

The report is prepared based on the design information received on 14 May 2026. The mark-up drawings used in this report are attached in Appendices.

3.0 Part J4 – Building Fabric

Part J4 of the 2022 NCC contains the requirements of the Deemed-to-Satisfy compliance of the building fabric. The purpose of this subsection is to ensure that the building fabric will provide sufficient thermal insulation to minimise heating and cooling loads placed on the building and the commensurate energy consumption HVAC systems servicing internal building spaces.

3.1 J4D2 – Application

As stated by the 2022 NCC, Part J4 applies to the commercial components of proposed building, including the swim school, retails, fitness, family entertainment, and the hotel with its services.

3.2 J4D3 – General Thermal Construction

Where thermal insulation is installed in exterior envelope walls or roof of the proposed development, the insulation must comply with AS/NZS 4859.1 and be installed so that it:

a. abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like where the insulation must be against the member;

b. forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and

c. does not affect the safe or effective operation of a *service* or fitting.

Where reflective insulation is installed in exterior envelope walls or roof of the proposed development, it must be installed with:

a. the necessary airspace to achieve the *required R-Value* between a reflective side of the *reflective insulation* and a building lining or cladding;

b. the *reflective insulation* closely fitted against any penetration, door or *window* opening;

c. the *reflective insulation* adequately supported by framing members; and

d. each adjoining sheet of roll membrane being:

- overlapped not less than 50 mm; or
- taped together.

Where bulk insulation is installed in exterior envelope walls or roof of the proposed development, it must be installed so that:

- it maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling or the like; and
- in ceilings where there is no bulk insulation or *reflective insulation* in the wall, it overlaps the wall member by not less than 50 mm.

The required Total R-Value and Total System U-Value, including allowance for thermal bridging, must be

- calculated in accordance with AS/NZS 4859.2 for a roof or floor; or

- determined in accordance with Specification 37 for wall-glazing construction; or
- determined in accordance with Specification 39 or Section 3.5 of CIBSE Guide A for soil or sub-floor spaces.

3.3 J4D4 – Roof and Ceiling Insulation

The proposed development is located in climate zone 5, the roof and ceiling system that is part of the envelope must achieve the minimum Total R-value of:

- in climate zones 1, 2, 3, 4 and 5, R3.7 for a downward direction of heat flow; and
- in climate zones 6, R3.2 for a downward direction of heat flow; and
- In climate zones 1, 2, 3, 4, 5, 6 and 7, the solar absorptance of the upper surface of a roof must be not more than 0.45.

Table 1 Roof R-value

Existing Roof	R-Value	R-Value Requirement	Compliance	Recommendations
Concrete slab + Plasterboard	0.3	3.7 (with a roof upper surface solar absorptance value not more than 0.45)	Compliance Readily Achievable	Additional insulation is required to meet the prescribed average total R value of R3.7.

Detailed mark ups of required roof insulation are shown in **Appendix A**.

3.4 J4D5 – Roof Lights

No roof lights have been provided to the proposed building, therefore this section is not applicable.

3.5 J4D6 – Walls and Glazing

The Total System U-Value of wall-glazing construction must not be greater than—

- for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a ward area, U2.0; and
- for a Class 3 or 9c building or a Class 9a ward area—
  - In climate zones 1, 3, 4, 6 or 7, U1.1; or
  - In climate zones 2 or 5, U2.0; or
  - in climate zone 8, U0.9.

The Total System U-Value of display glazing must not be greater than U5.8.

The Total System U-Value of wall-glazing construction must be calculated in accordance with Specification 37.

Wall components of a wall-glazing construction must achieve a minimum Total R-Value of—

- where the wall is less than 80% of the area of the wall-glazing construction, R1.0; or
- where the wall is 80% or more of the area of the wall-glazing construction, the value specified in Table J4D6a.

Table 2 Copy of J4D6a Minimum wall Total R-Value - Wall area 80% or more of wall-glazing construction area

Table J4D6a: Minimum wall Total R-Value - Wall area 80% or more of wall-glazing construction area

Climate zone	Class 2 common area, Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a *ward area*	Class 3 or 9c building or Class 9a *ward area*
1	2.4	3.3
2	1.4	1.4
3	1.4	3.3
4	1.4	2.8
5	1.4	1.4
6	1.4	2.8
7	1.4	2.8
8	1.4	3.8

The solar admittance of externally facing wall-glazing construction must not be greater than—

- for a Class 2 common area, a Class 5, 6, 7, 8 or 9b building or a Class 9a building other than a ward area, the values specified in Table J4D6b; and
- for a Class 3 or 9c building or a Class 9a ward area, the values specified in Table J4D6c.

The solar admittance of a wall-glazing construction must be calculated in accordance with Specification 37.

The Total system SHGC of display glazing must not be greater than 0.81 divided by the applicable shading factor specified in Clause 7 of Specification 37c7.

Table 3 Maximum wall-glazing construction solar admittance - Class 2 common area, Class 5, 6, 7, 8 or 9b building or Class 9a building other than a ward area

Table J4D6b: Maximum wall-glazing construction solar admittance - Class 2 common area, Class 5, 6, 7, 8 or 9b building or Class 9a building other than a ward area

Climate zone	Eastern aspect *solar admittance*	Northern aspect *solar admittance*	Southern aspect *solar admittance*	Western aspect *solar admittance*
1	0.12	0.12	0.12	0.12
2	0.13	0.13	0.13	0.13
3	0.16	0.16	0.16	0.16
4	0.13	0.13	0.13	0.13
5	0.13	0.13	0.13	0.13
6	0.13	0.13	0.13	0.13
7	0.13	0.13	0.13	0.13
8	0.2	0.2	0.42	0.36

Maximum wall-glazing construction solar admittance - Class 3 or 9c building or Class 9a ward area

Table J4D6c: Maximum wall-glazing construction solar admittance - Class 3 or 9c building or Class 9a ward area

Climate zone	Eastern aspect *solar admittance*	Northern aspect *solar admittance*	Southern aspect *solar admittance*	Western aspect *solar admittance*
1	0.07	0.07	0.10	0.07
2	0.10	0.10	0.10	0.10
3	0.07	0.07	0.07	0.07
4	0.07	0.07	0.07	0.07
5	0.10	0.10	0.10	0.10
6	0.07	0.07	0.07	0.07

Climate zone	Eastern aspect *solar admittance*	Northern aspect *solar admittance*	Southern aspect *solar admittance*	Western aspect *solar admittance*
7	0.07	0.07	0.08	0.07
8	0.08	0.08	0.08	0.08

Table 4 Wall-Glazing Calculation Results and Recommended average U-value and SHGC

Description	Façade	Wall-Glazing U-Value[1]	Solar Admittance	Compliance[2]		Recommended Average[3] – Glazing System	
				Method 1	Method 2 (Combined)	U-Value	SHGC
GF – Coliving Lobby and	North	1.57	0.08	Yes	Yes	5.6	0.30
	East	-	-	Yes	Yes	5.6	0.30

Description	Façade	Wall-Glazing U-Value[1]	Solar Admittance	Compliance[2]		Recommended Average[3] – Glazing System	
				Method 1	Method 2 (Combined)	U-Value	SHGC
Communal (Class 3)	South	3.32	0.15	No	Yes	5.6	0.30
	West	0.48	-	Yes	Yes	5.6	0.30
GF – F&B West (Class 6)	North	2.49	0.11	No	Yes	3.4	0.45
	East	2.49	0.11	No	Yes	3.4	0.45
	South	2.49	0.22	No	Yes	3.4	0.45
	West	0.48	-	Yes	Yes	3.4	0.45
GF – F&B East (Class 6)	North	1.46	0.17	No	Yes	3.6	0.37
	East	-	-	Yes	Yes	3.6	0.37
	South	1.46	0.19	No	Yes	3.6	0.37
	West	2.43	0.09	No	Yes	3.6	0.37
1F– Coliving	North	1.82	0.08	Yes	Yes	5.4	0.50
	East	1.78	0.08	Yes	Yes	5.4	0.50
	South	2.37	0.14	No	Yes	5.4	0.50
	West	1.46	0.06	Yes	Yes	5.4	0.50
2F– Coliving	North	2.19	0.10	No	Yes	5.4	0.50
	East	1.55	0.06	Yes	Yes	5.4	0.50
	South	2.30	0.14	No	Yes	5.4	0.50
	West	1.46	0.06	Yes	Yes	5.4	0.50
3F– Coliving	North	1.86	0.07	Yes	Yes	4.8	0.35
	East	0.85	0.02	Yes	Yes	4.8	0.35
	South	3.51	0.18	No	Yes	4.8	0.35
	West	1.34	0.04	Yes	Yes	4.8	0.35
9F – Shared Amenities and Communal Space (Class 3)	North	1.09	0.05	Yes	Yes	2.7	0.17
	East	0.48	-	Yes	Yes	2.7	0.17
	South	2.70	0.15	No	Yes	2.7	0.17
	West	2.68	0.13	No	Yes	2.7	0.17

Table 5 R-value of Proposed Wall System

Proposed Wall System	Proposed Average Wall R-Value[4]	Solar Adsorption	Compliance	Recommendations
Light Weight Cladding External Wall	R0.08	0.50	Compliance Readily Achievable	Additional insulation is required to meet the prescribed average total R value of R2.08.
Hebel Internal Wall	R0.70	0.50	Compliance Readily Achievable	Additional insulation is required to meet the prescribed average total R value of R2.08.

Wall-glazing calculations summary reports are shown in **Appendix C**.

Note:

U-value for the wall glazing system including Aluminium frame.

[2] Nominated compliance pathway: Either method can achieve compliance

[3] A JV3 Alternative Solution offers opportunities to reduce/remove higher glazing options finish.

3.6 J4D7 – Floors

A floor must achieve the total R-value specified in Table J4D7.

Table 6 Copy of J4D7 Floors – Minimum Total R-Value

Table J4D7: Floors – Minimum Total R-Value

Location	*Climate zone* 1— upwards heat flow	*Climate zones* 2 and 3 — upwards and downwards heat flow	*Climate zones* 4, 5, 6 and 7 — downwards heat flow	*Climate zone* 8 — downwards heat flow
A floor without an in-slab heating or cooling system	2.0	2.0	2.0	3.5
A floor with an in-slab heating or cooling system	3.25	3.25	3.25	4.75

Note to Table J1.6: For the purpose of calculating the Total R-Value of a floor, the sub-floor and soil R-Value must be calculated in accordance with Specification 39 or Section 3.5 of CIBSE Guide A.

The proposed floor system is as described below:

- Suspended concrete floor

Table 7 Summarises the R-values of the proposed floor systems, and the recommendations to achieve compliance.

Table 7 Floor Systems Summary and Recommendations

Proposed System	R-Value	R-Value Requirement	Compliance	Recommendations
Suspended Concrete Slab	0.3	2.0	Compliance Readily Achievable	Additional insulation is required to meet the prescribed average total R value of R2.0

Detailed mark ups of required floor insulation are shown in **Appendix B**.

4.0 Part J5 – Building Sealing

Part J5 of the 2022 NCC contains the requirements of the Deemed-to-Satisfy compliance for building sealing. The purpose of this subsection is to ensure that additional heating and cooling loads will not be introduced through building leakage.

4.1 J5D2 – Application

Building sealing is applicable to the conditioned spaces within the building.

4.2 J5D3 – Chimneys and Flues

The chimney or flue of an open solid fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue.

4.3 J5D4 – Roof Lights

No roof lights have been provided to the proposed development; therefore, this section is not applicable.

4.4 J5D5 – External Windows and Doors

The Part J5D5 of the NCC Section J requirements will apply to the development.

Part J5D5 of the 2022 NCC requires that a seal to restrict air infiltration must be fitted to each edge of an external door, openable external window or the like when serving a conditioned space. This requirement does not apply to:

- a window complying with AS 2047; or
- a fire door or smoke door; or
- a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security.

The seal may be a foam or rubber compressible strip, fibrous seal or the like.

A seal to restrict air infiltration—

- for the bottom edge of a door, must be a draft protection device; and
- for the other edges of a door or the edges of an openable window or other such opening, may be a foam or rubber compression strip, fibrous seal or the like.

An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, rapid roller door, revolving door or the like, other than—

- where the conditioned space has a floor area of not more than 50 m2; or
- where a café, restaurant, open front shop or the like has—
  - a 3 m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and
  - at all other entrances to the café, restaurant, open front shop or the like, self-closing doors.

A loading dock entrance, if leading to a conditioned space, must be fitted with a rapid roller door or the like.

4.5 J5D6 – Exhaust fans

An exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving—

- a conditioned space; or
- a habitable room in climate zones 4, 5, 6, 7 or 8.

4.6 J5D7 – Construction of ceilings, walls and floors

Ceilings, walls, floors and any opening such as a window frame, door frame, roof light frame or the like must be constructed to minimise air leakage in accordance with (2)—

- when forming part of the envelope; or
- in climate zones 4, 5, 6, 7 or 8.

Construction required by the above statement must be—

- enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or
- sealed at junctions and penetrations with—
  - close fitting architrave, skirting or cornice; or
  - expanding foam, rubber compressible strip, caulking or the like.

4.7 J5D8 – Evaporative coolers

An evaporative cooler must be fitted with a self-closing damper or the like—

(i) when serving a heated space; or

(ii) in climate zones 4, 5, 6, 7 or 8.

5.0 Part J6 – Air Conditioning and Ventilation Systems

Part J6 of the 2022 NCC contains the requirements of the Deemed-to-Satisfy compliance of a building's air conditioning and ventilation systems. The purpose of this subsection is to ensure that conditioned air (when required) is generated, controlled and supplied to the building in an energy efficient manner. This subsection also ensures that ventilation and exhaust systems are efficient, while also keeping the wasted conditioned air to a minimum.

The mechanical services engineer should ensure that the proposed air-conditioning systems for the development comply with the following sections.

5.1 J6D2 – Application

The Deemed-to-Satisfy Provisions of this Part do not apply to a Class 8 electricity network substation.

5.2 J6D3 – Air Conditioning System Control

The air-conditioning unit or system serving the conditioned spaces is to comply with the following performance requirements.

An air-conditioning unit or system must:

- Be capable of being deactivated when the building served is not occupied; and
    - Thermostatically control the temperature of each zone or area when serving more than one zone
    - not control the temperature by mixing actively heated air and actively cooled air; and
    - limit reheating to not more than—
        - for a fixed supply air rate, a 7.5 K rise in temperature; and
        - for a variable supply air rate, a 7.5 K rise in temperature at the nominal supply air rate but increased or decreased at the same rate that the supply air rate is respectively decreased or increased; and
- Provides the required mechanical ventilation, other than in climate zone 1 or where dehumidification control is needed, must have an outdoor air economy cycle if the total air flow rate of any airside component of an air-conditioning system is greater than or equal to the figures in Table 8.
- When two or more air-conditioning systems serve the same space, they must use control sequences that prevent the systems from operating in opposing heating and cooling modes.
- Contains more than one water heater, chiller or coil, must be capable of stopping the flow of water to those not operating; and with an airflow of more than 1000 L/s, must have a variable speed fan when its supply air quantity is capable of being varied;
- must have the ability to use direct signals from the control components responsible for the delivery of comfort conditions in the building to regulate the operation of central plant; and

- must have a control dead band of not less than 2°C, except where a smaller range is required for specialised applications; and
- must be provided with balancing dampers and balancing valves, as required to meet the needs of the system at its maximum operating condition, that ensure the maximum design air or fluid flow is achieved but not exceeded by more than 15% above design at each—
  - component; or
  - group of components operating under a common control in a system containing multiple components; and
- must ensure that each independently operating space of more than 1 000 m2 and every separate floor of the building has provision to terminate airflow independently of the remainder of the system sufficient to allow for different operating times; and
- must have automatic variable temperature operation of heated water and chilled water circuits; and
- when deactivated, must close any motorised outdoor air or return air damper that is not otherwise being actively controlled.

Time switches — the following applies:

- A time switch must be provided to control—
  - an air-conditioning system of more than 2 kWr; and
  - a heater of more than 1 kW heating used for air-conditioning.
- The time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.

Table 8 Copy of Table J6D3 - Requirement for an outdoor air economy cycle

Table J6D3: Requirement for an outdoor air economy cycle

Climate zone	Total air flow rate *requiring* an economy cycle (L/s)
2	9000
3	7500
4	3500
5	3000
6	2000
7	2500
8	4000

5.3 J6D4 – Mechanical Ventilation System Control

This subsection of J6D4 applies to all components of the proposed development as all spaces are to be mechanically ventilated. The mechanical ventilation systems are to comply with the following performance requirements.

A mechanical ventilation system must:

- Be capable of being deactivated when the building or part of the building served by that system is not occupied; and
- When serving a conditioned space-

- where specified in Table J6D4, have—
  - an energy reclaiming system that preconditions *outdoor air* at a minimum sensible heat transfer effectiveness of 60%; or
  - demand control ventilation in accordance with AS 1668.2 if appropriate to the application; and
- not exceed the minimum outdoor air quantity required by Part F6 by more than 20%, except where—
  - additional unconditioned outdoor air is supplied for free cooling; or
  - additional mechanical ventilation is needed to balance the required exhaust or process exhaust; or
  - an energy reclaiming system preconditions all the outdoor air; and
- for an airflow of more than 1000 L/s, have a variable speed fan unless the downstream airflow is required by Part F6 to be constant.

Table 9 Copy of Table J6D4 Required outdoor air treatment

Table J6D4: Required outdoor air treatment

Climate zone	*Outdoor air* flow (L/s)	*Required* measure
1	>500	Modulating control
2	Not applicable	No *required* measure
3	>1000	Modulating control
4 and 6	>500	Modulating control or energy reclaiming system
5	>1000	Modulating control or energy reclaiming system
7 and 8	>250	Modulating control or energy reclaiming system

5.4 J6D4 – Time Switch

Part J6D4 applies to the proposed development where applicable.

- A time switch must be provided to a mechanical ventilation system with an air flow rate of more than 1000 L/s.
- The time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.
- The above requirements do not apply to—
  - a mechanical ventilation system that serves—
    - only one sole-occupancy unit in a Class 2, 3 or 9c building; or
    - a Class 4 part of a building; or
  - a building where mechanical ventilation is needed for 24-hour occupancy.

5.5 J6D5 – Fan and Duct Systems

There are two options to demonstrate that a fan system that forms part of an air-conditioning system is compliant with J6D5.

Fans:

- The first option is to demonstrate that each of the individual components of a fan system are individually more efficient than the values specified in J6D5.
- The second option is to demonstrate that the fan system as a whole is more efficient than a system that is designed meeting the individual component requirements.

Ductwork:

- The pressure drop in the index run across all straight sections of rigid ductwork and all sections of flexible ductwork must not exceed 1 Pa/m when averaged over the entire length of straight rigid duct and flexible duct. The pressure drop of flexible ductwork sections may be calculated as if the flexible ductwork is laid straight.
- Flexible ductwork must not account for more than 6 m in length in any duct run.
- The upstream connection to ductwork bends, elbows and tees in the index run must have an equivalent diameter to the connected duct.
- Turning vanes must be included in all rigid ductwork elbows of 90° or more acute than 90° in the index run except where—
    - the inclusion of turning vanes presents a fouling risk; or
    - a long radius bend in accordance with AS 4254.2 is used.

Ductwork components in the index run:

- the ductwork components need to be more efficient than the values specified in J6D5.

5.6 J6D6 – Ductwork Insulation

Ductwork and fittings in an air-conditioning system must be provided with insulation—

- complying with AS/NZS 4859.1; and
- having an insulation R-Value greater than or equal to—
    - for flexible ductwork, 1.0; or
    - for cushion boxes, that of the connecting ductwork; or
    - that specified in Table J6D6.

Insulation must—

- be protected against the effects of weather and sunlight; and

- be installed so that it abuts adjoining insulation to form a continuous barrier; and maintains its position and thickness, other than at flanges and supports.
- when conveying cooled air—
    - be protected by a vapour barrier on the outside of the insulation; and
    - where the vapour barrier is a membrane, be installed so that adjoining sheets of the membrane—
        - overlap by at least 50 mm; and
        - are bonded or taped together.
- The requirements of above statements do not apply to—
    - ductwork and fittings located within the only or last room served by the system; or
    - fittings that form part of the interface with the conditioned space; or
    - return air ductwork in, or passing through, a conditioned space; or
    - ductwork for outdoor air and exhaust air associated with an air-conditioning system; or
    - the floor of an in-situ air-handling unit; or
    - packaged air conditioners, split systems, and variable refrigerant flow air-conditioning equipment complying with MEPS; or
    - flexible fan connections.
- For the purposes of the above statements, fittings—
    - include non-active components of a ductwork system such as cushion boxes; and
    - exclude active components such as air-handling unit components.

Table 10 Copy of Table J6D6 Ductwork and fittings – Minimum insulation R-Value

Table J6D6: Ductwork and fittings – Minimum insulation R-Value

Location of ductwork and fittings	*Climate zone* 1, 2, 3, 4, 5, 6 or 7	*Climate zone* 8
Within a conditioned space	1.2	2.0
Where exposed to direct sunlight	3.0	3.0
All other locations	2.0	3.0

5.7 J6D7 – Ductwork sealing

Ductwork in an air-conditioning system with a capacity of 3000 L/s or greater, not located within the only or last room served by the system, must be sealed against air loss in accordance with the duct sealing requirements of AS 4254.1 and AS 4254.2 for the static pressure in the system.

5.8 J6D8 – Pump Systems

Pumps and pipework that form part of an air-conditioning system must either—

- separately comply with the below statements; or
- achieve a pump motor power per unit of flowrate lower than the pump motor power per unit of flowrate achieved when applying the below statements together.

Circulator pumps — A glandless impeller pump, with a rated hydraulic power output of less than 2.5 kW and that is used in closed loop systems must have an energy efficiency index (EEI) not more than 0.27 calculated in accordance with European Union Commission Regulation No. 622/2012.

Other pumps — Pumps that are in accordance with Articles 1 and 2 of European Union Commission Regulation No. 547/2012 must have a minimum efficiency index (MEI) of 0.4 or more when calculated in accordance with European Union Commission Regulation No. 547/2012.

Pipework — Straight segments of pipework along the index run, forming part of an air-conditioning system—

- in pipework systems that do not have branches and have the same flow rate throughout the entire pipe network, must achieve an average pressure drop of not more than—
    - for constant speed systems, the values nominated in Table J6D8a; or
    - for variable speed systems, the values nominated in Table J6D8b; or
- in any other pipework system, must achieve an average pressure drop of not more than—
    - for constant speed systems, the values nominated in Table J6D8c; or
    - for variable speed systems, the values nominated in Table J6D8d.

The requirements of the pipework section do not apply—

- to valves and fittings; or
- where the smallest pipe size compliant with the pipework section results in a velocity of 0.7 m/s or less at design flow.

Table 11 Copy of J6D8a Maximum pipework pressure drop – Non-distributive constant speed systems

Table J6D8a: Maximum pipework pressure drop – Non-distributive constant speed systems

Nominal pipe diameter (mm)	Maximum pressure drop in systems operating 5000 hours/annum or less (Pa/m)	Maximum pressure drop in systems operating more than 5000 hours/annum (Pa/m)
Not more than 20	400	400
25	400	400
32	400	400
40	400	400
50	400	350
65	400	350
80	400	350
100	400	200
125	400	200
150 or more	400	200

Table 12 Copy of J6D8b Maximum pipework pressure drop – Non-distributive variable speed systems

Table J6D8b: Maximum pipework pressure drop – Non-distributive variable speed systems

Nominal pipe diameter (mm)	Maximum pressure drop in systems operating 5000 hours/annum or less (Pa/m)	Maximum pressure drop in systems operating more than 5000 hours/annum (Pa/m)
Not more than 20	400	400
25	400	400
32	400	400
40	400	400
50	400	400
65	400	400
80	400	400
100	400	300
125	400	300
150 or more	400	300

Table 13 Copy of J6D8c Maximum pipework pressure drop – Distributive constant speed systems

Table J6D8c: Maximum pipework pressure drop – Distributive constant speed systems

Nominal pipe diameter (mm)	Maximum pressure drop in systems operating 2000 hours/annum or less (Pa/m)	Maximum pressure drop in systems operating between 2000 hours/annum and 5000 hrs/yr (Pa/m)	Maximum pressure drop in systems operating more than 5000 hours/annum (Pa/m)
Not more than 20	400	300	150
25	400	220	100
32	400	220	100
40	400	220	100
50	400	220	100
65	400	400	170
80	400	400	170
100	400	400	170
125	400	400	170
150 or more	400	400	170

Table 14 Copy of J6D8d Maximum pipework pressure drop – Distributive variable speed systems

Table J6D8d: Maximum pipework pressure drop – Distributive variable speed systems

Nominal pipe diameter (mm)	Maximum pressure drop in systems operating 5000 hours/annum or less (Pa/m)	Maximum pressure drop in systems operating more than 5000 hours/annum (Pa/m)
Not more than 20	400	250
25	400	180
32	400	180
40	400	180
50	400	180
65	400	300
80	400	300
100	400	300
125	400	300
150 or more	400	300

5.9 J6D9 – Pipework insulation

Piping, vessels, heat exchangers and tanks containing heating or cooling fluid, where the fluid is held at a heated or cooled temperature, that are part of an air-conditioning system, other than in appliances covered by MEPS, must be provided with insulation—

- complying with AS/NZS 4859.1
- for piping of heating and cooling fluids, having an insulation R-Value in accordance with Table J6D9a; and
- for vessels, heat exchangers or tanks, having an insulation R-Value in accordance with Table J6D9b; and

- for refill or pressure relief piping, having an insulation R-Value equal to the required insulation R-Value of the connected pipe, vessel or tank within 500 mm of the connection.

Insulation must—

- be protected against the effects of weather and sunlight; and
- be able to withstand the temperatures within the piping, vessel, heat exchanger or tank.

Insulation provided to piping, vessels, heat exchangers or tanks containing cooling fluid must be protected by a vapour barrier on the outside of the insulation.

The requirements of the above statements do not apply to piping, vessels or heat exchangers—

- located within the only or last room served by the system and downstream of the control device for the regulation of heating or cooling service to that room; or
- encased within a concrete slab or panel which is part of a heating or cooling system; or
- supplied as an integral part of a chiller, boiler or unitary air-conditioner complying with the requirements of J6D10, J6D11 and J6D12; or
- inside an air-handling unit, fan-coil unit, or the like.

Table 15 Copy of Table J6D9a Piping – Minimum Insulation R value

Table J6D9a: Piping — Minimum insulation R-Value

Fluid temperature	Minimum insulation *R-Value* nominal pipe diameter ≤ 40 mm	Minimum insulation *R-Value* — nominal pipe diameter > 40 mm and ≤ 80 mm	Minimum insulation *R-Value* — nominal pipe diameter between > 80 mm and ≤ 150 mm	Minimum insulation *R-Value* — nominal pipe diameter > 150 mm
Low temperature chilled — ≤ 2°C	1.3	1.7	2.0	2.7
Chilled — > 2°C but ≤ 20°C	1.0	1.5	2.0	2.0
Heated — > 30°C but ≤ 85°C	1.7	1.7	1.7	1.7
High Temperature heated — > 85°C	2.7	2.7	2.7	2.7

Table 16 Copy of Table J6D9b Vessels, Heat Exchangers and Tanks — Minimum Insulation R-Value

Table J6D9b: Vessels, heat exchangers and tanks — Minimum insulation R-Value

Fluid temperature range	Minimum insulation *R-Value*
Low temperature chilled — ≤ 2°C	2.7
Chilled — > 2°C but ≤ 20°C	1.8
Heated — > 30°C but ≤ 85°C	3.0
High temperature heated — > 85°C	3.0

5.10 J6D10 – Space Heating

A heater used for air-conditioning or as part of an air-conditioning system must be a solar heater; or a gas heater; or a heat pump; or a heater using reclaimed heat from another process such as reject heat from a refrigeration plant; or an electric heater if —

- the heating capacity is not more than—
    - 10 W/m2 of the floor area of the conditioned space in climate zone 1; or
    - 40 W/m2 of the floor area of the conditioned space in climate zone 2; or
    - the value specified in Table J6D10 where reticulated gas is not available at the allotment boundary; or
- the annual energy consumption for heating is not more than 15 kWh/m2 of the floor area of the conditioned space in climate zones 1, 2, 3, 4 and 5; or

any combination of a solar heater to an electric heater.

- An electric heater may be used for heating a bathroom in a Class 2, 3, 9a or 9c building if the heating capacity is not more than 1.2 kW and the heater has a timer.
- A fixed heating or cooling appliance that moderates the temperature of an outdoor space must be configured to automatically shut down when—
    - there are no occupants in the space served; or
    - a period of one hour has elapsed since the last activation of the heater; or
    - the space served has reached the design temperature.
- A gas water heater, that is used as part of an air-conditioning system, must—
    - if rated to consume 500 MJ/hour of gas or less, achieve a minimum gross thermal efficiency of 86%; or
    - if rated to consume more than 500 MJ/hour of gas, achieve a minimum gross thermal efficiency of 90%.

Table 17 Copy of Table J6D10 Maximum electric heating capacity

Table J6D10: Maximum electric heating capacity

Floor area of the conditioned space	W/m² of *floor area* in *climate zone* 3	W/m² of *floor area* in *climate zone* 4	W/m² of *floor area* in *climate zone* 5	W/m² of *floor area* in *climate zone* 6	W/m² of *floor area* in *climate zone* 7
≤ 500 m²	50	60	55	65	70
> 500 m²	40	50	45	55	60

5.11 J6D11 – Refrigerant chillers

An air-conditioning system refrigerant chiller must comply with MEPS and the full load operation energy efficiency ratio and integrated part load energy efficiency ratio in Table J6D11a or Table J6D11b when determined in accordance with AHRI 551/591.

Table 18 Copy of Table J6D11a Minimum energy efficiency ratio for refrigerant chillers – Option 1

Table J6D11a: Minimum energy efficiency ratio for refrigerant chillers – Option 1

Chiller type	Full load operation ($W_r/W_{input\ power}$)	Integrated part load ($W_r/W_{input\ power}$)
Air-cooled chiller with a capacity ≤ 528 kWr	2.985	4.048
Air-cooled chiller with a capacity > 528 kWr	2.985	4.137
Water-cooled positive displacement chiller with a capacity ≤ 264 kWr	4.694	5.867
Water-cooled positive displacement chiller with a capacity > 264 kWr but ≤ 528 kWr	4.889	6.286
Water-cooled positive displacement chiller with a capacity > 528 kWr but ≤ 1055 kWr	5.334	6.519
Water-cooled positive displacement chiller with a capacity > 1055 kWr but ≤ 2110 kWr	5.800	6.770
Water-cooled positive displacement chiller with a capacity > 2110 kWr	6.286	7.041
Water-cooled centrifugal chiller with a capacity ≤ 528 kWr	5.771	6.401
Water-cooled centrifugal chiller with a capacity > 528 kWr but ≤ 1055 kWr	5.771	6.519
Water-cooled centrifugal chiller with a capacity > 1055 kWr but ≤ 1407 kWr	6.286	6.770
Water-cooled centrifugal chiller with a capacity > 1407 kWr	6.286	7.041

Table 19 Copy of Table J6D11b Minimum energy efficiency ratio for refrigerant chillers – Option 2

Table J6D11b: Minimum energy efficiency ratio for refrigerant chillers – Option 2

Chiller type	Full load operation ($W_r/W_{input\ power}$)	Integrated part load ($W_r/W_{input\ power}$)
Air-cooled chiller with a capacity ≤ 528 kWr	2.866	4.669
Air-cooled chiller with a capacity > 528 kWr	2.866	4.758
Water-cooled positive displacement chiller with a capacity ≤ 264 kWr	4.513	7.041
Water-cooled positive displacement chiller with a capacity > 264 kWr but ≤ 528 kWr	4.694	7.184
Water-cooled positive displacement chiller with a capacity > 528 kWr but ≤ 1055 kWr	5.177	8.001
Water-cooled positive displacement chiller with a capacity > 1055 kWr but ≤ 2110 kWr	5.633	8.586
Water-cooled positive displacement chiller with a capacity > 2110 kWr	6.018	9.264
Water-cooled centrifugal chiller with a capacity ≤ 528 kWr	5.065	8.001
Water-cooled centrifugal chiller with a capacity > 528 kWr but ≤ 1055 kWr	5.544	8.001
Water-cooled centrifugal chiller with a capacity > 1055 kWr but ≤ 1407 kWr	5.917	9.027
Water-cooled centrifugal chiller with a capacity > 1407 kWr	6.018	9.264

5.12 J6D12 – Unitary air-conditioning equipment

Unitary air-conditioning equipment including packaged air-conditioners, split systems, and variable refrigerant flow systems must comply with MEPS and for a capacity greater than or equal to 65 kWr—

- where water cooled, have a minimum energy efficiency ratio of 4.0 Wr/Winput power for cooling when tested in accordance with AS/NZS 3823.1.2 at test condition T1, where input power includes both compressor and fan input power; or

- where air cooled, have a minimum energy efficiency ratio of 2.9 Wr/Winput power for cooling when tested in accordance with AS/NZS 3823.1.2 at test condition T1, where input power includes both compressor and fan input power.

5.13 J6D13– Heat rejection equipment

The motor rated power of a fan in a cooling tower, closed circuit cooler or evaporative condenser must not exceed the allowances in Table J6D13.

The fan in an air-cooled condenser must have a motor rated power of not more than 42 W for each kW of heat rejected from the refrigerant, when determined in accordance with AHRI 460 except for—

- a refrigerant chiller in an air-conditioning system that complies with the energy efficiency ratios in J6D11;

- packaged air-conditioners, split systems, and variable refrigerant flow air-conditioning equipment that complies with the energy efficiency ratios in J6D12.

Table 20 Copy of Table J6D13 Maximum Fan Motor Power — Cooling Towers, Closed Circuit Coolers and Evaporative Condensers

Table J6D13: Maximum fan motor power – Cooling towers, closed circuit coolers and evaporative condensers

Type	Cooling tower maximum fan motor input power (W/kW_{rej})	Closed circuit cooler maximum fan motor input power (W/kW_{rej})	Evaporative condenser maximum fan motor input power (W/kW_{rej})
Induced draft	10.4	16.9	11.0
Forced draft	19.5	Note	11.0

6.0 Part J7 – Artificial Lighting and Power

Part J7 of the 2022 NCC contains the requirements of the Deemed-to-Satisfy compliance of a building's artificial lighting and power. The purpose of this subsection is to ensure that efficient lighting systems are installed to maintain required lighting levels while keeping energy consumption to a minimum. This subsection also ensures that effective lighting control is utilised to reduce wasted energy consumption.

6.1 J7D2 – Application

As stated by the 2022 NCC, Part J7 applies to all classes of buildings with the exception of Class 8 electricity network substation. Part J7 therefore applies to the proposed development**.**

6.2 J7D3 – Artificial Lighting

In a building other than a sole-occupancy unit of a Class 2 building or a Class 4 part of a building—

- for artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances obtained by multiplying the area of each space by the maximum illumination power density in Table J7D3a; and

- the aggregate design illumination power load in the above statement is the sum of the design illumination power loads in each of the spaces served; and

Table 21 Copy of Table J7D3a Maximum illumination power density

Table J7D3a: Maximum illumination power density

Space	Maximum *illumination power density* (W/m^2)
Auditorium, church and public hall	8
Board room and conference room	5
Carpark - general	2
Carpark - entry zone (first 15 m of travel) during the daytime	11.5
Carpark - entry zone (next 4 m of travel) during the day	2.5
Carpark - entry zone (first 20 m of travel) during night time	2.5
Common rooms, spaces and corridors in a Class 2 building	4.5
Control room, switch room and the like - intermittent monitoring	3
Control room, switch room and the like - constant monitoring	4.5
Corridors	5
Courtroom	4.5
Dormitory of a Class 3 building used for sleeping only	3
Dormitory of a Class 3 building used for sleeping and study	4
Entry lobby from outside the building	9
Health-care - infants' and children's wards and emergency department	4
Health-care - examination room	4.5
Health-care - examination room in intensive care and high dependency ward	6
Health-care - all other *patient care areas* including wards and corridors	2.5
Kitchen and food preparation area	4
Laboratory - artificially lit to an ambient level of 400 lx or more	6
Library - stack and shelving area	2.5
Library - reading room and general areas	4.5
Lounge area for communal use in a Class 3 or 9c building	4.5
Museum and gallery - circulation, cleaning and service lighting	2.5
Office - artificially lit to an ambient level of 200 lx or more	4.5
Office - artificially lit to an ambient level of less than 200 lx	2.5

Space	Maximum *illumination power density* (W/m^2)
Plant room where an average of 160 lx vertical illuminance is required on a vertical panel such as in switch rooms	4
Plant rooms with a horizontal illuminance target of 80 lx	2
Restaurant, café, bar, hotel lounge and a space for the serving and consumption of food or drinks	14
Retail space including a museum and gallery whose purpose is the sale of objects	14
School - general purpose learning areas and tutorial rooms	4.5
Sole-occupancy unit of a Class 3 or 9c building	5
Storage	1.5
Service area, cleaner's room and the like	1.5
Toilet, locker room, staff room, rest room and the like	3
Wholesale storage area with a vertical illuminance target of 160 lx	4
Stairways, including *fire-isolated stairways*	2
Lift cars	3

The maximum illuminance power density may be increased by multiplying by any adjustment factor provided in NCC Table J7D3b which provides adjustment factors based on methods of controlling the lighting systems, such as motion detectors, dimming systems and room properties.

Table 22 Copy of Table J7D3b Illumination power density adjustment factor for a control device

Table J7D3b: Illumination power density adjustment factor for a control device

Item Notes 1 and 2	Description	*illumination power density* adjustment factor
Motion detector	In a toilet or change room, other than a public toilet, in a Class 6 building	0.4
Motion detector	Where a group of light fittings serving less than 100 m^2 is controlled by one or more detectors	0.6

Item Notes 1 and 2	Description	*illumination power density* adjustment factor
Motion detector	Where a group of light fittings serving 100 m^2 or more is controlled by one or more detectors	0.7
Programmable dimming system Note 3	Where not less than 75% of the area of a space is controlled by programmable dimmers	0.85
Fixed dimming Notes 3 and 4	All fittings with fixed dimming	Whichever is greater of (a) 0.5; or (b) 0.2+0.8L where L = the illuminance turndown for the fixed dimming.
Lumen depreciation dimming Note 3	All fittings with lumen depreciation dimming	0.85
Two stage sensor - equipped lights with minimum power of 30 % of peak power or less	Fire stairs and other spaces not used for regular transit	0.4
Two stage sensor - equipped lights with minimum power of 30% of peak power or less	Transitory spaces in regular use or in a *carpark*	0.7
Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent *windows* Notes 3 and 5	In a Class 5, 6, 7, 8 or 9b building or a Class 9a building, other than a *ward area*, where the lights are adjacent *windows*, other than *roof lights*, for a distance from the *window* equal to the depth of the floor to *window* head height	0.5 Note 3
Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent *windows* Notes 3 and 5	Serving a Class 3 or 9c building, or a Class 9a *ward area*, where the lights are adjacent *windows*, other than *roof lights*, for a distance from the *window* equal to the depth of the floor to *window* head height	0.75 Note 3
Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent *windows* Notes 3 and 5	In a Class 5, 6, 7, 8 or 9b building or a Class 9a building, other than a *ward area*, where the lights are adjacent *roof lights*	0.6 Note 3
Daylight sensor and dynamic lighting control device - dimmed or stepped switching of lights adjacent *windows* Notes 3 and 5	In a Class 3 or 9c building, or a Class 9a *ward area*, where the lights are adjacent *roof lights*	0.8 Note 3

The above requirements do not apply to the following:

- Emergency lighting provided in accordance with Part E4.
- Signage, display lighting within cabinets and display cases that are fixed in place.
- Lighting for accommodation within the residential part of a detention centre.
- A heater where the heater also emits light, such as in bathrooms.
- Lighting of a specialist process nature such as in a surgical operating theatre, fume cupboard or clean workstation.
- Lighting of performances such as theatrical or sporting.

- Lighting for the permanent display and preservation of works of art or objects in a museum or gallery other than for retail sale, purchase or auction.

- Lighting installed solely to provide photosynthetically active radiation for indoor plant growth on green walls and the like.

6.3 J7D4 – Interior Artificial Lighting and Power Control

All artificial lighting of a room or space must be individually operated by–

- a switch; or

- other control device.

An artificial lighting switch or other control device in the above requirement must—

- if an artificial lighting switch, be located in a visible and easily accessed position—

    - in the room or space being switched; or

    - in an adjacent room or space from where 90% of the lighting being switched is visible; and

- for other than a single functional space such as an auditorium, theatre, swimming pool, sporting stadium or warehouse—

    - if in a Class 5 building or a Class 8 laboratory, not operate lighting for an area of more than 250 m^2; or

    - if in a Class 3, 6, 7, 8 (other than a laboratory) or 9 building, not operate lighting for an area of more than—

        - 250 m^2 for a space of not more than 2000 m^2; or

        - 1000 m^2 for a space of more than 2000 m^2.

95% of the light fittings in a building or storey of a building, other than a Class 2 or 3 building or a Class 4 part of a building of more than 250 m^2 must be controlled by—

- a time switch in accordance with Specification 40; or

- an occupant sensing device such as—

    - a security key card reader that registers a person entering and leaving the building; or

    - a motion detector in accordance with Specification 40.

In a Class 5, 6 or 8 building of more than 250 m^2, artificial lighting in a natural lighting zone adjacent to windows must be separately controlled from artificial lighting not in a natural lighting zone in the same storey except where—

- the room containing the natural lighting zone is less than 20 m2; or
- the room's natural lighting zone contains less than 4 luminaires; or
- 70% or more of the luminaires in the room are in the natural lighting zone.

Artificial lighting in a fire-isolated stairway, fire-isolated passageway or fire-isolated ramp, must be controlled by a motion detector in accordance with Specification 40.

Artificial lighting in a foyer, corridor and other circulation spaces—

- of more than 250 W within a single zone; and
- adjacent to windows, must be controlled by a daylight sensor and dynamic lighting control device in accordance with Specification 40.

Artificial lighting for daytime travel in the first 19 m of travel in a carpark entry zone must be controlled by a daylight sensor in accordance with Specification 40.

6.4 J7D5 – Interior Decorative and Display Lighting

Any interior/ lighting for display or decorative purposes, such as the illumination of foyer murals,

- must be separately controlled from other artificial lighting.
- by a time switch in accordance with Specification 40 where the display lighting exceeds 1 kW.

Window display lighting must be controlled separately from other display lighting.

6.5 J7D6 – Exterior Artificial lighting

Artificial lighting around the perimeter of a building will be controlled by a time switch or daylight sensor complying with Section J6 lighting controls requirements.

A time switch needs to abide by the specification set out in the 2022 NCC. Switching on and off electric power to systems at variable pre-programmed times and on variable pre-programmed days.

When the total perimeter lighting load exceeds 100W, LED luminaires must be used for 90% of the total lighting load or be controlled by a motion detector in accordance with Specification 40 or when used for decorative purposes, such as façade lighting or signage lighting, have a separate time switch in accordance with Specification 40.

6.6 J7D7 – Boiling Water and Chilled Water Storage Units

Power supply to a boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification 40.

6.7 J7D8 – Lifts

Lifts must—

- be configured to ensure artificial lighting and ventilation in the car are turned off when it is unused for 15 minutes; and
- achieve the idle and standby energy performance level in Table J7D8a; and
- achieve—
    - the energy efficiency class in Table J7D8b; or
    - if a dedicated goods lift, energy efficiency class D in accordance with ISO 25745-2.

Table 23 Copy of Table J7D8a Lift idle and standby energy performance level

Table J7D8a: Lift idle and standby energy performance level

Rated load	Idle and standby energy performance level in accordance with ISO 25745-2 Note
Less than or equal to 800 kg	2
801 kg to less than or equal to 2000 kg	3
2001 kg to less than or equal to 4000 kg	4
Greater than 4000 kg	5

Table 24 Copy of Table J7D8b Lift energy efficiency class

Table J7D8b: Lift energy efficiency class

Usage category in accordance with ISO 25745-2	Energy efficiency class in accordance with ISO 25745-2
1-4	C
> 5	D

6.8 J7D9 – Escalators and moving walkways

Escalators and moving walkways must have the ability to slow to between 0.2 m/s and 0.05 m/s when unused for more than 15 minutes.

7.0 Part J8 – Heated Water Supply and Swimming Pool and Spa Pool Plant

Part J8 of the 2022 NCC contains the requirements of the Deemed-to-Satisfy compliance of a building's hot water supply system. The purpose of this subsection is to ensure that efficient hot water units and systems are installed.

7.1 J8D2 - Heated water supply

A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.

7.2 J8D3 Swimming pool heating and pumping

Heating for a swimming pool must be by—

- a solar heater; or
- a heater using reclaimed heat from another process such as reject heat from a refrigeration plant; or
- a geothermal heater; or
- a gas heater that—
    - if rated to consume 500 MJ/hour or less, achieves a minimum gross thermal efficiency of 86%; or
    - if rated to consume more than 500 MJ/hour, achieves a minimum gross thermal efficiency of 90%; or
- a heat pump; or

Where some or all of the heating required by the above requirement is by a gas heater or a heat pump, the swimming pool must have—

- a cover with a minimum R-Value of 0.05; and
- a time switch to control the operation of the heater.

A time switch must be provided to control the operation of a circulation pump for a swimming pool.

Where required, a time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.

Pipework carrying heated or chilled water for a swimming pool must comply with the insulation requirements of J6D9.

For the purpose of J8D3, a swimming pool does not include a spa pool.

7.3 J8D4 Spa pool heating and pumping

Heating for a spa pool that shares a water recirculation system with a swimming pool must be by—

- a solar heater; or
- a heater using reclaimed heat from another process such as reject heat from a refrigeration plant; or
- a geothermal heater; or
- a gas heater that—
    - if rated to consume 500 MJ/hour or less, achieves a minimum gross thermal efficiency of 86%; or
    - if rated to consume more than 500 MJ/hour, achieves a minimum gross thermal efficiency of 90%; or
- a heat pump; or

Where some or all of the heating required by the above statement is by a gas heater or a heat pump, the spa pool must have—

- a cover with a minimum R-Value of 0.05; and
- a push button and a time switch to control the operation of the heater.

A time switch must be provided to control the operation of a circulation pump for a spa pool having a capacity of 680 L or more.

Where required, a time switch must be capable of switching electric power on and off at variable pre-programmed times and on variable pre-programmed days.

Pipework carrying heated or chilled water for a spa pool must comply with the insulation requirements of J6D9.

8.0 Part J9 – Facilities for energy monitoring

Part J9 of the 2022 NCC contains the requirements of the Deemed-to-Satisfy compliance of a building's Facilities for energy monitoring. The purpose of this subsection is to ensure that access can be gained to all services and must be interlinked by a communication system that collates the time-of-use energy consumption data to a single interface monitoring system where it can be stored, analysed and reviewed.

8.1 J9D2 - Application

As stated by the 2022 NCC, Part J9 does not apply to within a sole-occupancy unit of a Class 2 building or a Class 4 part of a building; or to a Class 8 electricity network substation. Part J9 therefore applies to the proposed development.

8.2 J9D3 Facilities for energy monitoring

A building or sole-occupancy unit with a floor area of more than 500 m2 must have the facility to record the consumption of gas and electricity.

A building with a floor area of more than 2 500 m2 must have energy meters configured to enable individual time-of-use energy data recording, in accordance with the below, of—

- air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and
- artificial lighting; and
- appliance power; and
- central hot water supply; and
- internal transport devices including lifts, escalators and moving walkways where there is more than one serving the building; and
- on-site renewable energy equipment; and
- on-site electric vehicle charging equipment; and
- on-site battery systems; and
- other ancillary plant.

Energy meters required by the above statement must be interlinked by a communication system that collates the time-of-use energy data to a single interface monitoring system where it can be stored, analysed and reviewed.

8.3 J9D4 Facilities for Electric Vehicle Charging Equipment

- A carpark associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with electrical distribution boards dedicated to electric vehicle charging—
    a. in accordance with Table J9D4 in each storey of the carpark; and

b. labelled to indicate use for electric vehicle charging equipment.

- Electrical distribution boards dedicated to serving electric vehicle charging in a carpark must—
  a. be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand; and
  b. have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 11:00 pm to 7:00 am daily when associated with a Class 2 building; and
  c. have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 9:00 am to 5:00 pm daily when associated with a Class 5 to 9 building; and
  d. be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in—
     (i) 100% of the car parking spaces associated with a Class 2 building; or
     (ii) 10% of car parking spaces associated with a Class 5 or 6 building; or
     (iii) 20% of car parking spaces associated with a Class 3, 7b, 8 or 9 building; and
  e. contain space of at least 36 mm width of DIN rail per outgoing circuit for individual sub-circuit electricity metering to record electricity use of electric vehicle charging equipment; and
  f. be labelled to indicate the use of the space required by (f) is for the future installation of metering equipment.

Table 25 Copy of Table J9D4 Electric vehicle distribution board requirement for each storey of a carpark

Table J9D4: Electric vehicle distribution board requirement for each storey of a carpark

Carpark spaces per *storey* for electric vehicles	Electrical distribution boards for electric vehicle charging per *storey*
0 - 9	0
10 - 24	1
25 - 48	2
49 - 72	3
73 - 96	4
97 - 120	5
121 - 144	6
145 - 168	7

8.4 J9D5 Facilities for Solar Photovoltaic and Battery Systems

- The main electrical switchboard of a building must contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for a solar photovoltaic system and a battery system; and be sized to accommodate the installation of solar photovoltaic panels producing their maximum electrical output on at least 20% of the building roof area.

- At least 20% of the roof area of a building must be left clear for the installation of solar photovoltaic panels, except for buildings—
    a. with installed solar photovoltaic panels on at least 20% of the roof area; or an equivalent generation capacity elsewhere on-site; or
    b. where 100% of the roof area is shaded for more than 70% of daylight hours; or
    c. with a roof area of not more than 55 m2; or
    d. where more than 50% of the roof area is used as a terrace, carpark, roof garden, roof light or the like.

9.0 Conclusion

This National Construction Code (NCC) Section Energy Efficiency report has been prepared by SLR Consulting Australia Pty Ltd (SLR) on behalf of Zurich Australian Insurance Properties Pty Ltd (**the Applicant**) to address the project-specific Secretary's Environmental Assessment Requirements (SEARs) issued the proposed State Significant Development Application (SSDA) SSD-86270706 for the proposed mixed use residential development located at 5 Blue Street, North Sydney. The objective of the NCC Section J is to

- reduce energy consumption and energy peak demand;
- reduce greenhouse gas emissions; and
- improve occupant health and amenity.

The land subject to this Scoping Report is located at 5 Blue Street, North Sydney, within the North Sydney Local Government Area (LGA).

The site is located at the southern fringe of the North Sydney Centre. The locality is at the preliminary stages of urban renewal, which will transform the North Sydney CBD and surrounds into a world class CBD, supported by a range of transport options, retail and residential uses.

This report focuses solely on the NCC Section J compliance requirements for the non-residential component of the development and the associated communal spaces. These requirements are defined in Volume 1 of the 2022 National Construction Code (NCC), Section J — Energy Efficiency.

Section J contains several Deemed-to-Satisfy (DTS) subsections, each addressing a different aspect of energy efficiency performance for Class 2–9 buildings.

- J4 - Building fabric
- J5 - Building sealing
- J6 - Air-conditioning and ventilation
- J7 - Artificial light and power
- J8 - Heated water supply and swimming pool and spa pool plant
- J9 - Energy monitoring and on-site distributed energy resources

The NCC currently defines the development area as climate zone 5.

The sub classification for the proposed building is:

- Retail space – Class 6
- Co-living apartments – Class 3
- Co-living lobby and communal space – Class 3
- Shared gym and sport spaces – Class 3 (preservative design approach)

- Shared communal space – Class 3 (preservative design approach)

SLR recommends the following to the building fabrics to comply with NCC 2022 Section J:

- Roof and ceiling insulation requirements have been specified within Table 1. The total R-value of the roof system is required to be R3.7 where specified in Appendix A.

- Floor insulation requirements have been specified within Table 7. The total R-value of the floor system is required to be R2.0 where specified in Appendix B.

- Wall-glazing requirements and wall requirements have been specified within Table 4 and Table 5.

    - The total R-value of the external wall system is required to be R2.08 for external walls where specified in Appendix C.

    - The total R-value of the internal wall system is required to be R2.08 for internal walls where specified in Appendix C

This report contains requirements for building sealing, air conditioning, artificial lighting, hot water supply, and the Facilities for Energy Monitoring.

This report has provided advice about each subsection under Section J and identified how compliance with the NCC can be achieved regarding the proposed building. The architect and services designers must specify and document compliant constructions showing NCC Section J requirements are met.

10.0 Feedback

At SLR, we are committed to delivering professional quality service to our clients. We are constantly looking for ways to improve the quality of our deliverables and our service to our clients. Client feedback is a valuable tool in helping us prioritise services and resources according to our client needs.

To achieve this, your feedback on the team's performance, deliverables and service are valuable and SLR welcome all feedback via https://www.slrconsulting.com/en/feedback. We recognise the value of your time and we will make a $10 donation to our Charity Partner - Lifeline, for every completed form.

Appendix A NCC 2022 envelope roof/ceiling DTS requirements



Ground Floor



Level 1



Level 2

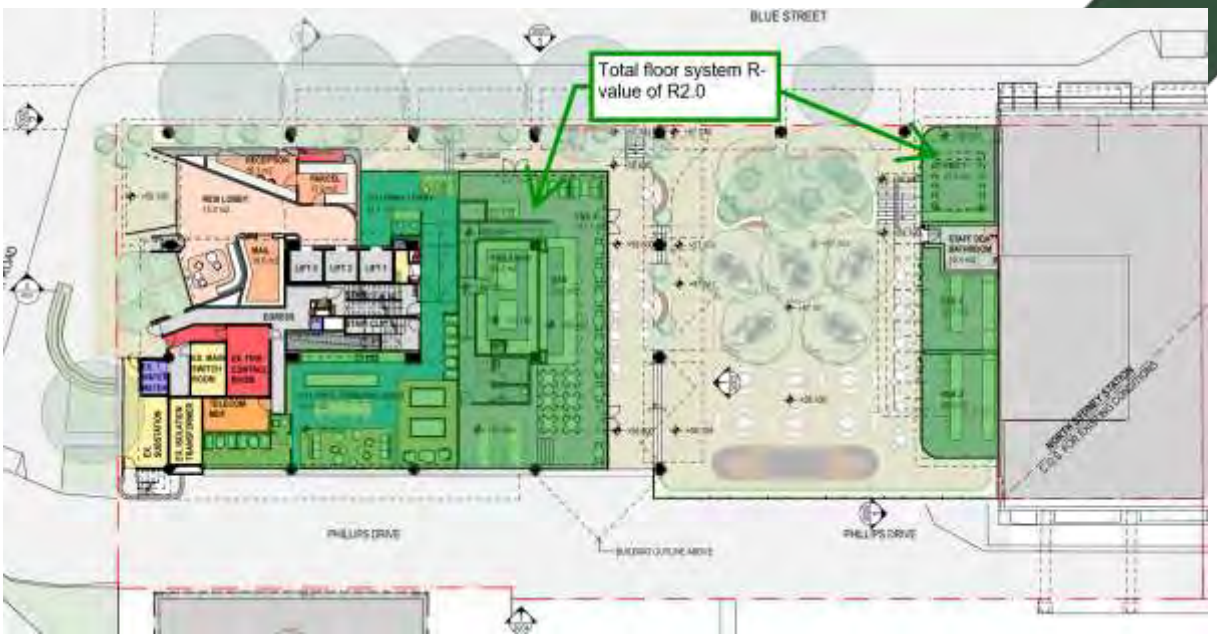


Level 3


0902
2BED
Total ceiling system
R-value of R3.7
0903
3BED
0901
3BED

Level 9

Appendix B NCC 2022 Envelope Floor DTS Requirements



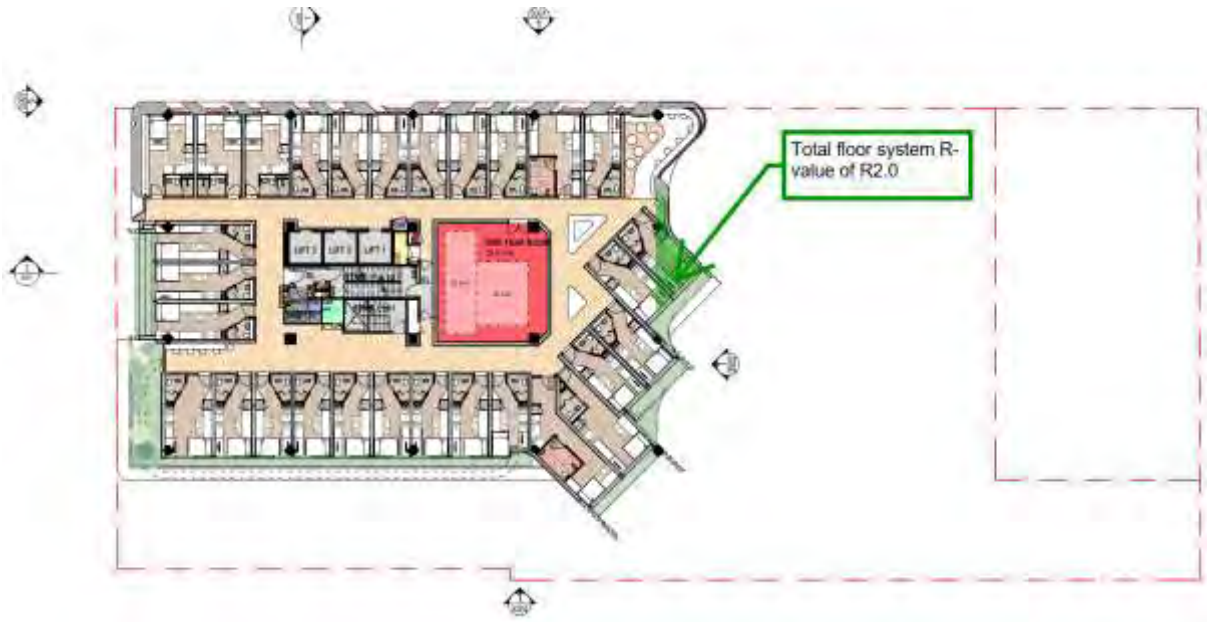
Ground Floor



Level 1



Level 2



Level 3

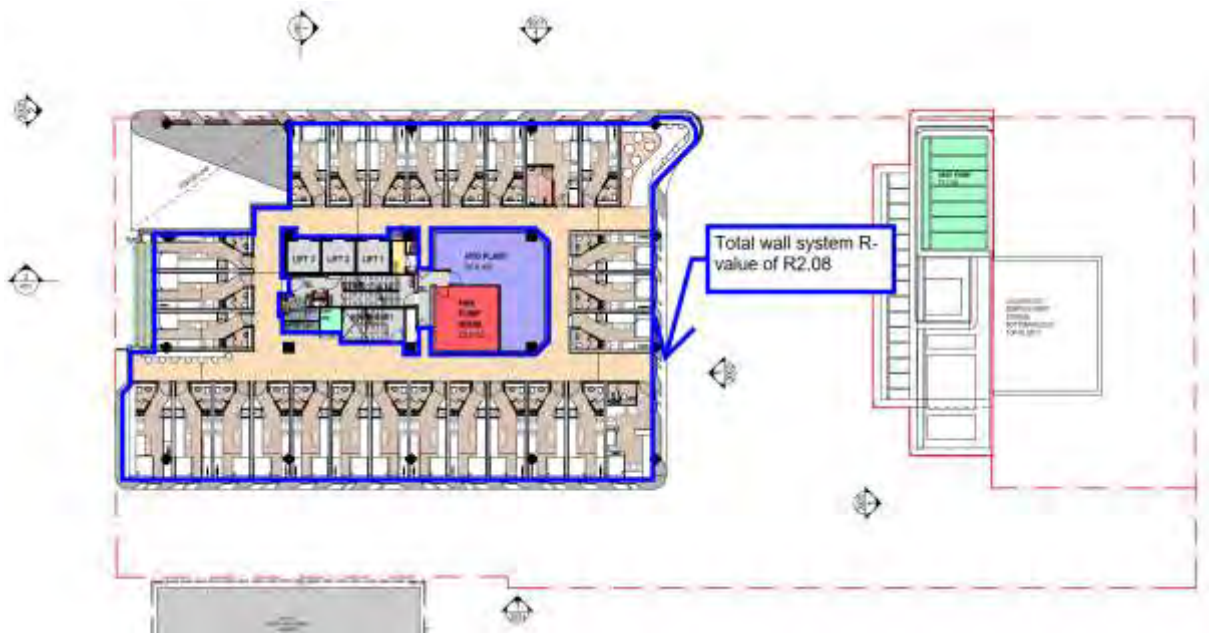

0902
2BED
Total floor system R-value of R2.0
0903
3BED
0901
3BED

Level 9

Appendix C Marked-up drawing for and NCC 2022 wall-glazing calculator DTS requirements external wall



Ground Floor



Level 1



Level 2

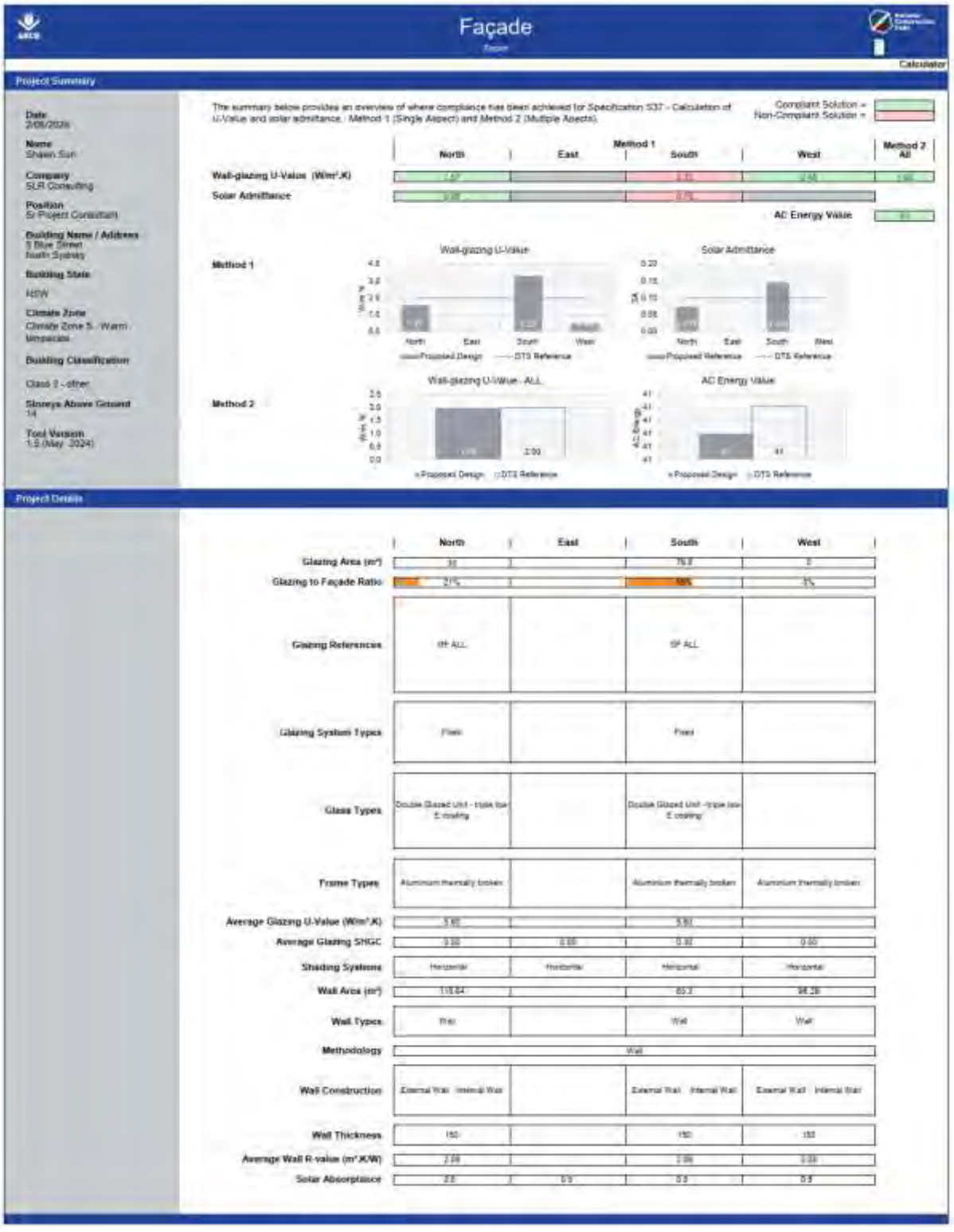


Level 3


0902
2BED
Total wall system R-value of R2.08
0903
3BED
0901
3BED

Level 9

Appendix D Glazing Calculator



Façade

Calculator

Project Summary

Date
2/05/2024

Name
Shawn Sun

Company
SLR Consulting

Position
Sr Project Consultant

Building Name / Address
9 Blue Street
North Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 9 - other

Storeys Above Ground
14

Tool Version
1.0 (May 2024)

The summary below provides an overview of where compliance has been achieved for Specification 537 - Calculation of U-Value and solar admittance. Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

Compliant Solution =
Non-Compliant Solution =

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	2.87		2.87	2.87	2.90
Solar Admittance	0.08		0.08		
AC Energy Value					41

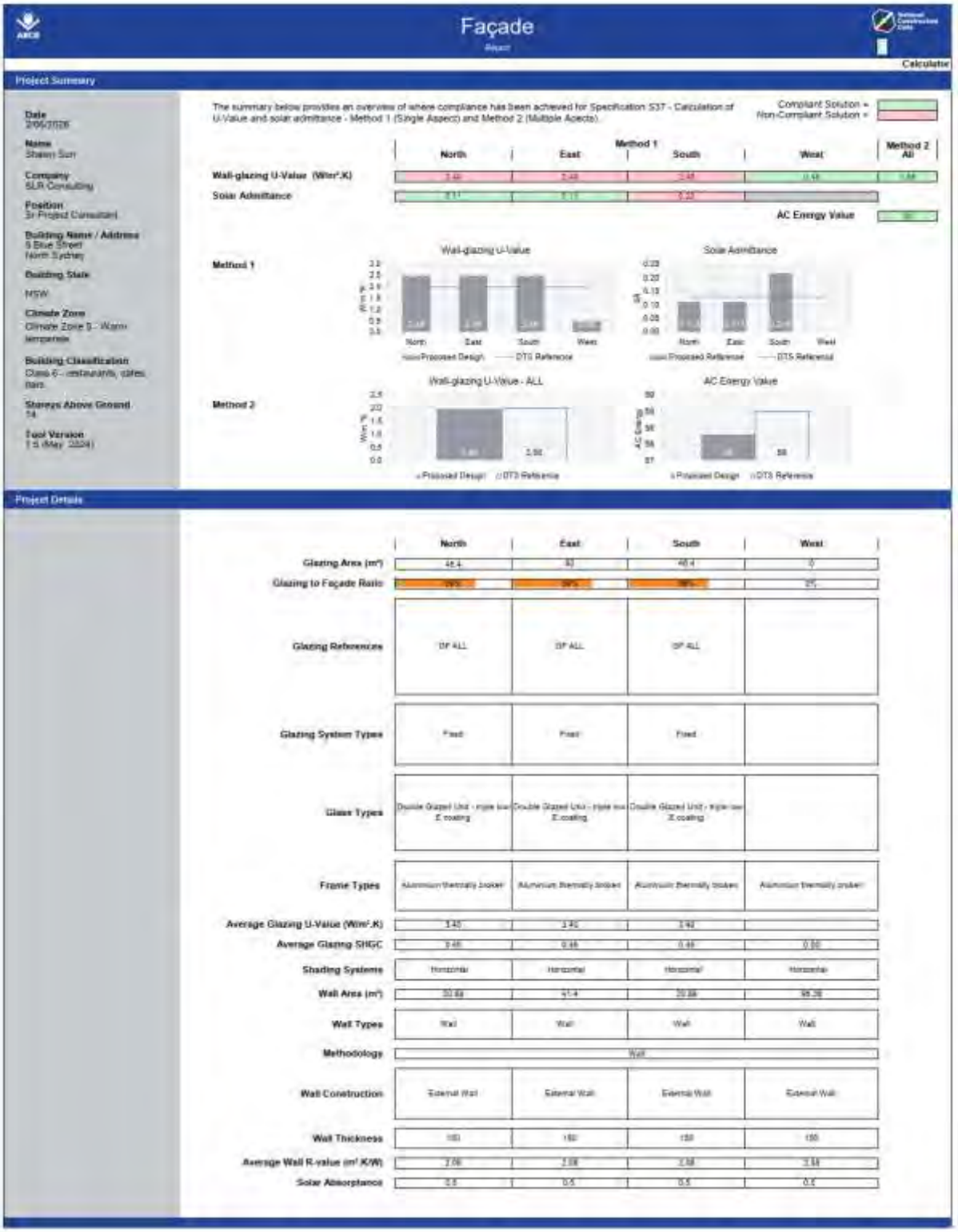
Method 1

Method 2

Project Details

	North	East	South	West
Glazing Area (m²)	30		76.8	0
Glazing to Façade Ratio	21%		56%	0%
Glazing References	6F ALL		5F ALL	
Glazing System Types	Fixed		Fixed	
Glass Types	Double Glazed Unit - triple low E coating		Double Glazed Unit - triple low E coating	
Frame Types	Aluminium thermally broken		Aluminium thermally broken	Aluminium thermally broken
Average Glazing U-Value (W/m².K)	5.60		5.60	
Average Glazing SHGC	0.08	0.08	0.08	0.08
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	115.64		65.3	98.28
Wall Types	Wall		Wall	Wall
Methodology	Wall			
Wall Construction	External Wall - Internal Wall		External Wall - Internal Wall	External Wall - Internal Wall
Wall Thickness	150		150	150
Average Wall R-value (m².K/W)	2.69		2.69	2.69
Solar Absorptance	0.6	0.6	0.6	0.6

GF – Coliving Lobby and Communal (Class 3)



Façade

Calculate

Project Summary

Date
2/06/2026

Name
Shawn Sun

Company
SLR Consulting

Position
Sr Project Consultant

Building Name / Address
9 Blue Street
North Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 6 - restaurants, cafes, bars

Storeys Above Ground
14

Tool Version
1.5 (May 2024)

The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

Compliant Solution =
Non-Compliant Solution =

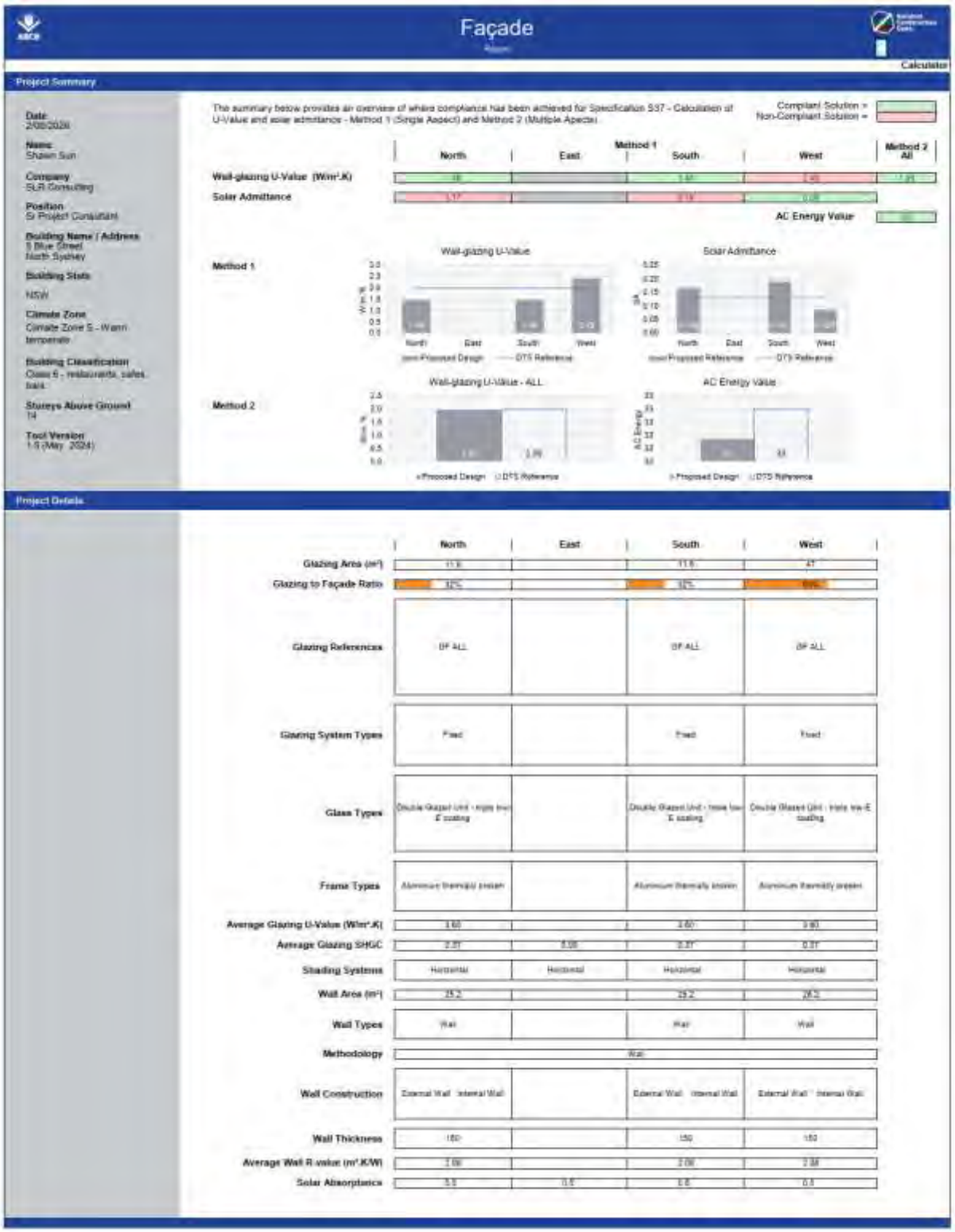
	Method 1 North	East	South	West	Method 2 All
Wall-glazing U-Value (W/m².K)	3.40	3.40	3.40	3.40	3.40
Solar Admittance	0.11	0.11	0.22		
AC Energy Value					56

Method 1

Method 2

Project Details

	North	East	South	West
Glazing Area (m²)	46.4	80	46.4	0
Glazing to Façade Ratio	39%	39%	39%	0%
Glazing References	DF ALL	DF ALL	DF ALL	
Glazing System Types	Fixed	Fixed	Fixed	
Glass Types	Double Glazed Unit - triple low E coating	Double Glazed Unit - triple low E coating	Double Glazed Unit - triple low E coating	
Frame Types	Aluminium thermally broken	Aluminium thermally broken	Aluminium thermally broken	Aluminium thermally broken
Average Glazing U-Value (W/m².K)	3.40	3.40	3.40	
Average Glazing SHGC	0.49	0.49	0.49	0.00
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	80.88	121.4	80.88	80.88
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	External Wall	External Wall	External Wall	External Wall
Wall Thickness	150	150	150	150
Average Wall R-value (m².K/W)	2.08	2.08	2.08	2.08
Solar Absorptance	0.5	0.5	0.5	0.5



Façade

Calculator

Project Summary

Date
2/08/2024

Name
Shawn Sun

Company
SLR Consulting

Position
Sr Project Consultant

Building Name / Address
9 Blue Street
North Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 6 - restaurants, cafes, bars

Storeys Above Ground
14

Tool Version
1.0 (May 2024)

The summary below provides an overview of where compliance has been achieved for Specification 537 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects)

Compliant Solution =
Non-Compliant Solution =

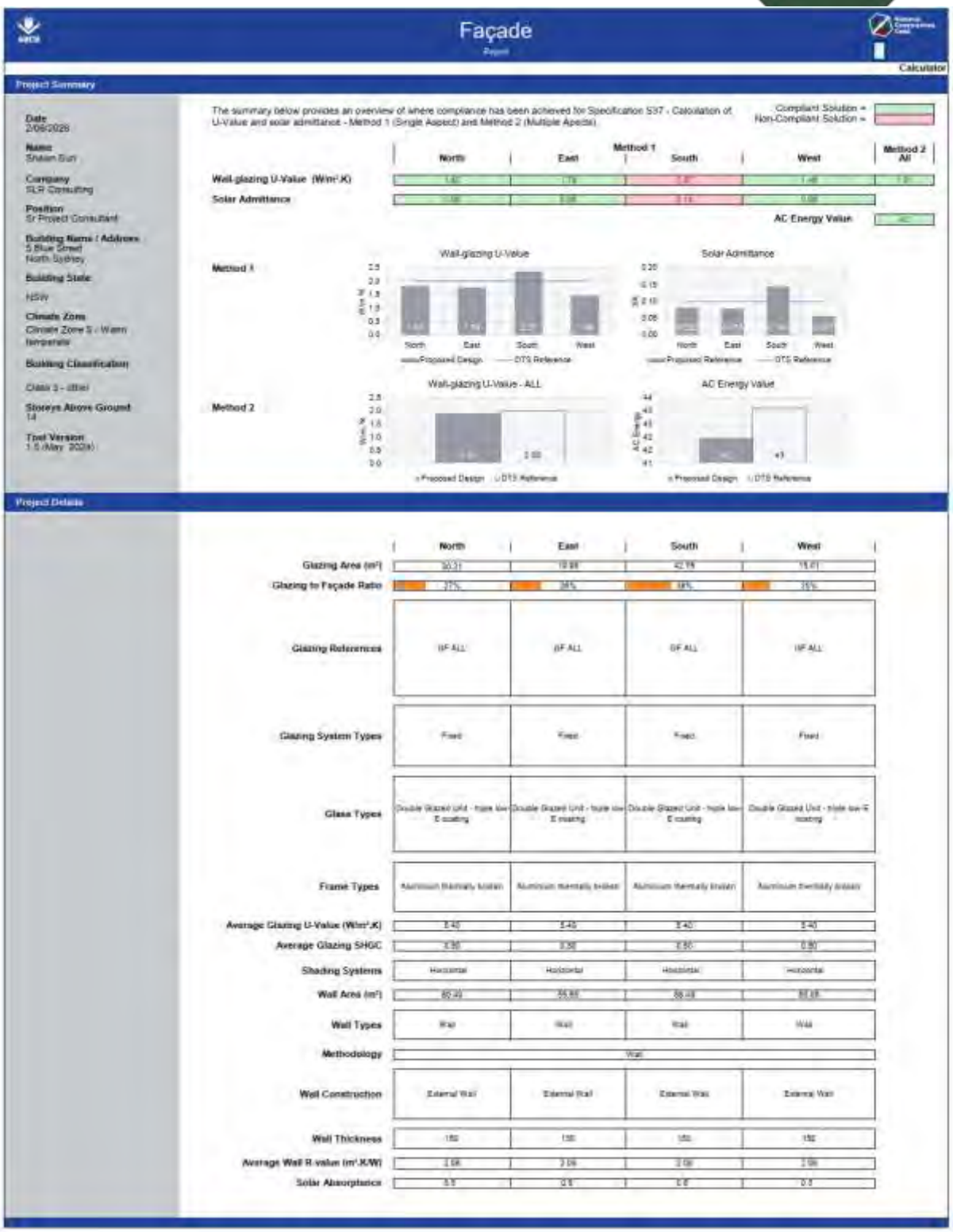
	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	3.6		3.60	3.60	3.60
Solar Admittance	0.17		0.19	0.08	
AC Energy Value					33

Method 1

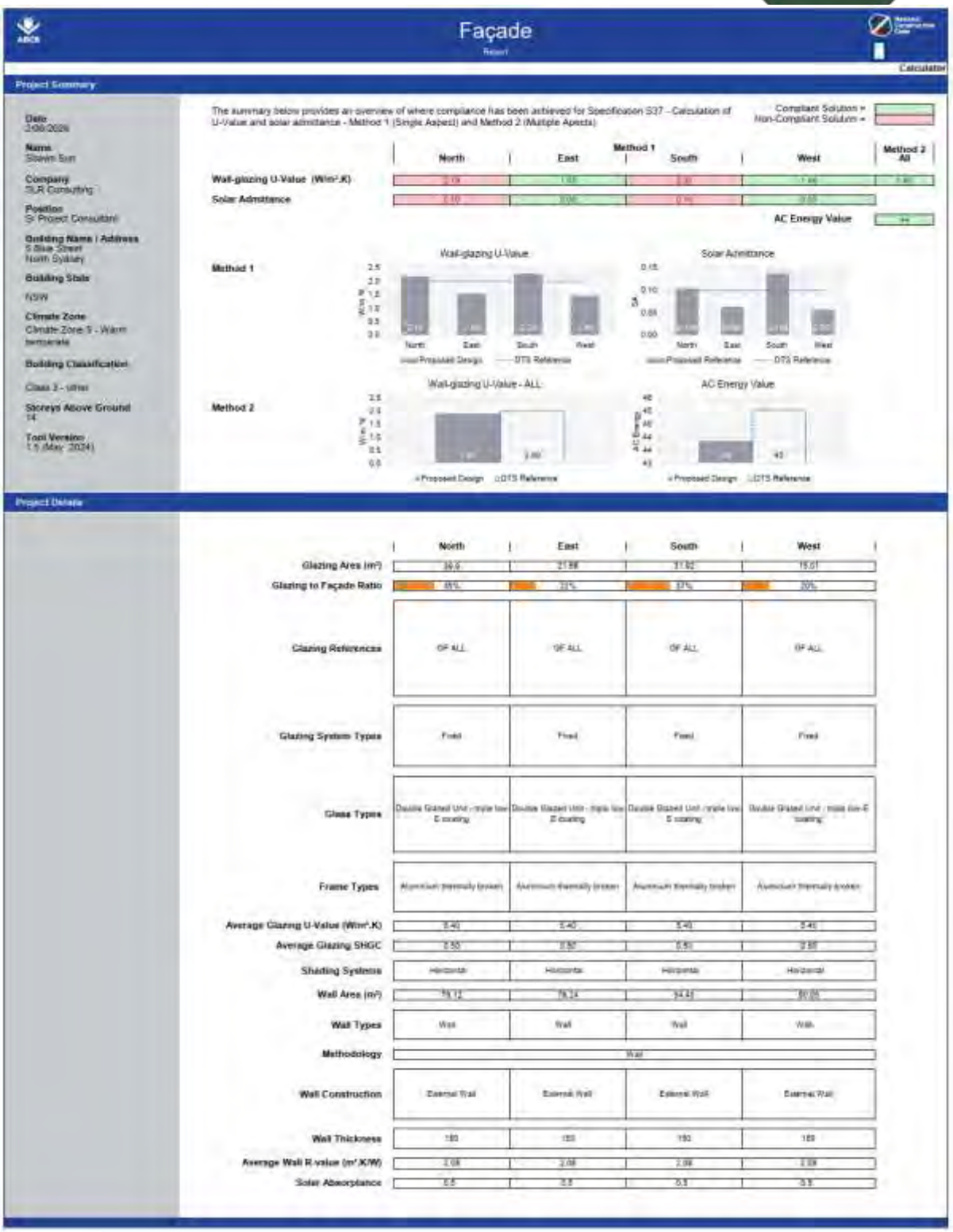
Method 2

Project Details

	North	East	South	West
Glazing Area (m²)	11.6		11.6	41
Glazing to Façade Ratio	32%		32%	64%
Glazing References	DF ALL		DF ALL	DF ALL
Glazing System Types	Fixed		Fixed	Fixed
Glass Types	Double Glazed Unit - triple low E coating		Double Glazed Unit - triple low E coating	Double Glazed Unit - triple low-E coating
Frame Types	Aluminium thermally broken		Aluminium thermally broken	Aluminium thermally broken
Average Glazing U-Value (W/m².K)	3.60		3.60	3.60
Average Glazing SHGC	0.31	0.00	0.31	0.31
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	25.2		25.2	26.2
Wall Types	Wall		Wall	Wall
Methodology	Wall			
Wall Construction	External Wall Internal Wall		External Wall Internal Wall	External Wall Internal Wall
Wall Thickness	150		150	150
Average Wall R-value (m².K/W)	2.08		2.08	2.08
Solar Absorptance	0.5	0.0	0.5	0.5


Façade
Report
Calculator
Project Summary
Date
2/06/2026
Name
Shalen Suri
Company
SLR Consulting
Position
Sr Project Consultant
Building Name / Address
5 Blue Street
North Sydney
Building State
NSW
Climate Zone
Climate Zone 5 - Warm temperate
Building Classification
Class 3 - other
Storeys Above Ground
14
Tool Version
1.5 (May 2024)
The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).
Compliant Solution =
Non-Compliant Solution =
Method 1
North
East
South
West
Method 2
All
Wall-glazing U-Value (W/m².K)
Solar Admittance
AC Energy Value
Method 1
Wall-glazing U-Value
Solar Admittance
North
East
South
West
Proposed Design
DTS Reference
Method 2
Wall-glazing U-Value - ALL
AC Energy Value
Project Details
North
East
South
West
Glazing Area (m²)
Glazing to Façade Ratio
Glazing References
Glazing System Types
Glass Types
Frame Types
Average Glazing U-Value (W/m².K)
Average Glazing SHGC
Shading Systems
Wall Area (m²)
Wall Types
Methodology
Wall Construction
Wall Thickness
Average Wall R-value (m².K/W)
Solar Absorptance

1F - Coliving



Façade

Report

Calculator

Project Summary

Date
24/06/2024

Name
Steven Sun

Company
SLR Consulting

Position
Sr Project Consultant

Building Name / Address
5 Blue Street
North Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 3 - other

Storeys Above Ground
14

Tool Version
1.5 (May 2024)

The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

Compliant Solution =
Non-Compliant Solution =

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)					
Solar Admittance					
AC Energy Value					

Method 1

Wall-glazing U-Value

Solar Admittance

Method 2

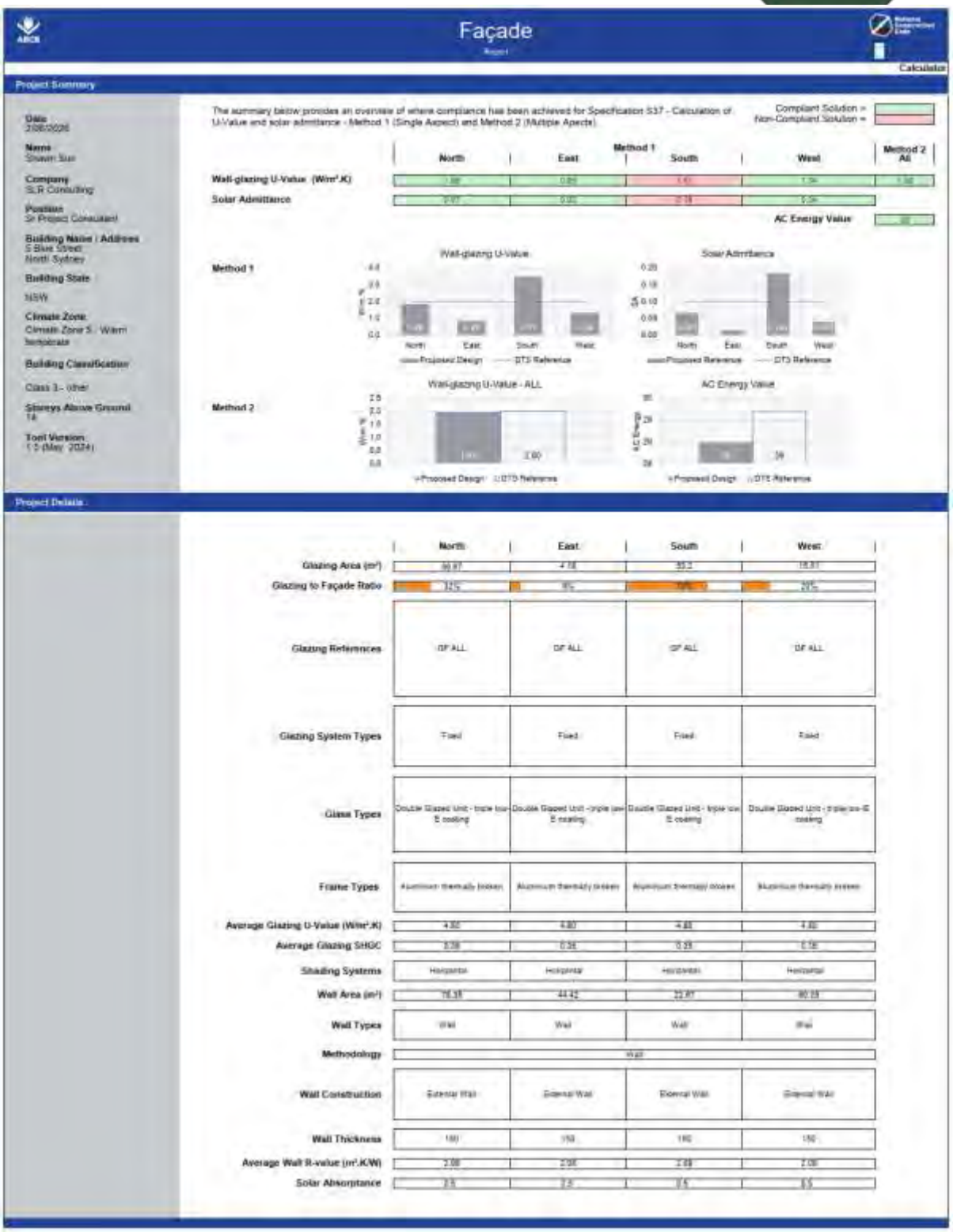
Wall-glazing U-Value - ALL

AC Energy Value

Project Details

	North	East	South	West
Glazing Area (m²)				
Glazing to Façade Ratio				
Glazing References				
Glazing System Types				
Glass Types				
Frame Types				
Average Glazing U-Value (W/m².K)				
Average Glazing SHGC				
Shading Systems				
Wall Area (m²)				
Wall Types				
Methodology				
Wall Construction				
Wall Thickness				
Average Wall R-value (m².K/W)				
Solar Absorptance				

2F – Coliving



Façade

Report

Calculator

Project Summary

Date
23/8/2026

Name
Shawn Sue

Company
SLR Consulting

Position
Sr Project Consultant

Building Name / Address
5 Blue Street
North Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 3 - other

Storeys Above Ground
14

Tool Version
1.0 (May 2024)

The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

Compliant Solution =
Non-Compliant Solution =

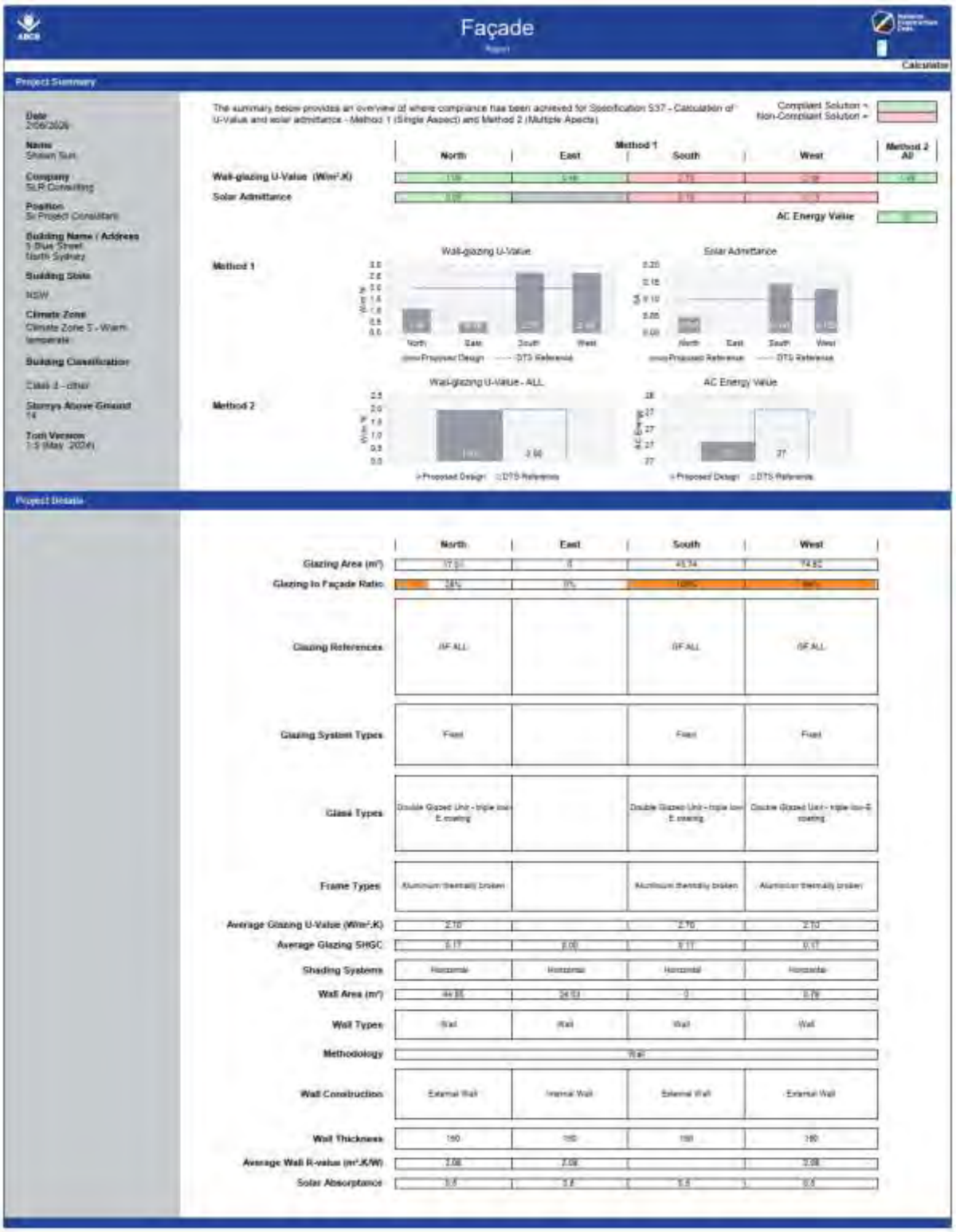
	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	3.89	0.89	1.43	1.34	1.58
Solar Admittance	0.07	0.01	0.19	0.24	
AC Energy Value					30

Method 1

Method 2

Project Details

	North	East	South	West
Glazing Area (m²)	30.87	4.78	33.2	18.31
Glazing to Façade Ratio	12%	9%	39%	22%
Glazing References	DF ALL	DF ALL	DF ALL	DF ALL
Glazing System Types	Fixed	Fixed	Fixed	Fixed
Glass Types	Double Glazed Unit - triple low-E coating	Double Glazed Unit - triple low-E coating	Double Glazed Unit - triple low-E coating	Double Glazed Unit - triple low-E coating
Frame Types	Aluminium thermally broken	Aluminium thermally broken	Aluminium thermally broken	Aluminium thermally broken
Average Glazing U-Value (W/m².K)	4.80	4.80	4.80	4.80
Average Glazing SHGC	0.09	0.09	0.09	0.09
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	76.58	44.42	33.87	80.09
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	External Wall	External Wall	External Wall	External Wall
Wall Thickness	150	150	150	150
Average Wall R-value (m².K/W)	2.08	2.08	2.08	2.08
Solar Absorptance	0.5	0.5	0.5	0.5



Façade

Report

Calculator

Project Summary

Date
20/6/2024

Name
Shawn Sun

Company
SLR Consulting

Position
Sr Project Consultant

Building Name / Address
1 Blue Street
North Sydney

Building State
NSW

Climate Zone
Climate Zone 5 - Warm temperate

Building Classification
Class 2 - other

Storeys Above Ground
14

Tool Version
1.5 (May 2024)

The summary below provides an overview of where compliance has been achieved for Specification S37 - Calculation of U-Value and solar admittance - Method 1 (Single Aspect) and Method 2 (Multiple Aspects).

Compliant Solution =
Non-Compliant Solution =

	Method 1				Method 2
	North	East	South	West	All
Wall-glazing U-Value (W/m².K)	1.00	5.48	2.70	2.70	3.48
Solar Admittance	0.09		0.10	0.10	
AC Energy Value					27

Method 1

Wall-glazing U-Value

Solar Admittance

Method 2

Wall-glazing U-Value - ALL

AC Energy Value

Project Details

	North	East	South	West
Glazing Area (m²)	17.91	0	45.74	74.82
Glazing to Façade Ratio	28%	0%	100%	100%
Glazing References	GF ALL		GF ALL	GF ALL
Glazing System Types	Fixed		Fixed	Fixed
Glass Types	Double Glazed Unit - triple low E coating		Double Glazed Unit - triple low E coating	Double Glazed Unit - triple low E coating
Frame Types	Aluminium thermally broken		Aluminium thermally broken	Aluminium thermally broken
Average Glazing U-Value (W/m².K)	2.70		2.70	2.70
Average Glazing SHGC	0.17	0.00	0.17	0.17
Shading Systems	Horizontal	Horizontal	Horizontal	Horizontal
Wall Area (m²)	44.85	24.53	0	0.79
Wall Types	Wall	Wall	Wall	Wall
Methodology	Wall			
Wall Construction	External Wall	Internal Wall	External Wall	External Wall
Wall Thickness	160	160	160	160
Average Wall R-value (m².K/W)	2.08	2.08		2.08
Solar Absorptance	0.6	0.6	0.6	0.6

Shared Amenities and Communal Space (Class 3)



Making Sustainability Happen

Nationwide House Energy Rating Scheme®
Class 2 Summary
NatHERS® Certificate No. U1FFLQIEEG

Generated on 4 Jun 2026 using FirstRate5 v5.5.5a

Property

Address	5 Blue Street, North Sydney, NSW, 2060
Lot/DP	
NatHERS Climate Zone	Sydney RO (Observatory Hill)

Accredited assessor

Name	Xiaoran Sun
Business name	SLR Consulting
Email	ssun@slrconsulting.com
Phone	0424275678
Accreditation No.	101556
Assessor Accrediting Organisation	ABSA

Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=U1FFLQIEEG&GrpCert=1
When using either link, ensure you are visiting www.fr5.com.au.

National Construction Code (NCC) requirements

The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance Star rating

7.5
Average Rating

NATIONWIDE HOUSE ENERGY RATING SCHEME®

The rating above is the average of all dwellings in this summary.

For more information on your dwelling's rating see:
www.nathers.gov.au

NCC heating and cooling maximum loads MJ/m²/p.a.

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled block average	18.3	7.6
Maximum allowable limit	N/A	N/A

Whole of Home performance rating

No Whole of Home performance rating conducted for this summary certificate
or
not completed for all dwellings

The rating above is the lowest of all dwellings in this summary

Summary of all dwellings

Certificate number and link	Unit number	Heating load (load limit) [MJ/m²/p.a.]	Cooling load (load limit) [MJ/m²/p.a.]	Total load [MJ/m²/p.a.]	Star rating	Whole of Home Rating
VUJWX42QBK	0401	23.1 (N/A)	4.1 (N/A)	27.2	7.4	NA
R07H9JMRPA	0402	22.7 (N/A)	10.3 (N/A)	33.0	6.7	NA

Summary of all dwellings

Certificate number and link	Unit number	Heating load (load limit) [MJ/m²/p.a.]	Cooling load (load limit) [MJ/m²/p.a.]	Total load [MJ/m²/p.a.]	Star rating	Whole of Home Rating
KB6YZVDA2D	0403	22.6 (N/A)	15.4 (N/A)	38.0	6.1	NA
JOYPWGIVWC	0404	11.3 (N/A)	15.7 (N/A)	27.0	7.4	NA
DF0HSYM2SN	0405	10.5 (N/A)	9.6 (N/A)	20.1	8.2	NA
IWMMSTYV7C	0406	6.1 (N/A)	5.1 (N/A)	11.2	9.4	NA
11X7ADBRU3	0407	18.7 (N/A)	3.1 (N/A)	21.8	8	NA
B05M7ELZGA	0501	23.7 (N/A)	4.1 (N/A)	27.8	7.3	NA
IKRP5WCL7D	0502	23.3 (N/A)	10.3 (N/A)	33.6	6.6	NA
RXYTLLS3GP	0503	23.3 (N/A)	15.4 (N/A)	38.7	6	NA
X4HZMR1APO	0504	11.7 (N/A)	15.5 (N/A)	27.2	7.4	NA
I9O63QKICO	0505	11.0 (N/A)	9.6 (N/A)	20.6	8.2	NA
AZURLNBLBV	0506	6.4 (N/A)	5.1 (N/A)	11.5	9.3	NA
VRS1NOD2DN	0507	19.2 (N/A)	3.1 (N/A)	22.3	7.9	NA
5C6S5SI204	0601	24.3 (N/A)	4.0 (N/A)	28.3	7.2	NA
BK12O7KZN8	0602	23.8 (N/A)	10.1 (N/A)	33.9	6.6	NA
QP8320QXSP	0603	24.1 (N/A)	14.9 (N/A)	39.0	6	NA
NREYS82BW3	0604	12.2 (N/A)	15.4 (N/A)	27.6	7.3	NA
FIUGUL00MQ	0605	11.2 (N/A)	9.6 (N/A)	20.8	8.2	NA
DNPF7PDDZF	0606	6.9 (N/A)	5.1 (N/A)	12.0	9.3	NA
CVKLRTFCJP	0607	19.6 (N/A)	3.0 (N/A)	22.6	7.9	NA
EIDU2H52IR	0701	24.7 (N/A)	3.9 (N/A)	28.6	7.2	NA
9ZKBL9C90C	0702	24.2 (N/A)	10.1 (N/A)	34.3	6.6	NA
5ZLR0U8JZA	0703	24.5 (N/A)	14.4 (N/A)	38.9	6	NA
FXQ6M4J4M0	0704	12.5 (N/A)	15.3 (N/A)	27.8	7.3	NA
UK5IFMKJ9R	0705	11.6 (N/A)	9.3 (N/A)	20.9	8.2	NA
RGMHUP6W3I	0706	7.1 (N/A)	5.0 (N/A)	12.1	9.2	NA
IVDHLLJOZQ	0707	19.8 (N/A)	2.9 (N/A)	22.7	7.9	NA
ZHX9RU3DLN	0801	25.3 (N/A)	3.9 (N/A)	29.2	7.1	NA
JZJHT9LJM7	0802	24.7 (N/A)	9.9 (N/A)	34.6	6.5	NA
8XBDR8HX63	0803	15.4 (N/A)	8.6 (N/A)	24.0	7.8	NA
D5UT1JTMZ9	0804	13.0 (N/A)	15.0 (N/A)	28.0	7.2	NA
V3LQ8TM6YM	0805	12.0 (N/A)	9.2 (N/A)	21.2	8.1	NA
A9B1SCGTST	0806	7.5 (N/A)	5.1 (N/A)	12.6	9.2	NA
NGHRKNF0PJ	0807	20.2 (N/A)	2.9 (N/A)	23.1	7.9	NA
Q8UNMELVE7	0901	27.7 (N/A)	3.6 (N/A)	31.3	6.9	NA
WL8T3E42AZ	0902	8.0 (N/A)	6.1 (N/A)	14.1	8.9	NA
D94FWOW3GU	0903	22.1 (N/A)	2.5 (N/A)	24.6	7.7	NA
OWQP6BPYPN	1001	28.1 (N/A)	3.6 (N/A)	31.7	6.8	NA

Summary of all dwellings

Certificate number and link	Unit number	Heating load (load limit) [MJ/m²/p.a.]	Cooling load (load limit) [MJ/m²/p.a.]	Total load [MJ/m²/p.a.]	Star rating	Whole of Home Rating
1VOU6BIXYF	1002	27.3 (N/A)	9.1 (N/A)	36.4	6.3	NA
TMZ0FREO07	1003	24.4 (N/A)	9.7 (N/A)	34.1	6.6	NA
SSPTSA4SX1	1004	7.9 (N/A)	5.7 (N/A)	13.6	9.1	NA
G8FABB60JO	1005	8.1 (N/A)	6.1 (N/A)	14.2	8.9	NA
7A7S5IG5B6	1006	22.5 (N/A)	2.5 (N/A)	25.0	7.6	NA
GZ97QNAD1X	1101	28.3 (N/A)	3.7 (N/A)	32.0	6.8	NA
64FG1TMOSR	1102	27.5 (N/A)	9.0 (N/A)	36.5	6.3	NA
EEJI3YI41Z	1103	24.6 (N/A)	9.5 (N/A)	34.1	6.6	NA
LZIMNQ9ITY	1104	7.9 (N/A)	5.7 (N/A)	13.6	9	NA
B28VSD510L	1105	8.2 (N/A)	6.2 (N/A)	14.4	8.9	NA
61MU2CQ0D2	1106	22.6 (N/A)	2.5 (N/A)	25.1	7.6	NA
EGMCMGV22K	1201	28.6 (N/A)	3.6 (N/A)	32.2	6.8	NA
TE54PLFX00	1202	27.8 (N/A)	9.3 (N/A)	37.1	6.2	NA
2RDP3TNYTK	1203	18.3 (N/A)	7.5 (N/A)	25.8	7.5	NA
AJE1T5Q5JL	1204	7.0 (N/A)	6.2 (N/A)	13.2	9.1	NA
SC8Q116SER	1205	6.6 (N/A)	5.3 (N/A)	11.9	9.3	NA
729N9XC7J2	1206	22.9 (N/A)	2.4 (N/A)	25.3	7.6	NA
37JRJK9ELU	1301	25.9 (N/A)	3.7 (N/A)	29.6	7.1	NA
5JOOI0SWXB	1302	28.5 (N/A)	10.2 (N/A)	38.7	6	NA
X4TCNIJ115	1303	19.3 (N/A)	7.8 (N/A)	27.1	7.4	NA
2TWRSU3RGR	1304	13.1 (N/A)	8.3 (N/A)	21.4	8.1	NA
12GTWXOVFJ	1305	17.3 (N/A)	5.9 (N/A)	23.2	7.9	NA
FPJIE8NGEB	1401	29.0 (N/A)	9.8 (N/A)	38.8	6	NA

Explanatory notes

About this report

The thermal performance star rating in this Certificate is the average rating of all NCC Class 2 dwellings in an apartment block. The Whole of Home performance rating in this Certificate is the lowest rating for the apartment block. Individual unit ratings are listed in the 'Summary of all dwellings' section of this Certificate. (accessible via link).

NatHERS ratings use computer modelling to evaluate a home's energy effi ciency and performance. They use localised climate data and standard assumptions on how people use their home to predict the energy loads and energy value*. The thermal performance star rating uses the home's building specifi cations, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy production and storage to estimate the homes energy value*.

For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link)

Accredited Assessors

For high quality NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Licensed assessors in the Australian Capital Territory (ACT) can produce assessments for regulatory purposes only, using endorsed software, as listed on the ACT licensing register

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specifi ed on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in certificates is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy use, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data fi les may be available from the assessor

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Drawing List

1000	Cover Sheet
1200	Context Plan
1201	Site Plan
1202	Site Analysis
1210	Existing Survey
1500	Demolition Plan
20B1	Basement Plan
20BM	Basement Mezz Plan
20LG	Lower Ground Plan
2000	Ground Floor Plan
2001	Level 01 Plan
2002	Level 02 Plan
2003	Level 03 Plan
2004	Level 04-08 Typical Plan
2009	Level 09 Plan
2010	Level 10-11 Typical Plan
2012	Level 12 Plan
2013	Level 13 Plan
2014	Level 14 Penthouse Plan
2015	Roof Plant
2200	Adaptable Unit - 1BED
2201	Adaptable Unit - 2BED
2202	Adaptable Unit - 3BED
2210	Livable Unit - 3BED (L4-8,L10-13)
2211	Livable Unit - 3BED (L4-7)
2300	Solar Access L4-L9
2301	Solar Access L10-L13
2310	Sun Eye Views
2320	Shadow Diagrams
2330	Cross Ventilation
2340	Communal Open Space
2800	GFA Plans
3001	North Elevation
3002	East and West Elevations
3004	South Elevation
3005	Retail Pavilion Elevation
4001	Sections
7000	Facade Material Sheet 1
7001	Facade Material Sheet 2
7002	Facade Material Sheet 3
7003	Facade Material Sheet 4

BASIX Building Fabric Requirements
5 Blue Street, North Sydney

Element	Material Type	Details
External Walls	Lightweight cladding + R2.0 + PB	Refer to drawings
Internal Walls	Within dwellings: PB on studs + No Insulation Between dwellings: Party wall + PB + R2.0	
Windows	**Standard:** ALM-005-04 (Awning) ALM-006-04 (Sliding / Fixed) **Treatment 1:** ATB-005-04A (Awning) ATB-006-04A (Sliding / Fixed) *0402, 0502, 0602, 0702, 0802, 0803, 1002, 1102, 1202, 1203, 1301, 1302, 1303, 1401* **Special Treatment:** To add 1100mm spandrel to the fixed windows towards the south balcony	NFRC Glazing System values: U ≤ 4.8 and SHGC = 0.34 (±5%) U ≤ 4.8 and SHGC = 0.34 (±5%) U ≤ 3.0 and SHGC = 0.27 (±5%) U ≤ 3.0 and SHGC = 0.26 (±5%)
Floor	Concrete slabs 1. Apply R2.0 Insulation to all suspended slabs with outdoor air below 2. Apply R2.0 Insulation to *1302, 1401*	Floor covering: As per drawings
Downlight	Default, sealed	
Ceiling	Plasterboard + R3.0 to outdoor air above	
Roof	Concrete, Waterproofing Membrane	

PRELIMINARY

5 Blue St
Cammeraygal
5 Blue St North Sydney NSW 2060

Cover Sheet
Cover Sheet

Rev	Date	Description	By	Chk
01	3/6/2026	SSD TOA Issue	NZ	

Scale Not to Scale @ A3
Code z5b
Sheet 1000
Rev 01

Certificate No. # U1FFLQIEEG
Scan QR code or follow website link for rating details.
Assessor name Xiaoran Sun
Accreditation No. 101556
Property Address 5 Blue Street, North Sydney, NSW, 2060
https://www.hh.com.au/QRCodeLanding?PublicId=U1FFLQIEEGBGYpCert=1

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architecture / interiors / landscape / urban / place Level 6, Australia Square, 264 George Street, Sydney NSW 2000 **t** +61 2 9251 7077 **w** fjcstudio.com

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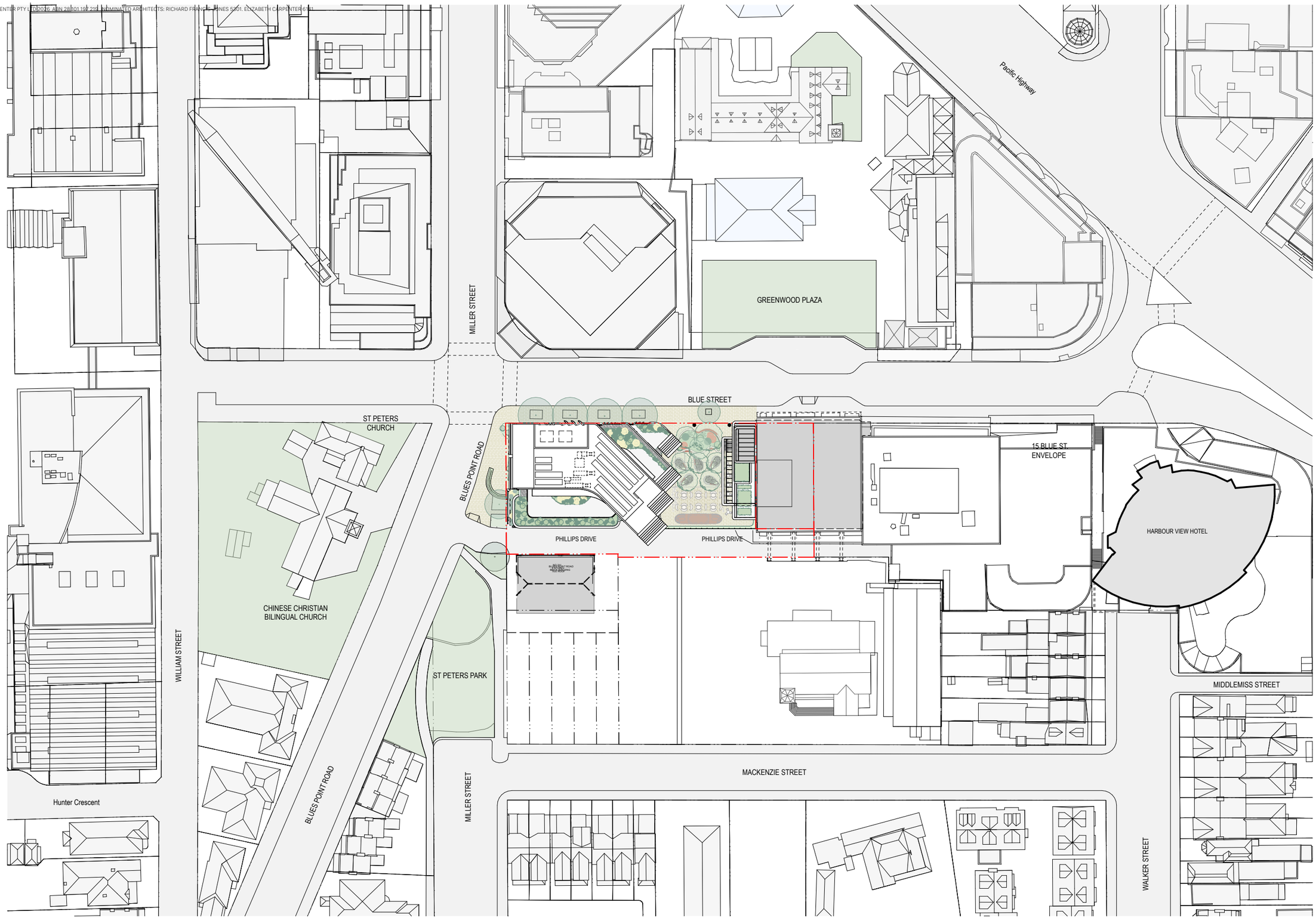
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Context Plan** Context	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** Not to Scale @ A3	**Code** z5b	**Sheet** 1200	**Rev** 01	Certificate No. # U1FFLQIEEG Scan QR code or follow website link for rating details. Assessor name Xiaoran Sun Accreditation No. 101556 Property Address 6 Blue Street, North Sydney, NSW, 2060 https://www.frl5.com.au/QRCodeLanding?PublicId=U1FFLQIEEG&isQrCode=1
		01	3/6/2026	SSD TOA Issue	NZ						

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PRELIMINARY

5 Blue St
Cammeraygal
5 Blue St North Sydney NSW 2060

Site Plan

Context

Certificate No. # U1FFLQIEEG
Scan QR code or follow website link for rating details.
Assessor name Xiaoran Sun
Accreditation No. 101556
Property Address 5 Blue Street, North Sydney, NSW, 2060
https://www.frl5.com.au/QRCodeLanding?PublicId=U1FFLQIEEG&QrCarl=1

Rev	Date	Description	By	Chk
01	3/6/2026	SSD TOA Issue	NZ	

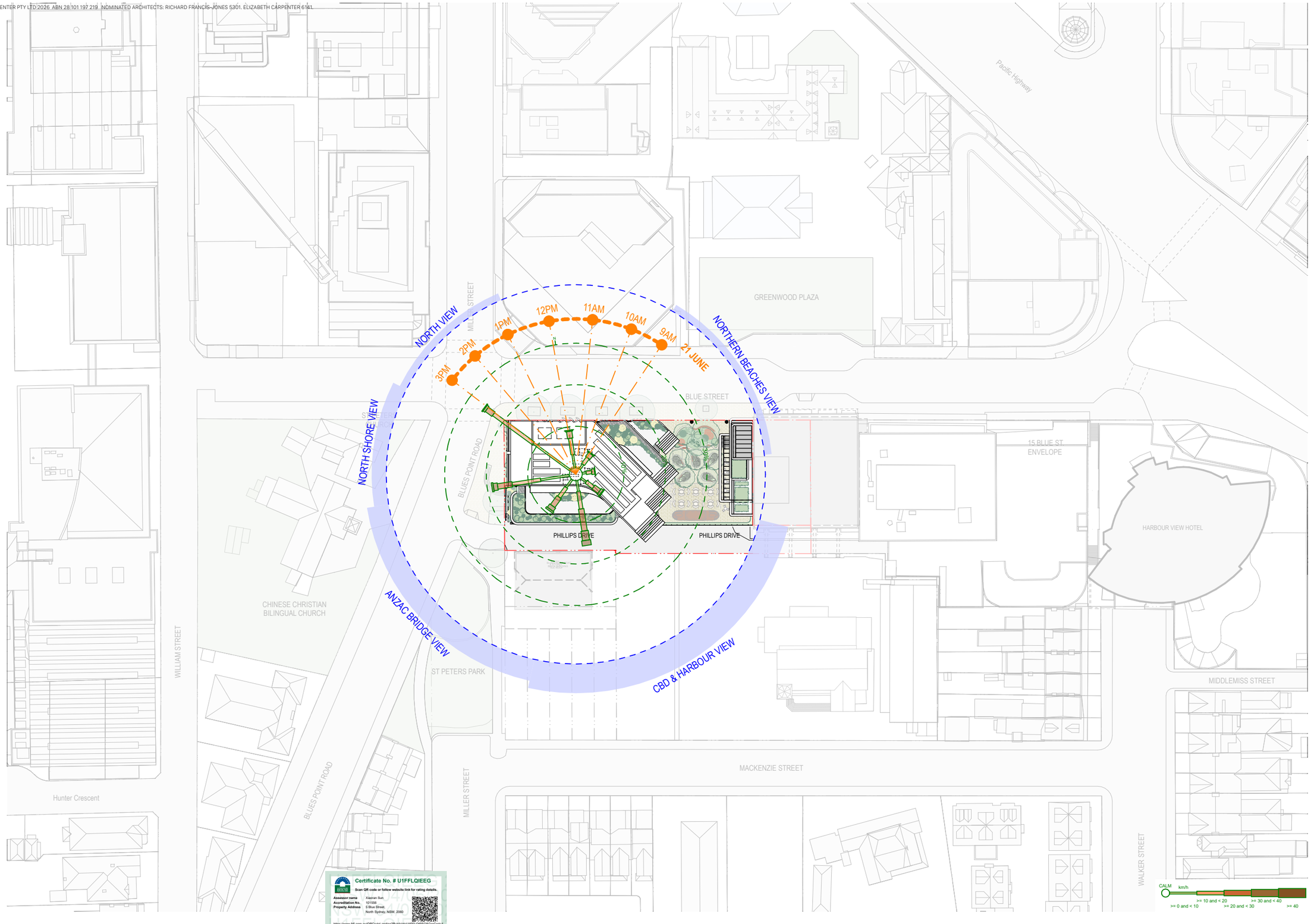
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Code z5b
Sheet 1201
Rev 01

0 10 20 50m

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Certificate No. # U1FFLQIEEG
Scan QR code or follow website link for rating details.
Assessor name Xiaoran Sun
Accreditation No. 101566
Property Address 5 Blue Street, North Sydney, NSW, 2060
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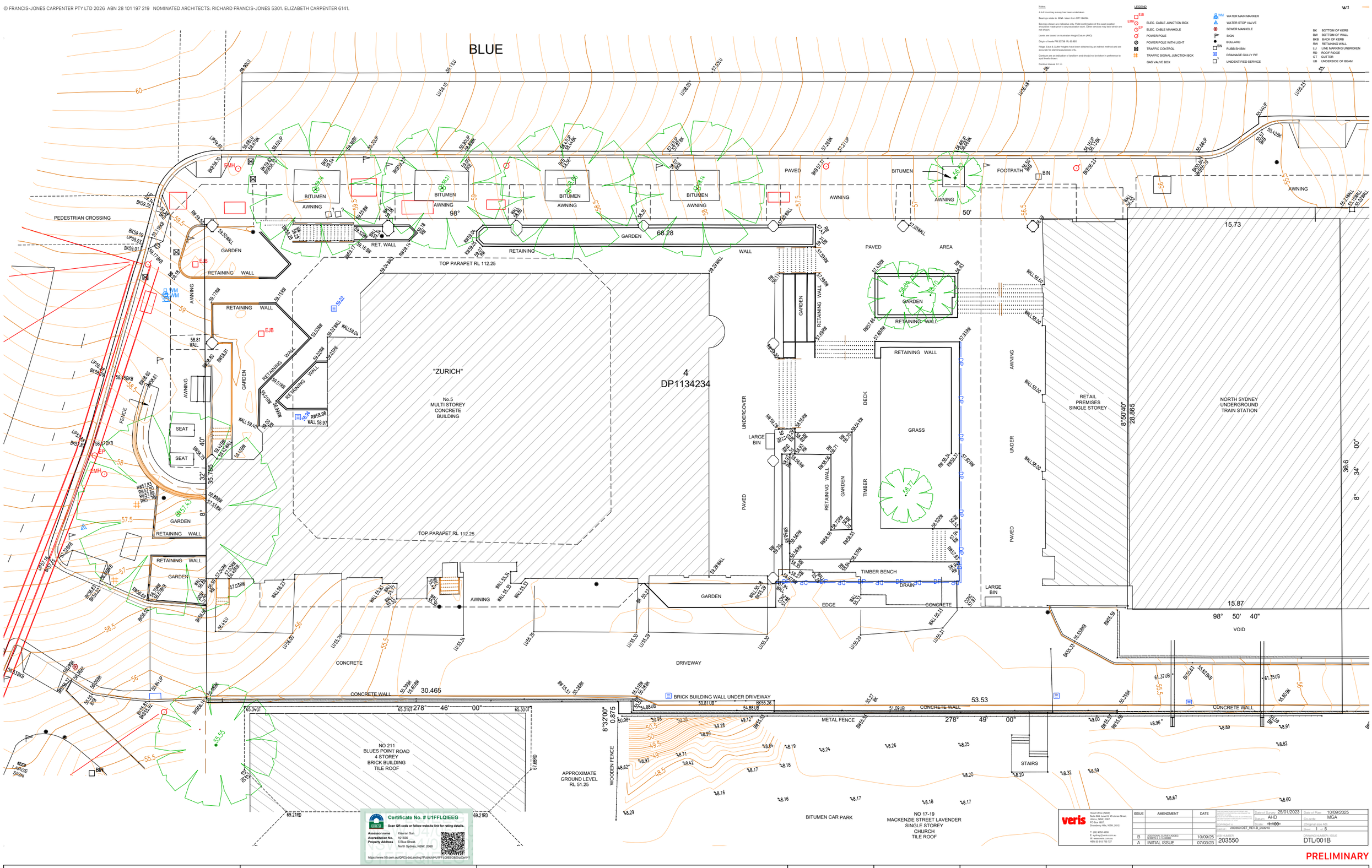
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Site Analysis** Context		**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:1000 @ A3	**Code** z5b	**Sheet** 1202	**Rev** 01	0 10 20 50m
			01	3/6/2026	SSD TOA Issue	NZ						

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Notes:

A full boundary survey has been undertaken.

Bearings relate to MGA taken from DP1134234.

Services shown are indicative only. Field confirmation of the exact position and depth is to be made prior to any excavation work. Other services may exist which are not shown.

Levels are based on Australian Height Datum (AHD).

Origin of levels PM 35758 RL 63.920

Ridge, Brick & Gutter heights have been obtained by an indirect method and are accurate for planning purposes only.

Contours are an indication of landform and should not be taken in preference to spot levels shown.

Contour Interval 0.1 m

LEGEND

- EJB ELEC. CABLE JUNCTION BOX
- EMH ELEC. CABLE MANHOLE
- EP POWER POLE
- POWER POLE WITH LIGHT
- TRAFFIC CONTROL
- TRAFFIC SIGNAL JUNCTION BOX
- GAS VALVE BOX
- WM WATER MAIN MARKER
- WATER STOP VALVE
- SEWER MANHOLE
- SIGN
- BOLLARD
- BIN RUBBISH BIN
- DRAINAGE GULLY PIT
- UNIDENTIFIED SERVICE

BK BOTTOM OF KERB
BW BOTTOM OF WALL
BKB BACK OF KERB
RW RETAINING WALL
LU LINE MARKING UNBROKEN
RD ROOF RIDGE
GT GUTTER
UB UNDERSIDE OF BEAM

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ISSUE	AMENDMENT	DATE
B	ISSUED FOR S.D.D.E.C ADDED: SHEETS 3, 4, 5 ADDED.	10/09/25
A	INITIAL ISSUE	07/03/23

Head Office (NSW): Suite 604, Level 6, 45 Jones Street, Ultimo, NSW, 2007. PO Box 16610, Strawberry Hills, NSW, 2012.
T: (02) 9662 4300
E: sydney@veris.com.au
W: www.veris.com.au
ABN 53 610 735 727

Date of Survey: 25/01/2023 | Date of Plan: 10/09/2025
Datum: AHD | Co-ords: MGA
Scale: ~~1:100~~ | Original size A0
Job ref: 203550 DET_REV B_250910 | Sheet 1 of 5
Plan Number: 203550 | DRAWING NUMBER / TITLE: DTL/001B

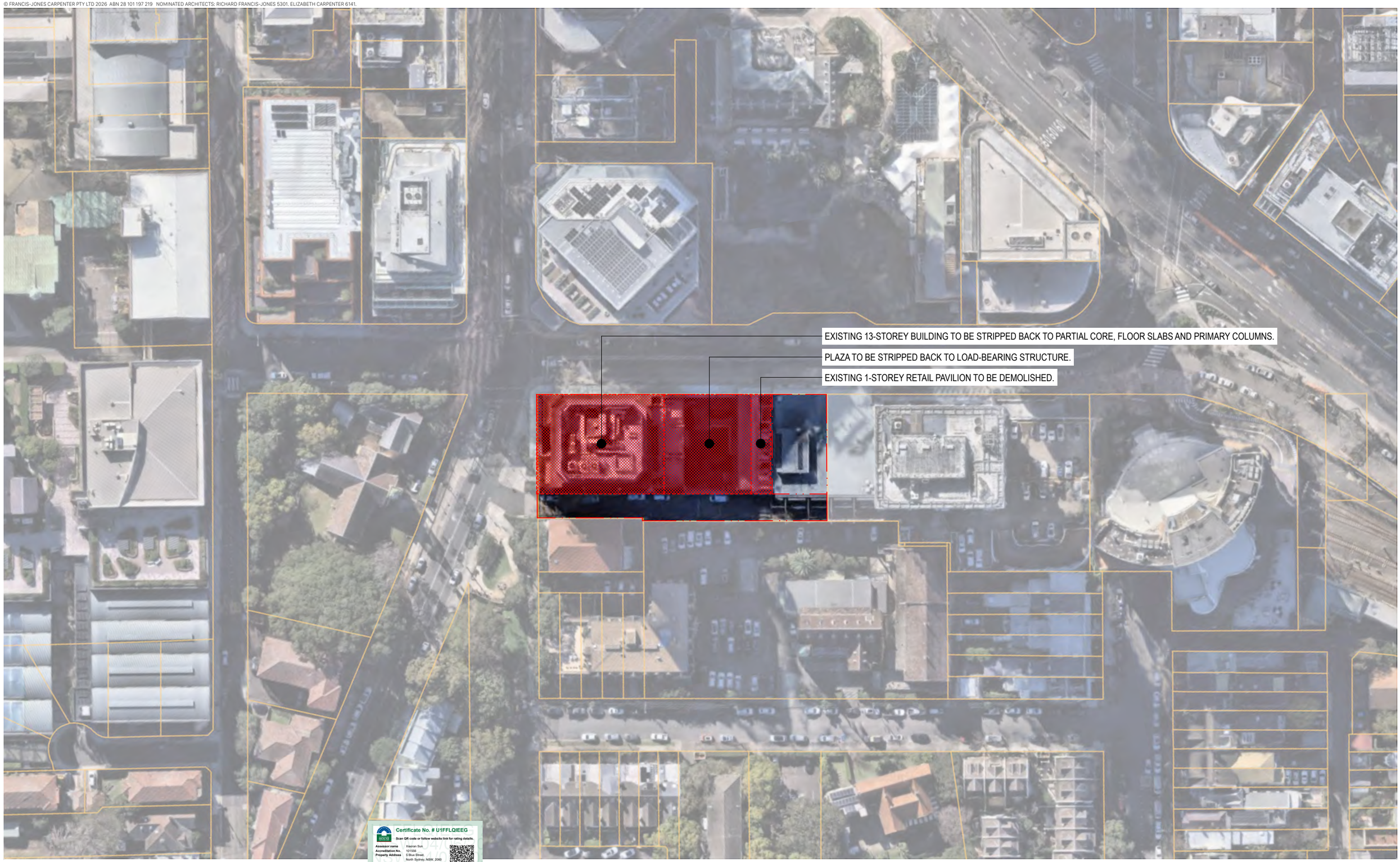
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5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Existing Survey** Context		**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 1210	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					

0 2.5 5 10m

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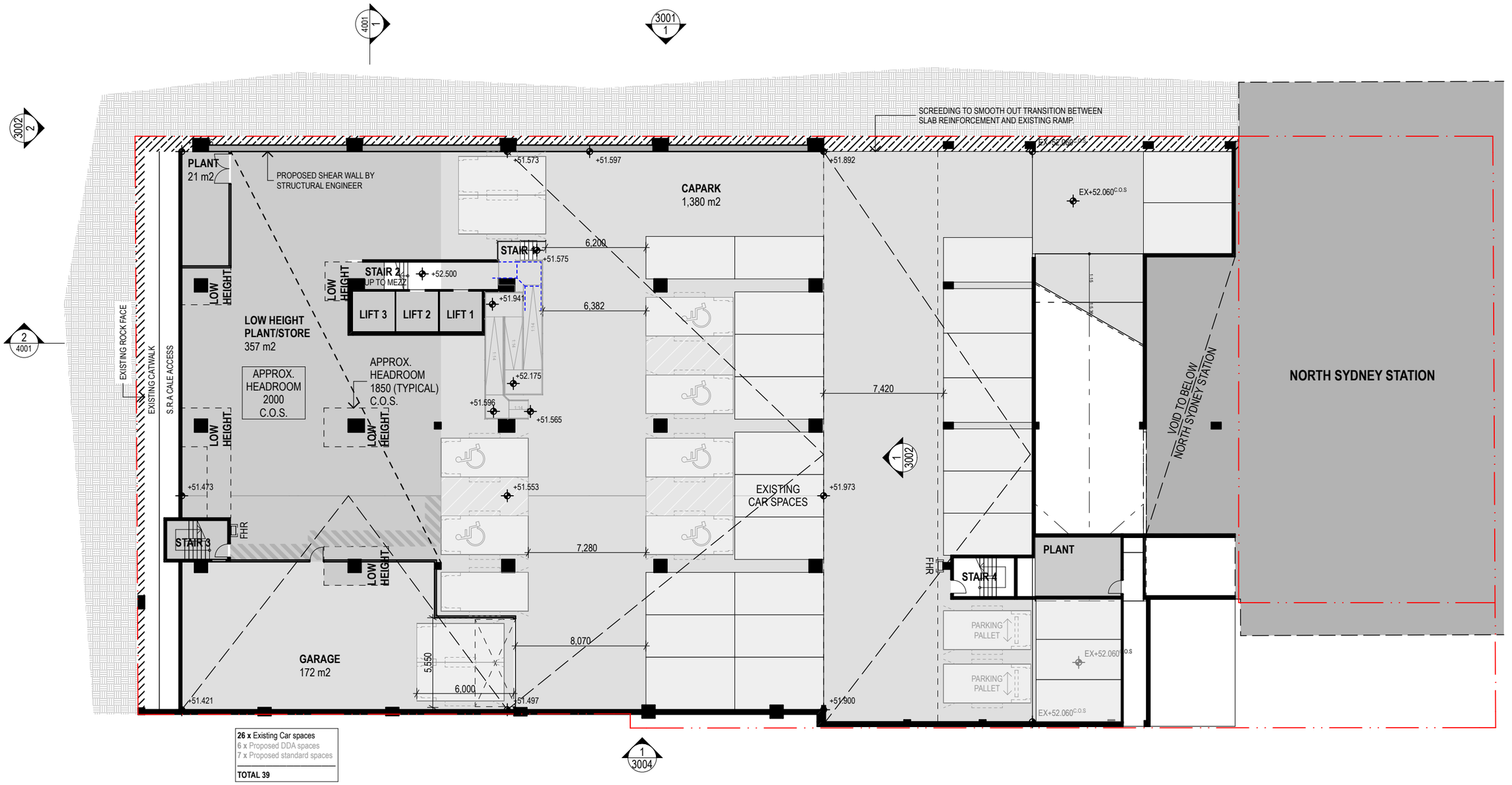
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Demolition Plan** Demolition	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** Not to Scale @ A3	**Code** z5b	**Sheet** 1500	**Rev** 01
		01	3/6/2026	SSD TOA Issue	NZ					

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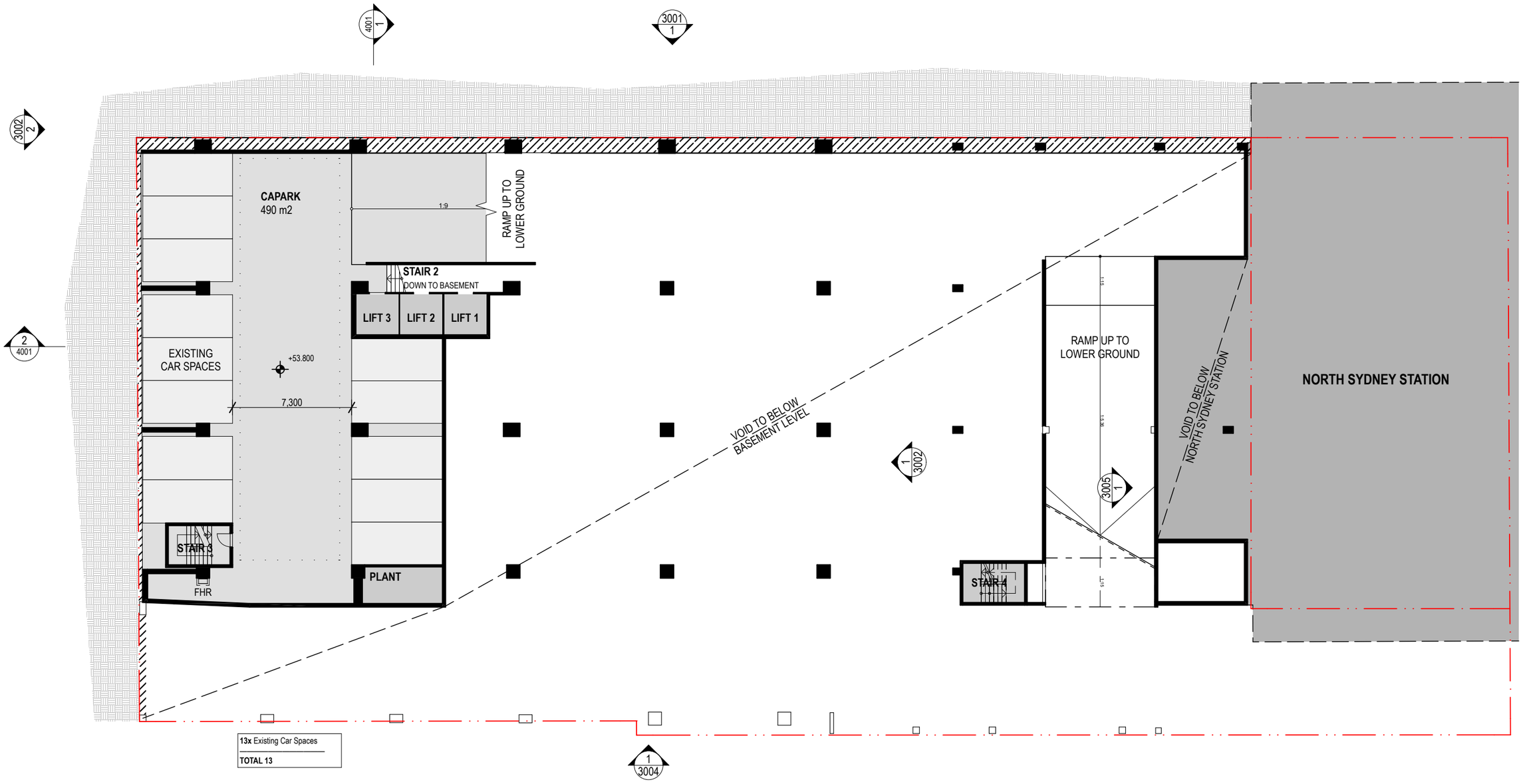
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Basement Plan** General Arrangement Plans	Existing New	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 20B1	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					

0 2.5 5 10m

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PRELIMINARY

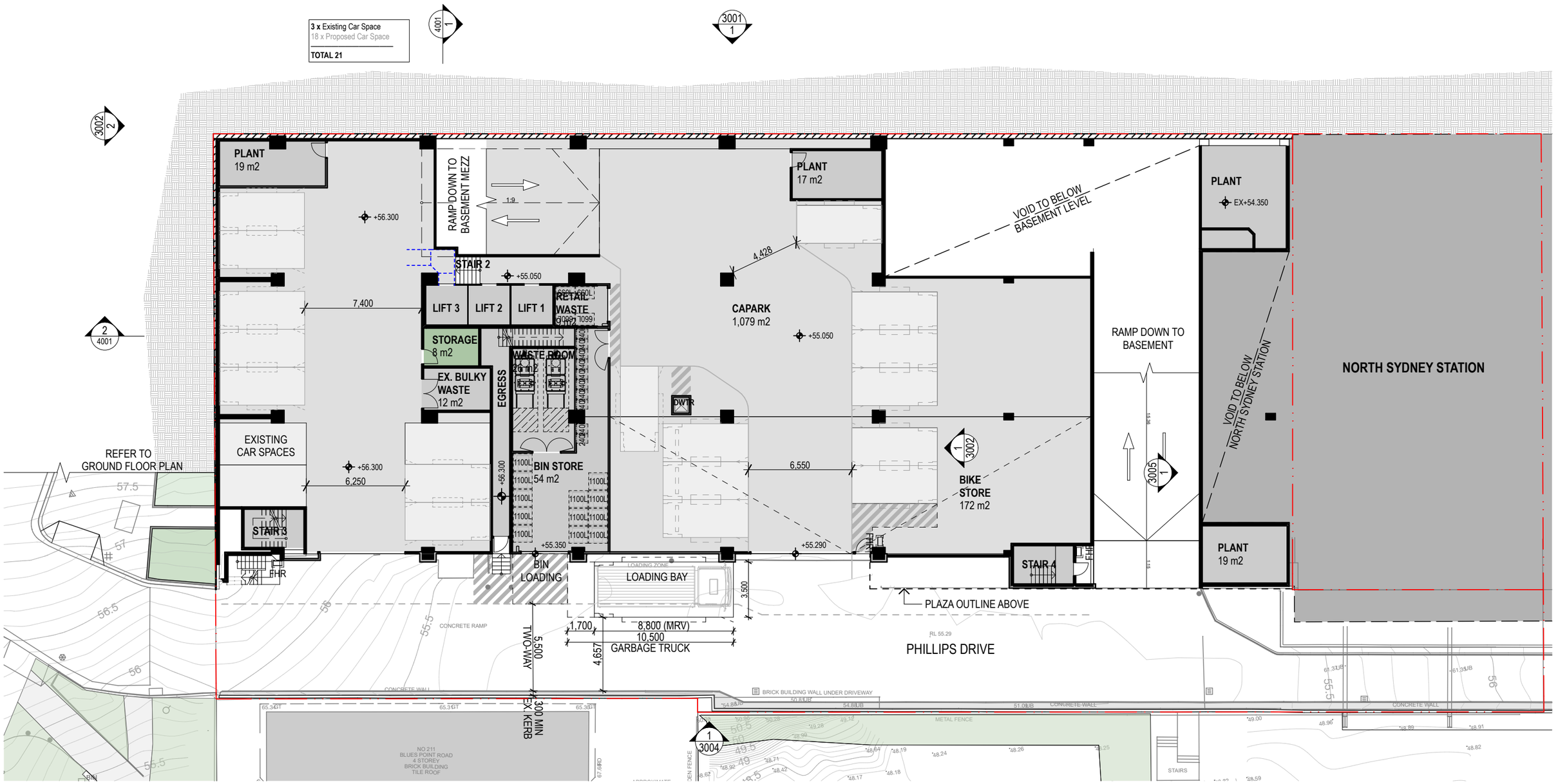
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			01	3/6/2026	SSD TOA Issue	NZ					

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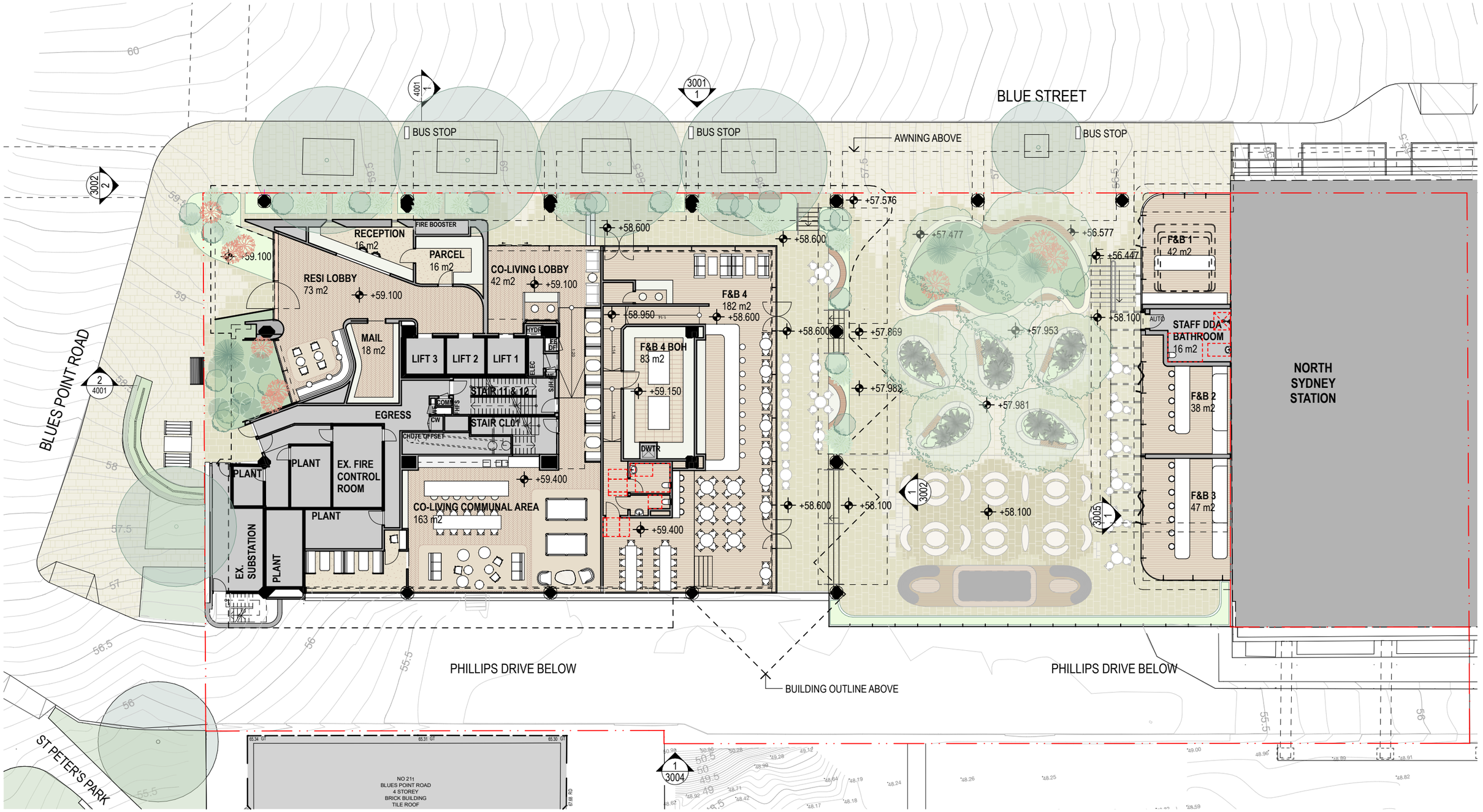
5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Lower Ground Plan** General Arrangement Plans	Existing New	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 20LG	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					

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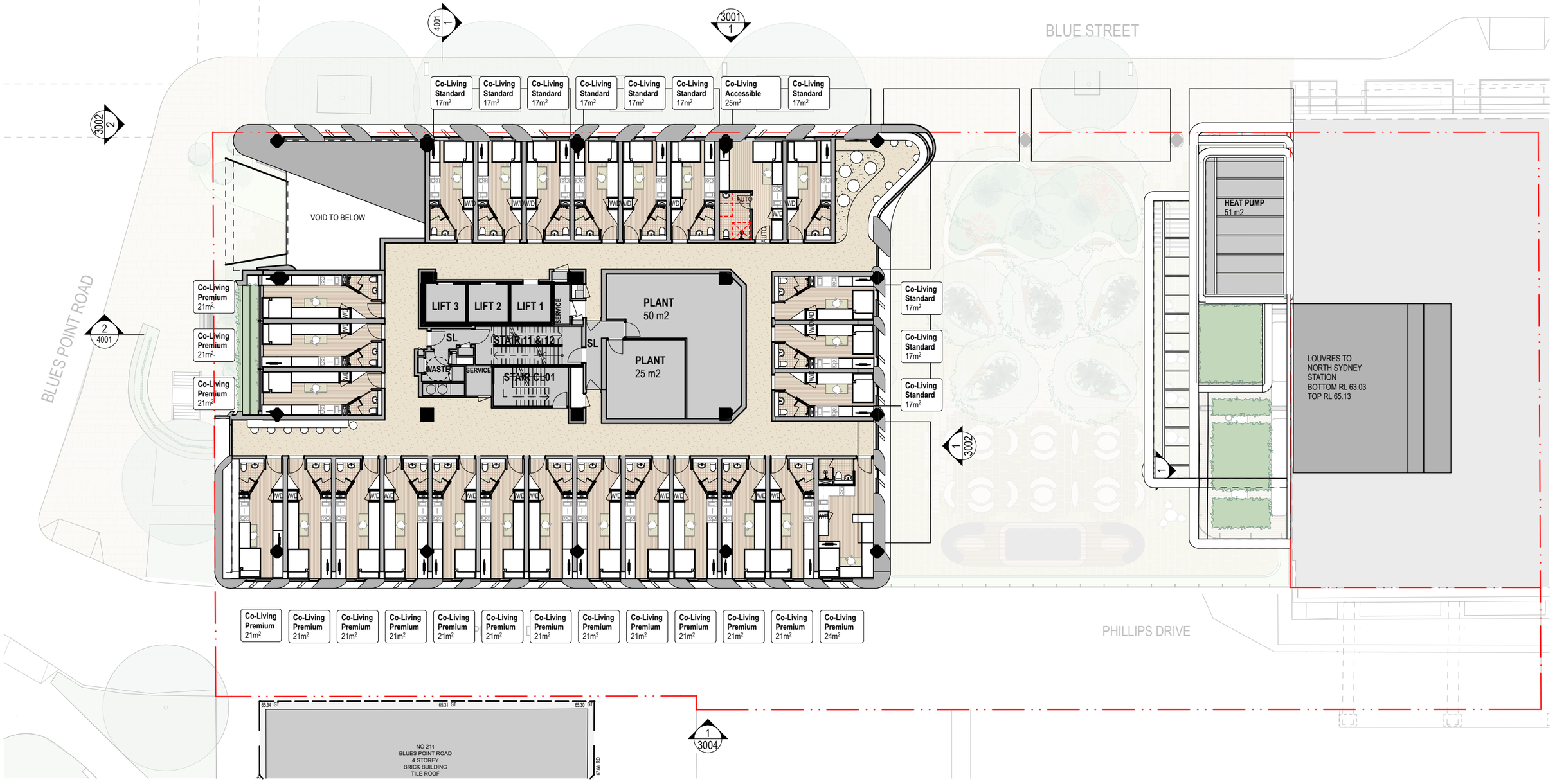
5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Ground Floor Plan** General Arrangement Plans	Existing New	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2000	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					

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PRELIMINARY

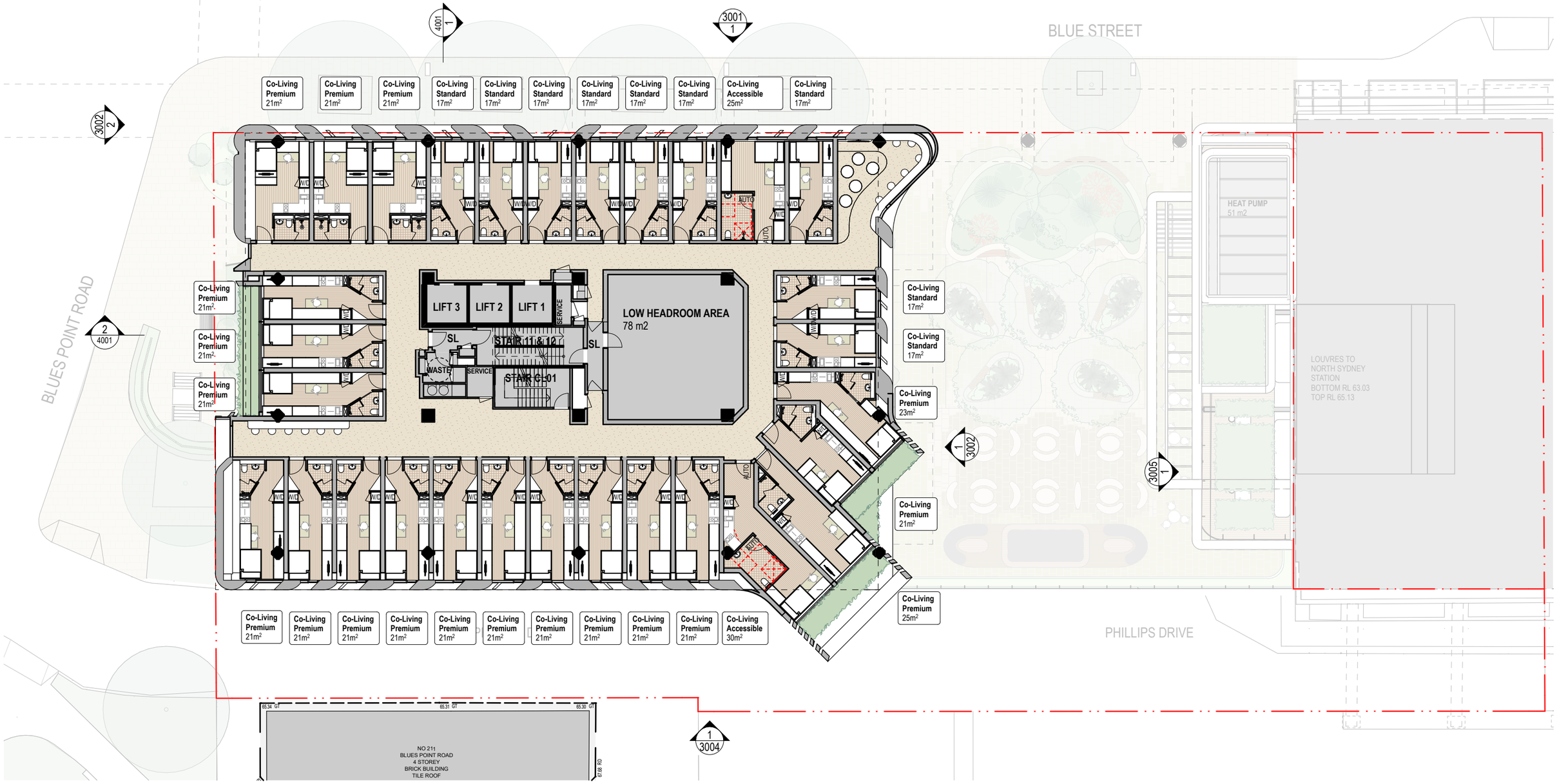
5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Level 01 Plan** General Arrangement Plans	Existing New	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2001	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					

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PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Level 02 Plan** General Arrangement Plans	Existing New	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2002	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					0 2.5 5 10m

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PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Level 03 Plan** General Arrangement Plans	Existing New	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2003	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					

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Legend

Existing

New

Room No. — Room Number Of The Floor
BED — Number Of Bedrooms
m2 — Apartment Internal Area
0 CV
CV — Cross Ventilation
Solar Compliance

Solar Compliance
0 No Solar
<2 <2 Hours Threshold
>2 >2 Hours Threshold

Cross Ventilation
CV Not Cross Ventilated
CV Cross Ventilated

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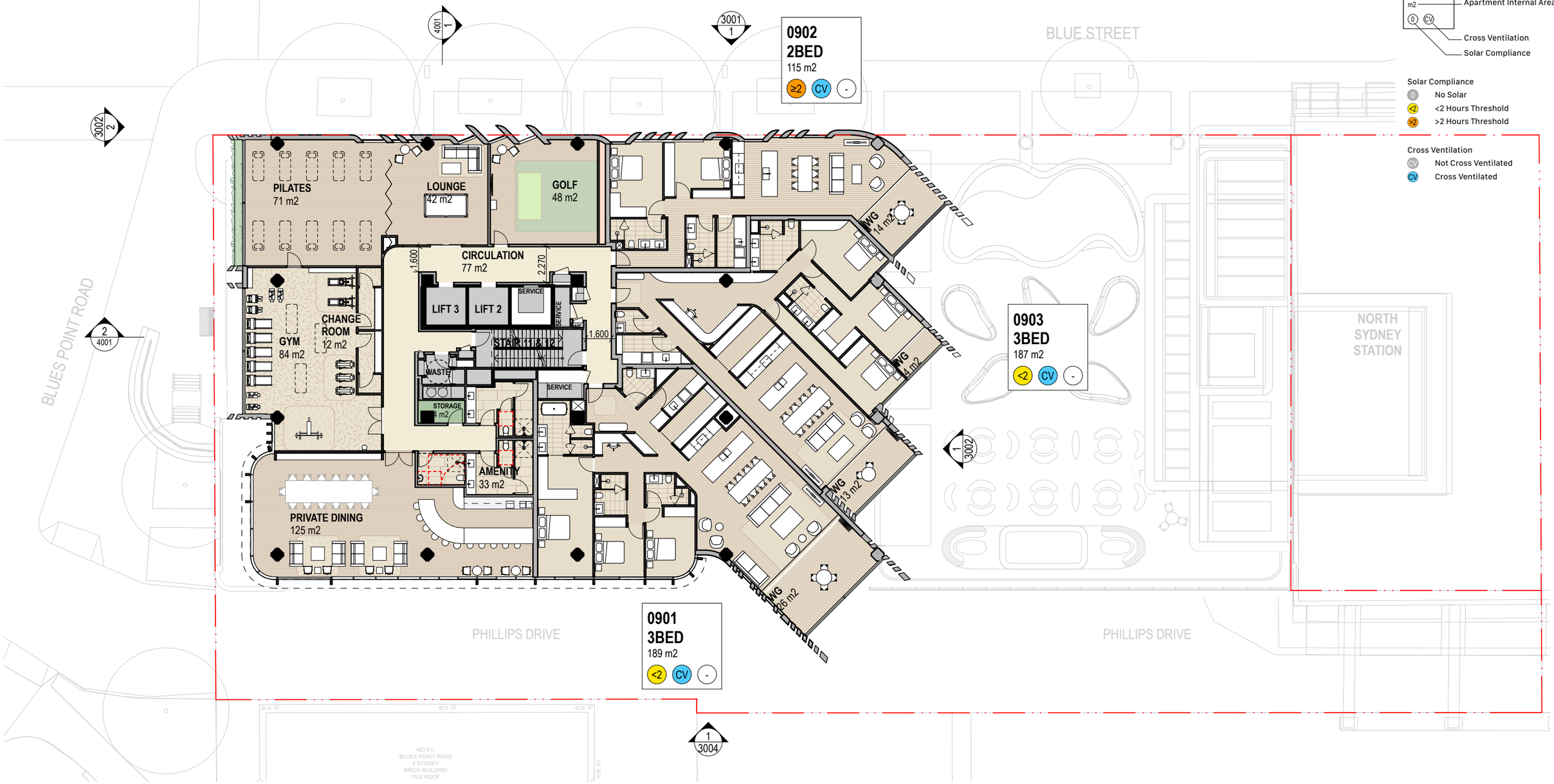
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Level 04-08 Typical Plan** General Arrangement Plans	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2004	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

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Legend

Existing

New

Room No. — Room Number Of The Floor
BED — Number Of Bedrooms
m2 — Apartment Internal Area
0 CV — Cross Ventilation; Solar Compliance

Solar Compliance
- 0 No Solar
- <2 <2 Hours Threshold
- >2 >2 Hours Threshold

Cross Ventilation
- CV Not Cross Ventilated
- CV Cross Ventilated

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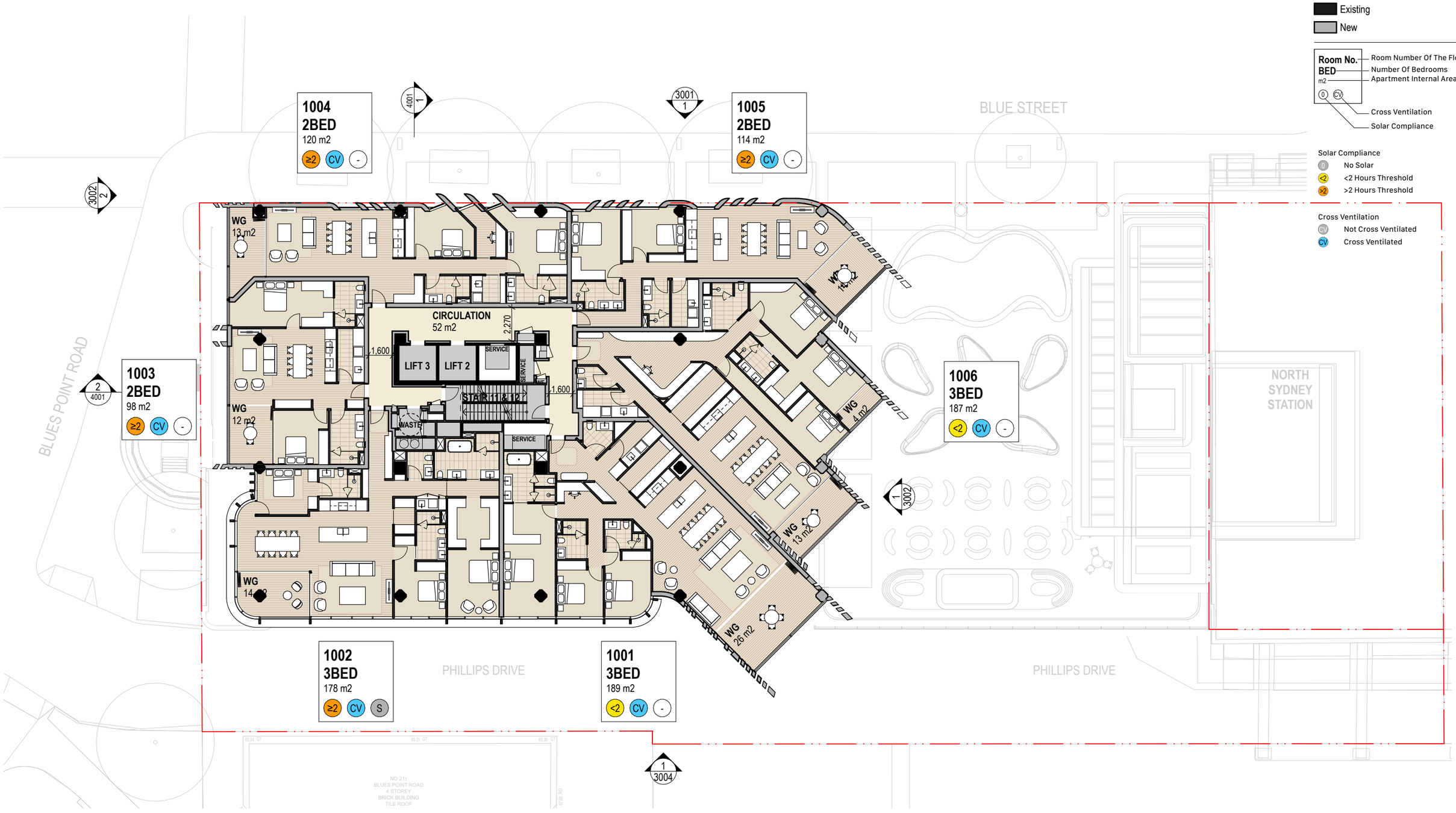
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Level 09 Plan** General Arrangement Plans	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2009	**Rev** 01	0 2.5 5 10m
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Legend

Existing

New

Room No. — Room Number Of The Floor
BED — Number Of Bedrooms
m2 — Apartment Internal Area
0 CV — Cross Ventilation; Solar Compliance

Solar Compliance
- 0 No Solar
- <2 <2 Hours Threshold
- >2 >2 Hours Threshold

Cross Ventilation
- CV Not Cross Ventilated
- CV Cross Ventilated

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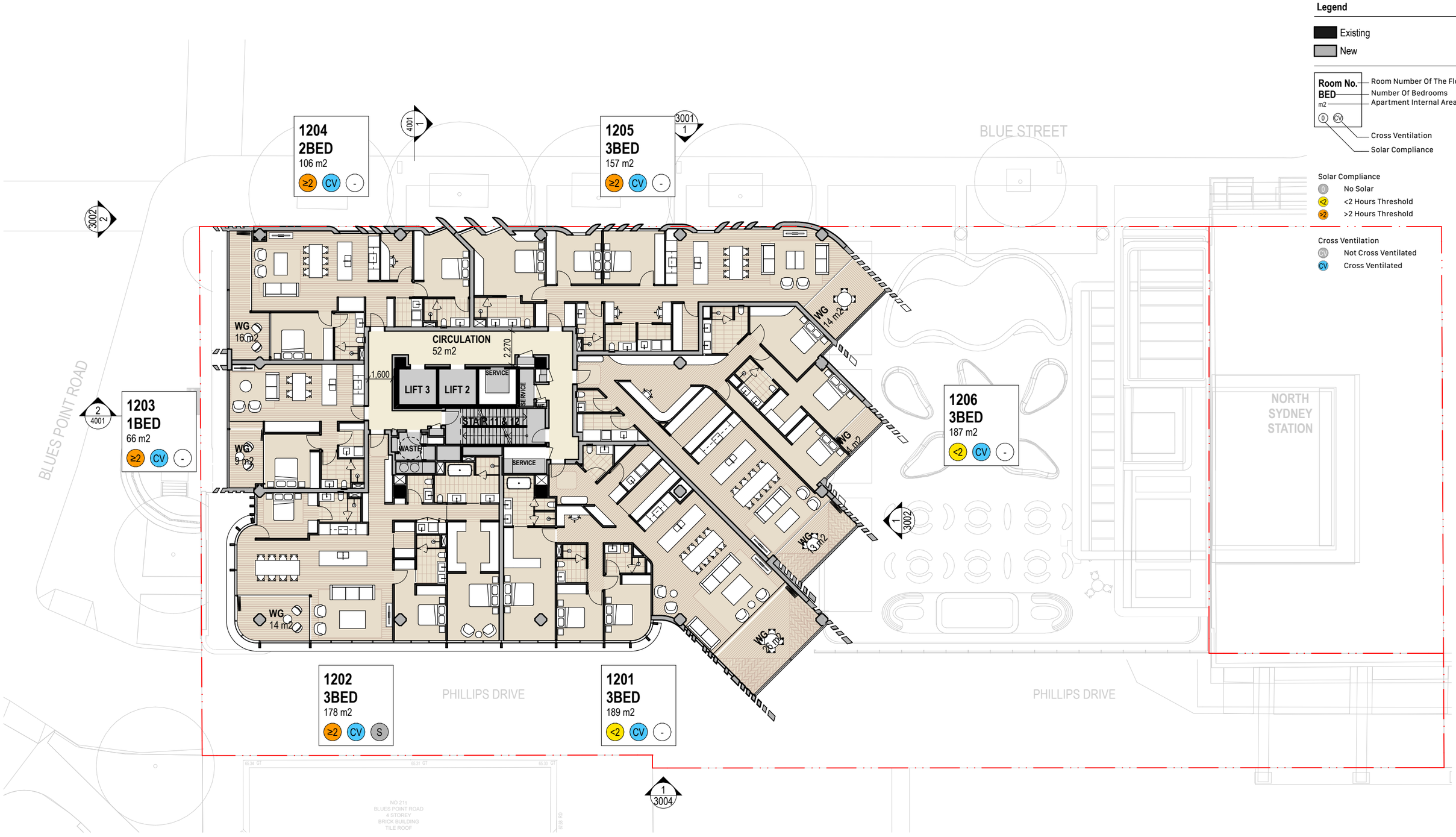
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Level 10-11 Typical Plan** General Arrangement Plans	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2010	**Rev** 01	0 2.5 5 10m
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Legend

Existing

New

Room No. — Room Number Of The Floor
BED — Number Of Bedrooms
m2 — Apartment Internal Area
0 CV — Cross Ventilation, Solar Compliance

Solar Compliance
- 0 No Solar
- <2 <2 Hours Threshold
- ≥2 >2 Hours Threshold

Cross Ventilation
- CV Not Cross Ventilated
- CV Cross Ventilated

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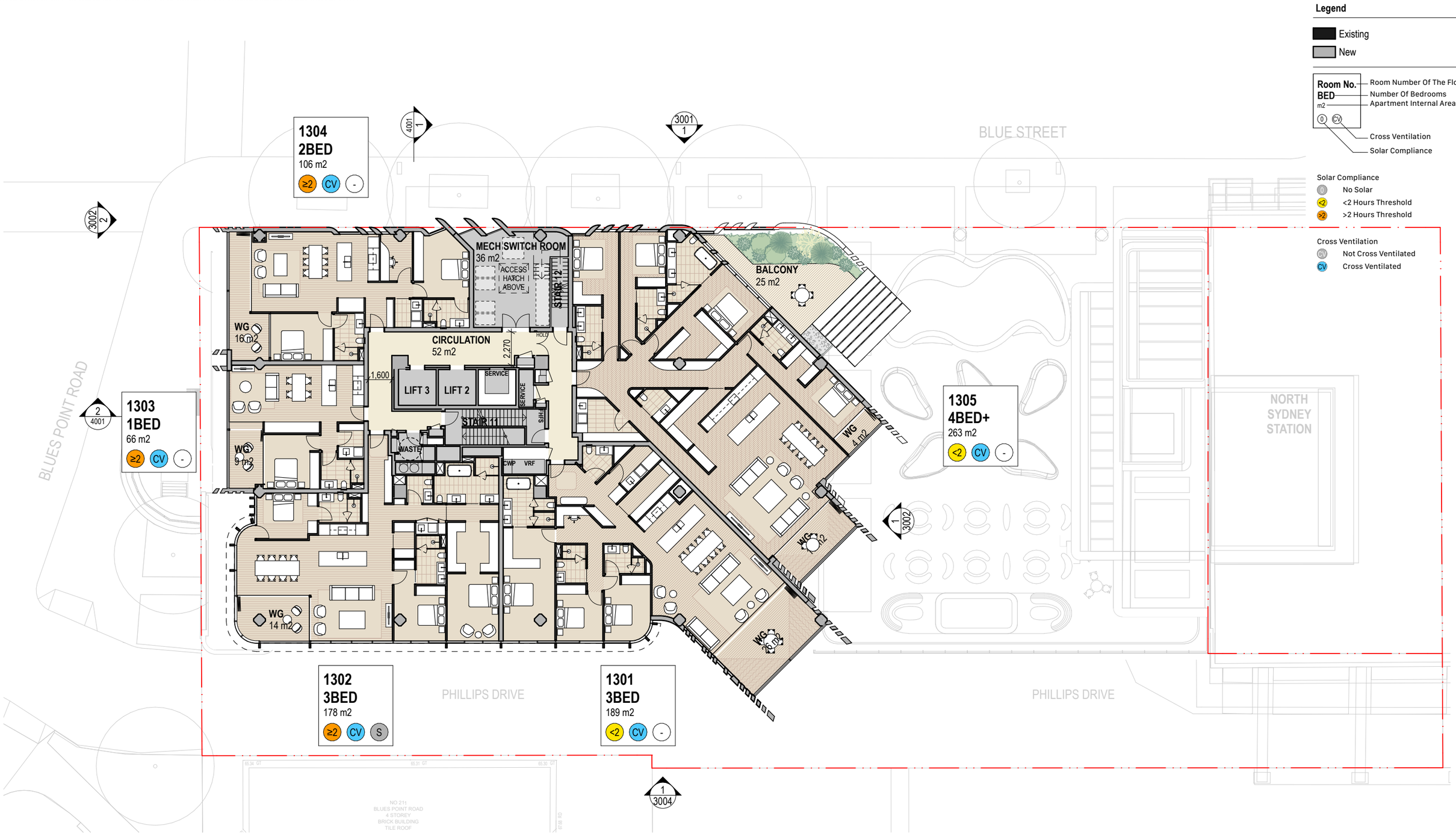
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Level 12 Plan** General Arrangement Plans	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2012	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

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Legend

Existing

New

Room No. — Room Number Of The Floor
BED — Number Of Bedrooms
m2 — Apartment Internal Area
0 CV — Cross Ventilation, Solar Compliance

Solar Compliance
- 0 No Solar
- <2 <2 Hours Threshold
- >2 >2 Hours Threshold

Cross Ventilation
- CV Not Cross Ventilated
- CV Cross Ventilated

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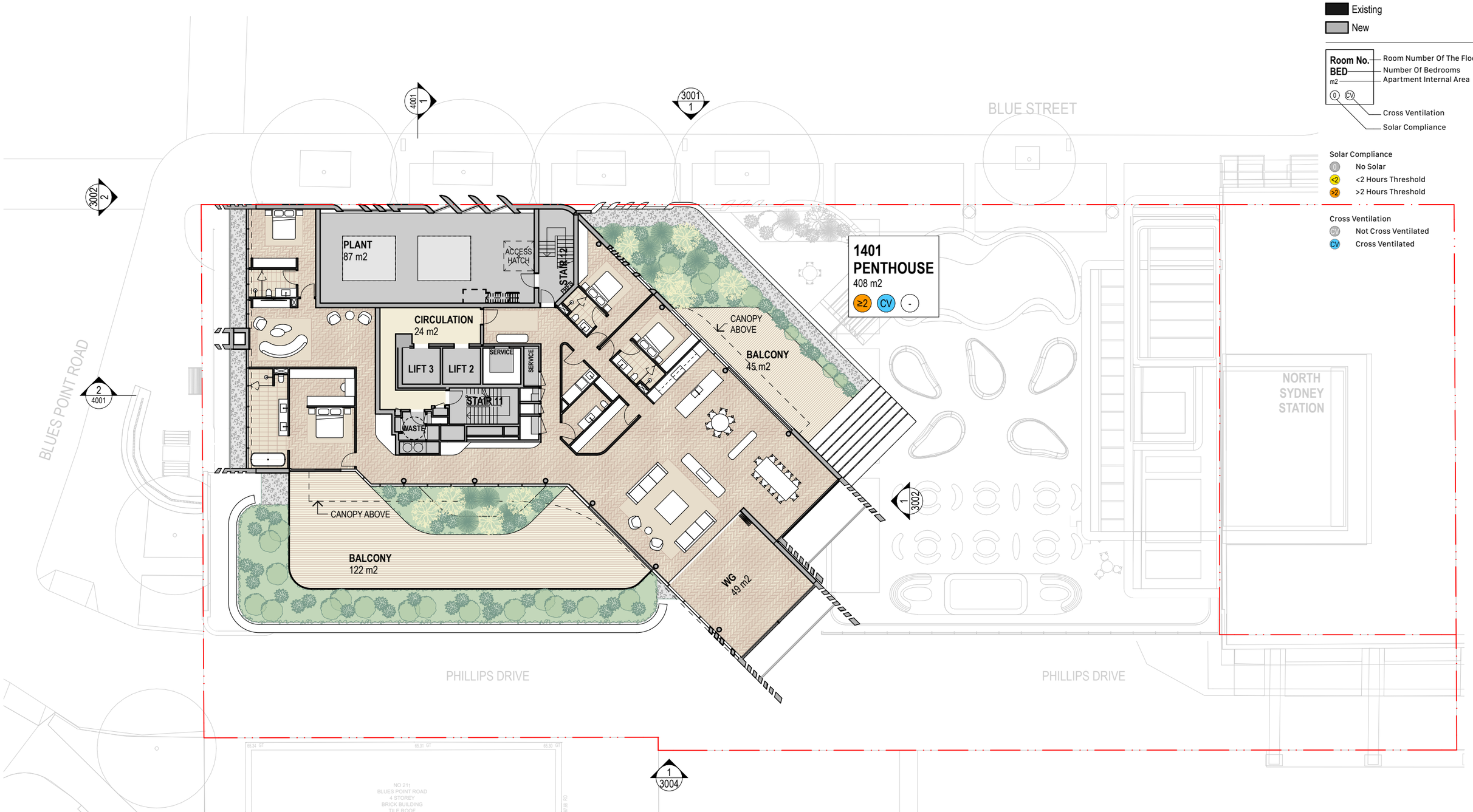
PRELIMINARY

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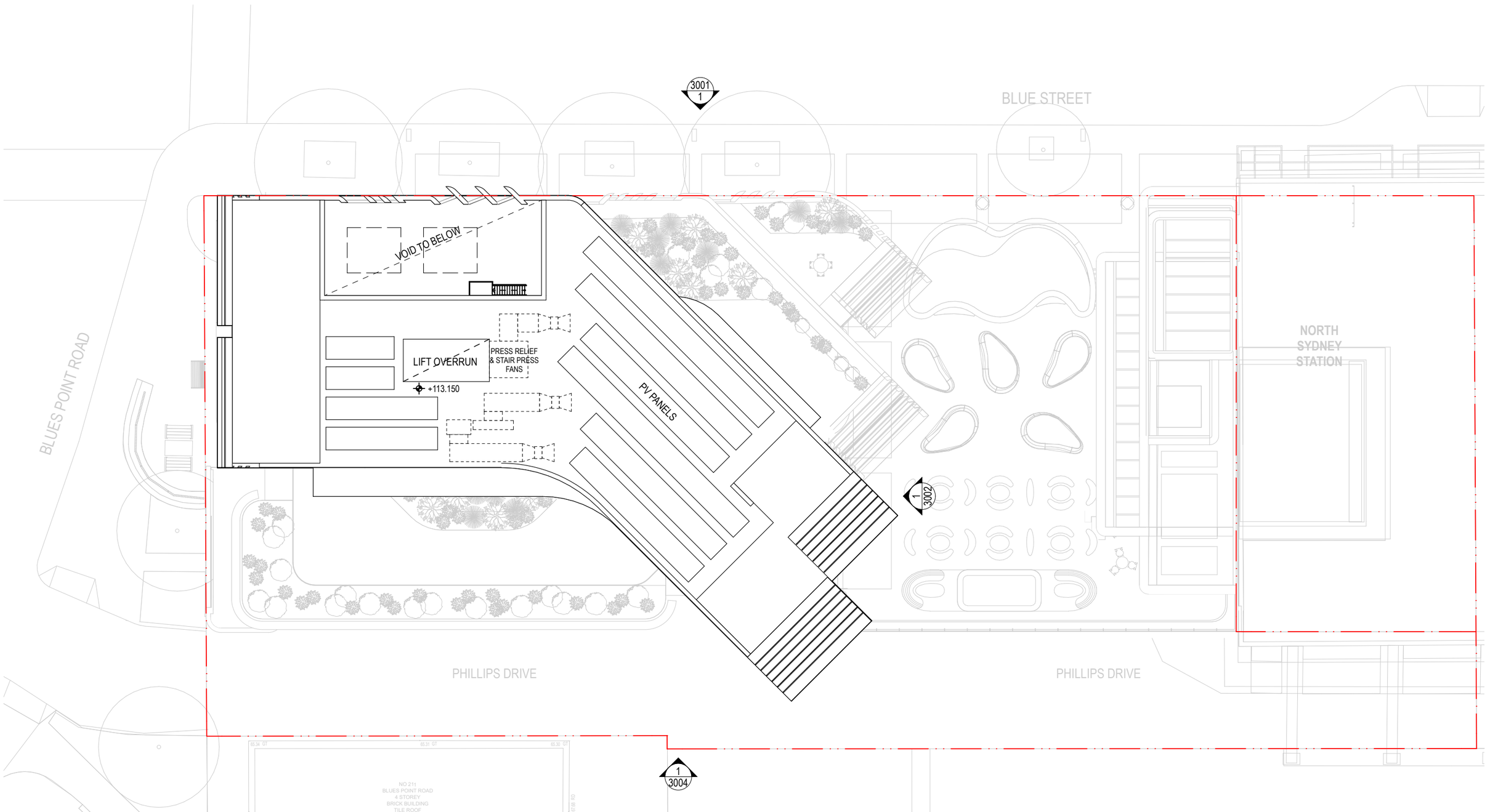
PRELIMINARY

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PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Roof Plant** General Arrangement Plans	Existing New	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2015	**Rev** 01
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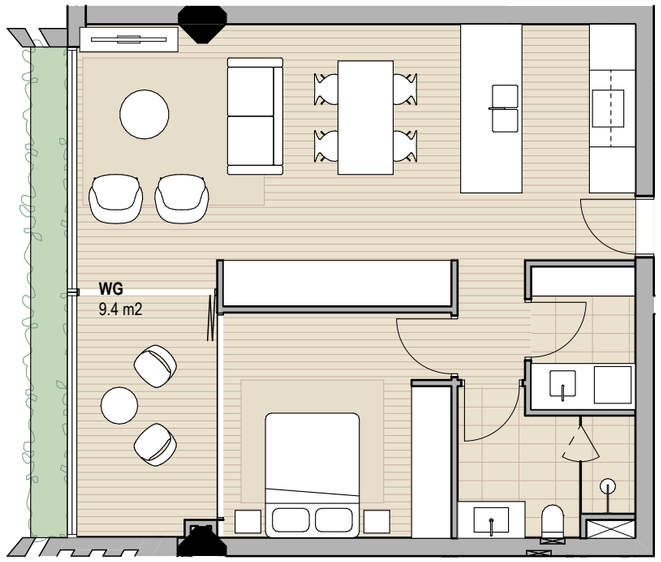
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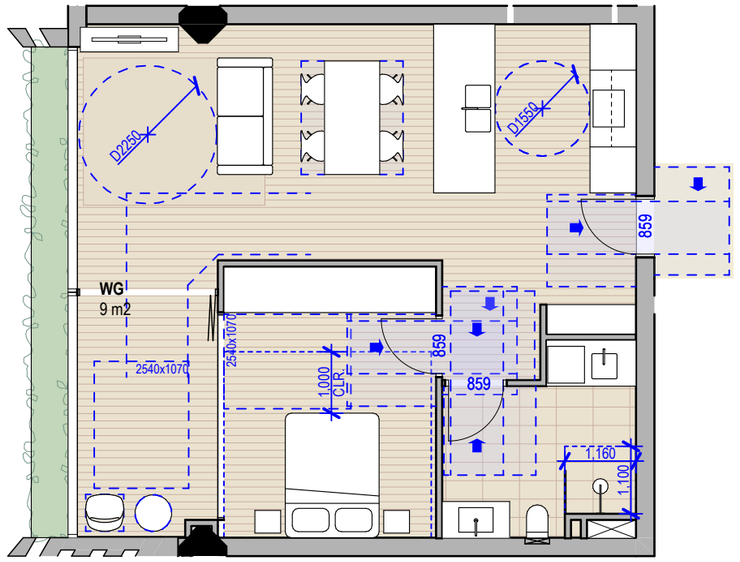
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[Ex. L09] Level 04



1BED 0403 [PRE-ADAPTION]
1:100



1BED 0403 [POST-ADAPTION]
1:100





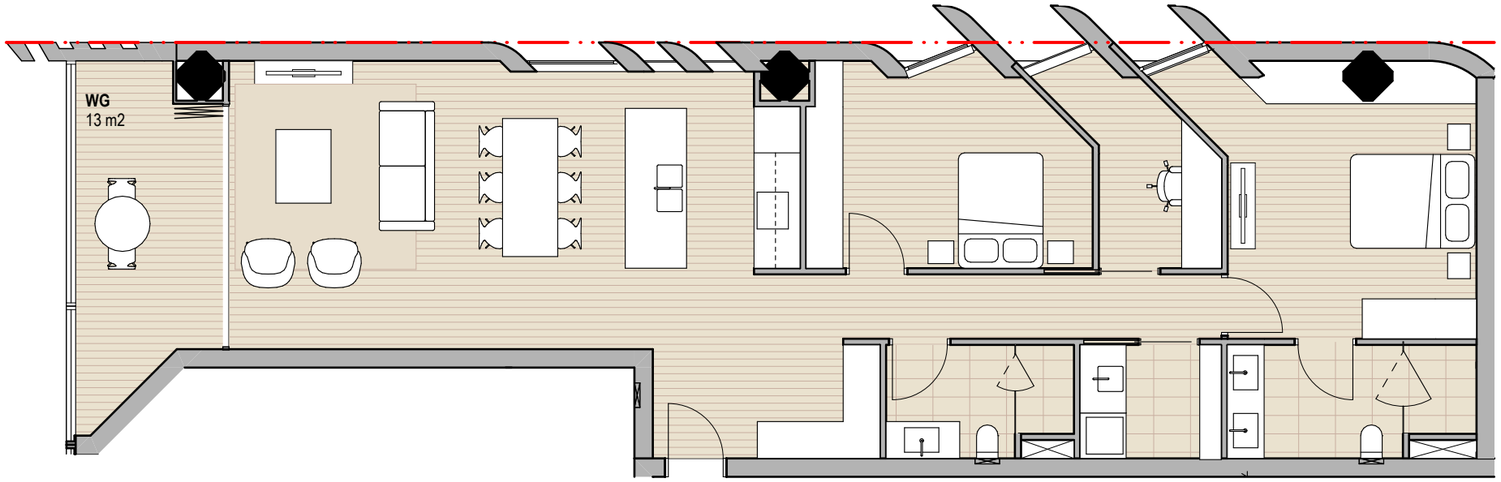
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Adaptable Unit - 1BED** Livable and Adaptable Housing	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2200	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

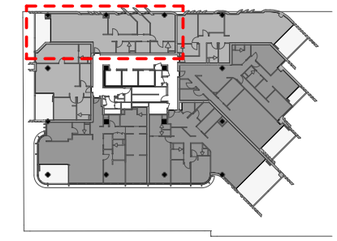
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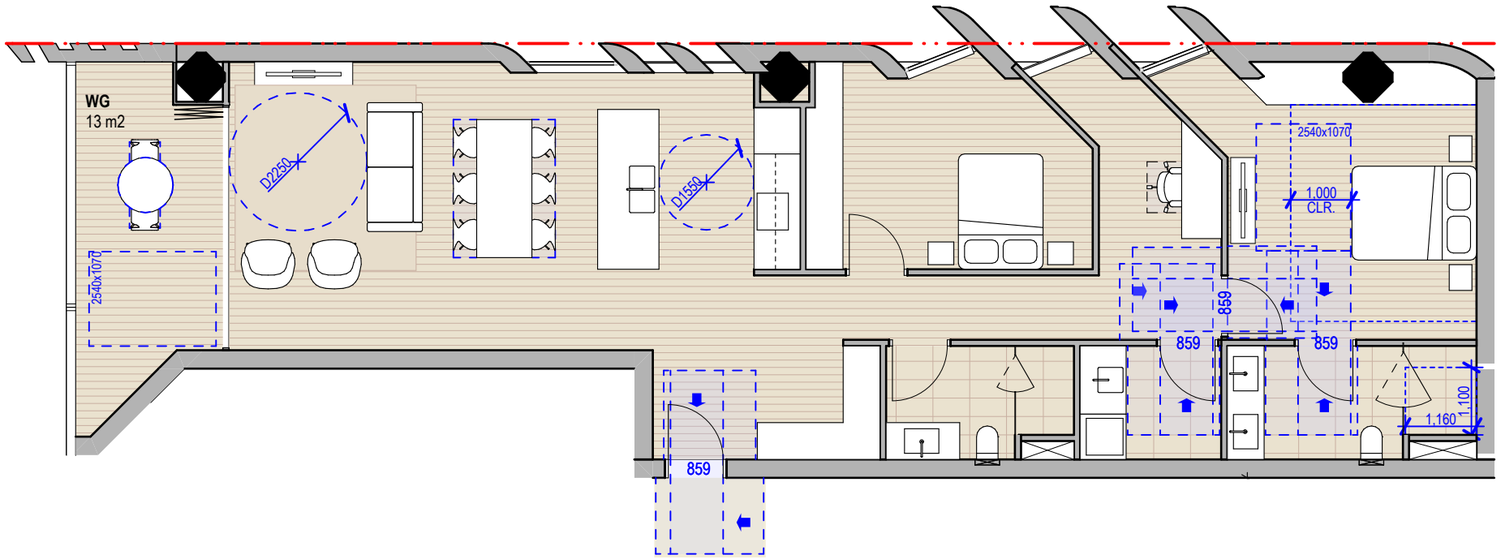
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2BED 1004 & 1104 [PRE-ADAPTION]
1:100



[Ex. L15] Level 10



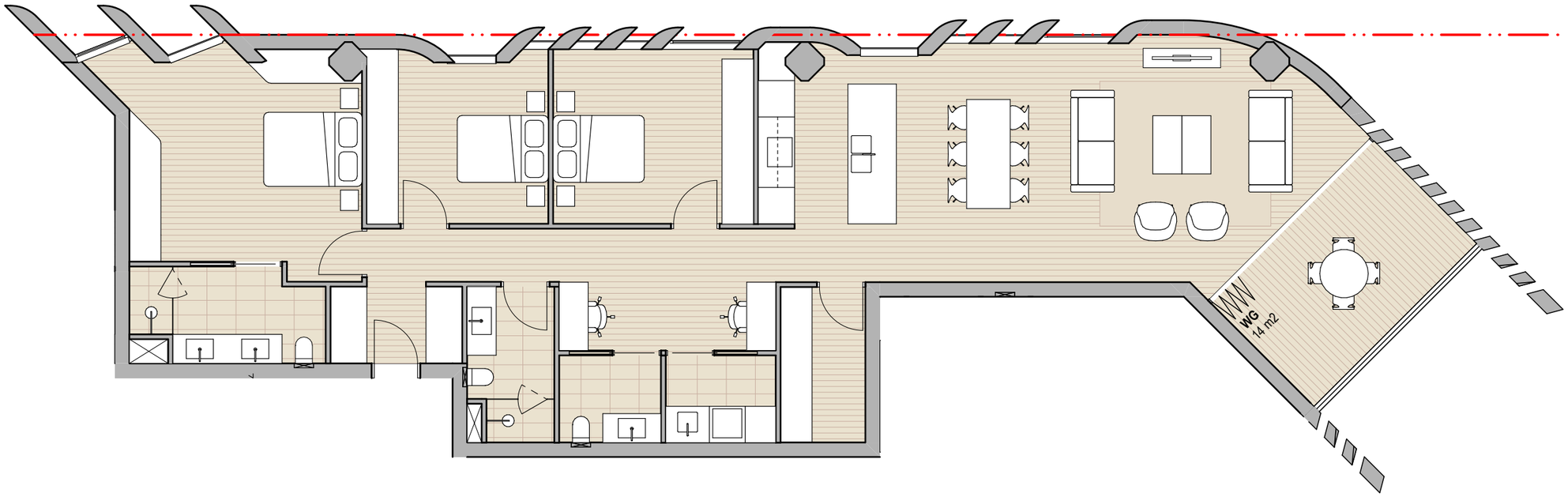
2BED 1004 & 1104 [POST-ADAPTION]
1:100

Certificate No. # U1FFLQIEEG
Scan QR code or follow website link for rating details.
Assessor name Xiaoran Sun
Accreditation No. 101556
Property Address 5 Blue Street, North Sydney, NSW, 2060
https://www.fd.com.au/QRCodeLanding?PublicId=U1FFLQIEEG&QrCodV=1

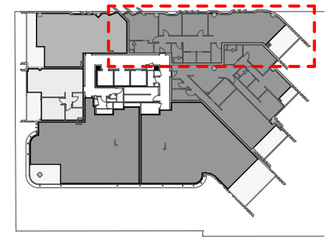
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Adaptable Unit - 2BED** Livable and Adaptable Housing	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2201	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

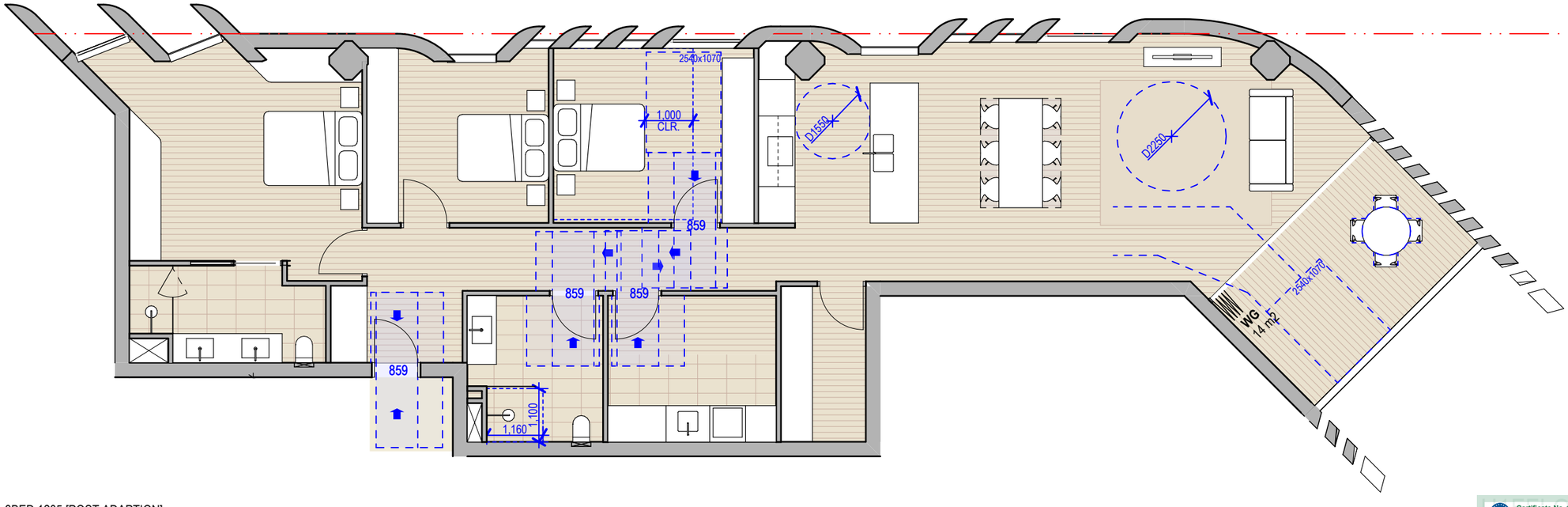
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3BED 1205 [PRE-ADAPTION]
1:100



[Ex. Plant] Level 12



3BED 1205 [POST-ADAPTION]
1:100

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PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Adaptable Unit - 3BED** Livable and Adaptable Housing	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2202	**Rev** 01
		01	3/6/2026	SSD TOA Issue	NZ					

0 2.5 5 10m

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3BED-L L04-08 L10-13 [SILVER]
1:100

LIVABLE HOUSING LIST
Silver
0402
0407
0502
0507
0602
0607
0702
0707
0802
1002
1102
1202
1302
13
62 (TOTAL UNITS)
20.9%

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Assessor name Xiaoran Sun
Accreditation No. 101556
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PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Livable Unit - 3BED (L4-8,L10-13)** Livable and Adaptable Housing	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2210	**Rev** 01	0 2.5 5 10m	

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3BED-L L04-07 [SILVER]
1:100



LIVABLE HOUSING LIST

Silver
0402
0407
0502
0507
0602
0607
0702
0707
0802
1002
1102
1202
1302
13
62 (TOTAL UNITS)
20.9%

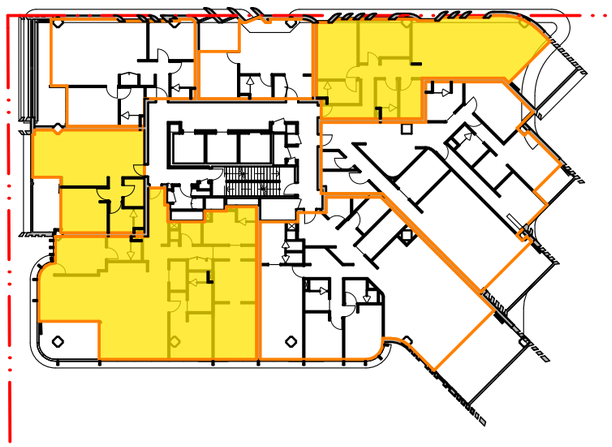
Certificate No. # U1FFLQIEEG
Scan QR code or follow website link for rating details.
Assessor name Xiaoran Sun
Accreditation No. 101556
Property Address 5 Blue Street, North Sydney, NSW, 2060
https://www.fifi.com.au/QRCodeLanding?PublicId=U1FFLQIEEG&CalcCat=1

PRELIMINARY

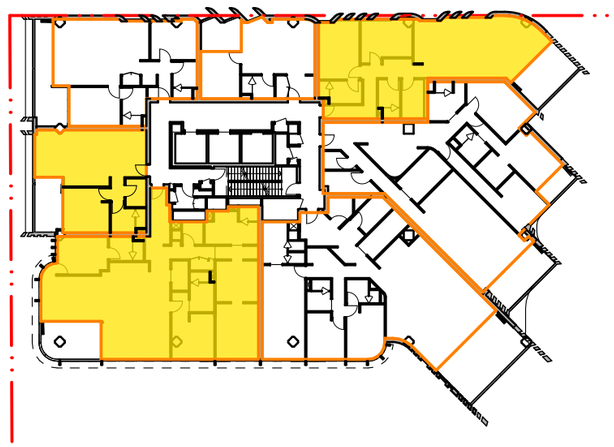
5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Livable Unit - 3BED (L4-7)** Livable and Adaptable Housing	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2211	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

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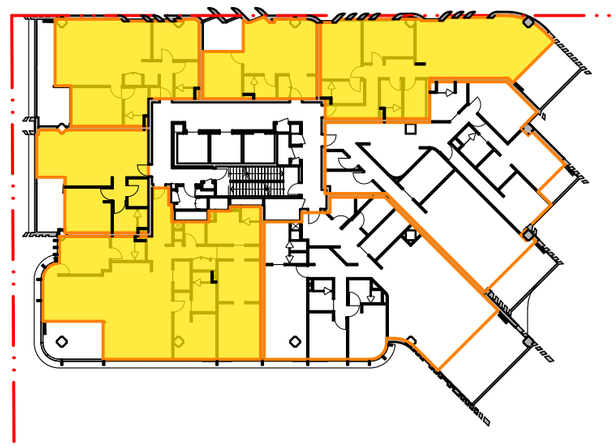
LEGEND
- ≥ 2 HRS
- < 2HRS



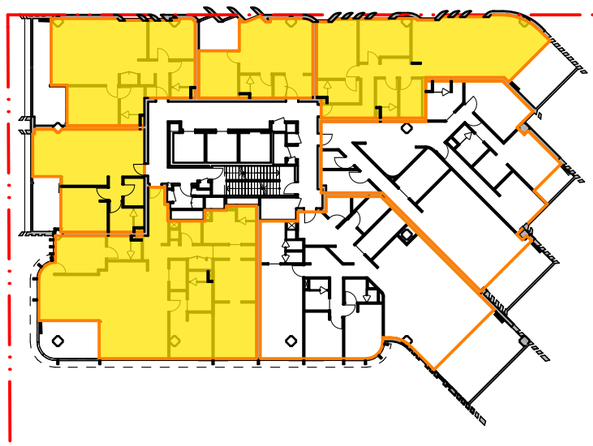
[Ex. L09] Level 04
1:500



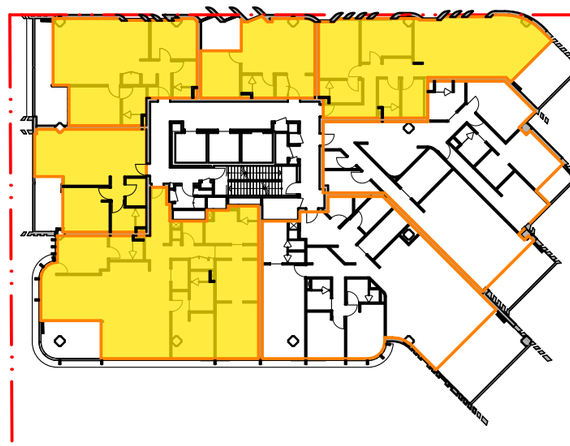
[Ex. L10] Level 05
1:500



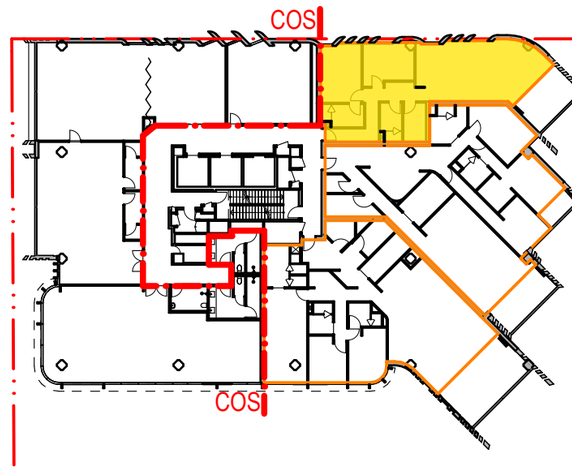
[Ex. L11] Level 06
1:500



[Ex. L12] Level 07
1:500



[Ex. L13] Level 08
1:500



[Ex. L14] Level 09
1:500

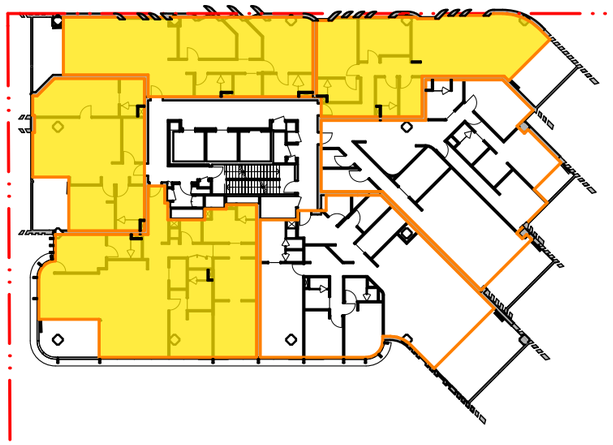




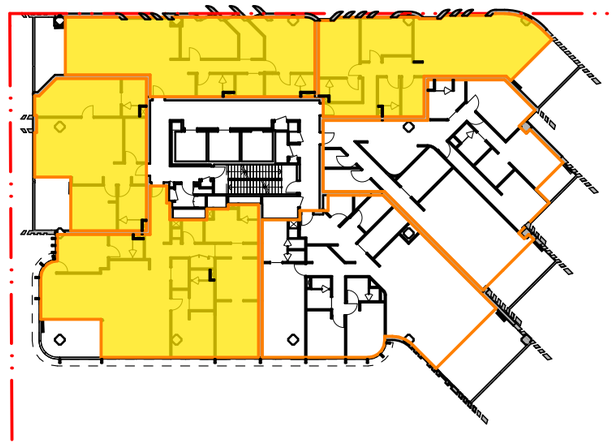
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Solar Access L4-L9** Compliance	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2300	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

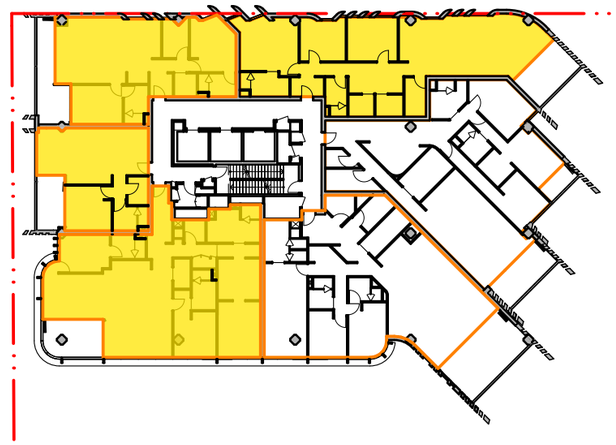
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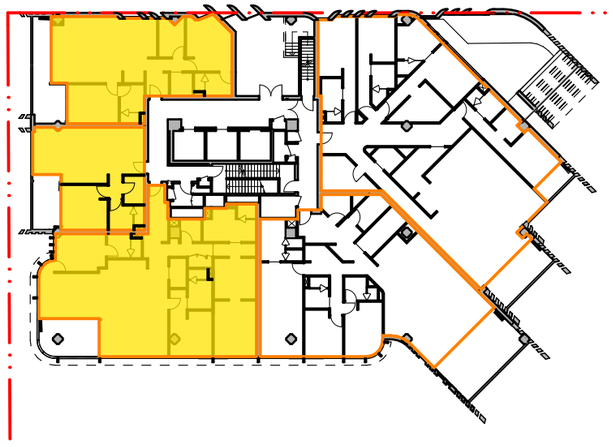
[Ex. L15] Level 10
1:500



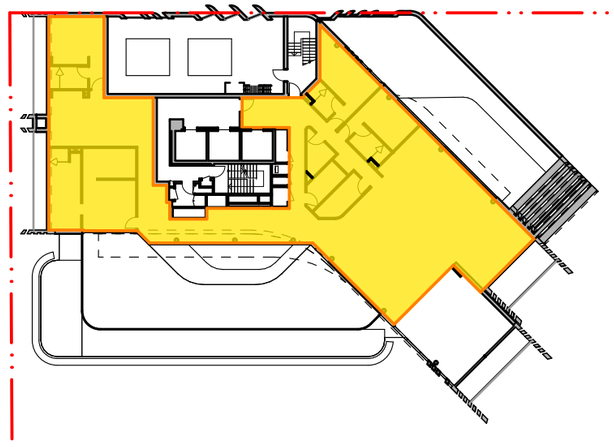
[Ex. L16] Level 11
1:500



[Ex. Plant] Level 12
1:500



[New] Level 13
1:500



[New] Level 14
1:500

LEGEND
- ≥ 2 HRS
- < 2HRS

ADG - 4A-1
Minimum 2 hours of solar access at midwinter
(Winter Solstice 9am-3pm)
Minimum 70% of apartments

Solar Access Compliance

Total Apartments (L4-L14)	62
Apartments receiving ≥2hrs of sun	38
Total Achieved	61.3%

ADG - 4A-1
A maximum of 15% of apartments in a building receive no direct sunlight between 9am-3pm at mid-winter

Solar Access Compliance

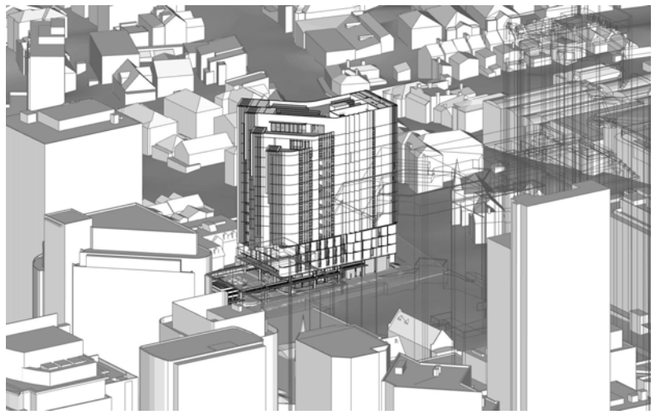
Apartments receiving no direct sunlight	32.2%

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Assessor name Xiaojian Sun
Accreditation No. 101556
Property Address 5 Blue Street, North Sydney, NSW, 2060
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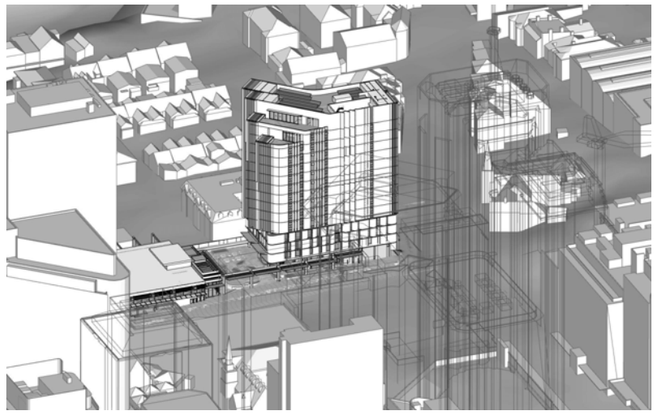
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Solar Access L10-L13** Compliance	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2301	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

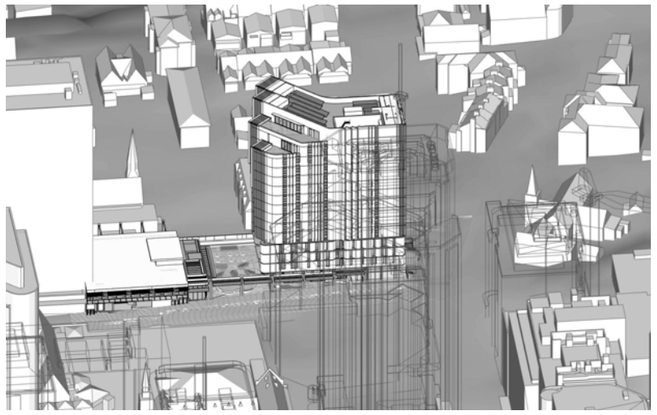
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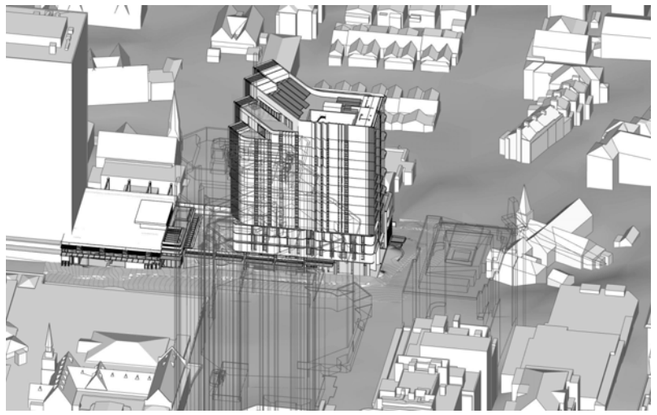
Jun 21st 9am



Jun 21st 10am



Jun 21st 11am



Jun 21st 12pm



Jun 21st 1pm



Jun 21st 2pm



Jun 21st 3pm

NOTE. FOREGROUND CBD BUILDINGS SHOWN IN WIREFRAME.





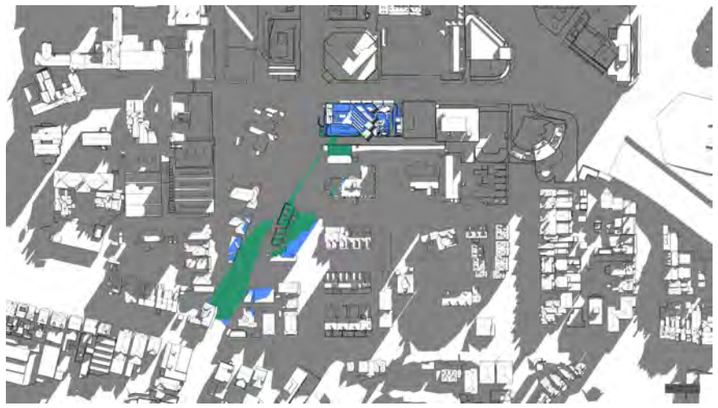
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Sun Eye Views** Compliance	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2310	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

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21st June - 9am



21st June - 10am



21st June - 11am

LEGEND

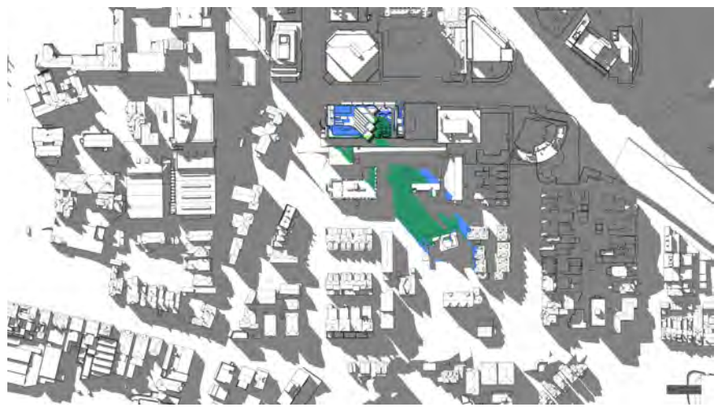
- NEIGHBOUR SHADOWS
- EXISTING 5 BLUE ST. SHADOWS
- PROPOSED 5 BLUE ST. SHADOWS



21st June - pm



21st June - 1pm



21st June - 2pm



21st June - 3pm





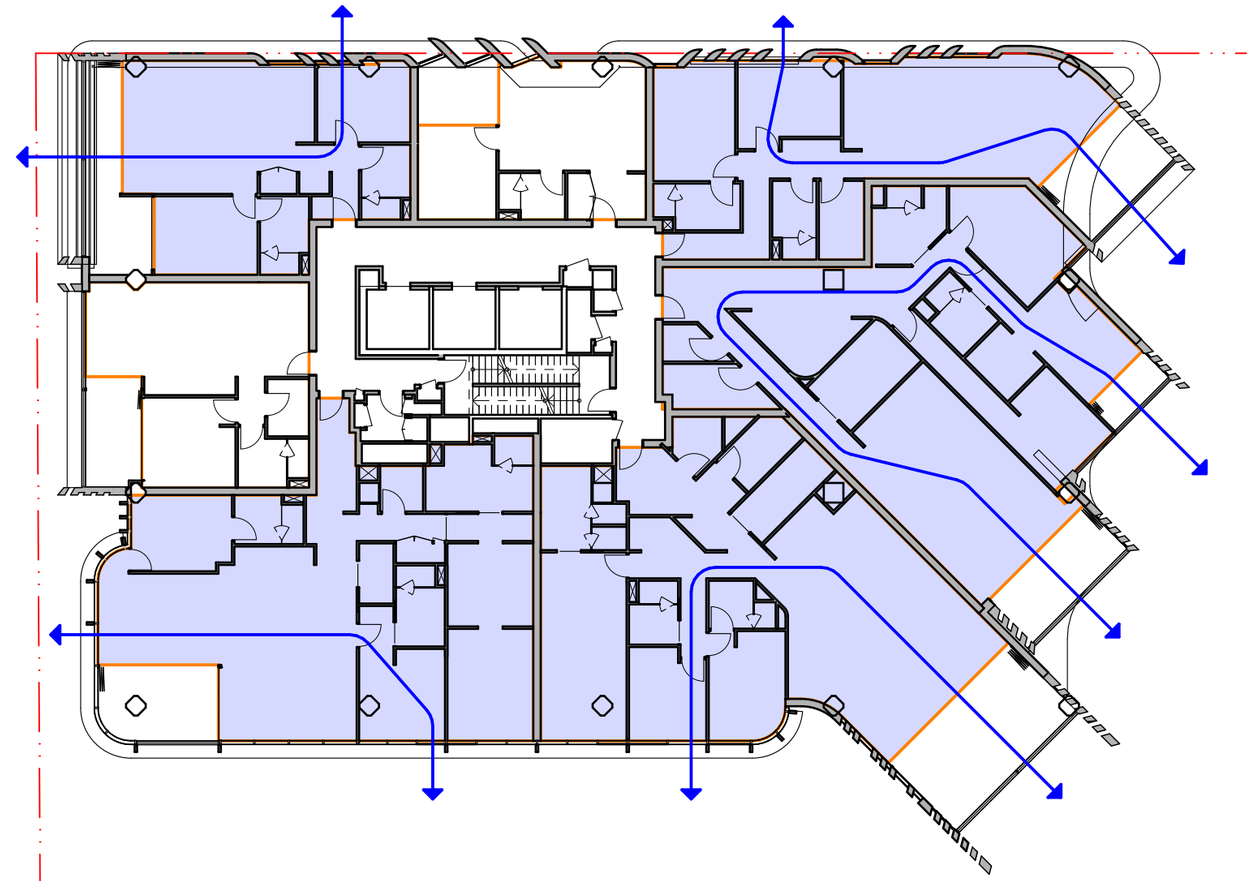
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Shadow Diagrams** Compliance	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2320	**Rev** 01	0 2.5 5 10m	
		01	3/6/2026	SSD TOA Issue	NZ							

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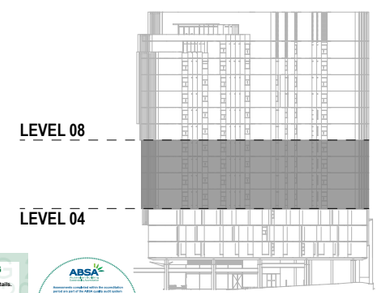
L4-8 Typical Plan
1:250

ADG - 4B-3

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.

Cross Ventilation Compliance

ADG Requirements (Minimum)	60%
Total Apartments (GF-L8)	35
Apartments with natural cross-ventilation	25
Total Achieved	71.4%







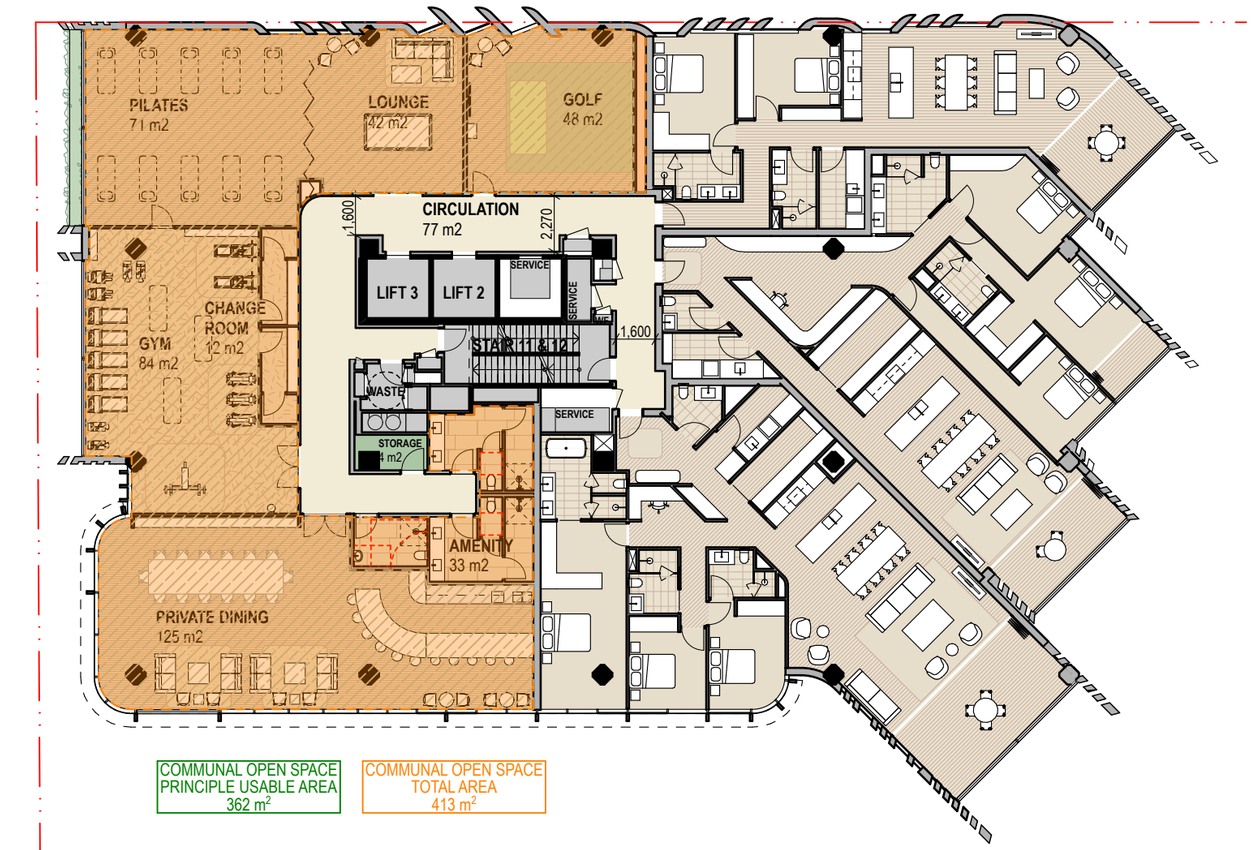
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Cross Ventilation** Compliance	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2330	**Rev** 01	0 2.5 5 10m	

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[Ex. L14] Level 09
1:250

ADG - COMMUNAL OPEN SPACE 3D-1

AREA OF DIRECT SUNLIGHT ≥2HRS	64.6m²
PRINCIPLE COMMUNAL OPEN SAPCE	362.5m²
%	17.8%
COMMUNAL OPEN SAPCE TOTAL AREA	413m²
SITE AREA*	1,374m²
%	30%

*The total site area is 3051sqm, however, 606sqm is used as a service road easement to 5 and 15 Blue street, 456sqm is unusable and over the station, and 615sqm is taken by the public Plaza. The remaining site area is 1,374sqm.





PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Communal Open Space** Compliance	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2340	**Rev** 01	0 2.5 5 10m	
		01	3/6/2026	SSD TOA Issue	NZ							

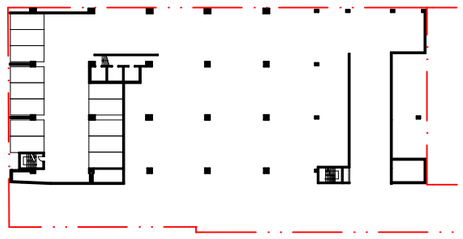
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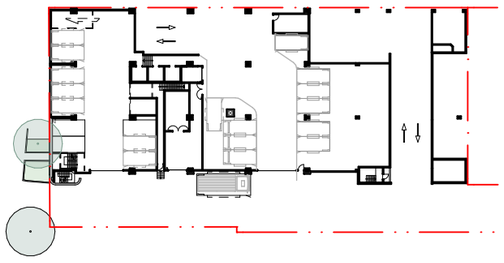
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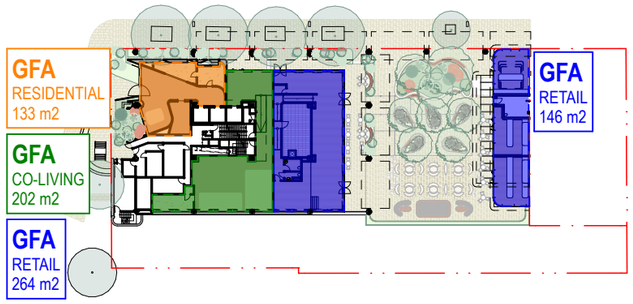
[Ex. L02] Basement
1:1000



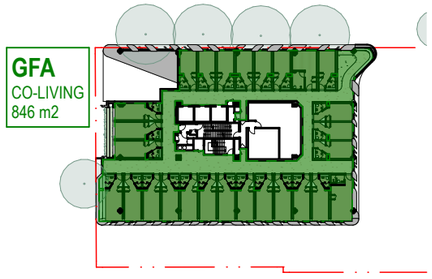
[Ex. L03] Basement Mezz
1:1000



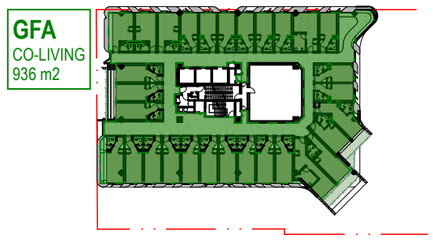
[Ex. L04 | Phillips Dr] Lower Ground
1:1000



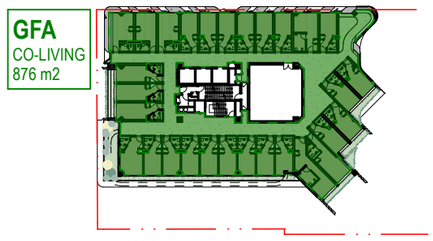
[Ex. L05 | Blue St] Ground Floor
1:1000



[Ex. L06] Level 01
1:1000



[Ex. L07] Level 02
1:1000



[Ex. L08] Level 03
1:1000



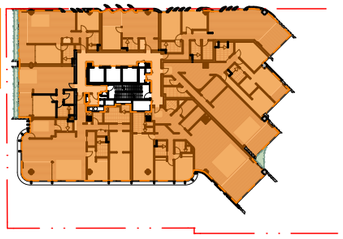
[Ex. L09] Level 04
1:1000



[Ex. L10] Level 05
1:1000







[Ex. L11] Level 06
1:1000



[Ex. L12] Level 07
1:1000



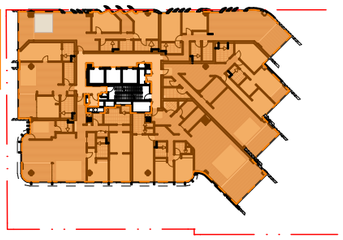
[Ex. L13] Level 08
1:1000



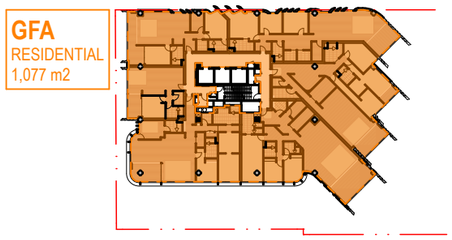
[Ex. L14] Level 09
1:1000



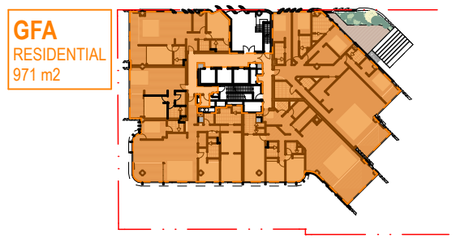
[Ex. L15] Level 10
1:1000



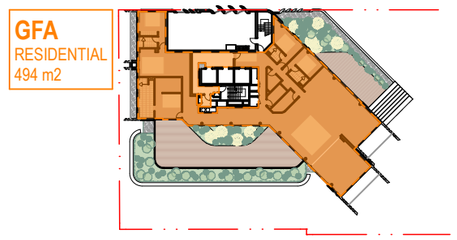
[Ex. L16] Level 11
1:1000



[Ex. Plant] Level 12
1:1000



[New] Level 13
1:1000



[New] Level 14
1:1000

Method of Measurement – Gross Floor Area
"gross floor area means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor,
and includes:
(a) the area of a mezzanine, and
(b) habitable rooms in a basement or an attic, and
(c) any shop, auditorium, cinema, and the like, in a basement or attic,
but excludes:
(d) any area for common vertical circulation, such as lifts and stairs, and
(e) any basement:
(i) storage, and
(ii) vehicular access, loading areas, garbage and services, and
(f) plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and
(g) car parking to meet any requirements of the consent authority (including access to that car parking), and
(h) any space used for the loading or unloading of goods (including access to it), and
(i) terraces and balconies with outer walls less than 1.4 metres high, and
(j) voids above a floor at the level of a storey or storey above. "

PRELIMINARY

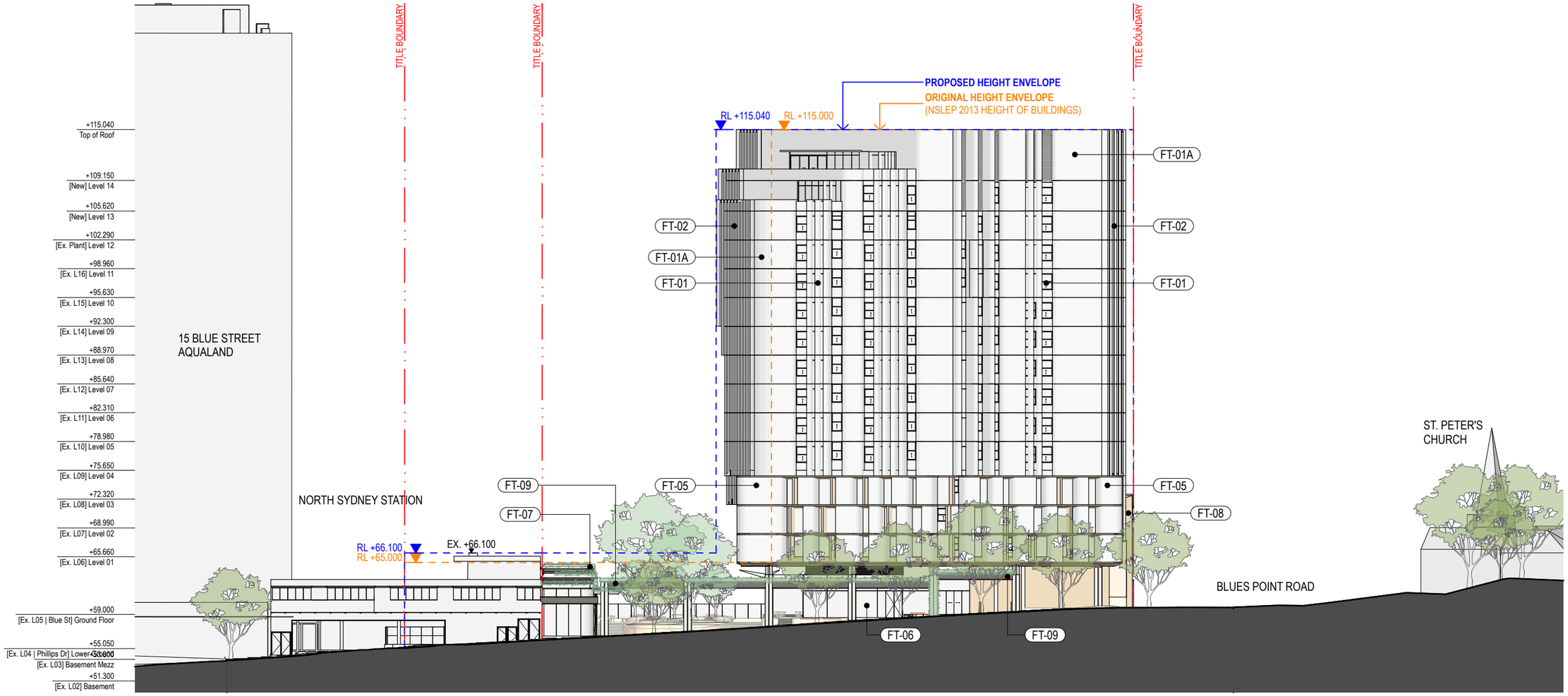
5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**GFA Plans** GFA Plans	GFA - RESI GFA - CO-LIVING GFA - RETAIL	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 2800	**Rev** 01
			01	3/6/2026	SSD TOA Issue	NZ					

0 2.5 5 10m

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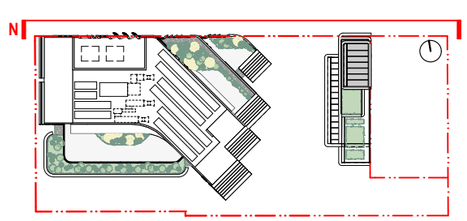
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REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet



PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**North Elevation** 1:500 Elevations	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:500 @ A3	**Code** z5b	**Sheet** 3001	**Rev** 01	0 5 10 20m
		01	3/6/2026	SSD TOA Issue	NZ						

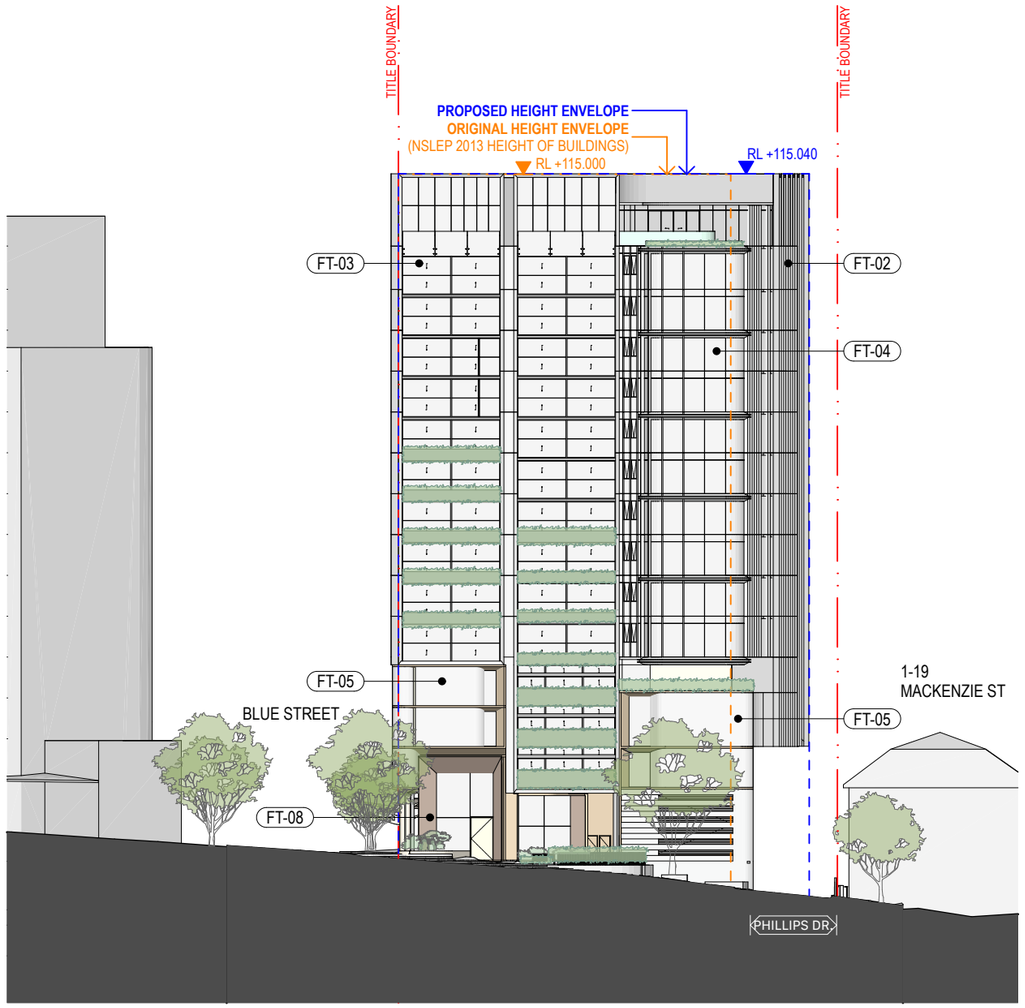
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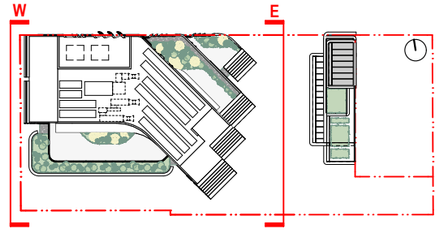
East Elevation
1:500



West Elevation
1:500

REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet



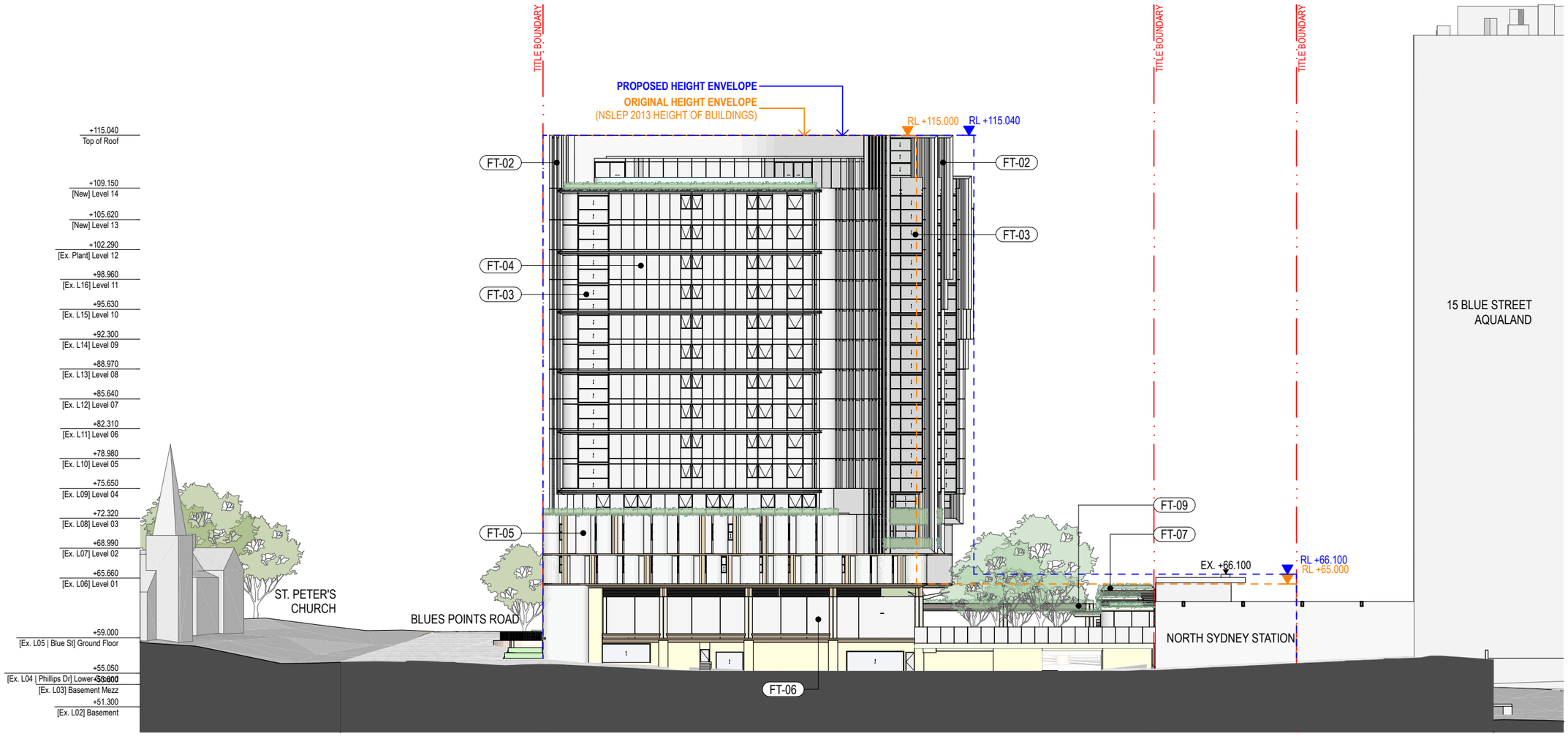
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**East and West Elevations** 1:500 Elevations	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:500 @ A3	**Code** z5b	**Sheet** 3002	**Rev** 01	0 5 10 20m
		01	3/6/2026	SSD TOA Issue	NZ						

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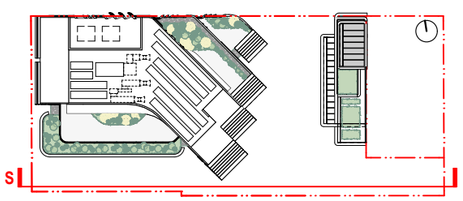
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REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet



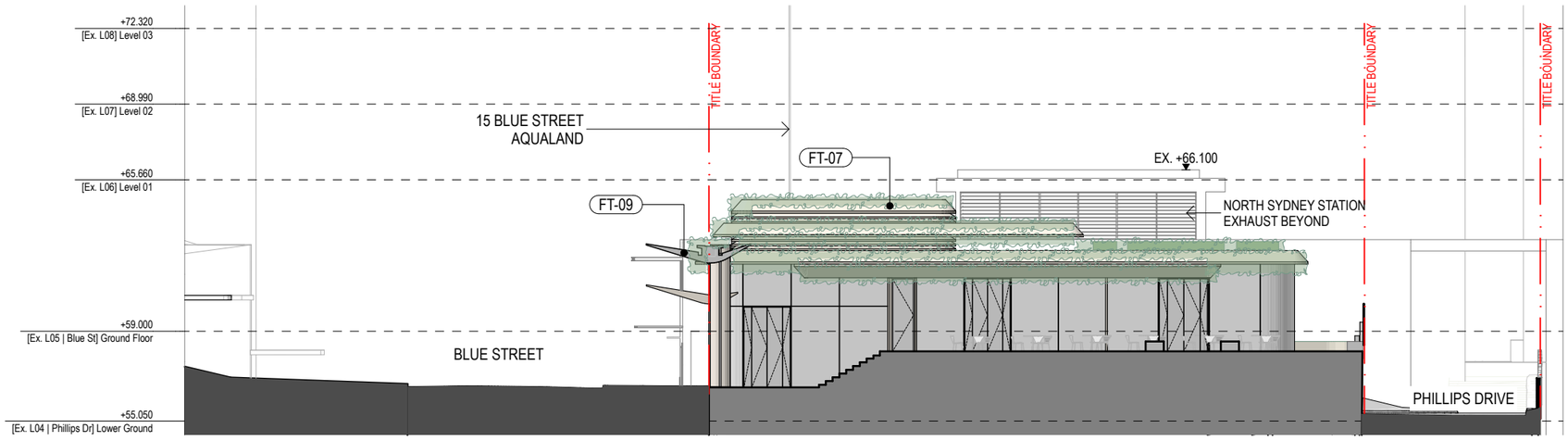
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**South Elevation** 1:500 Elevations	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:500 @ A3	**Code** z5b	**Sheet** 3004	**Rev** 01	0 5 10 20m
		01	3/6/2026	SSD TOA Issue	NZ						

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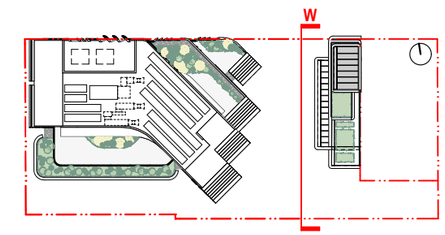
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Retail Pavilion West Elevation
1:250

REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet



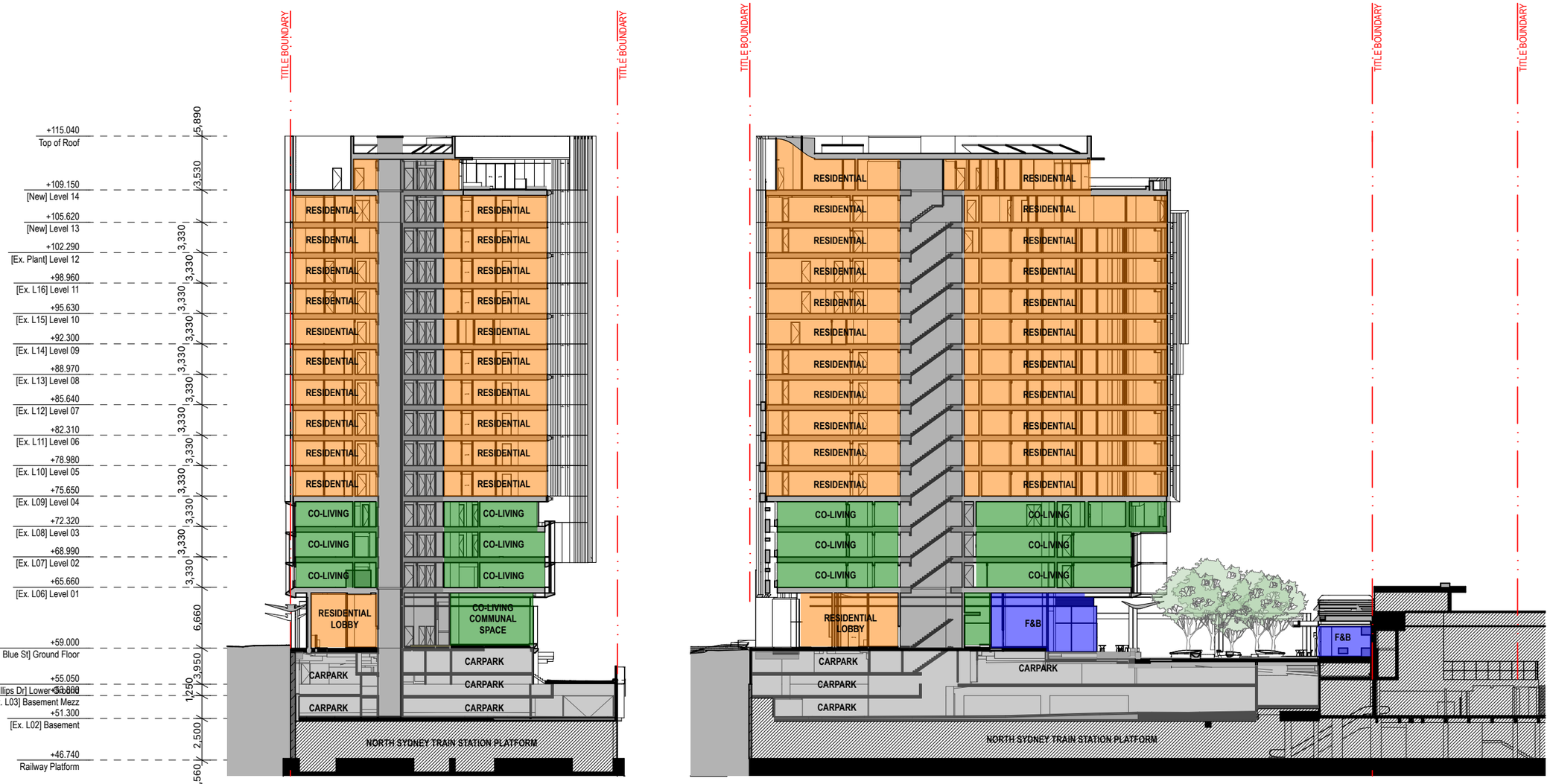
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Retail Pavilion Elevation** 1:500 Elevations	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:250 @ A3	**Code** z5b	**Sheet** 3005	**Rev** 01	0 2.5 5 10m
		01	3/6/2026	SSD TOA Issue	NZ						

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N-S Section
1:500

E-W Section
1:500

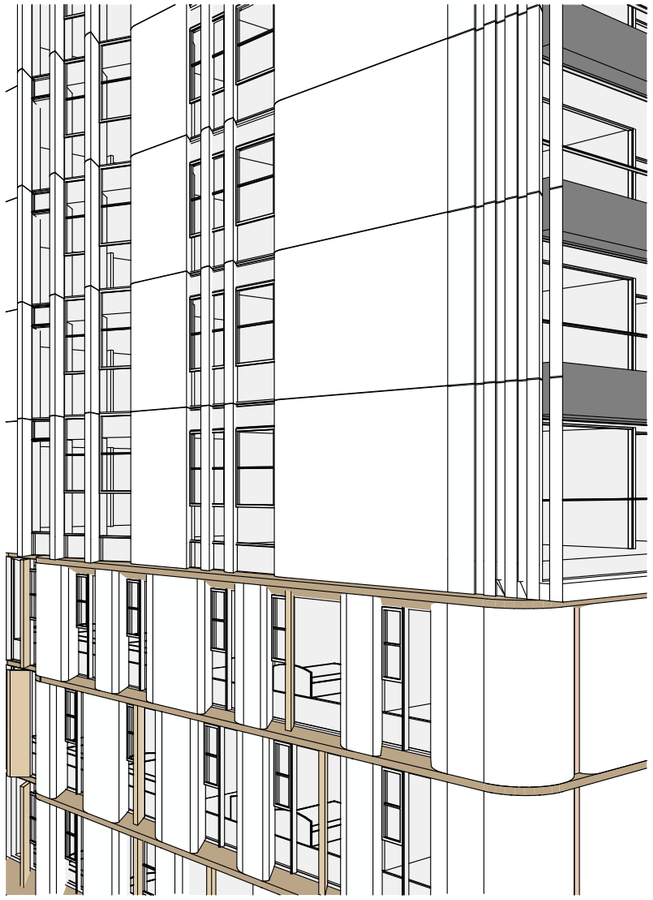
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Sections** 1:500 Sections	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** 1:500 @ A3	**Code** z5b	**Sheet** 4001	**Rev** 01	0 5 10 20m
		01	3/6/2026	SSD TOA Issue	NZ						

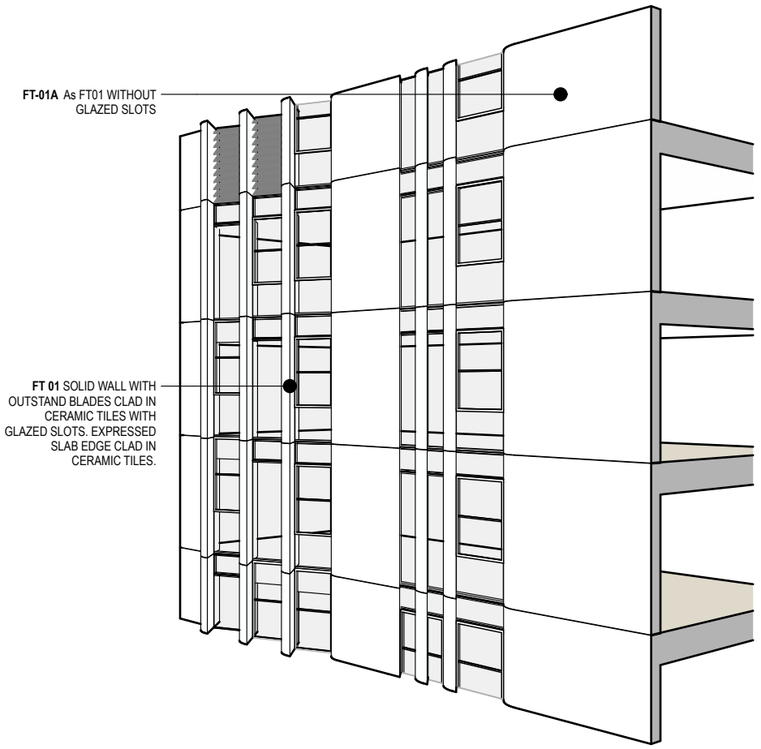
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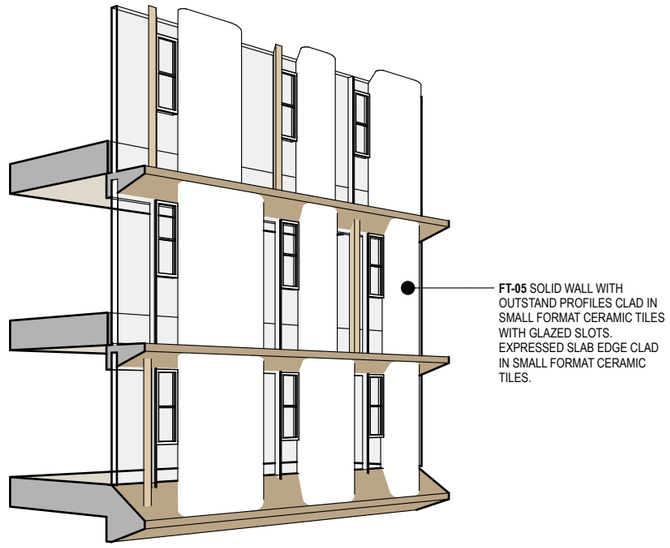
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Building Perspective 1
NTS



FT1 01,01A
NTS



FT 05
NTS



FT-01 & FT-01A



FT-02



FT-03

FT-04



FT-05

FT-06



FT-07



FT-08



FT-09

REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet

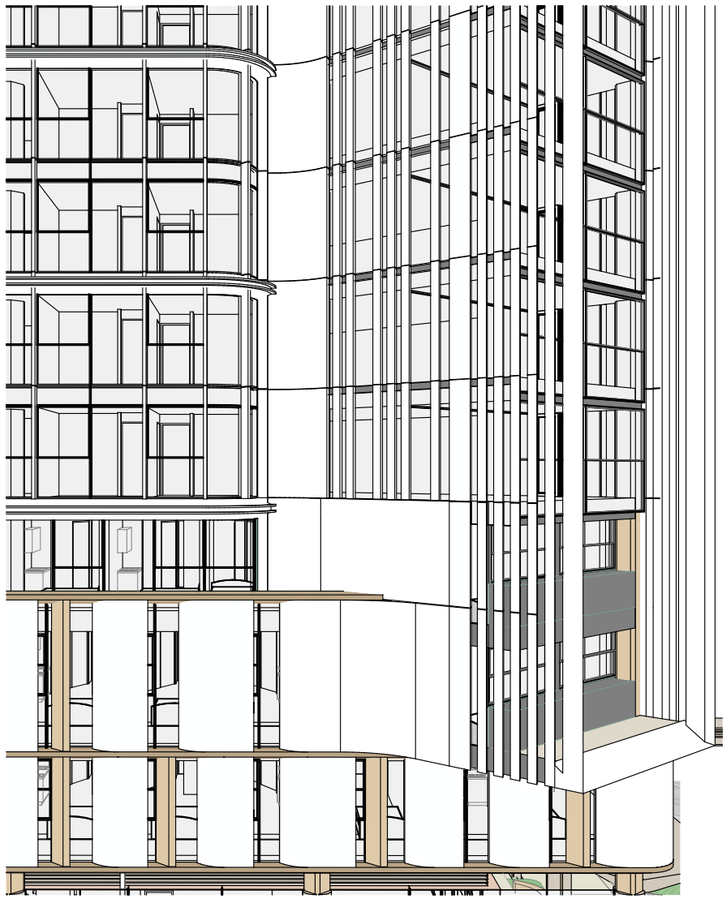
PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Facade Material Sheet 1** Facade Envelope	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** No Scale @ A3	**Code** z5b	**Sheet** 7000	**Rev** 01
		01	3/6/2026	SSD TOA Issue	NZ					

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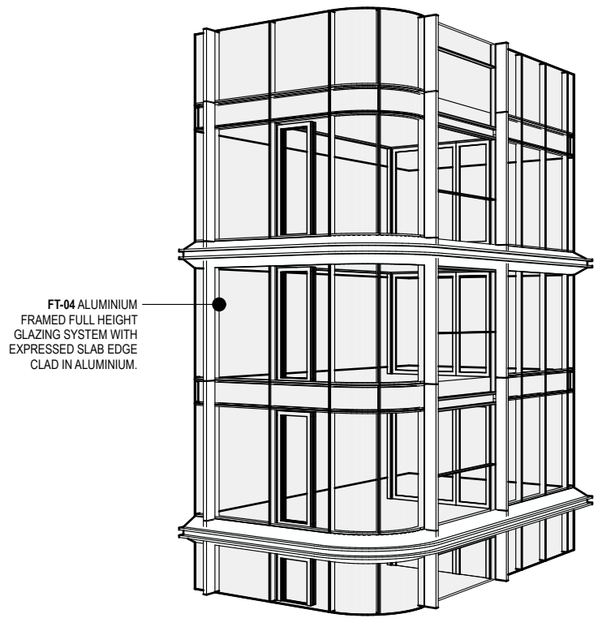
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Building Perspective 2
NTS



FT 02.03
NTS

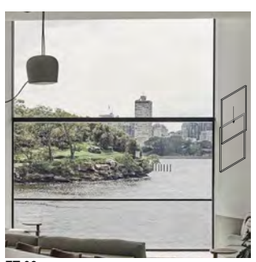


FT 04
NTS

FT-01 & FT-01A



FT-02



FT-03

FT-04



FT-05

FT-06



FT-07



FT-08



FT-09

REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet

PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Facade Material Sheet 2** Facade Envelope	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** No Scale @ A3	**Code** z5b	**Sheet** 7001	**Rev** 01
		01	3/6/2026	SSD TOA Issue	NZ					

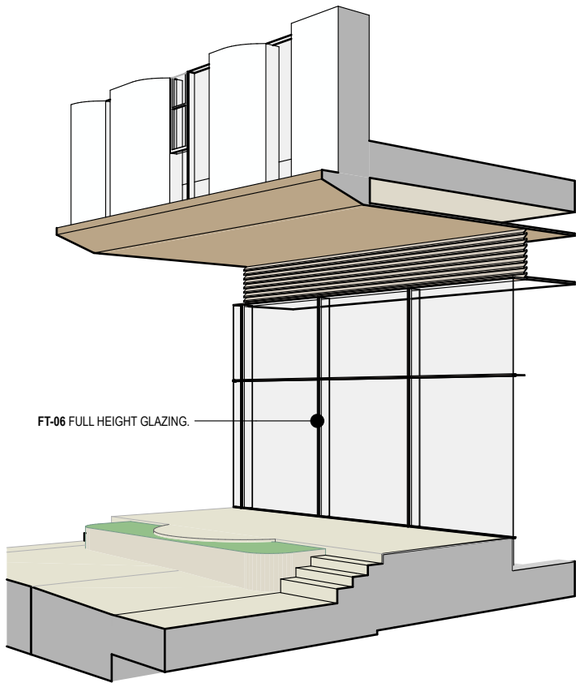
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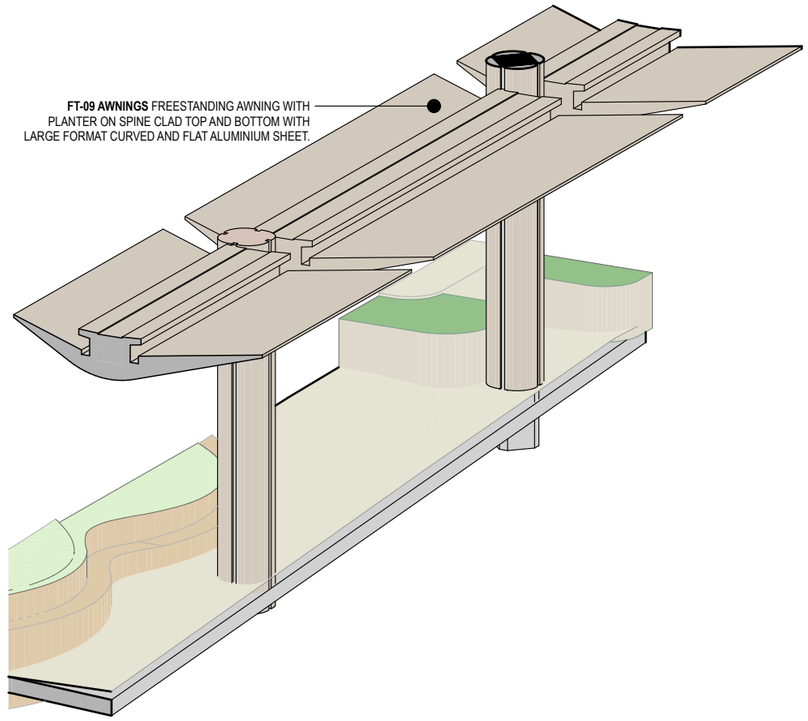
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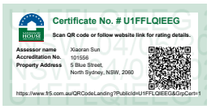
Building Perspective 3
NTS



FT 06
NTS



FT 09
NTS







FT-01 & FT-01A



FT-02



FT-03



FT-04



FT-05



FT-06



FT-07



FT-08



FT-09

REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet

PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Facade Material Sheet 3** Facade Envelope	**Rev**	**Date**	**Description**	**By Chk**	**Scale** No Scale @ A3	**Code** z5b	**Sheet** 7002	**Rev** 01
		01	3/6/2026	SSD TOA Issue	NZ				

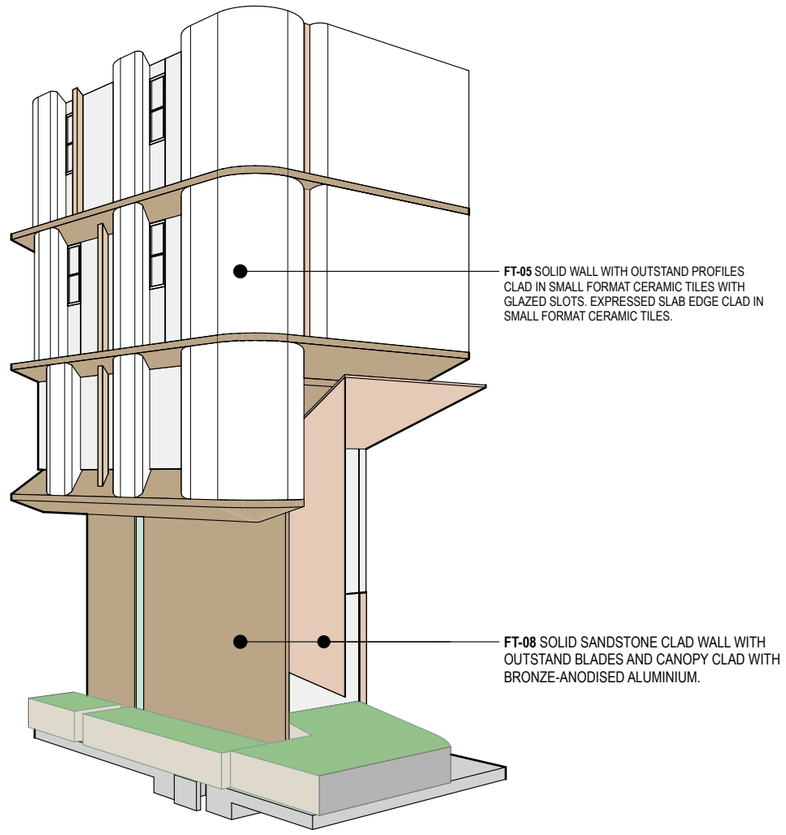
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Building Perspective 4
NTS



FT 08
NTS



FT-01 & FT-01A



FT-02



FT-03



FT-04



FT-05



FT-06



FT-07



FT-08



FT-09

REFERENCE	DESCRIPTION
FT-01	Solid wall with outstand blades clad in ceramic tiles with glazed slots. Expressed slab edge clad in ceramic tiles.
FT-01A	As FT-01 without glazed slots.
FT-02	Vertical louver blades clad in aluminium. Expressed slab edge clad in aluminium panel.
FT-03	Aluminium framed large format vertical sliding windows with expressed slab edge clad in aluminium.
FT-04	Aluminium framed full height glazing system with expressed slab edge clad in aluminium.

REFERENCE	DESCRIPTION
FT-05	Solid wall with outstand profiles clad in small format ceramic tiles with glazed slots. Expressed slab edge clad in small format ceramic tiles
FT-06 Ground floor	Full height glazing
FT-07 Plant Room	Solid spandrels clad with sloping rectilinear and curved aluminium panels. Infill louvers between spandrels.
FT-08 Entry	Solid sandstone clad wall with outstand blades and canopy clad with bronze-anodised aluminium.
FT-09 Awnings	Freestanding awning with planter on spine clad top an bottom with large format curved and flat aluminium sheet

PRELIMINARY

5 Blue St Cammeraygal 5 Blue St North Sydney NSW 2060	**Facade Material Sheet 4** Facade Envelope	**Rev**	**Date**	**Description**	**By**	**Chk**	**Scale** No Scale @ A3	**Code** z5b	**Sheet** 7003	**Rev** 01
		01	3/6/2026	SSD TOA Issue	NZ					

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