ESD Report

Crows Nest OSD - Site B

25/09/2024 **Ref: 301351270**

PREPARED FOR:

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Revision

Revision No.	Date	Description	Prepared by	Quality Reviewer	Project Manager Final Approval
1	29/11/23	Issue for DA	TY	RD	RD
2	28/06/24	Issue for SSDA	TY	RD	RD
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6	25/09/24	Issue for SSDA	RD	RD	RD

Stantec hereby declares the following:

Stantec understands that, to the best of our knowledge, this report contains all available information relevant to the assessment of the proposed development.

Stantec has taken every effort to confirm that the information contained in this report is neither false nor misleading.

Rebecca Dracup

Sustainability Project Technical Lead

Date: 25/09/2024

For and on behalf of

Stantec Australia Pty Ltd

Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

Disclaimer

This report has been developed based on the Development level of information provided to Stantec. Stantec has taken every effort to ensure the information presented in this report is an accurate reflection of the development but cannot guarantee the final performance of the building. The content of the development, including systems, materiality and finishes is subject to final architectural and client approval and subject to change.

Contents

Contents

1 Executive Summary

This Ecologically Sustainable Development (ESD) Report has been prepared at the request of Thirdiproperty Pty Ltd and is intended to provide an overview of the ESD Initiatives in accordance with the planning permit application for the proposed mixed-use development Crows Nest Over Station Developments (OSD) – Site B at 477- 495 Pacific Highway, Crows Nest 2065, more formally described as Lot 100 DP747672, Lot 101 DP747672 and Lot A DP442804 respectively.

The report aims to identify the ESD concepts and initiatives that are proposed to be included within the project and ensure that the development delivers a sustainable project outcome.

Crows Nest Over Station Development (OSD) makes the following minimum sustainability commitments for the development in response to the minimum regulatory requirements;

- Demonstrate BASIX (Building Sustainability Index) compliance for energy efficiency, water efficiency and thermal comfort.
    - BASIX Energy score: 60% reduction in Greenhouse Gas (GHG) emissions.
    - BASIX Water score: 40% saving in potable water consumption.
    - BASIX Thermal Comfort: 7-Star average NatHERS star rating across the project.
- Demonstrate NCC Section J compliance for energy efficiency.

Information contained within this ESD Report has been prepared in direct response to:

- NSW Environmental Planning and Assessment Regulation 2021 (EP&A Regulation)
- Sustainable Buildings SEPP 2022
- National Construction Code (NCC) 2022
- Building Sustainability Index (BASIX)
- North Sydney Local Environmental Plan 2013 (NSLEP)
- North Sydney Development Control Plan (DCP) 2013

This report includes:

- An overview of the sustainability drivers for the project (both regulatory and identified project drivers).
- An assessment of the energy and water uses and proposed measures to ensure energy and water efficiency.
- Detail regarding specific ESD initiatives which are to be targeted throughout all phases of the project.
- Overview of site-specific climate change impacts

2 Introduction

2.1 Project Description

Crows Nest OSD - Site B is a 14 storey tower above the Crows Nest Metro Station.

The site area is 1872sqm. The concept approval includes a maximum height to the top of the service zone of RL 158m and includes a maximum residential FSR of 13,000m^2.

The Metro Station is comprised of 3 levels:

- **Ground Level -Hume** includes the OSD tower lobby, retail, and back of house spaces.
- **Level 01** includes a retail mezzanine, back of house, and a loading dock which is used for OSD garbage collection and is a future easement for rail authority access.
- **Level 02 contains plant rooms for the metro station.**

The OSD car parking levels are located on level 5 and 6. These are naturally ventilated with 27 car spaces on level 5 and 28 car spaces on level 6. There is a total of 55 spaces.

Apartments are located from level 7 to 18. Level 19 and 20 contain penthouses.

A roof terrace on level 21 includes communal gardens and pools, as well as private penthouse terraces.

- Level 7-8: 10 apartments per floor
- Level 9-18: 11 apartments per floor
- Level 19: 8 apartments (5 x two storey)
- Level 20: 3 apartments
- **Total number of apartments: 130**

Figure 1 Crows Nest OSD Site B. Source: Woods Bagot Architects

2.2 Project Site

The proposed development is at 477- 495 Pacific Highway, Crows Nest (the site).

Figure 2: Project Site (Source: planningportal.nsw)

3 Sustainability Design Framework

The Ecologically Sustainable Design for 477- 495 Pacific Highway, Crows Nest is driven by various regulatory and ESG frameworks including:

- NSW Environmental Planning and Assessment Act 1979
- NSW Environmental Planning and Assessment Regulation 2021
- Sustainable Buildings SEPP 2022
- ESD principles identified within the North Sydney Local Environmental Plan 2013 (NSLEP)
- ESD principles identified within the North Sydney Development Control Plan (DCP) 2013
- National Construction Code (NCC) 2022
- NSW SEPP Building Sustainability Index (BASIX)

3.1 NSW Environmental Planning and Assessment Act 1979

Section 1.3 “Objects of Act” of the Environmental Planning and Assessment Act 1979 states the following:

The objects of this Act are as follows-

b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.

3.2 NSW Environmental Planning and Assessment Regulation 2021

Section 193 “Principles of ecologically sustainable development” under division 5 “Environmental impact statements” of the Environmental Planning and Assessment Regulation 2021 states the following:

1) The principles of ecologically sustainable development are the following-
a) the precautionary principle,

b) inter-generational equity,
c) conservation of biological diversity and ecological integrity,
d) improved valuation, pricing and incentive mechanisms.

2) The precautionary principle is that if 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.

3) In applying the precautionary principle, public and private decisions should be guided by—
a) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
b) an assessment of the risk-weighted consequences of various options.

4) The principle of inter-generational equity is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

5) The principle of the conservation of biological diversity and ecological integrity is that the conservation of biological diversity and ecological integrity should be a fundamental consideration.

6) The principle of improved valuation, pricing and incentive mechanisms is that environmental factors should be included in the valuation of assets and services, such as—
a) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement, and
b) the users of goods and services should pay prices based on the full life cycle of the costs of providing the goods and services, including the use of natural resources and assets and the ultimate disposal of waste, and
c) established environmental goals should be pursued in the most cost-effective way by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

3.3 Sustainable Buildings SEPP 2022

Sustainable Buildings SEPP 2022 outlines the standards for residential development—BASIX. Project's proposed sustainability response has been provided next to each of the provisions.

Section 2.1 (1) and (5) of the State Environmental Planning Policy (Sustainable Buildings) 2022 states:

2.1 Standards for BASIX development and BASIX optional development

(1) Schedule 1 sets out the standards that apply to BASIX development referred to in paragraphs (a) and (b) of the definition of BASIX development in the Environmental Planning and Assessment Regulation 2021.

(5) Development consent must not be granted to development to which the standards specified in Schedule 1 or 2 apply unless the consent authority is satisfied the embodied emissions attributable to the development have been quantified.

Schedule 1 Standards for erection of BASIX buildings and change of use to BASIX buildings

Part 1 Energy and water use

2 Energy use

(1) This section specifies the standard for energy use for different types of development according to the climate zone in which the development will be carried out.

(2) The standard is that the amount of greenhouse gas emissions resulting from the use of energy attributable to an occupant of the development over a year must be less than the baseline, by at least the percentage specified in Table 1 for the development.

(7) Column 5 of Table 1 specifies the percentage for residential flat buildings and shop top housing with 6–20 storeys above ground level (existing).

According to Table 1, for Climate zone 56, the amount of greenhouse gas emissions resulting from the use of energy attributable to an occupant of the development over a year must be less than the baseline, by at least 60%.

- refer to Section 5.1 Greenhouse Gas Emissions & Energy Efficiency

3 Water use

(1) This section specifies the standard for water use for development, according to the area shown on the Water Use Map in which the development will be carried out.

(2) The standard is that the average daily amount of mains-supplied potable water use attributable to an occupant of the development over a year must be less than the baseline, by at least the percentage shown on the Water Use Map for the land on which the development will be carried out.

According to Water Use Map, for postcode 2065, the average daily amount of mains-supplied potable water use attributable to an occupant of the development over a year must be less than the baseline, by at least 40%.

- refer to Section 5.2 Water Efficiency

Part 2 Thermal performance

4 Application of Part

(1) This Part specifies the standard for thermal performance for different types of development according to the climate zone in which the development will be carried out.

(2) The standard represents the maximum amount of energy that may be used to heat and cool a dwelling to a comfortable temperature, measured in megajoules per square metre of the conditioned floor area of the dwelling over a year.

7 Residential flat buildings and shop-top housing with 6 or more storeys

(1) This section applies to dwellings in residential flat buildings and shop-top housing with 6 or more storeys above ground level (existing).

(2) Column 1 of Table 4 specifies the standard for the total heating and cooling of a dwelling in the residential flat building or shop-top housing.

(3) Column 2 of Table 4 specifies the standard for heating a dwelling in the residential flat building or shop-top housing.

(4) Column 3 of Table 4 specifies the standard for cooling a dwelling in the residential flat building or shop-top housing.

(5) Column 4 of Table 4 specifies the standard for the total heating and cooling of all dwellings in the residential flat building or shop-top housing, calculated as a weighted average according to the conditioned floor area of a dwelling.

(6) Column 5 of Table 4 specifies the standard for heating all dwellings in the residential flat building or shop-top housing, calculated as a weighted average according to the conditioned floor area of a dwelling.

(7) Column 6 of Table 4 specifies the standard for cooling all dwellings in the residential flat building or shop-top housing, calculated as a weighted average according to the conditioned floor area of a dwelling.

According to Table 4, the requirement for thermal performance (not more than) are:

Total heating and cooling of a dwelling in the residential flat building: 38 MJ/m^2

Heating a dwelling in the residential flat building: 34.4 MJ/m^2

Cooling a dwelling in the residential flat building: 21.4 MJ/m^2

Total heating and cooling of all dwellings in the residential flat building or shop-top housing, calculated as a weighted average: 30 MJ/m^2

Heating all dwellings in the residential flat building or shop-top housing, calculated as a weighted average: 28.1 MJ/m^2

Cooling all dwellings in the residential flat building or shop-top housing, calculated as a weighted average: 20 MJ/m^2

- refer to Section 3.7 Building Sustainability Index (BASIX)

3.4 North Sydney Local Environmental Plan (LEP) 2013

The North Sydney Local Environmental Plan (LEP) 2013 has a specific focus on providing ecological sustainable development throughout North Sydney. The LEP 2013 includes specific aims targeting ESD for general residential developments of North Sydney.

The aims of relevance are outlined below:

PART 1- PRELIMINARY

1.2 Aims of Plan

(1) This Plan aims to make local environmental planning provisions for land in North Sydney in accordance with the relevant standard environmental planning instrument under section 3.20 of the Act.

(2) The particular aims of this Plan are as follows—

(a) to promote development that is appropriate to its context and enhances the amenity of the North Sydney community and environment,

(b) in relation to the character of North Sydney's neighbourhoods—

(i) to ensure that new development is compatible with the desired future character of an area in terms of bulk, scale and appearance, and

(ii) to maintain a diversity of activities while protecting residential accommodation and local amenity, and

(iii) to ensure that new development on foreshore land does not adversely affect the visual qualities of that foreshore land when viewed from Sydney Harbour and its tributaries,

(c) in relation to residential development—

(i) to ensure that new development does not adversely affect residential amenity in terms of visual and acoustic privacy, solar access and view sharing, and

(ii) to maintain and provide for an increase in dwelling stock, where appropriate,

(e) in relation to environmental quality—

(i) to maintain and protect natural landscapes, topographic features and existing ground levels, and

(ii) to minimise stormwater run-off and its adverse effects and improve the quality of local waterways,

(f) to identify and protect the natural, archaeological and built heritage of North Sydney and ensure that development does not adversely affect its significance,

3.5 North Sydney Council Development Control Plan (DCP) 2013

Sections of the North Sydney Council DCP with relevance to ESD design have been consolidated as follows:

Part B- Development Controls

Section 2 Commercial and Mixed Use Development

2.3 ENVIRONMENTAL CRITERIA

2.3.1 Clean Air

Objectives:

To ensure that development does not adversely affect air quality.

Provisions:

P1 Operating plant, building materials and finishes should be incorporated that are non-toxic and reduce toxic emissions.

P2 Discourage use of the private motor car and encourage walking, cycling and use of public transport.

P3 Car parking is provided in accordance with Part B: Section 10 - Car parking and Transport of the DCP.

2.3.7 Solar access

Objectives:

To ensure that all dwellings have reasonable access to sunlight and daylight.

Provisions:

P1 Developments within the North Sydney Centre must comply with the height and overshadowing requirements contained within cl.4.3, and cl.6.4 of NSLEP 2013.

P3 Despite P2 above, living rooms and private open spaces for at least 70% of dwellings within a residential flat building or shoptop housing should receive a minimum of 2 hours of solar access between the hours of 9.00am and 3.00pm at the winter solstice (21st June).

P8 Avoid providing apartments within mixed use developments that have a sole orientation to the south. Where south facing apartments cannot be avoided, ensure that they are provided with adequate access to natural light (e.g. by providing enlarged windows, skylights and the like). No more than 15% of all dwellings in the development must not receive no direct sunlight between 9am and 3pm at mid-winter.

2.3 EFFICIENT USE OF RESOURCES

2.6.1 Energy efficiency

Objectives:

To ensure that developments minimise their use of non-renewable energy resources.

To ensure that buildings are designed such that the air conditioning plant meets performance requirements, while minimising energy usage.

To encourage the use of energy efficient lighting.

Provisions:

P2 Consider the following issues when assessing the energy rating of buildings and whether any of these issues prevent the achievement of the energy ratings:

(a) orientation or shape of the block;

(b) existing overshadowing due to either the surrounding terrain or existing development;

(c) topography, geology or geo-technical constraints preclude energy saving design such as slab-on-ground construction;

(d) conflict with requirements or guidelines in relation to privacy, area character, building design, bulk and scale or heritage considerations set out in the LEP or the DCP.P4 Incorporate on-site renewable energy sources to supplement energy needs during daily peak energy use.

P3 Ensure that the development does not reduce the energy efficiency of buildings in the vicinity.

P4 Improve the control of mechanical space heating and cooling by designing heating/cooling systems to target only those spaces which require heating and cooling, not the whole building.

P5 Where the proposed development involves the installation of any of the following:

(a) hotwater systems;

(b) clothes drier;

(c) dishwasher;

(d) fixed air conditioning systems (including reverse cycle systems);

(e) fixed heating systems;

they must have a minimum energy star rating of 4.5 stars.

P6 Lighting for streets, parks and any other public domain spaces provided as part of a development should be energy efficient LED lighting.

P7 Car parking areas should be designed and constructed so that electric vehicle charging points can be installed at a later time.

P9 Improve the efficiency of hot water systems by insulating hot water systems.

P13 Timers and movement sensors should be used to minimise energy consumption, particularly for lighting and mechanical ventilation in public areas.

P14 Energy efficient lighting and technology should be used to reduce energy consumption. Consider the use of solar powered illumination.

1.6.2 Passive solar design

Objectives:

To ensure that site layout and building orientation allows for maximum solar access to dwellings, especially to living areas, and are adapted to local climatic conditions and prevailing site characteristics.

Provisions:

P1 To achieve maximum solar access orient the building within 20° west of north to 30° east of north.

P2 Adapt site layout and building orientation to local climatic conditions and prevailing site characteristics, such as existing overshadowing, planting and slope.

P3 Locate the main daytime living areas (e.g. family, dining and meal rooms) on the northern side of dwellings.

P8 Optimise natural light access to reduce the amount of energy used to run artificial lighting (limiting the internal depth of the building allows efficient use of natural light).

P9 If landscaping is proposed as part of the development, a documented landscape design concept shows how the landscaping contributes to energy efficiency by providing substantial shade in summer, especially to west-facing windows and open car park areas, and admitting winter sunlight to outdoor and indoor living and working areas.

2.6.3 Thermal Mass and Insulation

Objectives:

To achieve more even, year-round average temperature, making the building more comfortable for occupants and resulting in less demand for artificial heating or cooling.

Provisions:

P1 To maximise natural heating, provide flooring that will absorb heat from the winter sun (i.e. A concrete slab floor on the ground offers the best thermal massing properties, whilst timber floors have minimal performance in terms of thermal mass. Dark coloured tiles laid over a concrete slab is the most desirable covering in terms of maximising the performance of thermal mass in a dwelling).

P2 To maximise natural cooling, protect thermal mass from summer sun with shading and insulation. Allow cool night breezes and air currents to pass over the thermal mass, drawing out all the stored energy.

P4 Thermal insulation is used in the roof, walls and floor.

P5 Ceiling/roof insulation must have at least an R3.0 rating or equivalent and wall insulation must have at least an R1.5 or equivalent rating. Insulation of cavity brick walls is not required. These ratings are based on AS 2627: Part 1-1993.

P6 Use bulk or reflective insulation, or a combination of both, to achieve the required insulation value.

P7 Heat loss/gain is minimised though the use of awnings, shutters or high performance glazing (e.g. double glazing).

2.6.4 Natural ventilation

Objectives:

To ensure that dwellings are designed to provide all habitable rooms with direct access to fresh air and to assist in promoting thermal comfort for occupants.

To reduce energy consumption by minimising the use of mechanical ventilation, particularly air conditioning.

Provisions:

P1 Locate windows and openings in line with each other on opposing walls and with prevailing breezes.

P2 Provide ceiling fans for use in summer (fans produce a cooling air movement that is preferable to letting in the hot daytime air).

2.6.5 Water Conservation

Objectives:

To minimise the use of potable water.

To encourage the reuse of greywater, rainwater and stormwater.

Provisions:

P1 Where the proposed development involves the installation of new:

(a) shower roses;

(b) taps for use over a basin, ablution trough, kitchen sink or laundry tub;

(c) flow restrictors;

(d) toilets;

(e) white goods, such as clothes washers or dishwashers;

they must have the highest WELS star rating available at the time of development.

P2 Recycled water (serviced by dual reticulation) should be utilised for permitted non-potable uses such as toilet flushing, laundry, irrigation, car washing, fire fighting, industrial processes and cooling towers.

P3 Harvest and use rainwater for garden irrigation and toilet flushing.

P6 Install water efficient irrigation systems and controls.

P7 Separate meters are to be installed for the make-up lines to cooling towers, swimming pools, on the water supply to outdoor irrigation, and other significant end uses.

P9 Install a pool cover where the proposed development includes an external swimming pool.

P10 Rainwater tanks or other alternative water sources including recycled water systems are to be installed to minimise the use of potable water and maximise the use of alternative water sources.

P11 Rainwater tanks should be plumed to appropriate end uses, including toilet flushing, water features, car washing and garden irrigation.

P12 Separate meters are to be installed on separate units of occupancy in non-residential BCA class 5, 6 and 7 buildings.

P13 A reporting system should be developed to inform/educate occupants about the building's water consumption.

P14 Use waterless urinals.

P15 Install sensor operated taps, or automatic shutoff taps, especially in public areas.

P16 A BASIX Certificate is required to be submitted with all buildings incorporating residential development types nominated under SEPP (Building Sustainability Index: BASIX) 2004.

2.6.6 Waste Management & Minimisation

Objectives:

To minimise material usage and waste during building, construction and demolition.

To minimise the level of waste during operation reduce new building material usage and minimise volume of demolition materials.

Provisions:

P1 A Waste Management Plan for the demolition, construction and operation of the building must be provided in accordance with Part B: Section 19 - Waste Minimisation and Management of the DCP.

P2 The building should be designed to encourage waste minimisation (e.g. source separation, reuse and recycling).

P3 Adequate recycling systems must be provided in the design of the garbage room.

P4 Materials with long lives and low maintenance needs are encouraged to be incorporated.

P5 Contractors and sub-contractors employed to undertake proposed construction works and waste removal should be educated about the waste objectives of the development.

P6 The storage of any hazardous waste materials must be adequately secured.

2.6.7 Stormwater management

Objectives:

To mimic pre-development or natural drainage systems through the incorporation of WSUD on-site.

To protect watersheds by minimising stormwater discharge and maximising stormwater quality.

To minimise off-site localised flooding or stormwater inundation.

Provisions:

P1 An Erosion and Sediment Control Plan for the construction of the building is required in accordance with Part B: Section 17 - Erosion and Sedimentation Control of the DCP.

P2 A Stormwater Management Plan for the operation of the building is required demonstrating compliance with this subsection as well as Part B: Section 18 – Stormwater Management of the DCP.

P3 Demonstrate how run-off from the site will be minimised and the quality of water leaving the site will be improved.

P4 Rainwater tanks should be installed for all developments, including major alterations and additions and mixed-use developments. Rainwater tanks should be plumbed to appropriate end uses, including toilet flushing, water features, car washing and garden irrigation, to ensure sufficient use of tank water so that capacity exists to accommodate rainwater from storm events.

P5 As a minimum, post-development stormwater discharge rates should be less than pre-developmentstormwater discharge rates.

P6 As a minimum, post-development stormwater quality should be improved from pre-development levels.

P7 On-site stormwater detention, including the use of grass swales and detention basins, should be pursued where practicable to minimise and filter stormwater runoff

P8 Impervious surfaces should be minimised.

P9 Ensure paved areas are at least 50% pervious.

P10 In addition to a Stormwater Drainage Plan, residential developments with a gross floor area greater than 2000m² must also submit a Water Sensitive Urban Design report from a suitably qualified consultant demonstrating that WSUD has been incorporated to the maximum extent practicable and that stormwater discharge will be reduced to

the maximum extent practicable.

P11 All developments with a gross floor area greater than 2000m² are to undertake a stormwater quality assessment to demonstrate that the development will achieve the post-development pollutant load standards indicated below:

(a) Litter and vegetation larger than 5mm: 90% reduction on the Baseline Annual Pollutant Load;

(b) Total Suspended Solids: 85% reduction on the Baseline Annual Pollutant Load;

(c) Total Phosphorous: 65% reduction on the Baseline Annual Pollutant Load;

(d) Total Nitrogen: 45% reduction on the Baseline Annual Pollutant Load.

2.6.8 Building Materials

Objectives:

To encourage the use of materials which have a low environmental impact during their life cycle.

To encourage the use of toxin free material to minimise the health impact of materials used indoors.

To maximise the energy efficiency of buildings

Provisions:

P1 Products with the least life cycle impact should be favoured.

P2 The use of the following types of building materials are to be maximised wherever possible:

(a) materials which are sourced from renewable and abundant resources;

(b) materials which are durable;

(c) locally manufactured materials and produced;

(d) materials with a low embodied energy content;

(e) salvaged and/or recycled materials;

(f) timber used be obtained from certified sustainable sources;

(g) materials with a high recycled content (>50%);

(h) low volatile organic compound (VOC) emitting materials;

(i) mechanical fixings instead of adhesives and glues, wherever possible;

(j) when using Medium Density Fibreboard, ensure that it has a low formaldehyde content;

(k) use toxin-free floor finishes;

P3 Avoid the use of the following:

(a) copper, chrome, cadmium, lead, mercury, cyanide, and formaldehyde;

(b) materials, sealants and adhesives containing PVC;

(c) wood treated with CCA;

(d) solvents.

P4 Use physical termite barriers (made of granite or stainless steel) instead of chemicals where possible.

P5 Buildings should use lighter coloured materials and finishes on main external parts of the building.

2.6.10 Hotwater systems

Objectives:

To ensure the most efficient water heating methods are used to assist in the reduction of greenhouse gas emissions and use of non-renewable resources.

Provisions:

P1 New hotwater systems installed in dwellings must not solely rely on electrical mains power to heat the water (n.b. sole electrical hotwater systems are not permitted in new dwellings).

P2 Install solar powered water heaters on any residential development. Solar powered water heaters may be either gas or electrically boosted, but boosting should be limited to a maximum of 50% of total heating requirement with the remainder of heating requirements achieved through solar gain.

P3 Where it can be demonstrated that insufficient solar access is available for a solar powered system install a heat pump or natural gas system.

P4 Locate solar cells, heat pumps or any associated structures so as to as avoid impact on the aesthetics of a building, the streetscape, or heritage significance of a building or conservation area.

P5 Centralise solar or heat pump hot water systems in larger scale residential flat buildings or attached dwelling developments, to achieve economies of scale.

P6 Where it can be demonstrated that the installation of a low greenhouse gas emission water heating system would require additional expenditure which is not cost-effective over a five year period other systems may be considered.

2.6.11 Green roofs

Objectives:

To provide accessible roof space providing increased amenity for the occupants and visitors of the building.

To improve the aesthetics and amenity of the urban environment (this particularly relates to the appearance of the roof when viewed from surrounding buildings).

To provide space to accommodate renewable energy production.

To improve stormwater management by controlling both the quality and flow of stormwater.

To increase biodiversity by the use of plant material, and in particular to promote food production where appropriate.

To protect the building structure by increasing its thermal protection which will also help to reduce internal heating and cooling requirements.

Provisions:

P1 Development applications for all new buildings or alterations and additions to an existing building that involves the creation of new roof spaces must submit a roof plan demonstrating how the new available roof space contributes to the achievement of at least three of the above objectives.

P2 In satisfying provision P1 above, the roof plan must illustrate those parts of the available roof space to be used as a green roof immediately after construction of the proposed works and/or areas capable of being retrofitted for a green roof at a later date. Applicants are encouraged to accommodate green roofs immediately after construction.

3.6 National Construction Code (NCC) 2022 Section J Compliance

The project will be required to demonstrate compliance with the NCC 2022 Section J – energy efficiency provisions.

Section J outlines minimum performance requirements including,

- Maximum greenhouse gas emissions (GHG) levels;
- Minimum thermal envelope performance for building elements such as walls, floors, roof and external glazing;
- Minimum performance requirements for building sealing;
- Maximum lighting power densities for internal lighting design;
- Minimum performance levels for building air-conditioning and ventilation systems;
- Minimum requirements for energy and water metering;
- Minimum requirements for energy and water data collection; and
- Minimum access for maintenance requirements.

The proposed performance standards for Section J (2022) will outline the thermal performance requirements for code compliant façade designs, meaning consideration must be shown for the amount of exposed glazing included within the façade design.

The development will need to seek to optimise energy efficiency & thermal performance via design elements which improve the building façade performance including façade design, thermal envelope, HVAC system selection and lighting design.

3.7 Building Sustainability Index (BASIX)

Based on the North Sydney Local Environmental Plan and Development Control Plan, the multi-unit residential buildings of the 477- 495 Pacific Highway, Crows Nest development is required to demonstrate BASIX compliance in support of the application development approval (class 2 multi-unit residential dwelling).

BASIX is implemented under the Environmental Planning and Assessment Act and applies to all residential dwelling types within NSW. BASIX forms both part of the development application and building certification process within the state of NSW.

BASIX sets water and greenhouse gas reduction targets relative to the NSW average benchmark for per person potable water consumption and greenhouse gas emissions with the residential sector. The proposed residential development is required to meet the following BASIX benchmark targets.

Climate Zone	BASIX Energy Target	BASIX Water Target
56 (East Sydney)	60	40

BASIX also sets the minimum performance levels for thermal comfort of the dwelling and replaces the NCC Energy Efficiency benchmarks within the state of NSW. As the development is located within climate zone- 56, East Sydney, the residential dwelling units shall maintain heating and cooling loads below the maximum allowance defined by the BASIX Thermal Comfort Protocol.

	Maximum Total Load (MJ/m2/annum)	Maximum Heating Load (MJ/m2/annum)	Maximum Cooling Load (MJ/m2/annum)
For each apartment (individual)	38.0	34.4	21.4
For the development (average)	30	28.1	20.0

Thermal comfort levels are assessed via a simulation method in accordance with the NatHERS House Energy Rating protocol.

Minimum NatHERS Star Rating NCC 2022 (For individual Dwelling)	Average NatHERS Star Rating for NCC 2022
6 star	7 star

4 Project Design Response

The project team has assessed the energy use profile of the development and will implement a number of energy efficiency measures that will significantly reduce the greenhouse gas emissions and footprint of the project. Also, as listed below, a series of best practice sustainability initiatives will be incorporated so that potential environmental impacts are mitigated substantially.

Design themes	Targets and Initiatives
Energy efficiency and greenhouse gas emissions	• The design will meet BASIX minimum compliance requirements for Energy: 60% reduction in Greenhouse Gas (GHG) emissions. Energy demand to be mitigated through passive design, efficient systems, services and appliances. Refer to Section 6.3 for the detailed list of BASIX Energy strategies. • Considering high performance glazing, to exceed the thermal requirements of the Building Code of Australia, in the concept design stage. • Smart metering. • Electric car charging. • Efficient lighting systems including LED lighting with efficiency controls. Lighting power density reduction below the maximum illumination power densities defined in NCC Section J to be considered in the concept design stage. • Motion, lighting level sensors and timers in common areas to ensure lighting is only used when required Best practice façade thermal performance/ building thermal mass. Well-insulated building fabric. • Solar gain reduction through passive design (shading). • Efficient HVAC system equipment. • Shading devices will be utilised where necessary, particularly where windows of habitable rooms are located on the western elevation.
Thermal comfort and indoor air quality	• The design will meet BASIX minimum compliance requirements for Thermal Comfort: 7-Star average NatHERS star rating across the project. Thermal comfort to be improved through passive design and high-performance façade incorporating shading, high-performance glazing and insulation to improve occupant comfort and reduce air-conditioning costs.

	Refer to Section 6.2 for the detailed list of BASIX Thermal Comfort strategies. • Selecting paints, adhesives, sealants and floor coverings which have low Volatile Organic Compound (VOC) emissions, and engineered wood products with low formaldehyde emissions. • Increased access to natural daylight where possible. Maximise natural sunlight to living spaces to improve residential amenity and minimise the use of artificial light. • Considering occupant thermal comfort by utilising passive design and careful design of air-conditioning systems. • Climate change adaptation and resilience should be considered to enable the building to adapt to potential climate changes and extreme weather events with the intention of minimising risk and disruption to the occupants, the building and the community. • A high amount of openability to allow for effective natural ventilation.
Renewable energy opportunity	• Roof with on-site renewable energy production.
Water conservation	• The project will meet BASIX minimum compliance requirements for Water: 40% saving in potable water consumption. Water consumption to be reduced through efficient fixtures, appliances, rainwater capture for re-use and landscaping with climate-resilient plant species native to the bioregion. Refer to Section 6.1 for the detailed list of BASIX Water strategies. • Water efficient fixtures and fittings (WELS rating). • Rainwater tanks for rainwater reuse. • Smart water efficient irrigation systems such as subsoil drip irrigation with moisture sensors.
City greening	• Selection of native and low water use vegetation. • Application of Water Sensitive Urban Design (WSUD) principles.
Waste avoidance and resource recovering	• Providing infrastructure and guidance to maximise waste recycling during operation. Provision of Operational Waste Management Plan. • Reducing the amount of materials used in the construction of a building wherever practical. • Implementing best practice construction waste management plans and engage with the supply chain. • Providing facilities for collection and separation of major waste streams for collection by the relevant waste contractor in operation.
Embodied carbon	• Explore opportunities to reduce embodied energy reduction associated with construction material selection. • Reducing the use of Portland cement in concrete mixes by replacing with an industrial waste product such as fly ash. • Using reclaimed water and recycled aggregates.

	• Selection of responsible steel products sourced from accredited steel makers and fabricators. • Selection of certified timbers, and Best Practice Certified PVC products. • Specification of sustainable products where appropriate, such as those containing recycled content, third-party environmentally certified products, and those with product stewardship agreements in place. • Designing building components, including the structural framing, roofing and facade cladding for longevity, adaptation, disassembly, re-use and recycling. • Local procurement to support the local economy and reduce transport emissions.
Safety	• The concept design has taken into account Crime Prevention through Environmental Design (CPTED) principles, and these will be revisited during the detailed design phase.
Responsible Construction Practices	• Contractors will be requested to provide and abide by an Environmental Management System to be in accordance with NSW Environmental Management Systems Guidelines or a similar standard. This places a value on environmentally responsible building practices to ensure they are held responsible for the environmental management of the building site as they complete their work. • Once the new development is under activity, operational guidelines, best practice procedures and appropriate monitoring and control measures will be defined by the building owner. This will be in accordance with the sustainable strategies adopted by the development and will be distributed to the tenants to ensure environmental impacts associated with operational processes are minimized wherever possible.

5 ESD Opportunities & Initiatives

The following section addresses the Greenhouse Gas Emissions, Energy Efficiency and Ecologically Sustainable Development aspects in response to the Sustainable Design Frameworks (as per Section 3) for the project. It uses best practice sustainable design principles and borrows elements from external sustainability tools to develop a set of metrics for the site.

There are several ESD opportunities and initiatives that will be implemented in the project. The following examples are to be read in conjunction with design documentation prepared by Woods Bagot.

Fundamental to the success of improving the ESD outcome for the project is the adoption of a strong design philosophy. Passive design features can:

- Lower operational energy demand via improved thermal performance;
- Promote greater indoor environmental quality;
- Reduce the requirements for artificial lighting and power;
- Reduce the buildings' reliance on HVAC systems;
- Improve building occupant comfort; and

- Improve the project's capacity to deliver a responsible development.

The design will include several passive design options and provide a robust and environmentally sensitive framework. Furthermore, several energy efficiency measures and intelligent selection of systems are being proposed in order to improve the environmental outcome of the development while maintaining occupant level comfort and well-being.

5.1 Greenhouse Gas Emissions & Energy Efficiency

A variety of greenhouse gas and energy efficiency measures are applicable to the proposed development and form part of the initial design and operation plan. The final strategy will be a combination of sustainability, operational feasibility, architectural intent and site-specific appropriateness.

The energy efficiency strategy follows the hierarchy pyramid below. Best practice energy conservation dictates that in the first instance demand is reduced. This has a much greater benefit to the overall long-term sustainability of the site compared to efficiency measures or renewables/offsets. As such, the focus will be on the elements that provide the greatest impact and return on investment.

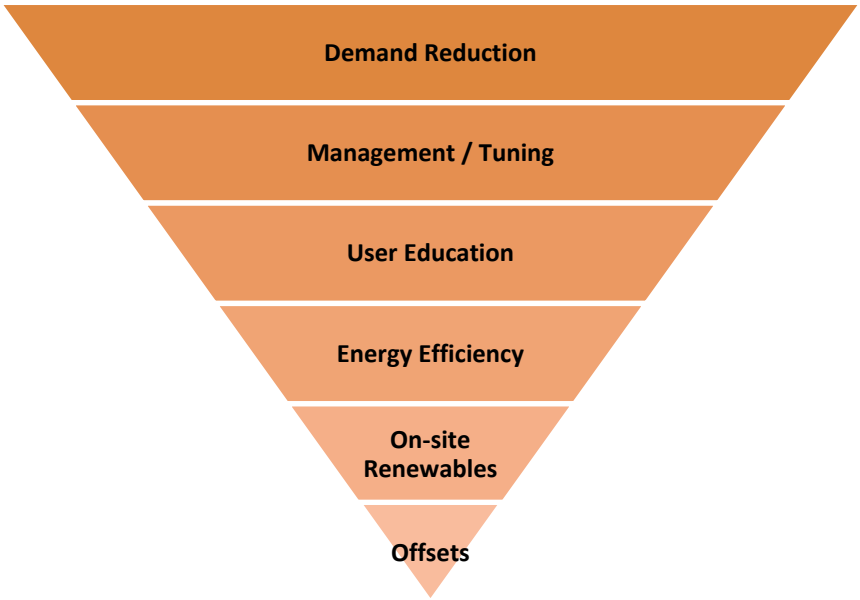


Figure 3 - Energy Efficiency Strategy Hierarchy

Energy efficiency measures which will be applied across the development to reduce its energy consumption include:

- **Electrification** – 100% of building energy is sourced from electricity.
- **Renewable Energy** – Combination of onsite solar PV array and offsite renewable energy. Further feasibility will be completed regarding the ideal system configuration, sizing, annual energy generation, etc. It is noted that the electrical consumption from the site is still to be estimated, whereby the appropriate renewable energy contribution will depend on the final architectural design, industrial arrangement, building services design and tenants operational requirements.
- **Natural Ventilation –** Corridors, lobbies and carparks will be naturally ventilated where feasible.
- **Architecture -** Vernacular architecture principals, designed to maximize the specific needs of all occupants and users of the building. The building is designed to deliver comfort, practicality, daylight, connection to the outside through

views and energy conservation with its architectural design intent. The development will also offer fresh air and daylight access to occupants in many forms to indoor spaces.

- **High Quality Daylight and Views** – Focusing on the wellbeing of the occupant to delivering daylight comfort and healthy indoors spaces with high quality views towards the exterior.
- **Shading and Blinds** – Design of external shading and use of internal blinds will reduce direct solar gains, control radiant heat and increase comfort without compromising the connection to the outside.
- **Glazing** – Considering high performance glazing, to exceed the thermal requirements of the Building Code of Australia.
- **Thermally Efficient Construction** – Consideration of thermal mass, insulation where required and the lack of insulation where beneficial. Airtightness in the façade design to reduce bulk airflow, a pragmatic approach to wrapping the entire building to exceed code requirements and using appropriate colours and finishes.
- **Efficient HVAC System** – Selection of efficient HVAC systems with high COPs, appropriately designed to meet the needs of the internal loads. HVAC systems will require adequate efficiency, with economy cycle and CO_2 monitoring for temperature band fluctuation control to promote energy efficiency in the design. It is recommended to use floor diffuser for air conditioning of common room to reduce the volume of conditioned area in space. Legionella risks shall be managed via air-cooled HVAC systems.
- **Economy Cycle** – Improving the energy efficiency via outside air economy mode will result in reduced cooling requirements when outside ambient air temperatures are suitable.
- **Water Efficient Fixtures and Fittings** - Selection of low-flow showers and taps, which will reduce the hot water demand across the development associated with showering, sinks and hand basins.
- **Efficient Lighting Systems** – Providing high efficiency LED and fluorescent lighting with lighting controls including timing, occupancy and daylight sensors to reduce the demand on the lighting system. Light pollution shall be managed via effective external lighting design.
- **Energy Efficient Appliances** – Specifying high energy star rated refrigerators/freezers and dishwashers to improve general building energy use, minimum ratings. Targeting 1 star below the maximum start rating for the applicable appliance e.g.
    - **Dishwashers** – 3.5 stars (4.5 stars is the maximum)
    - **Fridge/freezers** – 5 Stars (6 stars is the maximum)
- **Smart Energy Metering and Monitoring** - Metering shall be designed to meet metering guidelines under the weights and measurement legislation, as outlined under the current National Measurement Regulations. A detailed monitoring system will be installed to help with early identification of excessive energy users. All hydraulic plant and equipment shall be monitored for faults or failures. The automatic monitoring system must be capable of:
    - Collecting data from all meters
    - Alert to any fault or failures of hydraulic plant and equipment
- **Transport plan**: Dedicated site-specific transport plan including suitable provision for sustainable modes of transport to be utilized by the occupants.

Responds to: North Sydney DCP 2013 requirements.

5.1.1 NCC Section J - Building fabric requirements

NCC 2022 Section J energy efficiency provisions will apply to the design and construction of the development with the intent to ensure the build form and associated building services demonstrate a minimum level of energy efficiency performance.

All conditioned (heated or cooled) areas of the project are required to comply with the thermal performance requirements of Section J 2022. In order to demonstrate section J compliance, the conditioned areas will be assessed in accordance with the energy modelling provisions of an Alternative Solution, known as a J1V3 Performance Solution assessment.

A Performance Solution is based on assessing the energy performance of a proposed building against that of a reference building. This involves detailed simulation modelling of the proposed buildings to provide a holistic assessment of the building's energy efficiency in accordance with the requirements of Section J of the BCA. This method of compliance provides much higher levels of flexibility in the design of a building's envelope.

5.1.2 Passive Thermal Design

- Considered approach to window-to-wall ratio to meet stringent NCC 2022 Section J and NatHERS requirements, and fixed external shading devices to prevent direct solar gain to reduce external heat loads.
- Use of solar control glazing with high visual light transmission to decrease solar gain in summer whilst allowing penetration of natural daylight.
- Insulation to exposed floors, external walls and exposed roofs for thermal efficiency and prevention of heat loss and gains.
- Operable windows for natural air conditioning. This also allows for future design adaptability and greater building life cycle, and
- A shallow floorplate allows for effective cross ventilation to minimize load on mechanical systems.

5.1.3 Building Commissioning and Tuning

- Services and Maintainability review is to be undertaken to identify any shortfalls in the services design.
- Incorporation of building commissioning & tuning procedures to ensure optimized operational efficiency in line with the intended building design.
- A Building Management and Control System (BMCS) may be installed which can digitally control the HVAC system to ensure optimal effectiveness and energy efficiency.

5.1.4 Smart Metering and Monitoring

Utility meters and energy & water sub-metering to the development common areas where required and practically useful can monitor building energy and water consumption, track and identify possible leaks and faults, help educate users and provide an incentive to reduce future operational and energy & potable water consumption of the precinct.

5.2 Water Efficiency

A variety of water efficiency measures can be applied to the proposed development. These best practice water efficiency measures implemented to reduce water consumption include:

- **Water efficient fixtures and fittings (WELS rating)**

  By implementing low-flow water fixtures, the consumption associated with amenities can be reduced. This includes taps, wash basins, WCs, Urinals, showers and supplementary water uses.

- **Water use metering and monitoring**

  Which can identify leaks and amend losses before greater loss occurs.

- **Selection of native & low water plants / trees**

  Native plants are designed to thrive in the Australian environment and are typically more resilient than their exotic counterparts. Low water species will reduce even more irrigation demand.

- **Rainwater collection and reuse**

Rooftop rainwater collection and reuse on landscaping.

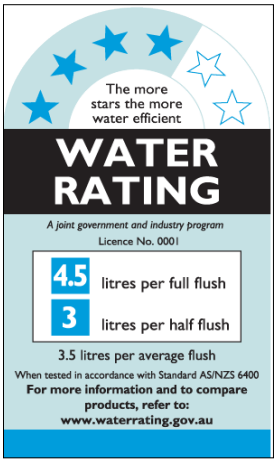


Figure 4 - Illustration of WELS rating label.

Responds to: North Sydney DCP.

5.3 Environmentally Friendly Materials

Apart from the energy and water consumed on site by the development, there are additional measures that can be taken to reduce the overall impact of the development from the initial build through to the materials consumed by on-going building management. The following measures may be implemented:

- Consideration of materials and products which include reused content, environmental product declarations, third party sustainability certifications or product stewardship programs.
- Use of steel sourced from manufacturers who are members of the Australian Steel Institute Sustainability Charter for sustainable and energy reducing steel manufacture.
- Best practice PVC plastics in formwork, piping, blinds, cables, and conduits. PVC generally has a reputation for damaging the environment in their production, both upstream and downstream of the manufacturing process and the use of Best Practice PVC will minimise these impacts; and
- A target of 90% of construction and demolition waste will be diverted from landfill.
- Completion of the BASIX Materials Index.

5.3.1 Material Reduction

- The selection of a limited materials palette, along with a focus on raw finishes, aims to reduce total material usage in the project.

5.3.2 Reclaimed or Recycled Materials

- Opportunities to use reclaimed or recycled materials, such as concrete aggregates and supplementary cementitious materials (e.g., fly ash, ground granulated blast furnace slag, amorphous silica, etc.), will be pursued through detailed design where applicable. Concrete is particularly carbon-intensive, and reducing its quantity is a great way to reduce the environmental impact.
- Recycled asphalt product containing recycled glass and plastic materials for pavement of cycling and walking path could be of consideration into the design.

5.3.3 Low Impact Materials

- Subject to structural engineering requirements, the project will specify recycled content (fly ash or furnace slag) in structural concrete.
- Preference for new timber used in the project from FSC or PeFC certified scheme to ensure the ongoing protection of forests.
- Sourcing of reinforcing steel bar and mesh produced using energy-reducing processes to reduce the embodied energy footprint.

5.3.4 Resource Recovery and Source Separation

North Sydney Council provides three receptables each with a different colour lid, Yellow, Green and Red. Each are allocated specific resources that will either be recycled or sent to land fill. Overall, the separation of general waste and comingled recycling will reduce waste disposal costs for the development and therefore help to minimise waste levies payable by residents.

- There is an opportunity to add other streams to those offered by council. These include organics compost and, paper and cardboard. Source separation for organics compost may create an educational opportunity for community on the benefits that compost provides to urban productive landscapes and community gardens. Therefore, the organics produced on site may be retained on site for use in the proposed productive landscapes.
- Source separation of paper and cardboard with an on-site compactor to process both residents and retailers' paper-based recycling, will likely result in a notable operational cost savings because this resource stream attracts either low cost, nil charge or pay-back for its collection.

The following waste measures for the operational period of the proposed mixed-use development include but are not limited to:

- Mixed Recycling - Yellow,
- Green waste - Green
- General waste to Landfill – Red

5.4 Indoor & Outdoor Environmental Quality

Indoor Environment Quality (IEQ) has been defined as a key sustainable building category to improve indoor environments for building occupants, which in turn improves their overall wellbeing. Consideration to improving indoor environmental quality will be a vital step within the development's design process. Therefore, provision of more thermally comfortable spaces for occupants and allowance for natural daylight will be envisaged.

The proposed development seeks to improve the overall IEQ for building occupants by addressing the following elements:

- Glazing will be selected to **maximise access to daylight** while prioritising thermal performance necessary to achieve the targeted energy consumption outcomes.
- **Low Volatile Organic Compounds** (VOC) internally applied paints, carpets, adhesives, and sealants will be selected for the project where applied.
- **Low Formaldehyde** engineered wood products (particleboard, plywood, MDF) will be selected for the project where applied.
- **Best Practice PVC products** to be specified and sourced where applicable.

5.5 Building Management

In line with industry recognised best practice frameworks, the project design and built form will seek to respond to the ongoing environmental challenges of urban development and ensure the project implements a range of ESD initiatives aimed at improving ongoing building management.

Through specific contractual commitments and documented design intent the project proposes to address environmental management & building operational performance through the following initiatives.

- **Building Commissioning & Tuning Procedures:**

  Prior to practical completion / 12 months post practical completion. By implementing this via project contract documents the project ensures operational efficiency & building operation is optimised in accordance with the intended building design.

- **Smart Metering:**

  Smart metering will provide relevant data for the use & management of building staff. This will provide detailed information about the project energy use and profile on a regular basis and through an easily accessible online platform. This information will help in the understanding of the usage profile so that adjustments can be made to guarantee optimal performance. This ensures operational efficiency is maintained and also facilitates detection of systems failures, thus improving maintenance and tuning processes.

5.6 Health and Wellbeing

5.6.1 Sustainable Transport

- The proposed development may increase the benefits of walkability for future residents. It provides amenities for the public transport network through Crows Nest Metro Station. This promotes the reduction of carbon emissions from personal vehicle transport and encourage public and active transport because of its relative proximity to a transportation interchange.
- Secure bicycle spaces are to be provided for building occupants and visitors.

5.7 Waste Management

In order to facilitate sustainable waste management in accordance with the principles of Ecologically Sustainable Development, waste minimisation and resource recovery, easy access to waste systems, pollution prevention associated with waste management practices will be taken into consideration as part of waste management strategy.

The development aims to increase on-site recycling and resource optimisation through adoption of the Waste Management Hierarchy with the ultimate goal of reducing waste going to landfill, which is in line with the *The Waste Avoidance and Resource Recovery Act, 2001* and the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*. The waste reduction strategy follows the hierarchy pyramid below.

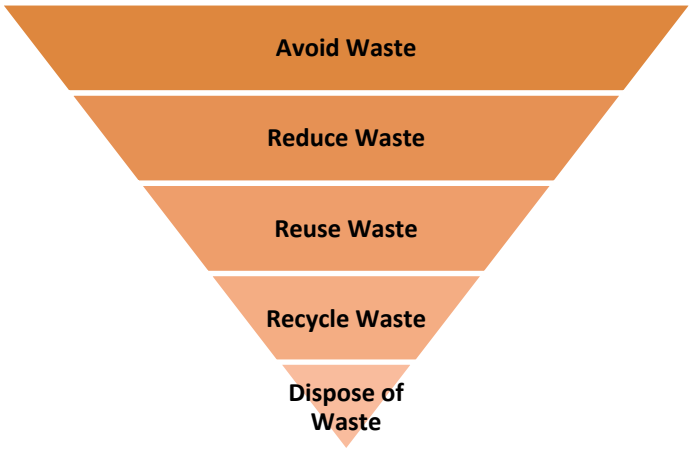


Figure 5 - The "Waste Hierarchy"

The key objectives for the management of waste generated by the demolition, early works and construction will include:

- Minimise waste generation on site;
- Segregate waste on site to maximise recycling;
- Store wastes on site appropriately to prevent cross-contamination and/or mixing of different waste;
- Segregate hazardous waste for appropriate treatment and disposal, where applicable;
- Where appropriate, set targets for demolition and construction waste diversion from landfill;
- Where appropriate, analyse potential operational waste generation profile from the warehouses and propose best practice Waste Management Strategies.

Responds to: Thirdi's ESG targets.

6 BASIX

BASIX sets water, greenhouse gas reduction and materials relative to the NSW average benchmark for per person potable water consumption & greenhouse gas emissions within the residential sector. BASIX also sets the minimum performance levels for thermal comfort of the dwelling and replaces the NCC Energy Efficiency benchmarks within the state of NSW. Thermal comfort levels are assessed via a simulation method in accordance with the NatHERS House Energy Rating protocol. Modelling for BASIX has been completed for the residential section of the development to ensure it meets the required minimum standards. The following sections outline the baseline BASIX inclusions and proposed strategies to achieve compliance in each category. The BASIX certification is provided in Appendix A.

6.1 Water

BASIX Water Inclusions:
Alternative Water Supply Minimum rainwater tank of 15,000L have been included within BASIX and are required to collect rainwater from approximately 554.8 m^2 of roof area (total across the development) which is to be used for irrigation of approximately 1040.9 m^2 of landscaped areas, and four car wash bays. Overflow from the rainwater tank will be diverted to the included OSD tank.

An OSD tank has also been included as per Civil Engineer's designs.
Fixtures & Fittings: Fixtures with the following WELS ratings will be included in the BASIX Assessment: **Common Areas (as applicable) & all dwellings:** • 4 Star WELS minimum rated Showerheads (> 4.5 but <= 6 L/min) • 4 Star WELS minimum rated Toilets • 5 Star WELS minimum rated Kitchen taps • 5 Star WELS minimum rated Bathroom taps
Outdoor Pool All outdoor pools and spas will be provided with pool covers.
Water Saving required: 40% **Water Saving Achieved: 41%**

6.2 Thermal Comfort

NatHers Thermal Comfort Inclusions
External Walls: A minimum of R2.5 insulation added to external walls. **Internal Walls to Adjoining Apartment:** Insulation of R0.0 to all walls between neighboring units. **Internal Walls to Corridors:** Insulation of R1.5 to all walls adjacent common areas, lifts, stairwells, etc.
Floors: 200mm concrete suspended floor, no insulation required to units with units above 200mm concrete suspended floor, minimum R2.0 insulation (insulation only) required to units with unconditioned spaces below. Suspended Floor slabs: R3.5 insulation to the underside of exposed and enclosed suspended concrete.
Ventilation: Bathroom – individual ducted fan Laundry – individual ducted fan Kitchen range hood – individual ducted fan
Ceilings: Plasterboard ceilings, no insulation required to units with units above.

Plasterboard ceilings below balconies : minimum R4.46 insulation (insulation only).

Plasterboard ceilings below roof or terrace: minimum R4.46 insulation (insulation only).

Plasterboard ceilings below roof: minimum R4.46 insulation (insulation only).

All ceiling penetrations: downlights and exhaust fans are sealed to prevent the movement of air between a zone and another zone, neighbour or roof/attic space. Sizes as below:

- Exhaust fans: 250 x 250mm with 50mm clearance
- Downlights: 100 x 100mm with 50mm clearance

Notes:

- Default ceiling penetration modelled as per NatHERS Technical Note Version 23 October 2023 – 9.6

Floor Coverings

The following design specifications have been included within the NatHERS Assessments:

- Carpet to bedrooms.
- Ceramic tiles to the bathrooms/wet areas.
- Timber floorboards to all other internal areas.

6.3 Energy

BASIX Energy Inclusions:
Alternative Energy Supply/ Solar Photovoltaic System Solar PV panels with approximately 60kW peak capacity.
Air Leakage Kitchen, bathroom, and laundry exhaust shall be via individual fan ducted to the façade or roof. Back-draft dampers will be installed to prevent air infiltration.
Hot Water System Electric heat pump – air sourced Piping insulation both internal and external (rig main and supply riser) must have R1.0 insulation Unit efficiency: 3.5 < COP ≤ 4.0.
Mechanical Ventilation system: Refer to Appendix A for details
HVAC system: System type: 3-phase air conditioning - ducted / EER 3.5 – 4.0 Cooling, 3-phase air conditioning - ducted / EER 3.5 – 4.0 Heating

Lighting: **Common Areas:** Refer to Appendix A for details **Dwellings:** Dedicated fluorescent or LED lamps, all downlights to be sealed
Vertical Transportation: Gearless traction lifts with VVVF motor and regenerative drive serving all storeys of all buildings
Dwelling Appliance Specifications: The following minimum energy performance specifications have been included within the BASIX assessment: • Electric cooktops and electric ovens to all dwellings. • Dishwasher 4.5 stars • Clothes dryer 7.5 stars
Pool and Sauna Pool heating system: Electric heat pump - Pump controlled by timer Sauna heating system: electric infrared on / timer off Pool Pump: Multi Speed, 6 stars
Energy Saving required: 60% **Energy Saving Achieved: 60%**

7 NCC Section J

The Class 2 common areas and Class 6 must comply with the National Construction Code 2022 (NCC) Section J4 Building Fabric. Based on the DtS assessment undertaken, the following sets out the minimum requirements to be adopted during completion of design documentation to meet the requirements of NCC Part J4D4 to Part J4D7.

Building Element forming part of Section J Envelope	Minimum Total R-Value* of Building Element (m^2K/W)
Roof/Ceiling	R_T* $\geq$ 3.7 / SA $\leq$ 0.45
External Walls Curtain Wall & Window Wall	R_T* $\geq$ 1.4 / SA $\leq$ 0.60
Internal Walls	R_T* $\geq$ 1.4

Suspended Floor Slab	R_T* ≥ 2.0
Slab on-ground	R_T* ≥ 2.0
Ceilings separating conditioned and unconditioned zones	R_{T*} 3.7 (for below unconditioned zone) R_{T*} 2.0 (for above unconditioned zone)

*The Total effective R-Value is the combination of the R-values of the individual component layers in a composite element including any building material, insulating material, airspace and associated surface resistances.

Window Type (Glazing + Frame)	Reference Building**
All Glazing to Conditioned Occupied Zones	Total U Value ≤ 3.1 W/m^{2}K Total SHGC ≤ 0.40

**The Total System performance requirements above are for combined effect of glass + frame in accordance with Australian Fenestration Rating Council (AFRC) requirements.

8 Climate Change Resilience

Climate Change in Australia can deter the future amenity and wellbeing currently provided within the built environment. Natural disasters such as bushfires, floods or cyclones constitute real threats to buildings in operation, and the long-term effects of climate change are likely to increase the frequency of such events. It's paramount to future-proof building design and ensure its adaptability and resilience to long-term climate change effects.

Climate projections across NSW are provided by the NSW and ACT Regional Climate Modelling (NARCliM) project. NARCliM offers robust climate projections which can be used to analyse the climate impacts on the development site over two 20-year time periods: 2020-2039 described as 2030, and 2060-2079 described as 2070.

Considering the site location in Crows Nest, this constitutes part of the Sydney Metropolitan Region as defined by NARCliM project which encompasses the Cumberland Plain and extends to the Blue Mountains in the west, Broken Bay in the north, and Garie Beach in the Royal National Park in the south as shown in the map below:

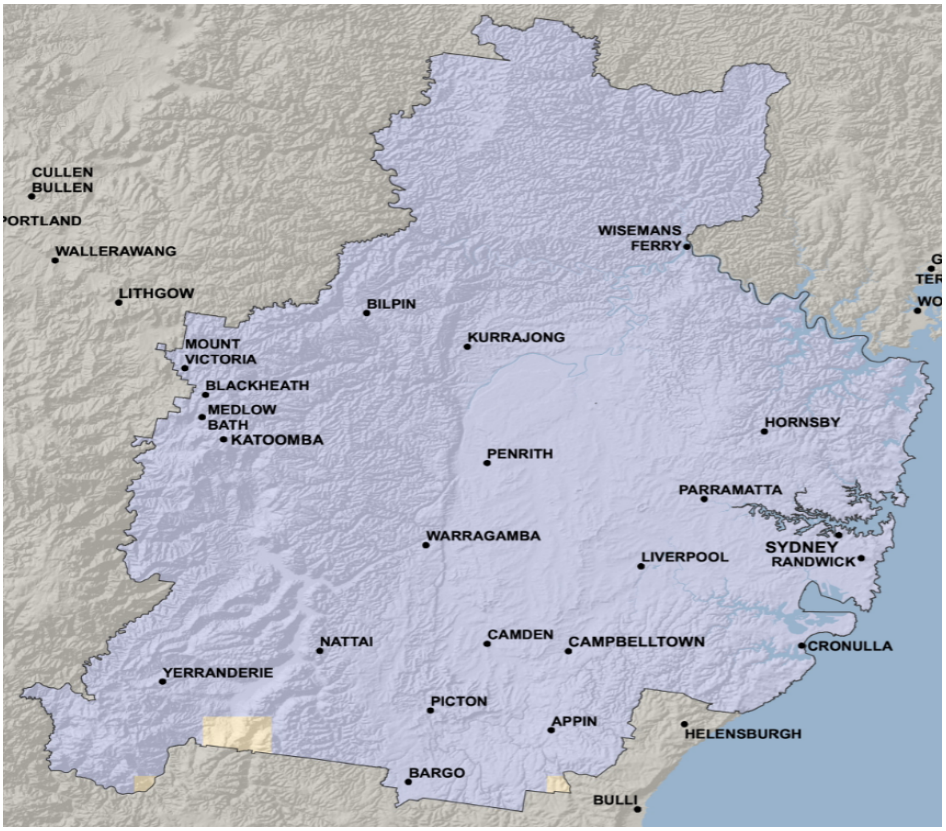


Figure 6 NARCliM assessment region: Metropolitan Sydney (Climate projections for NSW, 2014)

The climate projections for this region are explored in the following sections.

Mean Temperature

Changes in temperatures and frequency of hot/cold days can have considerable impacts on the native ecosystems for the region.

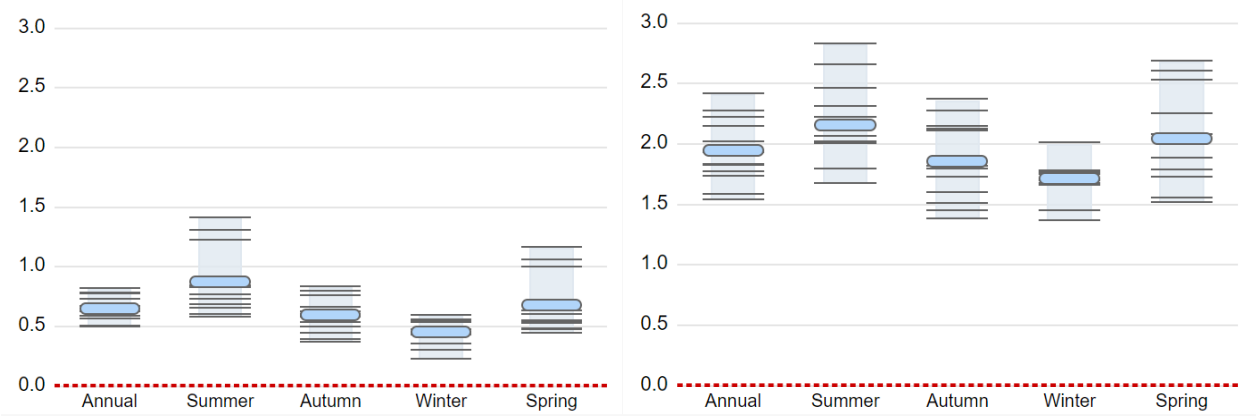


Figure 7 Change in average temperature for 2030 (right) and 2070 scenarios (left). (Climate projections for NSW, 2014)

As shown in the figure above, mean temperatures are projected to rise by 0.7 ºC by 2030. The increases are occurring across the region. All models show there are no declines in mean temperatures across Metropolitan Sydney. Mean temperatures are projected to rise by 1.9 ºC by 2070. The greatest increases are being seen during summer and spring. All models show there are no declines in mean temperatures across the Metropolitan Region.

Maximum Temperature

Due to rising temperatures, peak temperature events will become more frequent whereby the number of days above 35°C are expected to increase for both projected scenarios. The change in number of days annually where the maximum temperature exceeds 35˚C is projected to be:

- +3.9 days for 2020-2039, mostly to occur in summer.
- +10.4 days for 2060-2079, mostly to occur in summer but more hot days to be expected in spring also.

Minimum Temperature

Due to the increase in temperatures across both scenarios, it is expected to have a decrease in the days where the minimum temperature drops below 2 ˚C. This is projected to be mainly experienced around the mountainous regions, and the changes in number of days annually where the minimum temperature drops below 2 ˚C is expected to be:

- -5.9 days for 2020-2039, mostly to occur in winter.
- -17.3 days for 2060-2079, mostly to occur in winter but less cold days to be expected in spring also.

The projected temperature changes across both, 2030 and 2070, scenarios indicate the increased likelihood of heatwaves, droughts, and bushfires for the Sydney region. The increased frequency of these events poses risks to the amenity and comfort the building is designed for.

Mean Rainfall

By 2030 there is little change in annual rainfall. While it increases generally in autumn, it is still variable across the region during the other seasons. Annual rainfall is projected to increase by 2070. Increases are projected across the whole region for summer and autumn, with winter and spring rainfall becoming more variable. Although an average increase is projected across all projections, rainfall is expected to be as infrequent short downpours. Therefore, water conservation management between rain events and flood management are important to address. From the figure below, the increase in annual rainfall is projected to be:

- 1.7% increase for 2020-2039
- 8.9% increase for 2060-2079

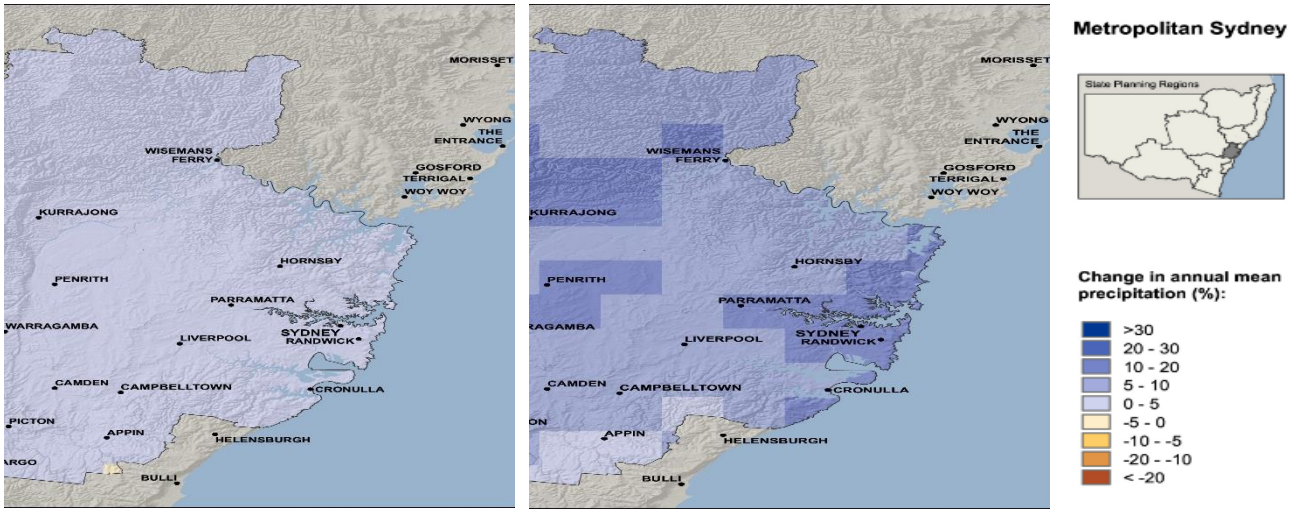


Figure 8 Change in annual rainfall for 2030 (right) and 2070 scenarios (left). (Climate projections for NSW, 2014)

Fire Projections

Forest Fire Danger Index (FFDI) is used in NSW to quantify fire weather. It combines observations of temperature, humidity, and wind speed, and is classified as severe when the FFDI is above 50. By 2030 severe fire weather is projected

to have a slight increase in summer and along the Blue Mountains during spring. Decreases are projected during autumn likely due to increases in rainfall. Projected increases are seen during the peak fire risk season which is summer. From the figure below, the change in number of days where the FFDI for the region exceeds 50 is projected to be:

- +0.1 Changes in number of days a year FFDI > 50 for 2020-2039
- +0.6 Changes in number of days a year FFDI > 50 for 2060-2079

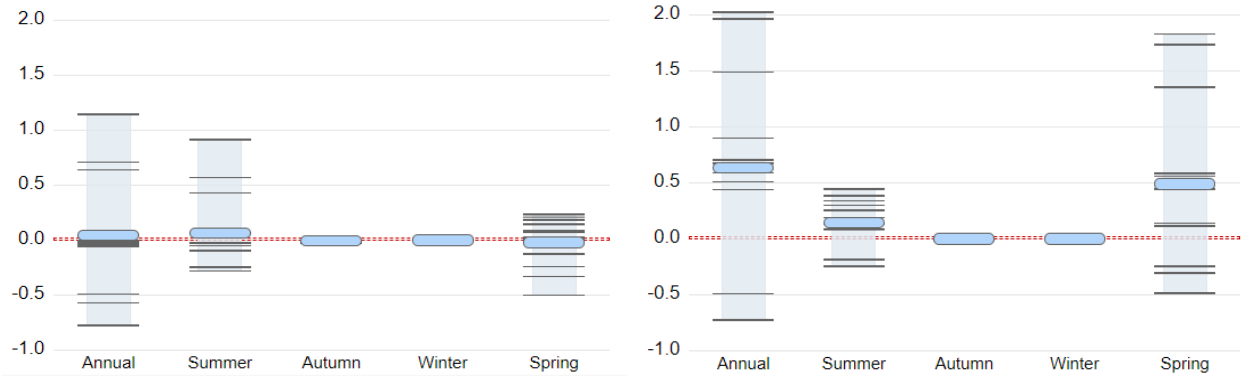


Figure 9 Change in average temperature for 2030 (right) and 2070 scenarios (left). (Climate projections for NSW, 2014)

9 Summary of Design Response

Ecologically Sustainable Design continues to be a driving consideration for the Crows Nest OSD Site B development at 477- 495 Pacific Highway, Crows Nest. In line with the development's core vision, the project will aim to incorporate strategies and initiatives to ensure a sustainable outcome centred around well-being and resilience. The initiatives outlined in this report are intended to be used as a design guide for the development, and they are designed to comply with the guidelines set out by the relevant authorities.

Crows Nest Over Station Development (OSD) makes the following minimum sustainability commitments for the development in response to the minimum regulatory requirements;

- Demonstrate BASIX (Building Sustainability Index) compliance for energy efficiency, water efficiency and thermal comfort.
  - BASIX Energy score: 60% reduction in Greenhouse Gas (GHG) emissions.
  - BASIX Water score: 40% saving in potable water consumption.
  - BASIX Thermal Comfort: 7-Star average NatHERS star rating across the project.
- Demonstrate NCC Section J compliance for energy efficiency.

The development's commitment to reducing the overall environmental impact is evident in the holistic approach taken towards long-term sustainability. The documented initiatives cover a range of topics including:

- Energy and greenhouse gas emissions reduction
- Potable water reduction
- Minimising waste to landfill
- Indoor environmental quality

- Occupant amenity and comfort
- Building management practices
- Climate adaptation and resilience

We trust this report provides sufficient overview of the project's commitment to environmentally sustainable design and greenhouse gas and energy efficiency vision for the Crows Nest OSD Site B development.

Appendix A – North Sydney Efficient Use of Resources

EFFICIENT USE OF RESOURCES

Commercial developments and the commercial component of mixed-use developments

This commitment table is to be completed for all development applications for commercial or mixed use developments that have a non-residential gross floor area less than 5000m².

Applicants must indicate in the compliance column whether the proposed development complies with the provision or, in cases where information is not available at development application stage to demonstrate compliance, that the applicant is committed to achieving compliance with the provision.

Non-compliance, an unwillingness to commit to compliance, or the reason/s why a provision is not applicable to the proposed development should be explained in the comment column.

Where a provision only provides guidance the applicant should indicate in the comment column whether the provision was considered in the design of the development and how the development has benefited from the guidance.

This commitment table may form part of the consent documentation, or form the basis of conditions of consent, should the development application be approved.

PRIVACY STATEMENT

North Sydney Council is collecting your personal information for the purposes of processing an application or submission. The supply of personal information is entirely voluntary. If you elect not to provide or do not wish to provide your personal information, Council may not be able to process your application or act on or acknowledge your submission. North Sydney Council shall be regarded as the agency that holds your personal information and access to your personal information by interested parties, may be released in line with Council policies. North Sydney Council may publish any personal information included in a submission on a proposal or proposed development. You have a right to access your personal information held by Council. You also have a right to have your personal information corrected or amended by Council. Applications by members of the public to view Council's records which are not in the public arena are subject to the provisions of Privacy and Personal Information Protection Act 1998, Government Information (Public Access) Act 2009 and North Sydney Council's Privacy Management Plan.

Compliance key: ✓ = compliant or committed to compliance
X = not compliant or not committed to compliance (comment required)
N/A = not applicable (comment required)

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
Energy efficiency			
1. To ensure that developments minimise their use of non-renewable energy resources. 2. To ensure that buildings are designed such that the air conditioning plant meets performance requirements, while minimising energy usage.	The development has been designed so that it will not reduce the energy efficiency of buildings in the vicinity.	✓	
	Mechanical space heating and cooling systems have been designed to target only those spaces which require heating and cooling, not the whole building.	✓	
	Car parking areas have been designed so that electric vehicle charging points can be installed at a later time.	✓	
Passive solar design			
1. To ensure that the site layout and building orientation allows for maximum solar access and are adapted to local climatic conditions and prevailing site characteristics.	Site layout and building orientation are adapted to local climatic conditions and prevailing site characteristics, such as existing overshadowing, planting and slope.	✓	
	The long axis or length of the building is oriented to the northerly aspect.	N/A	The long axis of the building is facing North-East and South-West due to site orientation restrictions. Design have been optimised that no window facing West.
	East and west facing glazing is minimised and fully shaded at noon at the summer solstice.	N/A	
	Natural light access has been optimised through limiting the internal depth of the building to reduce the amount of energy used to run artificial lighting.	✓	
	The landscaping plan submitted with the development application shows how the landscaping contributes to energy efficiency by providing substantial shade in summer, especially to west-facing windows and open car park areas, and admitting winter sunlight to outdoor and indoor working areas.	✓	
	North facing pergolas are proposed to shade walls and windows (deciduous vines will be trained over the pergola to provide effective cooling in warm weather).	✓	
	The fixed louvers of the north facing pergolas are spaced and oriented so that a line between the top of one blade and the bottom of the next makes an angle of 70°.	N/A	No louvers for pergolas. The design intent is solid pergolas. The shading effect will be more significant.

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
	Louvres are angled to correspond to the lowest altitude angle the sun reaches at noon in winter (31° in Sydney).	✓	
	South facing glazing has been kept to a minimum to reduce winter heat losses.	✓	
	The building has been designed to include a north facing roof where a solar hot water system or collector can be installed.	✓	
Thermal mass and insulation			
1. To achieve more even, year-round average temperature, making the building more comfortable for occupants and resulting in less demand for artificial heating or cooling.	Flooring is designed to absorb heat from the winter sun to maximise natural heating.	✓	
	To maximise natural cooling, thermal mass is protected from summer sun with shading and insulation. The design allows for cool night breezes and air currents to pass over the thermal mass, drawing out all the stored energy.	✓	
	Masonry walls and insulated walls and ceilings have been incorporated to contribute to the effectiveness of thermal mass.	✓	
	The roof, walls and floor, incorporate thermal insulation.	✓	
	Awnings, shutters or double-glazing are proposed to be incorporated to minimise heat loss/gain.	✓	
Water conservation			
1. To minimise the use of potable water. 2. To encourage the reuse of grey water, rainwater and stormwater.	The development is designed so that stormwater runoff will be collected and reused for subsurface irrigation.	✓	
	The development is designed to incorporate a water efficient irrigation system.	✓	
	A reporting system is proposed for the development to inform/educate occupants about the buildings water consumption.	✓	
Waste management and minimisation			
1. To minimise material usage and waste during building, construction and demolition. 2. To minimise the level of waste during operation reduce new building material	The building has been designed to encourage waste minimisation (e.g. source separation, reuse and recycling).	✓	
	The garbage room has been designed to provide adequate recycling systems.	✓	
	The proposed development incorporates materials with long lives and low maintenance needs.	✓	

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
usage and minimise volume of demolition materials.	Contractors and sub-contractors employed to undertake proposed construction works and waste removal will be educated about the waste objectives of the development.	✓	
	The storage of any hazardous waste materials will be adequately secured.	✓	
Stormwater management			
1. To mimic pre-development or natural drainage systems through the incorporation of WSUD on-site. 2. To protect watersheds by minimising stormwater discharge and maximising stormwater quality. 3. To minimise off-site localised flooding or stormwater inundation.	The development has been designed to ensure that, as a minimum, post-development stormwater discharge rates will be less than pre-development stormwater discharge rates.	✓	
	The development has been designed to ensure that, as a minimum, post-development stormwater quality will be improved from pre-development levels.	✓	
	On-site stormwater detention, including the use of grass swales and detention basins, has been incorporated to minimise and filter stormwater runoff.	✓	
	Impervious surfaces have been minimised.	✓	
Building materials			
1. To encourage the use of materials which have a low environmental impact during their life cycle. 2. To encourage the use of toxin free material to minimise the health impact of materials used indoors. 3. To maximise the energy efficiency of buildings.	Products with the least life cycle impact have been favoured.	✓	
	The development has been designed to ensure the following types of building materials will be used: (a) materials which are sourced from renewable and abundant resources; (b) materials which are durable; (c) locally manufactured materials and produced; (d) materials with a low embodied energy content; (e) salvaged and/or recycled materials; (f) timber used be obtained from certified sustainable sources; (g) materials with a high recycled content (>50%); (h) low volatile organic compound (VOC) emitting materials; (i) mechanical fixings instead of adhesives and glues, wherever possible; (j) when using Medium Density Fibreboard, ensure that it has a low formaldehyde content; (k) materials which are non-toxic including toxin-free floor finishes.	✓	
	The development has been designed to ensure the following materials will be avoided:	✓	

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
	(a) copper, chrome, cadmium, lead, mercury, cyanide, and formaldehyde; (b) materials, sealants and adhesives containing PVC; (c) wood treated with CCA; (d) solvents.	✓	
	The development has been designed to incorporate physical termite barriers (made of granite or stainless steel) instead of chemicals.	✓	
	The development has been designed to incorporate lighter coloured materials and finishes on the main external parts of the building.	✓	
Adaptive reuse of buildings			
1. To encourage the adaption and reuse of buildings.	The development has been designed so that existing buildings are reused in preference to demolition.	✓	
	Buildings have been designed to encourage adaptable office floorspace to accommodate changing occupier requirements.	✓	
Green roofs			
1. To provide accessible roof space providing increased amenity for the occupants and visitors of the building. 2. To improve the aesthetics and amenity of the urban environment (this particularly relates to the appearance of the roof when viewed from surrounding buildings). 3. To provide space to accommodate renewable energy production. 4. To improve stormwater management by controlling both the quality and flow of stormwater.	As the proposed development involves the creation of new roof space, a roof plan has been submitted that demonstrates how the new available roof space contributes to the achievement of at least three of the above objectives. The roof plan illustrates those parts of the available roof space to be used as a green roof immediately after construction of the proposed works. Applicants are encouraged to install green roofs immediately after construction. Applicants are advised to consult the North Sydney Council Green Roof and Wall Resource Manual for technical guidance on the design, construction and maintenance of green roofs.	✓	

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
5. To increase biodiversity by the use of plant material, and in particular to promote food production where appropriate. 6. To protect the building structure by increasing its thermal protection which will also help to reduce internal heating and cooling requirements			
PART B: INFORMATION AVAILABLE AT CONSTRUCTION CERTIFICATE STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
Energy efficiency			
1. To ensure that developments minimise their use of non-renewable energy resources. 2. To ensure that buildings are designed such that the air conditioning plant meets performance requirements, while minimising energy usage. 3. To encourage the use of energy efficient lighting.	As the development is a multi-floor or multi-tenant or strata-subdivided development, electricity sub-metering will be provided for lighting, air-conditioning and power within each floor and/ or tenancy and/or strata unit. Locations are identified on the development plans. Electricity sub-metering will also be provided for significant end uses that will consume more than 10,000 kWh/a.	✓	
	Appliances and equipment that generate waste heat (such as copiers) will be located in areas separated from the spaces requiring cooling.	✓	
	As the building contains greater than 2000m² of non-residential gross floor area it will be capable of achieving a minimum 4.5 star rating under DECCW's NABERS Energy. In this regard, the following information will be lodged with the relevant certifying authority (Council or an accredited certifier) prior to the issue of a Construction Certificate: (a) Evidence that a Commitment Agreement has been entered into with DECCW, to deliver this star rating for the base building (i.e. services traditionally supplied as 'common' to tenants, such as air conditioning, lifts and common area lighting) or for the whole building where the applicant is to occupy the entire building. (b) An independent energy assessment report that follows the guidelines in DECCW's NABERS Energy and Water for Offices Rules for collecting and using data. This document can be obtained from www.nabers.com.au;	N/A	No non-residential gross floor area greater than 2000m² in this project. Thus, it is not applicable.

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
	(c) A computer building simulation in accordance with DECCW's NABERS Energy Guide to Building Energy Estimation. This document can be obtained from www.nabers.com.au. The computer building simulation will demonstrate to the satisfaction of Council, or the private certifier if Council is not the certifying authority, that the building can reasonably be expected to achieve the proposed rating under realistic operating conditions.		
Passive solar design			
1. To ensure that the site layout and building orientation allows for maximum solar access and are adapted to local climatic conditions and prevailing site characteristics.	Shading devices will be provided on north facing walls to completely shade glazing from October to late February. To calculate the extent of shading device, draw a section and extend a line from the base of the window at 70°. The outer edge of the eaves must reach this line.	N/A	The long axis of the building is facing North-East and South-West due to site orientation restrictions. There will be no North facing wall. Thus this provision is not applicable.
Water conservation			
1. To minimise the use of potable water.	Endemic plants (as listed on Council's website) and xeriscape principles will be used in landscaping.	✓	
Waste management and minimisation			
1. To minimise material usage and waste during building, construction and demolition. 2. To minimise the level of waste during operation reduce new building material usage and minimise volume of demolition materials.	A Waste Management Plan for the demolition, construction and operation of the building is, or will be, provided in accordance with Part B: Section 19 - *Waste Management* of DCP 2013.	✓	
Stormwater management			
1. To mimic pre-development or natural drainage systems through the incorporation of WSUD on-site. 2. To protect watersheds by minimising stormwater discharge and maximising stormwater quality.	An Erosion and Sediment Control Plan for the construction of the building is, or will be, provided in accordance with Part B: Section 17 - *Erosion and Sediment Control* of DCP 2013.	N/A	The project is an Over Station Development.
	A Stormwater Management Plan for the operation of the building is, or will be, provided demonstrating compliance with Section 18 – *Stormwater Management* of DCP 2013.	✓	
	The Stormwater Management Plan demonstrates how run-off from the site will be minimised and the quality of water leaving the site will be improved.	✓	

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
3. To minimise off-site localised flooding or stormwater inundation.	Paved areas will be at least 50% pervious.	X	The site will be all built up. 50% pervious is unlikely to achieve.
	As the building is a commercial, industrial or mixed-use development with a gross floor area greater than 2000m², a Water Sensitive Urban Design report from a suitably qualified consultant demonstrating that WSUD has been incorporated to the maximum extent practicable and that stormwater discharge will be reduced to the maximum extent practicable will be provided. This is in addition to a Stormwater Management Plan.	N/A	No non-residential gross floor area greater than 2000m² in this project. Thus, it is not applicable.
	As the development has a gross floor area greater than 2000m² a stormwater quality assessment will be undertaken by a suitably qualified consultant which demonstrates that the development will achieve the post-development pollutant load standards indicated below: (a) Litter and vegetation larger than 5mm: 90% reduction on the Baseline Annual Pollutant Load; (b) Total Suspended Solids: 85% reduction on the Baseline Annual Pollutant Load; (c) Total Phosphorous: 65% reduction on the Baseline Annual Pollutant Load; (d) Total Nitrogen: 45% reduction on the Baseline Annual Pollutant Load.	N/A	No non-residential gross floor area greater than 2000m² in this project. Thus, it is not applicable.
PART C: INFORMATION AVAILABLE AT OCCUPATION CERTIFICATE STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
Energy efficiency			
1. To ensure that developments minimise their use of non-renewable energy resources. 2. To ensure that buildings are designed such that the air conditioning plant meets performance requirements, while minimising energy usage. 3. To encourage the use of energy efficient lighting.	Where the proposed development involves the installation of: (a) hot water systems; (b) clothes drier; (c) dishwasher; (d) fixed air conditioning systems (including reverse cycle systems); or (e) fixed heating systems; they will have a minimum energy star rating of 4.5 stars.	✓	
	Lighting for streets, parks and any other public domain spaces provided as part of a development will be energy efficient LED lighting.	✓	
	Hot water systems will be insulated.	✓	
	Solar hot water systems will be provided.	✓	
	On-site renewable energy sources will supplement energy needs during daily peak energy use.	✓	

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
	Timers and movement sensors will be used to minimise energy consumption, particularly for lighting and mechanical ventilation in public areas.	✓	
	Energy efficient lighting and technology will be used to reduce energy consumption.	✓	
	Solar powered lighting will be used for external areas.	✓	
	Lighting systems will be designed to target only those spaces which require lighting at any particular 'off-peak' time, not the whole building.	✓	
Thermal mass and insulation			
1. To achieve more even, year-round average temperature, making the building more comfortable for occupants and resulting in less demand for artificial heating or cooling.	Ceiling/roof insulation must be rated R3.0 or equivalent and wall insulation must have an R1.5 or equivalent rating. Insulation of cavity brick walls is not required. These ratings are based on AS 2627: Part 1-1993.	✓	
Water conservation			
1. To minimise the use of potable water. 2. To encourage the reuse of grey water, rainwater and stormwater.	Where the proposed development involves the installation of new: (a) shower roses; (b) taps for use over a basin, ablution trough, kitchen sink or laundry tub; (c) flow restrictors; (d) toilets; (e) white goods, such as clothes washers or dishwashers; they will have the highest Water Efficiency Labelling Scheme (WELS) star rating available at the time of development.	✓	
	Recycled water (serviced by dual reticulation) will be utilised for permitted non-potable uses such as toilet flushing, laundry, irrigation, car washing, firefighting, industrial processes and cooling towers.	✓	
	Rainwater will be harvested and used for garden irrigation and toilet flushing.	✓	
	Separate meters will be installed for the make-up lines to cooling towers, swimming pools, on the water supply to outdoor irrigation, and other significant end uses.	✓	
	Cooling towers will:		

PART A: INFORMATION AVAILABLE AT DEVELOPMENT APPLICATION STAGE			
Objectives	**Provision**	**Compliance**	**Comment**
	(a) employ alternative water sources; or (b) include a water meter connected to a building energy and water metering system to monitor water usage; and (c) be connected to a recirculating cooling water loop; and (d) not incorporate a single pass cooling system; and (e) be connected to a conductivity meter to ensure optimum circulation before discharge.	N/A	The design has no cooling tower to minimise water use.
	A pool cover will be installed for any external swimming pool.	✓	
	Rainwater tanks or other alternative water sources including recycled water systems will be installed to minimise the use of potable water and maximise the use of alternative water sources.	✓	
	Rainwater tanks will be plumed to appropriate end uses, including toilet flushing, water features, car washing and garden irrigation.	✓	
	Separate meters will be installed on separate units of occupancy in non-residential BCA class 5, 6 and 7 buildings.	✓	
	Waterless urinals will be used.	✓	
	Sensor operated taps, or automatic shutoff taps, will be installed especially in public areas.	✓	
Stormwater management			
1. To mimic pre-development or natural drainage systems through the incorporation of WSUD on-site. 2. To protect watersheds by minimising stormwater discharge and maximising stormwater quality. 3. To minimise off-site localised flooding or stormwater inundation.	Rainwater tanks will be installed for all developments, including major alterations and additions and mixed-use developments. Rainwater tanks will be plumbed to appropriate end uses, including toilet flushing, water features, car washing and garden irrigation, to ensure sufficient use of tank water so that capacity exists to accommodate rainwater from storm events.	✓	

Appendix B – BASIX Certificate

BASIX® Certificate

Building Sustainability Index www.basix.nsw.gov.au

Multi Dwelling

Certificate number: BSX-29075M_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.basix.nsw.gov.au

Secretary
Date of issue: Tuesday, 10 September 2024
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.

NSW GOVERNMENT

Project summary	
Project name	Crows Nest OSD - Site B_02
Street address	491-495 PACIFIC HIGHWAY CROWS NEST 2065
Local Government Area	NORTH SYDNEY
Plan type and plan number	Deposited Plan DP442804
Lot no.	A
Section no.	-
No. of residential flat buildings	1
Residential flat buildings: no. of dwellings	130
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Project score		
Water	✔ 41	Target 40
Thermal Performance	✔ Pass	Target Pass
Energy	✔ 60	Target 60
Materials	✔ -66	Target n/a

Certificate Prepared by
Name / Company Name: Stantec Australia Pty Ltd.
ABN (if applicable): 17007820322

Description of project

Project address

Project name	Crows Nest OSD - Site B_02
Street address	491-495 PACIFIC HIGHWAY CROWS NEST 2065
Local Government Area	NORTH SYDNEY
Plan type and plan number	Deposited Plan DP442804
Lot no.	A
Section no.	-

Project type

No. of residential flat buildings	1
Residential flat buildings: no. of dwellings	130
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Site details

Site area (m²)	1872
Roof area (m²)	554.8
Non-residential floor area (m²)	472.24
Residential car spaces	55
Non-residential car spaces	0

Common area landscape

Common area lawn (m²)	0.00
Common area garden (m²)	1040.92
Area of indigenous or low water use species (m²)	1040.92

Assessor details and thermal loads

Assessor number	DMN/21/2042
Certificate number	HR-2IKGOL-01
Climate zone	56

Project score

Water	✔ 41	Target 40
Thermal Performance	✔ Pass	Target Pass
Energy	✔ 60	Target 60
Materials	✔ -66	Target n/a

Description of project

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

Residential flat buildings - Building1, 130 dwellings, 19 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)
10.01	1	65.72	0.00	0.00	0.00
10.06	3	112.56	0.00	0.00	0.00
10.10	2	85.08	0.00	0.00	0.00
11.02	1	60.14	0.00	0.00	0.00
11.07	1	59.47	0.00	0.00	0.00
11.11	2	87.45	0.00	0.00	0.00
12.03	2	81.40	0.00	0.00	0.00
12.08	2	96.75	0.00	0.00	0.00
12.12	1	56.99	0.00	0.00	0.00
13.05	2	75.58	0.00	0.00	0.00
13.09	2	92.89	0.00	0.00	0.00
15.01	1	65.60	0.00	0.00	0.00
15.06	3	112.55	0.00	0.00	0.00
15.10	2	85.16	0.00	0.00	0.00
16.02	1	59.41	0.00	0.00	0.00
16.07	1	59.46	0.00	0.00	0.00
16.11	2	87.43	0.00	0.00	0.00
17.03	2	81.32	0.00	0.00	0.00
17.08	2	96.56	0.00	0.00	0.00
17.12	1	56.82	0.00	0.00	0.00
18.05	2	75.26	0.00	0.00	0.00
10.02	1	59.43	0.00	0.00	0.00
10.07	1	59.41	0.00	0.00	0.00
10.11	2	86.92	0.00	0.00	0.00
11.03	2	80.99	0.00	0.00	0.00
11.08	2	96.73	0.00	0.00	0.00
11.12	1	57.11	0.00	0.00	0.00
12.05	2	75.29	0.00	0.00	0.00
12.09	2	93.05	0.00	0.00	0.00
13.01	1	65.44	0.00	0.00	0.00
13.06	3	112.49	0.00	0.00	0.00
13.10	2	85.08	0.00	0.00	0.00
15.02	1	59.86	0.00	0.00	0.00
15.07	1	59.55	0.00	0.00	0.00
15.11	2	87.41	0.00	0.00	0.00
16.03	2	81.14	0.00	0.00	0.00
16.08	2	96.66	0.00	0.00	0.00
16.12	1	56.75	0.00	0.00	0.00
17.05	2	75.12	0.00	0.00	0.00
17.09	2	92.93	0.00	0.00	0.00
18.01	1	65.54	0.00	0.00	0.00
18.06	3	112.61	0.00	0.00	0.00
10.03	2	81.22	0.00	0.00	0.00
10.08	2	96.58	0.00	0.00	0.00
10.12	1	56.93	0.00	0.00	0.00
11.05	2	75.38	0.00	0.00	0.00
11.09	2	92.87	0.00	0.00	0.00
12.01	1	65.44	0.00	0.00	0.00
12.06	3	112.49	0.00	0.00	0.00
12.10	2	85.13	0.00	0.00	0.00
13.02	1	59.85	0.00	0.00	0.00
13.07	1	59.46	0.00	0.00	0.00
13.11	2	87.13	0.00	0.00	0.00
15.03	2	81.29	0.00	0.00	0.00
15.08	2	96.67	0.00	0.00	0.00
15.12	1	57.11	0.00	0.00	0.00
16.05	2	75.36	0.00	0.00	0.00
16.09	2	92.89	0.00	0.00	0.00
17.01	1	65.32	0.00	0.00	0.00
17.06	3	112.55	0.00	0.00	0.00
17.10	2	85.12	0.00	0.00	0.00
18.02	1	60.13	0.00	0.00	0.00
18.07	1	59.51	0.00	0.00	0.00
10.05	2	75.17	0.00	0.00	0.00
10.09	2	92.88	0.00	0.00	0.00
11.01	1	65.50	0.00	0.00	0.00
11.06	3	112.51	0.00	0.00	0.00
11.10	2	85.14	0.00	0.00	0.00
12.02	1	60.15	0.00	0.00	0.00
12.07	1	59.46	0.00	0.00	0.00
12.11	2	87.27	0.00	0.00	0.00
13.03	2	81.40	0.00	0.00	0.00
13.08	2	96.66	0.00	0.00	0.00
13.12	1	57.08	0.00	0.00	0.00
15.05	2	75.54	0.00	0.00	0.00
15.09	2	92.90	0.00	0.00	0.00
16.01	1	65.67	0.00	0.00	0.00
16.06	3	112.45	0.00	0.00	0.00
16.10	2	85.00	0.00	0.00	0.00
17.02	1	59.87	0.00	0.00	0.00
17.07	1	59.45	0.00	0.00	0.00
17.11	2	87.22	0.00	0.00	0.00
18.03	2	81.49	0.00	0.00	0.00
18.08	2	96.74	0.00	0.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
18.09	2	92.87	0.00	0.00	0.00
19.01	1	131.10	0.00	0.00	0.00
20.02	1	143.90	0.00	0.00	0.00
20.07	2	198.30	0.00	0.00	0.00
7.02	2	66.67	0.00	0.00	0.00
7.07	2	96.71	0.00	0.00	0.00
7.11	1	49.56	0.00	0.00	0.00
8.05	3	112.62	0.00	0.00	0.00
8.09	2	85.12	0.00	0.00	0.00
9.02	1	60.29	0.00	0.00	0.00
9.07	1	59.46	0.00	0.00	0.00
9.11	2	87.09	0.00	0.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
18.10	2	84.68	0.00	0.00	0.00
19.02	1	143.80	0.00	0.00	0.00
20.03	2	221.40	0.00	0.00	0.00
20.08	2	169.19	0.00	0.00	0.00
7.03	1	55.45	0.00	0.00	0.00
7.08	2	93.05	0.00	0.00	0.00
8.01	3	100.18	0.00	0.00	0.00
8.06	1	59.40	0.00	0.00	0.00
8.10	1	61.94	0.00	0.00	0.00
9.03	2	80.97	0.00	0.00	0.00
9.08	2	96.68	0.00	0.00	0.00
9.12	1	56.90	0.00	0.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
18.11	2	87.04	0.00	0.00	0.00
19.09	2	148.10	0.00	0.00	0.00
20.05	3	148.00	0.00	0.00	0.00
20.09	2	153.30	0.00	0.00	0.00
7.05	3	112.62	0.00	0.00	0.00
7.09	2	85.11	0.00	0.00	0.00
8.02	2	66.63	0.00	0.00	0.00
8.07	2	96.46	0.00	0.00	0.00
8.11	1	49.60	0.00	0.00	0.00
9.05	2	75.53	0.00	0.00	0.00
9.09	2	93.04	0.00	0.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
18.12	1	56.70	0.00	0.00	0.00
20.01	2	130.90	0.00	0.00	0.00
20.06	1	205.00	0.00	0.00	0.00
7.01	3	100.43	0.00	0.00	0.00
7.06	1	59.56	0.00	0.00	0.00
7.10	1	61.62	0.00	0.00	0.00
8.03	1	55.09	0.00	0.00	0.00
8.08	2	92.93	0.00	0.00	0.00
9.01	1	65.50	0.00	0.00	0.00
9.06	3	112.49	0.00	0.00	0.00
9.10	2	85.03	0.00	0.00	0.00

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)
Lift bank (No. 1)	-
Lift bank (No. 4)	-
Lift motor room (No. 2)	7.13
Lift motor room (No. 5)	3.49
Switch room (No. 2)	120.46
Plant or service room (No. 1) Shared	126.8
Other internal common area (No. 2) Stairs	540.99
Lift bank (No. 5)	-

Common area	Floor area (m²)
Lift bank (No. 2)	-
Car park area (No. 1)	2335.06
Lift motor room (No. 3)	3.94
Lift motor room (No. 6)	7.36
Garbage room (No. 1 Shared)	52.67
Plant or service room (No. 2)	492.38
Ground floor lobby type (No. 1)	114.36

Common area	Floor area (m²)
Lift bank (No. 3)	-
Lift motor room (No. 1)	7.79
Lift motor room (No. 4)	63.16
Switch room (No. 1 Shared)	117.38
Garbage room (No. 2)	253.05
Other internal common area (No. 1)	42.11
Hallway/lobby type (No. 1)	2261.38

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 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**
floors above habitable rooms, frame: suspended concrete slab	11143.84	-	-
suspended floor above garage, frame: suspended concrete slab	935.4	fibreglass batts or roll	-
suspended floor above enclosed subfloor, frame: suspended concrete slab	4955.69	fibreglass batts or roll	-
concrete slab on ground, frame:	1597	-	none

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	9386.9253	-	fibreglass batts or roll

Internal wall types			
Internal wall type	**Construction type**	**Area (m2)**	**Insulation**
Internal wall type 1	plasterboard, frame:light steel frame	7942.53	-
Internal wall type 2	200 mm AAC block, frame:light steel frame	9100.49	fibreglass batts or roll

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	**Volume (m^3)**	**Low emissions option**
yes	382.06	-

Ceiling and roof types			
Ceiling and roof type	**Area (m^2)**	**Roof Insulation**	**Ceiling Insulation**
concrete - plasterboard internal, frame: no frame	1202	foil backed blanket	-

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)**
-	3743.5	-	3743.5	-	-	-	-

(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
20.03, 20.05, 20.06, 20.07, 20.08, 20.09	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	5 star	-	not specified	not specified	10	yes	outdoors	no	-	-	-

	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 other dwellings	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	5 star	-	not specified	not specified	-	-	-	-	-	-	-

	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.	✔	✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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".		✔	

	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 or roof	interlocked to light with timer off	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
All dwellings	3-phase airconditioning / EER 3.5 - 4.0	3-phase airconditioning / EER 3.5 - 4.0	3-phase airconditioning / EER 3.5 - 4.0	3-phase airconditioning / EER 3.5 - 4.0	0	yes

	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
20.03, 20.05, 20.06, 20.07, 20.08, 20.09	electric heat pump	multi-speed-8 stars or higher	yes	-	-	induction cooktop & electric oven	4.5 star	7.5 star	no	no
All other dwellings	-	-	-	-	-	induction cooktop & electric oven	4.5 star	7.5 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.	✔	✔	✔

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
10.01	1.80	12.50	14.300
10.03	8.70	6.20	14.900
10.05	0.70	5.90	6.600
10.08	28.20	7.50	35.700
10.09	18.40	13.20	31.600
10.10	19.80	10.10	29.900
10.11	27.10	8.80	35.900
10.12	9.20	9.50	18.700
11.02	3.90	7.40	11.300
11.03	8.90	6.20	15.100
11.05	0.80	6.30	7.100
11.06	2.40	10.90	13.300
11.08	28.50	7.70	36.200
11.09	17.90	13.40	31.300
11.10	20.40	9.60	30.000
11.11	27.40	8.70	36.100
11.12	9.30	9.30	18.600
12.03	8.90	6.10	15.000
12.05	0.80	5.90	6.700
12.06	2.40	10.80	13.200
12.07	6.40	7.40	13.800
12.08	28.60	7.70	36.300
12.09	18.20	13.10	31.300

	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)
12.10	20.20	9.70	29.900
12.11	27.60	8.70	36.300
12.12	9.40	9.40	18.800
13.01	1.90	12.50	14.400
13.03	9.80	5.60	15.400
13.06	4.00	9.70	13.700
13.07	7.90	9.20	17.100
13.08	29.80	7.50	37.300
13.09	23.90	12.20	36.100
13.10	24.30	7.40	31.700
13.11	29.50	8.10	37.600
13.12	4.70	8.00	12.700
15.01	2.40	13.80	16.200
15.02	3.50	7.10	10.600
15.03	9.90	5.80	15.700
15.06	4.00	9.50	13.500
15.07	8.00	9.30	17.300
15.08	30.00	7.30	37.300
15.09	24.10	12.30	36.400
15.10	24.40	7.50	31.900
15.11	29.60	7.90	37.500
15.12	4.50	7.80	12.300
16.01	2.50	13.70	16.200
16.02	3.50	7.30	10.800
16.03	6.60	5.30	11.900
16.05	5.70	11.40	17.100
16.06	0.60	8.00	8.600
16.07	12.80	4.70	17.500
16.08	8.50	9.90	18.400
16.09	25.80	10.00	35.800
16.10	20.30	13.30	33.600

	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)
16.11	32.40	5.00	37.400
16.12	30.40	6.90	37.300
17.01	15.00	7.30	22.300
17.02	13.90	5.20	19.100
17.03	12.00	8.70	20.700
17.05	5.60	12.20	17.800
17.06	6.30	6.00	12.300
17.07	26.20	5.10	31.300
17.08	10.60	14.50	25.100
17.09	20.00	7.80	27.800
17.10	24.20	7.30	31.500
17.11	9.50	17.00	26.500
17.12	5.50	5.60	11.100
18.01	7.30	17.70	25.000
18.02	6.60	10.30	16.900
18.03	3.50	14.00	17.500
18.05	4.50	6.80	11.300
18.06	18.40	6.00	24.400
18.07	7.30	16.20	23.500
18.08	13.70	9.10	22.800
18.09	17.30	8.30	25.600
18.10	7.60	17.80	25.400
18.11	3.10	6.20	9.300
18.12	5.00	20.00	25.000
19.01	8.60	6.50	15.100
19.02	0.70	6.20	6.900
19.09	2.20	11.10	13.300
20.02	3.70	7.60	11.300
20.03	6.50	7.60	14.100
20.05	27.00	7.50	34.500
20.06	18.90	14.40	33.300

	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)
20.07	21.70	10.20	31.900
20.08	26.00	9.20	35.200
20.09	8.70	10.00	18.700
7.01	8.6	6.6	15.200
7.02	0.80	6.20	7.000
7.06	27.30	7.50	34.800
7.07	19.30	14.30	33.600
7.08	22.00	10.20	32.200
7.09	26.30	9.10	35.400
7.10	8.80	9.70	18.500
7.11	1.70	12.50	14.200
8.01	3.60	7.80	11.400
8.02	8.70	6.40	15.100
8.03	0.80	6.10	6.900
8.07	27.60	7.50	35.100
8.08	19.60	14.20	33.800
8.09	21.30	10.20	31.500
8.10	26.60	9.00	35.600
8.11	8.90	9.70	18.600
9.03	8.60	6.10	14.700
9.05	0.80	6.00	6.800
9.07	6.30	7.50	13.800
9.08	27.90	7.50	35.400
9.09	20.00	13.50	33.500
9.10	19.50	10.00	29.500
9.11	26.90	8.90	35.800
9.12	9.00	9.70	18.700
10.02, 13.02	3.90	7.50	11.400
10.06, 9.06	2.20	10.70	12.900
10.07, 11.07	6.40	7.50	13.900
11.01, 12.01	1.90	12.40	14.300

	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)**
12.02, 9.02	3.80	7.60	11.400
13.05, 15.05	1.30	6.40	7.700
20.01, 9.01	1.70	12.40	14.100
7.03, 8.05	2.20	10.90	13.100
All other dwellings	6.70	7.60	14.300

(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	no common facility	no common facility	no common facility	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Swimming pool (No. 1)	Volume: 50 kLs	Location: Building1 Pool shaded: yes	-
Spa (No. 1)	Volume: 10 kLs	Location: Building1 Spa shaded: yes Spa cover: yes	-
Central water tank - rainwater or stormwater (No. 1)	15000	To collect run-off from at least: - 550 square metres of roof area of buildings in the development - 0.00 square metres of impervious area in the development - 0.00 square metres of garden/lawn area in the development - 0.00 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 1040.92 square metres of common landscaped area on the site - car washing in 4 car washing bays on the site

Central systems	Size	Configuration	Connection (to allow for...)
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

(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
Lift bank (No. 1)	-	-	light-emitting diode	connected to lift call button	no
Lift bank (No. 2)	-	-	light-emitting diode	connected to lift call button	no
Lift bank (No. 3)	-	-	light-emitting diode	connected to lift call button	no
Lift bank (No. 4)	-	-	light-emitting diode	connected to lift call button	no
Car park area (No. 1)	ventilation (supply + exhaust)	carbon monoxide monitor + 2-speed fan	light-emitting diode	zoned switching with motion sensor	no
Lift motor room (No. 1)	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Lift motor room (No. 2)	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Lift motor room (No. 3)	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Lift motor room (No. 4)	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Lift motor room (No. 5)	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Lift motor room (No. 6)	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Switch room (No. 1 Shared)	ventilation supply only	thermostatically controlled	light-emitting diode	manual on / manual off	no
Switch room (No. 2)	ventilation supply only	thermostatically controlled	light-emitting diode	manual on / manual off	no
Garbage room (No. 1 Shared)	ventilation exhaust only	-	light-emitting diode	manual on / manual off	no
Garbage room (No. 2)	ventilation exhaust only	-	light-emitting diode	manual on / manual off	no

	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**
Plant or service room (No. 1) Shared	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Plant or service room (No. 2)	ventilation exhaust only	interlocked to light	light-emitting diode	manual on / manual off	no
Other internal common area (No. 1)	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	motion sensors	no
Other internal common area (No. 2) Stairs	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	motion sensors	no
Ground floor lobby type (No. 1)	air conditioning system	time clock or BMS controlled	light-emitting diode	motion sensors	no
Hallway/lobby type (No. 1)	air conditioning system	time clock or BMS controlled	light-emitting diode	motion sensors	no
Lift bank (No. 5)	-	-	light-emitting diode	connected to lift call button	no

Central energy systems	Type	Specification
Swimming pool (No. 1)	Heating source: electric heat pump	Pump controlled by timer: yes
Spa (No. 1)	Heating system: electric heat pump	Pump controlled by timer: yes
Lift bank (No. 1)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 2 number of levels from the bottom of the lift shaft to the top of the lift shaft: 2 number of lifts: 1 lift load capacity: <1001 kg
Lift bank (No. 2)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 18 number of levels from the bottom of the lift shaft to the top of the lift shaft: 20 number of lifts: 1 lift load capacity: <1001 kg
Lift bank (No. 3)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 17 number of levels from the bottom of the lift shaft to the top of the lift shaft: 20 number of lifts: 1 lift load capacity: <1001 kg
Lift bank (No. 4)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 2 number of levels from the bottom of the lift shaft to the top of the lift shaft: 3 number of lifts: 1 lift load capacity: >1500kg

Central energy systems	Type	Specification
Lift bank (No. 5)	gearless traction with V V V F motor and regenerative drive	Number of levels (including basement): 2 number of levels from the bottom of the lift shaft to the top of the lift shaft: 2 number of lifts: 1 lift load capacity: <1001 kg
Central hot water system (No. 1)	electric heat pump – air sourced	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm) (c) Unit Efficiency: 3.5 < COP <= 4.0

2. 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	no common facility	no common facility	no common facility	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): 60 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).

Appendix C – NaTHERS Group Certificate

Nationwide House Energy Rating Scheme®
Class 2 Summary
NatHERS® Certificate No. #HR-2IKGOL-01

Generated on 10 Sep 2024 using Hero 4.1

Property

Address	477 Pacific Highway, Sydney, NSW, 2065
Lot/DP	
NatHERS climate zone	56 - Mascot AMO

Accredited assessor

Name	Juhi Banerji
Business name	Stantec
Email	juhi.banerji@stantec.com
Phone	+61 410136876
Accreditation No.	DMN/21/2042
Assessor Accrediting Organisation	DMN

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com.au/pdf/HR-2IKGOL-01. When using either link, ensure you are visiting http://www.hero-software.com.au

National Construction Code (NCC) requirements

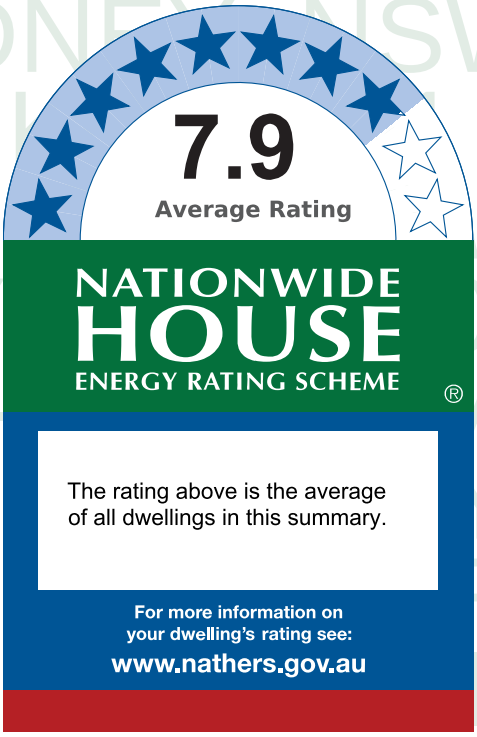
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two.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



NCC heating and cooling maximum loads MJ/m².yr

Limits taken from ABCB Standard 2022

	Heating	Cooling
Average load	12.7	9.1
Maximum load	32.4	17.7
Average limit	29.7	21.2
Maximum limit	32.9	20.4

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate or not completed for all dwellings.

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-ILQPG7-01	10.01	8.6 (33)	6.6 (20)	15.2	8.6	n/a
HR-H5TQP1-01	10.02	0.8 (33)	6.2 (20)	7.0	9.8	n/a
HR-05UT4O-01	10.03	2.2 (33)	10.9 (20)	13.1	8.9	n/a

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-1PY9FI-01	10.05	6.7 (33)	7.6 (20)	14.3	8.7	n/a
HR-V6BJX0-01	10.06	27.3 (33)	7.5 (20)	34.8	6.4	n/a
HR-OL1BKU-01	10.07	19.3 (33)	14.3 (20)	33.7	6.5	n/a
HR-XCPEKR-01	10.08	22.0 (33)	10.2 (20)	32.2	6.7	n/a
HR-SJ9YO4-01	10.09	26.3 (33)	9.1 (20)	35.4	6.3	n/a
HR-EMW2IZ-01	10.10	8.8 (33)	9.7 (20)	18.5	8.2	n/a
HR-38GRHA-01	10.11	1.7 (33)	12.5 (20)	14.3	8.7	n/a
HR-K3CI1H-01	10.12	3.6 (33)	7.8 (20)	11.4	9.1	n/a
HR-PGWJUM-01	11.01	8.7 (33)	6.4 (20)	15.1	8.6	n/a
HR-XYNZPJ-01	11.02	0.8 (33)	6.1 (20)	6.9	9.8	n/a
HR-8TIG6P-01	11.03	2.2 (33)	10.9 (20)	13.1	8.9	n/a
HR-AVADVS-01	11.05	6.7 (33)	7.6 (20)	14.3	8.7	n/a
HR-1JDZE9-01	11.06	27.6 (33)	7.5 (20)	35.1	6.4	n/a
HR-4BQD2B-01	11.07	19.6 (33)	14.2 (20)	33.8	6.5	n/a
HR-DC1SN3-01	11.08	21.3 (33)	10.2 (20)	31.5	6.8	n/a
HR-Y8JX62-01	11.09	26.6 (33)	9.0 (20)	35.6	6.3	n/a
HR-SH55AR-01	11.10	8.9 (33)	9.7 (20)	18.5	8.2	n/a
HR-W8ENGF-01	11.11	1.7 (33)	12.4 (20)	14.1	8.7	n/a
HR-H2SD7D-01	11.12	3.8 (33)	7.6 (20)	11.4	9.1	n/a
HR-61DGP3-01	12.01	8.6 (33)	6.1 (20)	14.7	8.7	n/a
HR-BZY59P-01	12.02	0.8 (33)	6.0 (20)	6.7	9.9	n/a
HR-TJFVE9-01	12.03	2.2 (33)	10.7 (20)	12.9	8.9	n/a
HR-R49O4C-01	12.05	6.3 (33)	7.5 (20)	13.8	8.8	n/a
HR-Y3IWOP-01	12.06	27.9 (33)	7.5 (20)	35.4	6.3	n/a
HR-I3H56U-01	12.07	20.0 (33)	13.5 (20)	33.5	6.6	n/a
HR-CDR5VZ-01	12.08	19.5 (33)	10.0 (20)	29.5	7.0	n/a
HR-29861K-01	12.09	26.9 (33)	8.9 (20)	35.7	6.3	n/a
HR-2TXXDD-01	12.10	9.0 (33)	9.7 (20)	18.7	8.2	n/a
HR-8KG6BE-01	12.11	1.8 (33)	12.5 (20)	14.3	8.7	n/a

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-8D5RM4-01	12.12	3.9 (33)	7.5 (20)	11.3	9.1	n/a
HR-JJ9LU4-01	13.01	8.7 (33)	6.2 (20)	14.9	8.6	n/a
HR-MPZB9Z-01	13.02	0.7 (33)	5.9 (20)	6.6	9.9	n/a
HR-WQ9XBM-01	13.03	2.3 (33)	10.8 (20)	13.1	8.9	n/a
HR-1QDEHA-01	13.05	6.4 (33)	7.5 (20)	13.8	8.8	n/a
HR-NFS5WB-01	13.06	28.2 (33)	7.5 (20)	35.7	6.3	n/a
HR-3JXW82-01	13.07	18.4 (33)	13.2 (20)	31.6	6.8	n/a
HR-AVBNXN-01	13.08	19.8 (33)	10.1 (20)	29.9	7.0	n/a
HR-SHENZU-01	13.09	27.1 (33)	8.8 (20)	36.0	6.3	n/a
HR-N3MLOQ-01	13.10	9.2 (33)	9.5 (20)	18.7	8.2	n/a
HR-3Q27UD-01	13.11	1.9 (33)	12.4 (20)	14.3	8.7	n/a
HR-6TPBI9-01	13.12	3.9 (33)	7.4 (20)	11.3	9.1	n/a
HR-CBTV8X-01	15.01	8.9 (33)	6.2 (20)	15.0	8.6	n/a
HR-MXIRQ1-01	15.02	0.8 (33)	6.3 (20)	7.1	9.8	n/a
HR-MMHBC1-01	15.03	2.4 (33)	10.9 (20)	13.2	8.8	n/a
HR-FA7MKY-01	15.05	6.4 (33)	7.5 (20)	13.9	8.8	n/a
HR-ED4UFD-01	15.06	28.5 (33)	7.7 (20)	36.1	6.2	n/a
HR-UBLR72-01	15.07	17.9 (33)	13.4 (20)	31.3	6.8	n/a
HR-W2528I-01	15.08	20.4 (33)	9.6 (20)	30.0	7.0	n/a
HR-2LRV61-01	15.09	27.4 (33)	8.7 (20)	36.2	6.2	n/a
HR-3L3QMG-01	15.10	9.3 (33)	9.3 (20)	18.6	8.2	n/a
HR-UUT9F2-01	15.11	1.9 (33)	12.4 (20)	14.3	8.7	n/a
HR-3W3T2U-01	15.12	3.8 (33)	7.6 (20)	11.4	9.1	n/a
HR-6SKYJQ-01	16.01	8.9 (33)	6.1 (20)	15.0	8.6	n/a
HR-ZJ2QQ8-01	16.02	0.8 (33)	5.9 (20)	6.8	9.9	n/a
HR-Y64UPV-01	16.03	2.4 (33)	10.8 (20)	13.2	8.9	n/a
HR-05ABVN-01	16.05	6.4 (33)	7.4 (20)	13.8	8.8	n/a
HR-4S9QO4-01	16.06	28.6 (33)	7.7 (20)	36.3	6.2	n/a
HR-92IME9-01	16.07	18.2 (33)	13.1 (20)	31.3	6.8	n/a

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-G28BHK-01	16.08	20.2 (33)	9.7 (20)	29.9	7.0	n/a
HR-QARTWF-01	16.09	27.6 (33)	8.7 (20)	36.3	6.2	n/a
HR-10CYYZ-01	16.10	9.4 (33)	9.4 (20)	18.8	8.2	n/a
HR-PCZAMX-01	16.11	1.9 (33)	12.5 (20)	14.4	8.7	n/a
HR-VYZUDQ-01	16.12	3.9 (33)	7.5 (20)	11.4	9.1	n/a
HR-3PZBHC-01	17.01	9.8 (33)	5.6 (20)	15.4	8.6	n/a
HR-RCWH59-01	17.02	1.3 (33)	6.4 (20)	7.7	9.7	n/a
HR-28L1X5-01	17.03	4.0 (33)	9.7 (20)	13.6	8.8	n/a
HR-9LBJMR-01	17.05	7.9 (33)	9.2 (20)	17.2	8.4	n/a
HR-SLYXBV-01	17.06	29.8 (33)	7.5 (20)	37.3	6.1	n/a
HR-FUHQ1G-01	17.07	23.9 (33)	12.2 (20)	36.2	6.2	n/a
HR-DE0J2Z-01	17.08	24.3 (33)	7.4 (20)	31.7	6.8	n/a
HR-CXZHTC-01	17.09	29.5 (33)	8.1 (20)	37.6	6.1	n/a
HR-M7H55A-01	17.10	4.7 (33)	8.0 (20)	12.7	8.9	n/a
HR-N5UVC6-01	17.11	2.4 (33)	13.8 (20)	16.2	8.4	n/a
HR-EGMRFM-01	17.12	3.5 (33)	7.1 (20)	10.7	9.2	n/a
HR-V6VTBX-01	18.01	9.9 (33)	5.8 (20)	15.7	8.5	n/a
HR-ZPCVAR-01	18.02	1.3 (33)	6.4 (20)	7.7	9.7	n/a
HR-YR5NFP-01	18.03	4.0 (33)	9.5 (20)	13.4	8.8	n/a
HR-QIUYG8-01	18.05	8.0 (33)	9.3 (20)	17.3	8.4	n/a
HR-O2XMDJ-01	18.06	30.0 (33)	7.3 (20)	37.2	6.1	n/a
HR-KMIB4N-01	18.07	24.1 (33)	12.3 (20)	36.4	6.2	n/a
HR-MBMHPM-01	18.08	24.4 (33)	7.5 (20)	31.9	6.8	n/a
HR-5VZ5ZQ-01	18.09	29.6 (33)	7.9 (20)	37.6	6.1	n/a
HR-ESDN3G-01	18.10	4.5 (33)	7.8 (20)	12.4	8.9	n/a
HR-RGD3OS-01	18.11	2.5 (33)	13.7 (20)	16.2	8.4	n/a
HR-RBVODY-01	18.12	3.5 (33)	7.3 (20)	10.9	9.2	n/a
HR-KCV5RW-01	19.01	6.6 (33)	5.3 (20)	11.8	9.0	n/a
HR-QHCSHP-01	19.02	5.7 (33)	11.4 (20)	17.1	8.4	n/a

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-ZPNIWG-01	19.09	0.6 (33)	8.0 (20)	8.6	9.6	n/a
HR-F0JEFG-01	20.01	12.8 (33)	4.7 (20)	17.5	8.4	n/a
HR-BAIIU5-01	20.02	8.5 (33)	9.9 (20)	18.4	8.3	n/a
HR-PZ6UR5-01	20.03	25.8 (33)	10.0 (20)	35.8	6.3	n/a
HR-9NRJJ4-01	20.05	20.3 (33)	13.3 (20)	33.6	6.5	n/a
HR-EPYGKB-01	20.06	32.4 (33)	5.0 (20)	37.4	6.1	n/a
HR-TR2LBZ-01	20.07	30.4 (33)	6.9 (20)	37.3	6.1	n/a
HR-5B6VNP-01	20.08	15.0 (33)	7.3 (20)	22.2	7.8	n/a
HR-TVUINW-01	20.09	13.9 (33)	5.2 (20)	19.2	8.2	n/a
HR-2EYU96-01	7.01	12.0 (33)	8.7 (20)	20.7	8.0	n/a
HR-EESSN4-01	7.02	5.6 (33)	12.2 (20)	17.7	8.3	n/a
HR-Q29D8Y-01	7.03	6.3 (33)	6.0 (20)	12.3	8.9	n/a
HR-YHBLMR-01	7.05	26.2 (33)	5.1 (20)	31.3	6.8	n/a
HR-T067BU-01	7.06	10.6 (33)	14.5 (20)	25.0	7.4	n/a
HR-LXLTYN-01	7.07	20.0 (33)	7.7 (20)	27.7	7.2	n/a
HR-C4D8FV-01	7.08	24.2 (33)	7.3 (20)	31.5	6.8	n/a
HR-SJUKNI-01	7.09	9.5 (33)	17.0 (20)	26.4	7.4	n/a
HR-G9PDTB-01	7.10	5.5 (33)	5.6 (20)	11.1	9.2	n/a
HR-NE7K7N-01	7.11	7.3 (33)	17.7 (20)	25.0	7.5	n/a
HR-LLIU6L-01	8.01	13.7 (33)	8.9 (20)	22.6	7.8	n/a
HR-R6R11V-01	8.02	11.4 (33)	10.8 (20)	22.3	7.8	n/a
HR-P3JAQ0-01	8.03	22.8 (33)	4.8 (20)	27.6	7.2	n/a
HR-60P6PF-01	8.05	26.4 (33)	5.5 (20)	32.0	6.8	n/a
HR-WOA4W2-01	8.06	17.0 (33)	13.5 (20)	30.5	6.9	n/a
HR-0ZFOUS-01	8.07	22.8 (33)	8.1 (20)	30.8	6.9	n/a
HR-S18HXY-01	8.08	26.3 (33)	7.3 (20)	33.6	6.6	n/a
HR-0I3KT7-01	8.09	15.0 (33)	16.8 (20)	31.8	6.8	n/a
HR-7IQRJ6-01	8.10	18.1 (33)	5.6 (20)	23.7	7.7	n/a
HR-TQA4NJ-01	8.11	8.6 (33)	12.4 (20)	21.0	8.0	n/a

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-BK3FQ8-01	9.01	8.6 (33)	6.5 (20)	15.1	8.6	n/a
HR-JGKFHP-01	9.02	0.7 (33)	6.2 (20)	6.9	9.8	n/a
HR-UUZGRS-01	9.03	2.2 (33)	11.1 (20)	13.4	8.8	n/a
HR-G6P8HF-01	9.05	6.5 (33)	7.6 (20)	14.1	8.7	n/a
HR-TZ0MRR-01	9.06	27.0 (33)	7.5 (20)	34.5	6.4	n/a
HR-VSAYAU-01	9.07	18.9 (33)	14.4 (20)	33.4	6.6	n/a
HR-C61S35-01	9.08	21.7 (33)	10.2 (20)	31.9	6.8	n/a
HR-XUACAD-01	9.09	26.0 (33)	9.2 (20)	35.2	6.3	n/a
HR-Z48AWA-01	9.10	8.7 (33)	10.0 (20)	18.7	8.2	n/a
HR-1MKHX6-01	9.11	1.7 (33)	12.4 (20)	14.1	8.7	n/a
HR-LVJU9V-01	9.12	3.7 (33)	7.6 (20)	11.3	9.1	n/a
Averages	130x (Total)	12.7	9.1	21.8	7.9	n/a
Maximum Loads and Minimum Ratings		32.4	17.7	37.6	6.1	n/a

Explanatory notes

About the ratings

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.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the energy loads and societal cost. The thermal performance star rating uses the home's building specifications, 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 societal cost.
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 specified 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 files may be available from the assessor.

Appendix D – Stamped Drawings

W–B
WOODS BAGOT

WB_Publishing_DRAWING LIST

Drawing Number	Sheet Title	
00 GENERAL		
DA-0000	COVER SHEET	A
10 OVERALL ARRANGEMENT		
DA-1101	SITE LOCATION	A
DA-1102	SITE ANALYSIS	A
DA-1103	EXISTING SITE PLAN	A
DA-1104	PROPOSED SITE PLAN	A
DA-1105	DEMARCATION DIAGRAMS	A
DA-1111	CONCEPT APPROVAL BUILDING ENVELOPE	A
DA-1112	CONCEPT APPROVAL BUILDING ENVELOPE	A
DA-1113	DEVELOPMENT ENVELOPE DIAGRAM	A
DA-1121	COMPLIANCE MASSING STUDY - NORTH WEST	A
DA-1122	COMPLIANCE MASSING STUDY - SOUTH EAST	A
20 GENERAL ARRANGEMENT		
DA-2208	B0 PLANT MEZZANINE	A
DA-2209	GROUND LEVEL - HUME STREET	A
DA-2210	LEVEL 01	A
DA-2212	LEVEL 02	A
DA-2215	CARPARK LEVEL 05	A
DA-2216	CARPARK LEVEL 06	A
DA-2217	LEVEL 07	A
DA-2218	LEVEL 08	A
DA-2219	TYPICAL APARTMENT LEVELS - L09-16	A
DA-2228	TYPICAL APARTMENT LEVELS - L17 - 18	A
DA-2229	LOWER PENTHOUSE - L19	A
DA-2230	UPPER PENTHOUSE - L20	A
DA-2231	ROOF TERRACE	A
DA-2232	ROOF PLAN	A
DA-2301	GFA DIAGRAM	A
DA-2303	SOLAR ACCESS	A
DA-2304	CROSS VENTILATION	A
DA-2311	DETAILED PLAN - ADAPTABLE UNIT LAYOUTS	A
DA-2312	DETAILED PLAN - ADAPTABLE UNIT LAYOUTS	A
30 GENERAL ARRANGEMENT: ELEVATIONS AND SECTIONS		
DA-3101	PACIFIC HIGHWAY ELEVATION EXISTING	A
DA-3102	NORTH AND SOUTH ELEVATIONS EXISTING	A
DA-3201	ELEVATIONS	A
DA-3202	ELEVATIONS	A
DA-3206	LONG SECTION	A
DA-3207	SHORT SECTION	A
DA-3208	SHORT SECTION	A
77 SHADOW & SUN EYE		
DA-7701	SHADOW DIAGRAMS 1	A
DA-7702	SHADOW DIAGRAMS 2	A
DA-7703	SHADOW DIAGRAMS 3	A
DA-7704	SHADOW DIAGRAMS 4	A
DA-7705	SHADOW DIAGRAMS 5	A

WB_Publishing_DRAWING LIST

Drawing Number	Sheet Title	
DA-7721	SUN EYE DIAGRAM	A
88 MATERIALITY AND VISUALS		
DA-8801	MATERIALITY	A
DA-8802	COMPUTER GENERATED IMAGES	A
DA-8803	COMPUTER GENERATED IMAGES	A
DA-8804	COMPUTER GENERATED IMAGES	A
DA-8805	COMPUTER GENERATED IMAGES	A

Project

Crows Nest OSD - Site B

Address

477-495 Pacific Highway, Crows Nest

Client

Third.i

Project number

121809

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 2:51:35 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

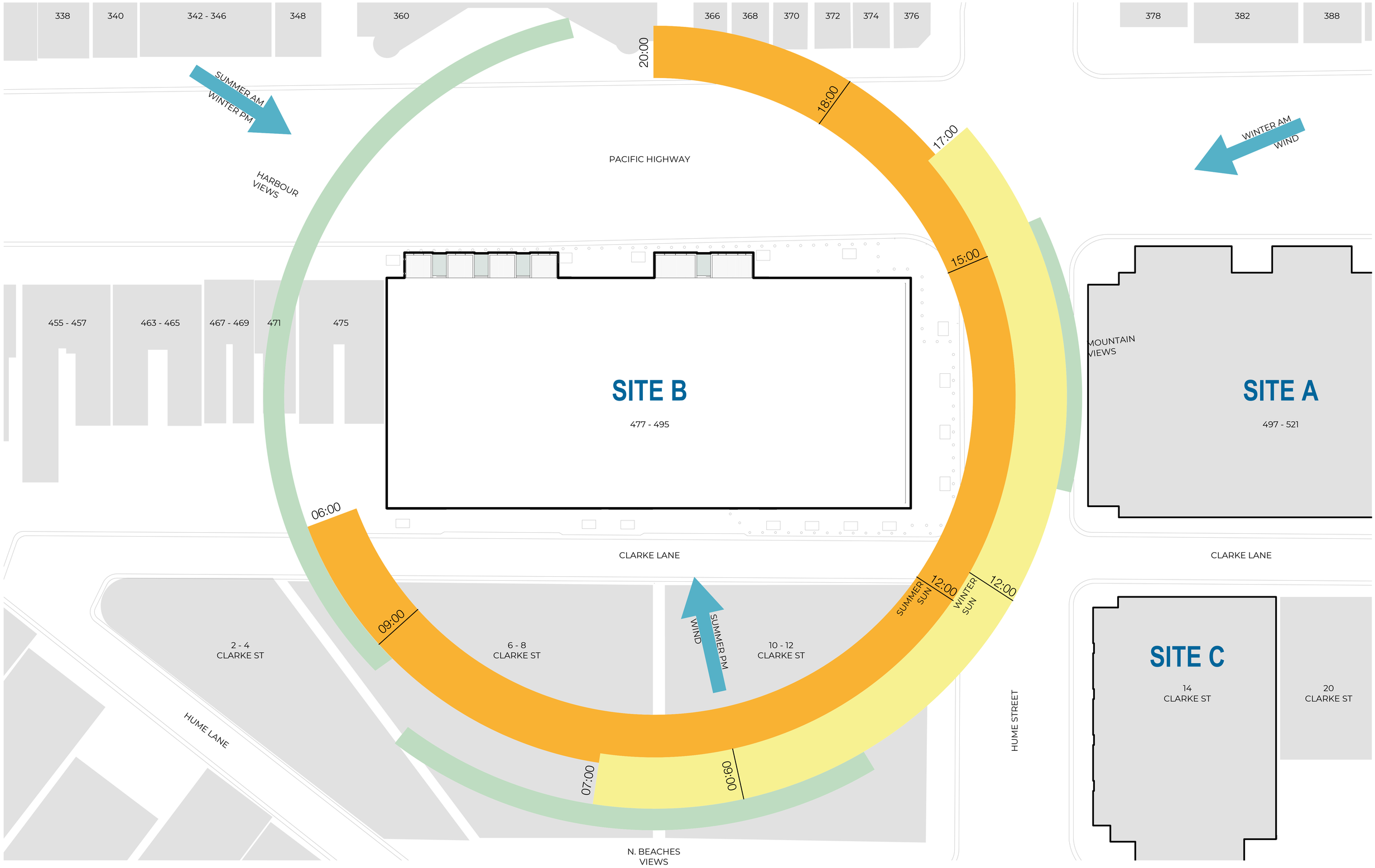
Checked Approved Sheet size Scale
Checker Approver A1 1 : 100

Sheet title
SITE LOCATION

Sheet number
DA-1101

Revision
A

Status



Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Date generated 13/08/2024 2:52:00 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name John Barrett
Accreditation No. DMN/21/2042
Property Address 477 Pacific Highway, Sydney, NSW, 2065
http://www.hero-software.com.au/pdf/HR-2IKGOL-01

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

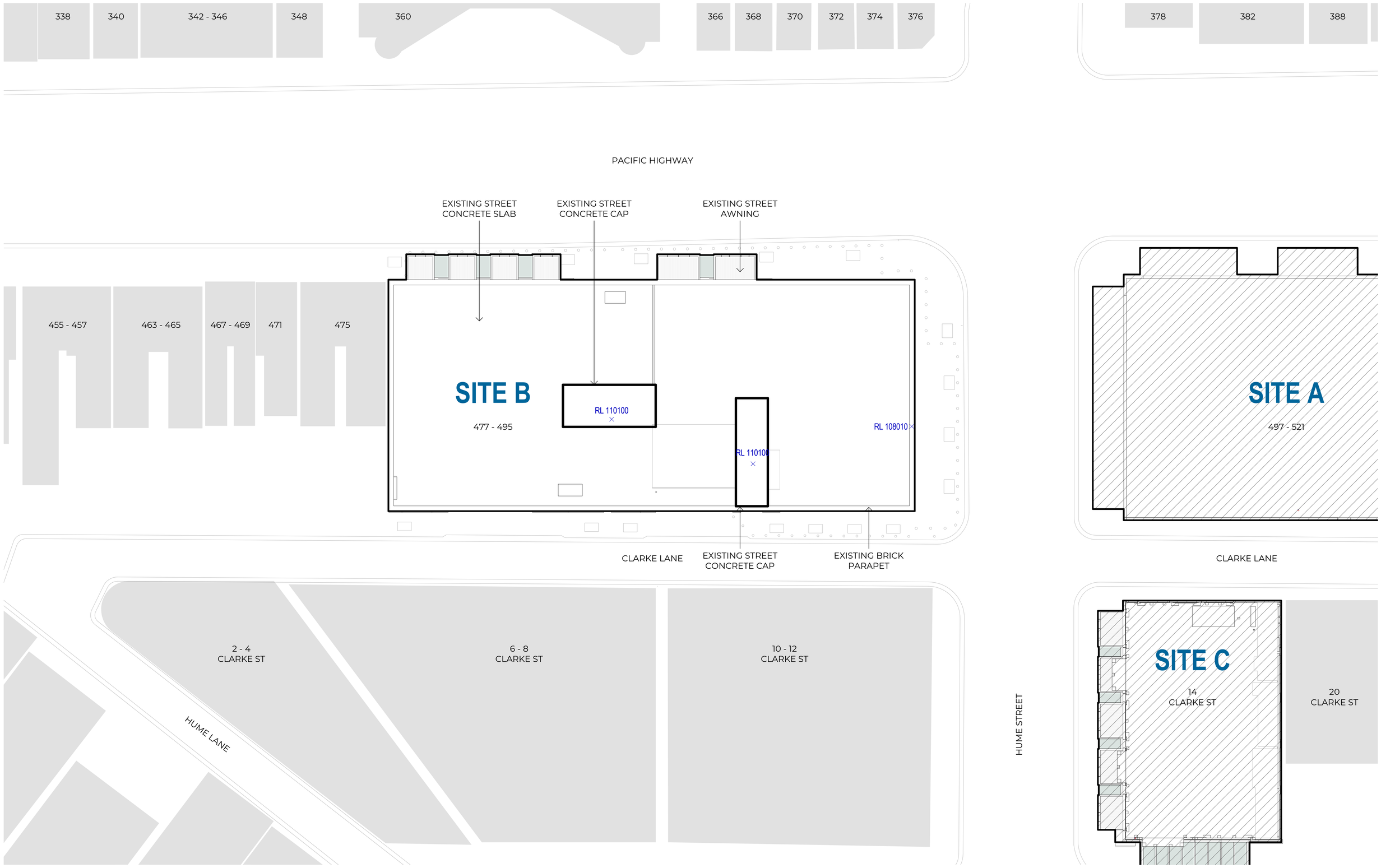
Scale
1 : 200

Sheet title
SITE ANALYSIS

Sheet number
DA-1102

Revision
A

Status



Recent revision history

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Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
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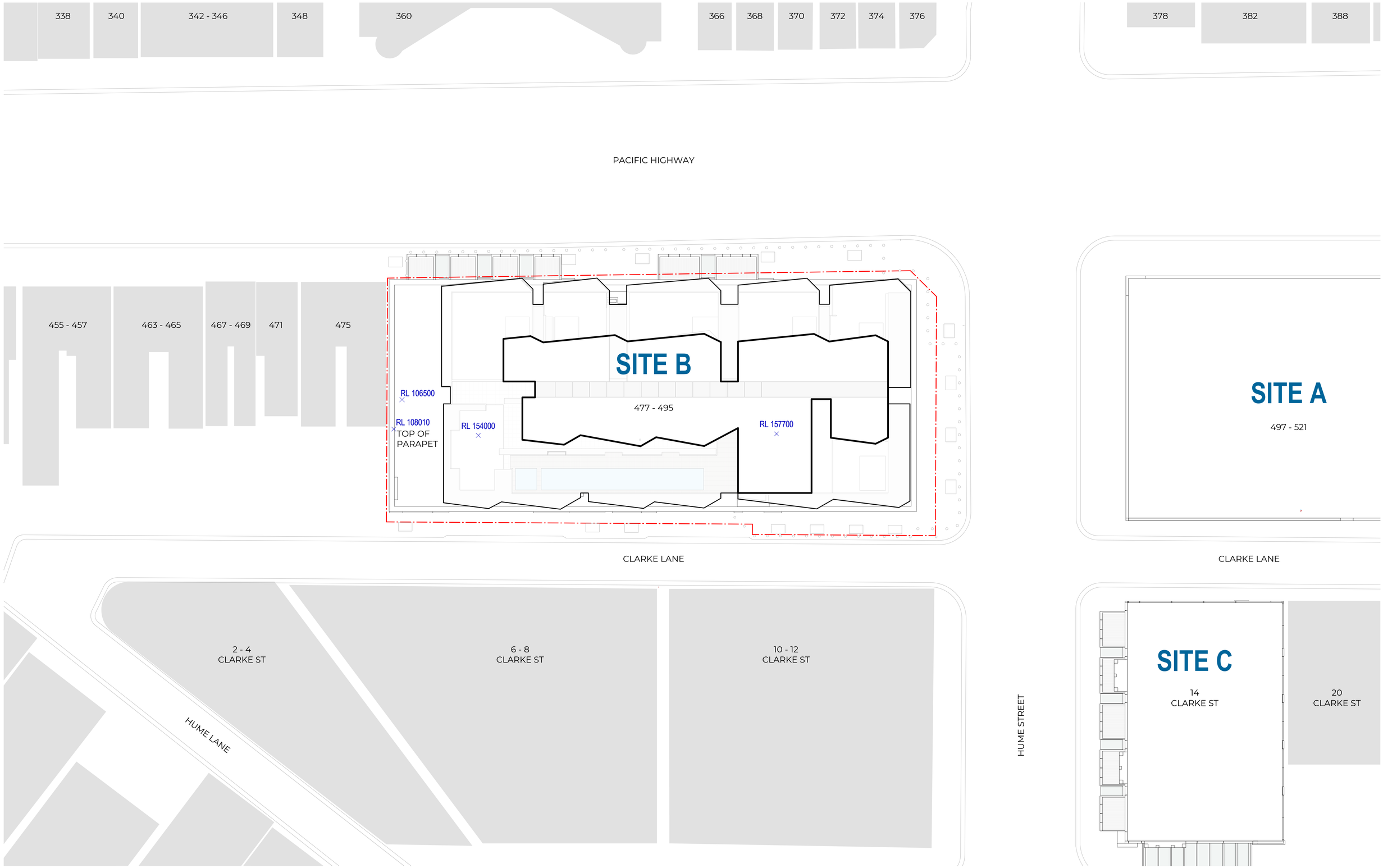
Checked Approved Sheet size Scale
Checker Approver A1 1 : 200

Sheet title
EXISTING SITE PLAN

Sheet number
DA-1103

Revision
A

Status



Recent revision history

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Date generated 13/08/2024 2:52:29 PM Autodesk Docs://121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
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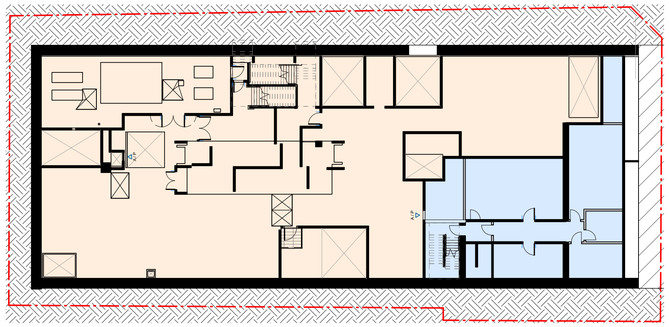
Checked	Approved	Sheet size	Scale
Checker	Approver	A1	As indicated

Sheet title
PROPOSED SITE PLAN

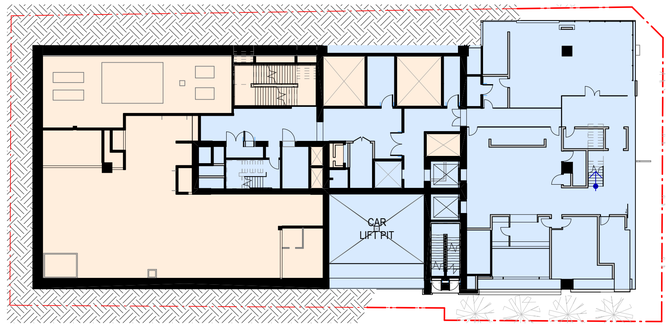
Sheet number
DA-1104

Revision
A

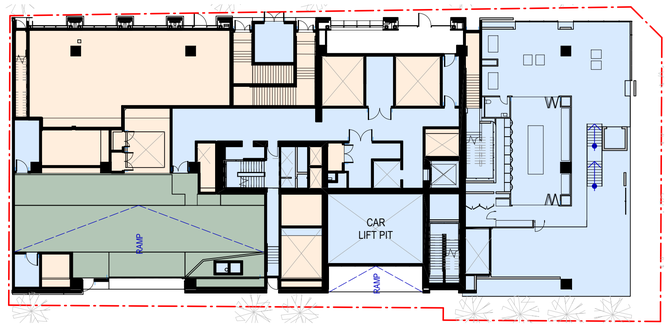
Status



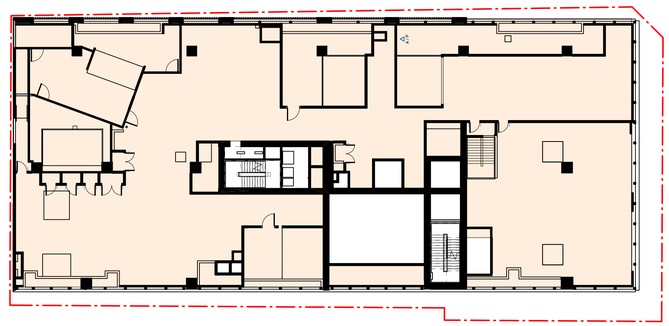
1 B0 PLANT - DEMARCATION PLAN
SCALE 1 : 300



2 GROUND PLAN - DEMARCATION PLAN
SCALE 1 : 300



3 UPPER GROUND - DEMARCATION PLAN
SCALE 1 : 300



4 LEVEL 01 - DEMARCATION PLAN
SCALE 1 : 300

NOTE: INFORMATION TAKEN FROM SYDMEY METRO - CROWS NEST STATION DEMARCATION PLANS MARCH 2021

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

METRO CSSI APPROVED SCOPE
HUME PLACE
SHARED

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

Scale
1 : 300

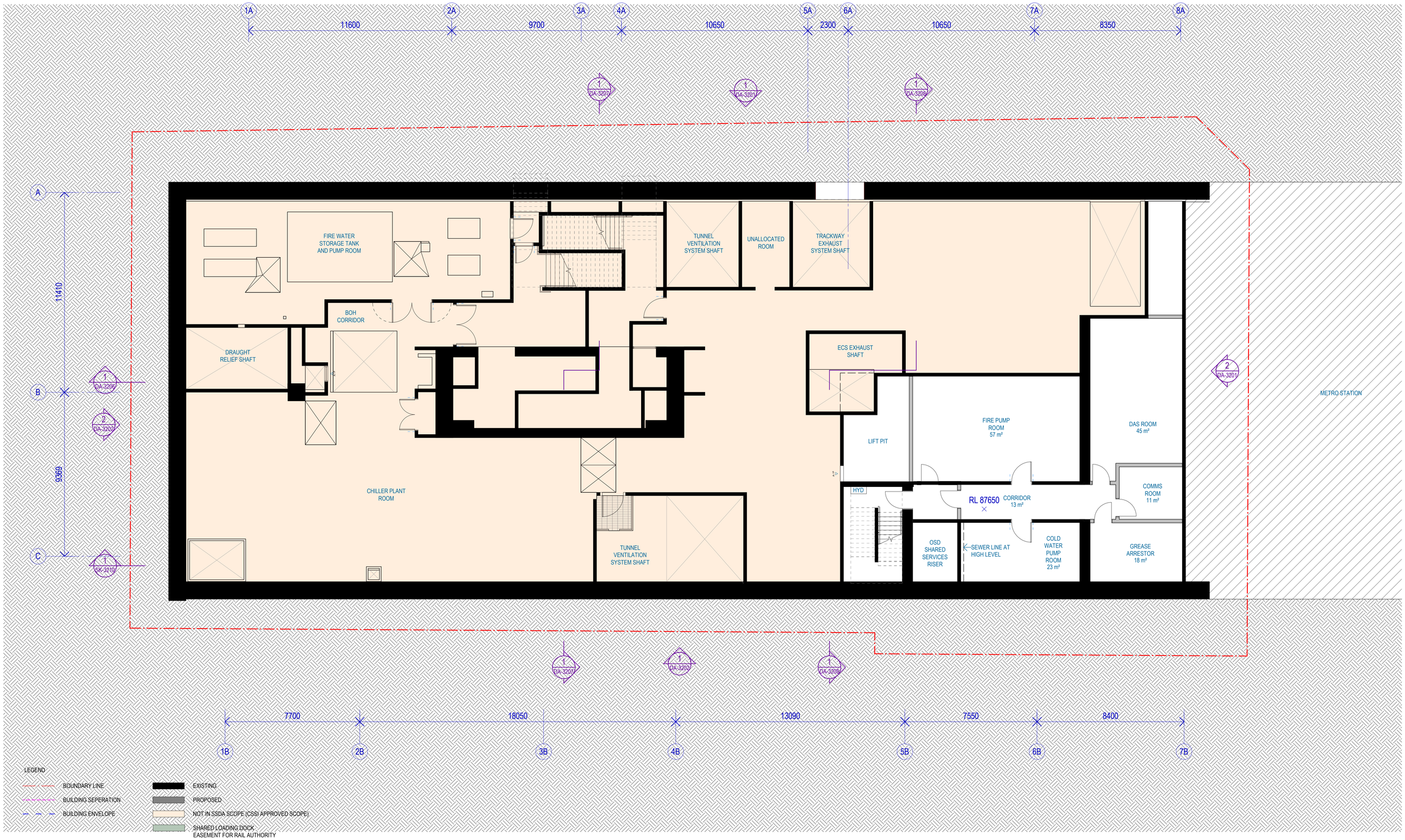
Sheet title
DEMARCATION DIAGRAMS

Sheet number
DA-1105

Revision
A

Status

Date generated 13/08/2024 3:27:06 PM Autodesk Docs://121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt



Recent revision history

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Date generated 13/08/2024 3:18:18 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name John Barnett
Accreditation No. DMN/21/2042
Property Address 477 Pacific Highway, Sydney, NSW, 2065
http://www.hero-software.com.au/p/dl/HR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W—B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

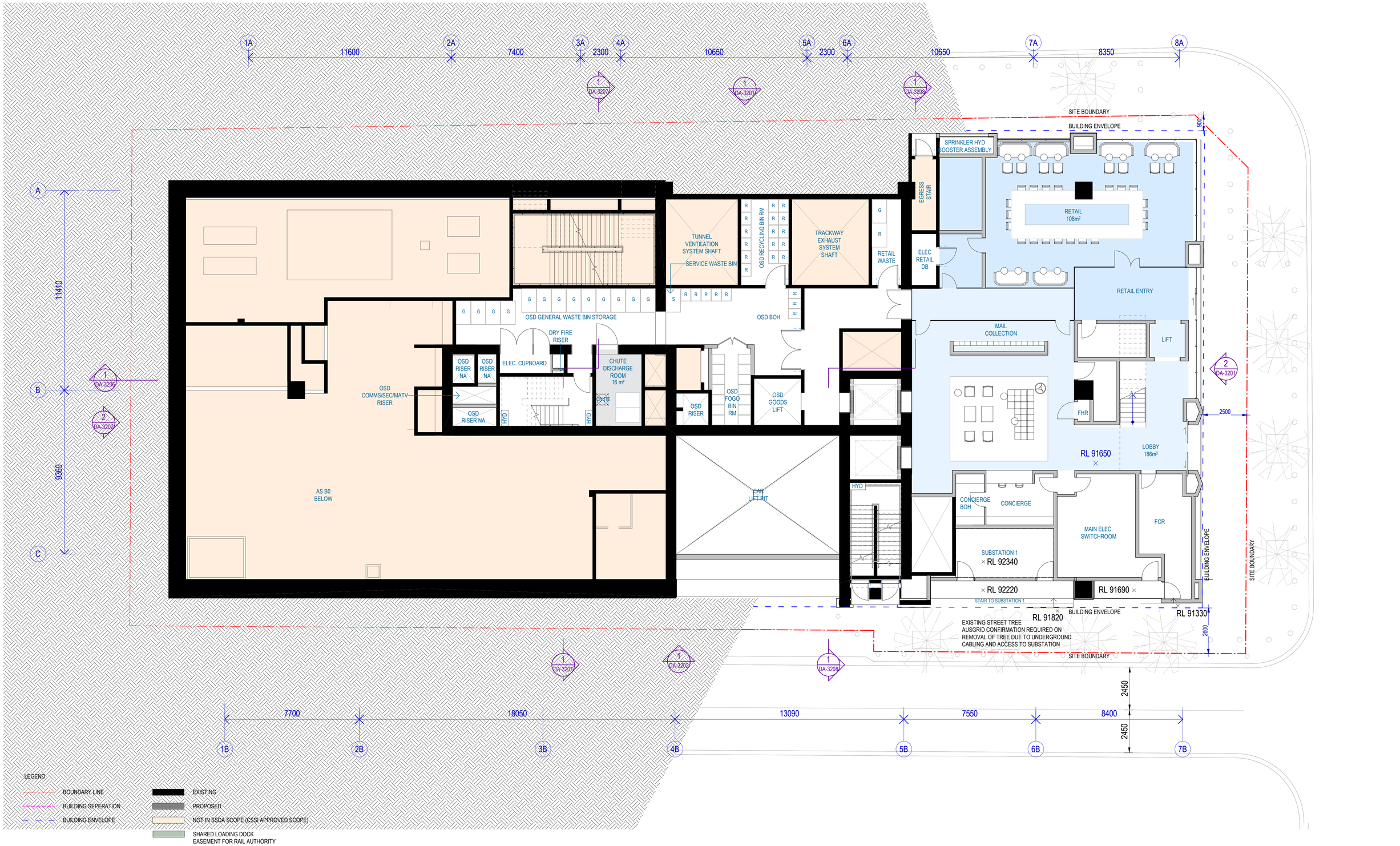
Scale
1 : 100

Sheet title
B0 PLANT MEZZANINE

Sheet number
DA-2208

Revision
A

Status



Recent revision history

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Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name John Barnett
Accreditation No. DMN/21/2042
Property Address 477 Pacific Highway, Sydney, NSW, 2065
http://www.hero-software.com.au/p/dHR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W—B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

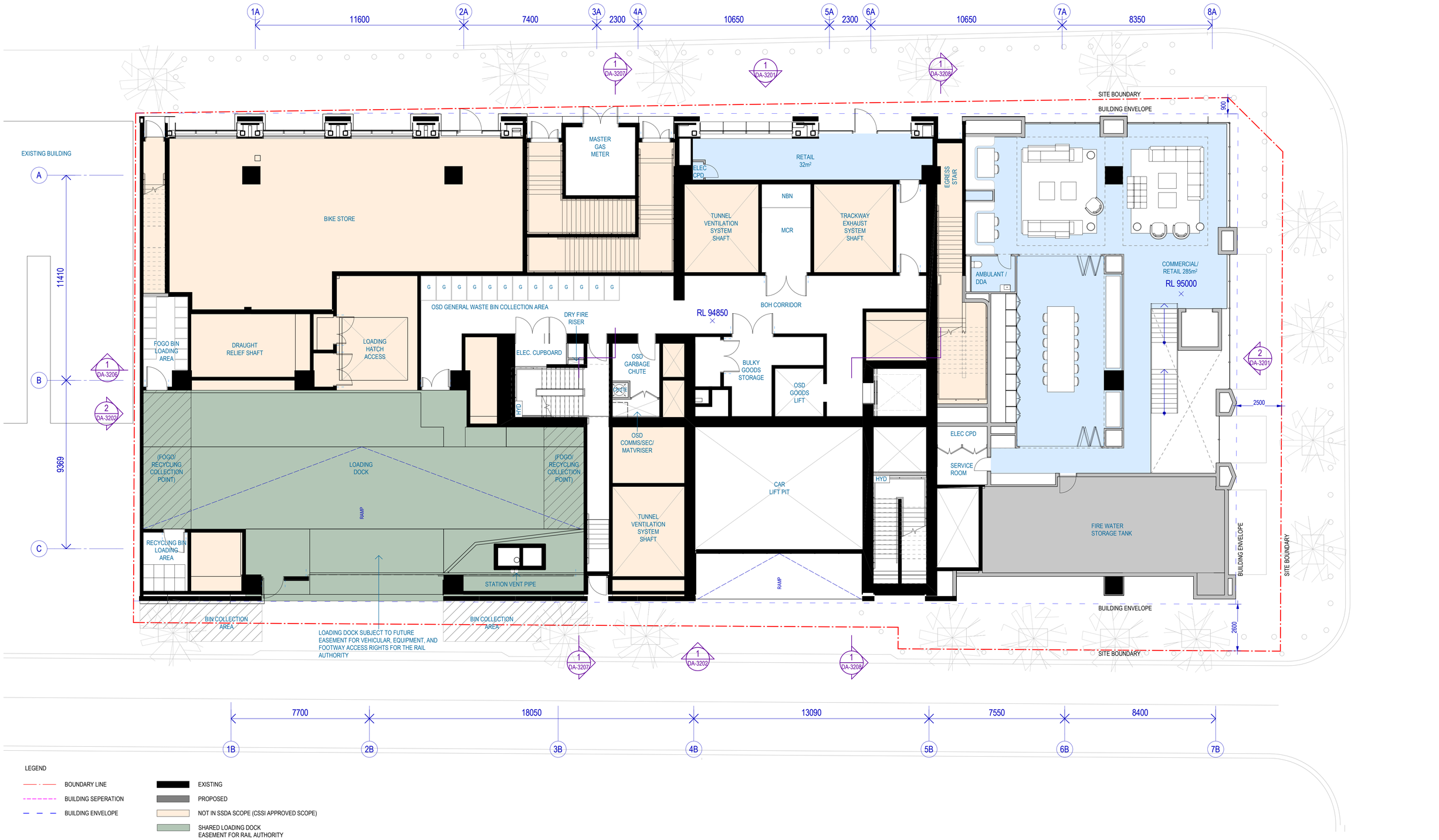
Scale
1 : 100

Sheet title
GROUND LEVEL - HUME STREET

Sheet number
DA-2209

Revision
A

Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Date generated 13/08/2024 3:18:32 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

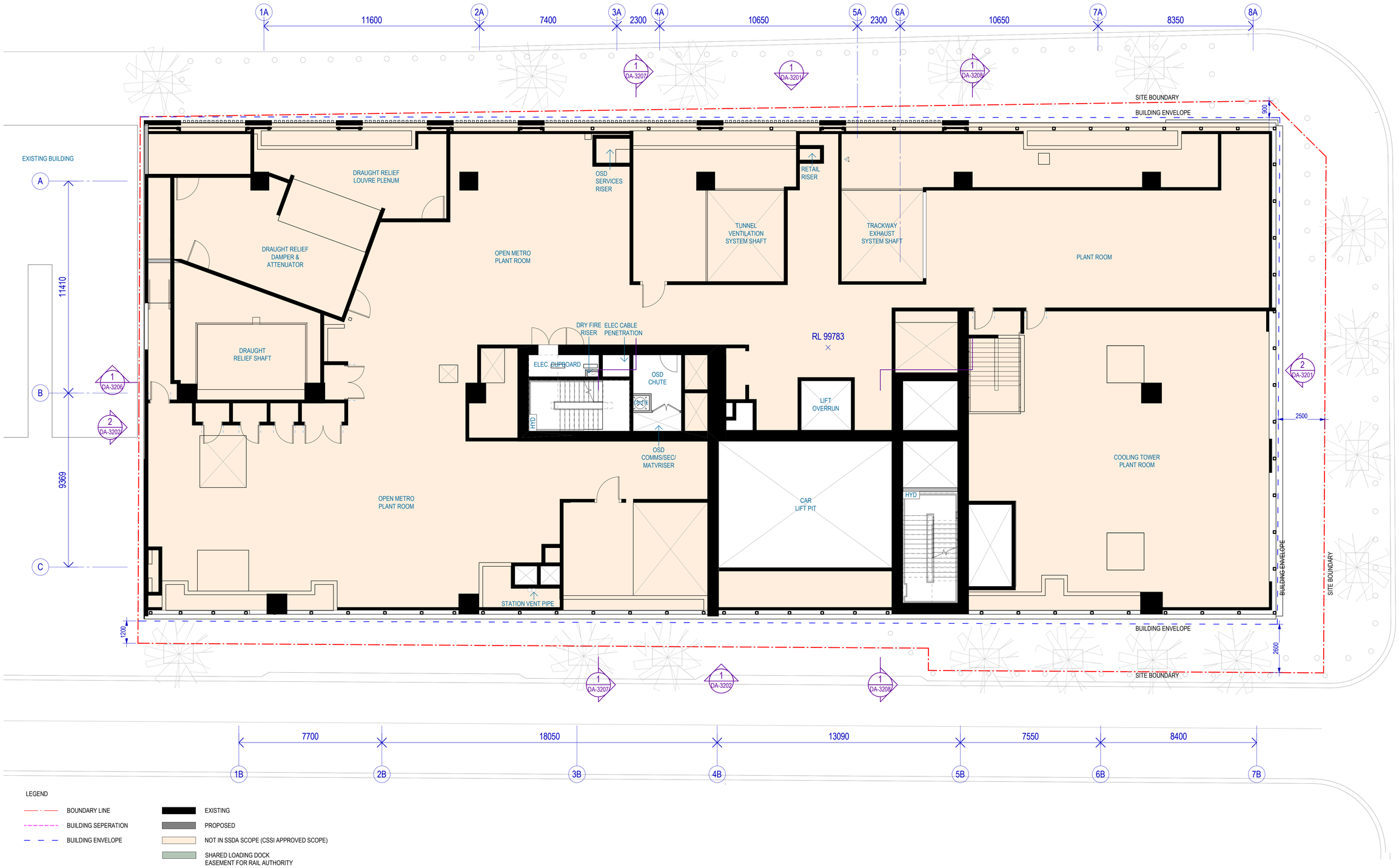
Scale
1 : 100

Sheet title
LEVEL 01

Sheet number
DA-2210

Revision
A

Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK
  EASEMENT FOR RAIL AUTHORITY

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name John Banerji
Accreditation No. DMN/21/2542
Property Address 477 Pacific Highway, Sydney, NSW, 2060
http://www.hero-software.com.au/p/HR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

Scale
1 : 100

Sheet title
LEVEL 02

Sheet number
DA-2212

Revision
A

Status

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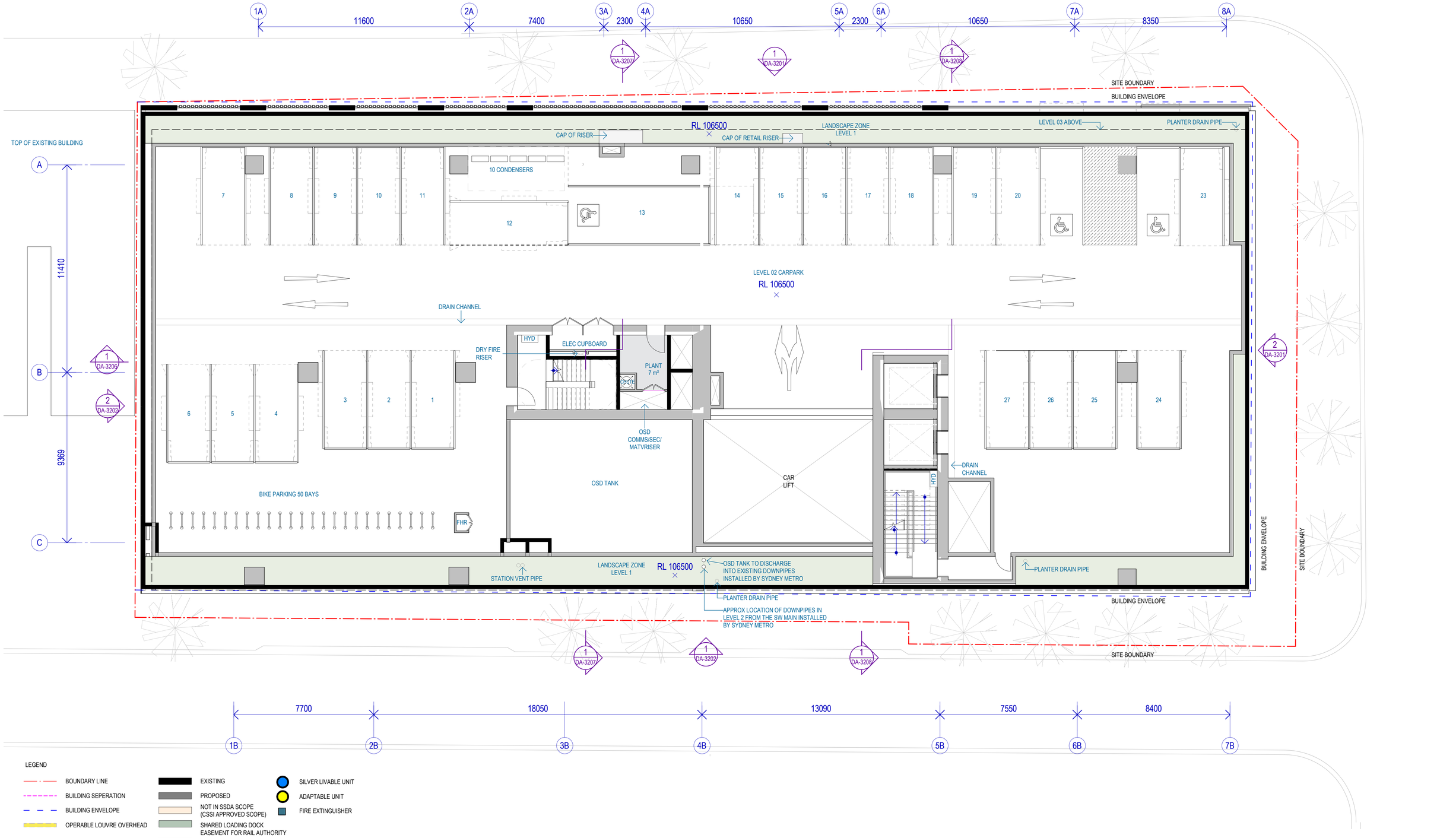


LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Date generated 13/08/2024 3:39:40 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name Juhi Bansal
Accreditation No. DMN/21/2042
Property Address 477 Pacific Highway, Sydney, NSW, 2065
http://www.hero-software.com.au/p/dHR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

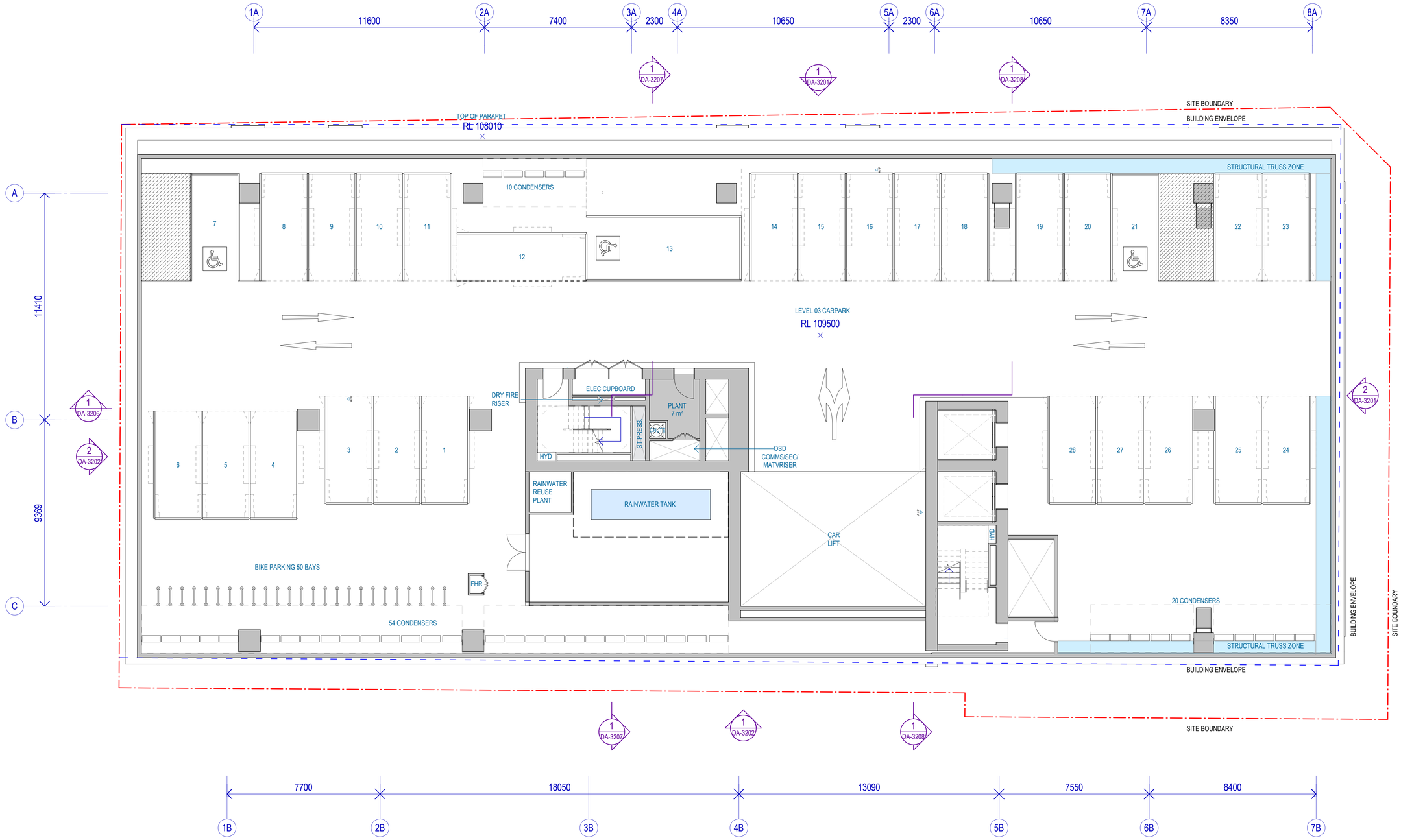
Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number 121809
Size check 25mm
Checked Checker
Approved Approver
Sheet size A1
Scale 1 : 100

Sheet title
CARPARK LEVEL 05

Sheet number DA-2215
Revision A
Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 4:54:38 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

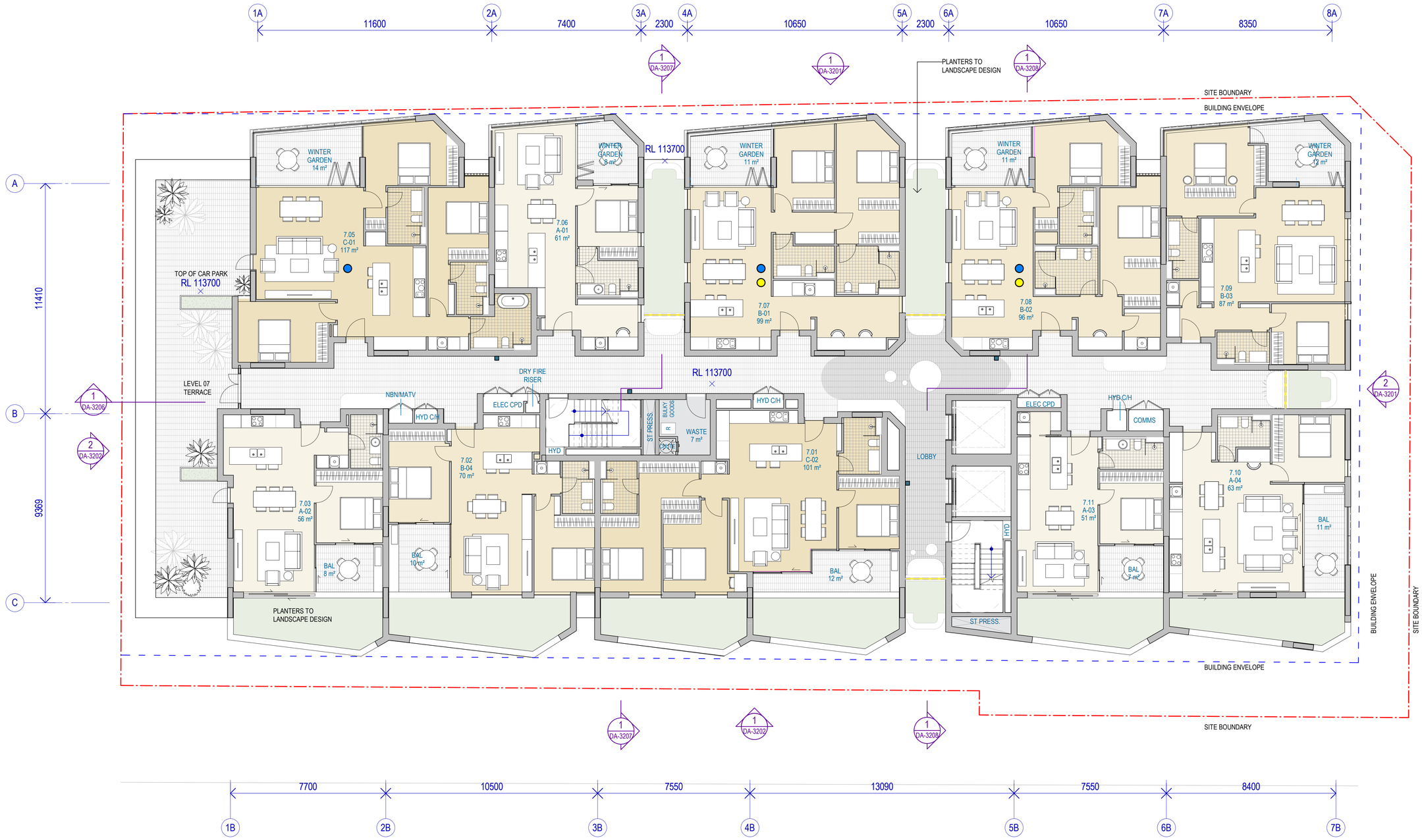
Issuer
W–B WOODS BAGOT

Project number	Size check		
121809	25mm		
Checked	Approved	Sheet size	Scale
Checker	Approver	A1	1 : 100

Sheet title
CARPARK LEVEL 06

Sheet number	Revision
DA-2216	A

Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:19:15 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

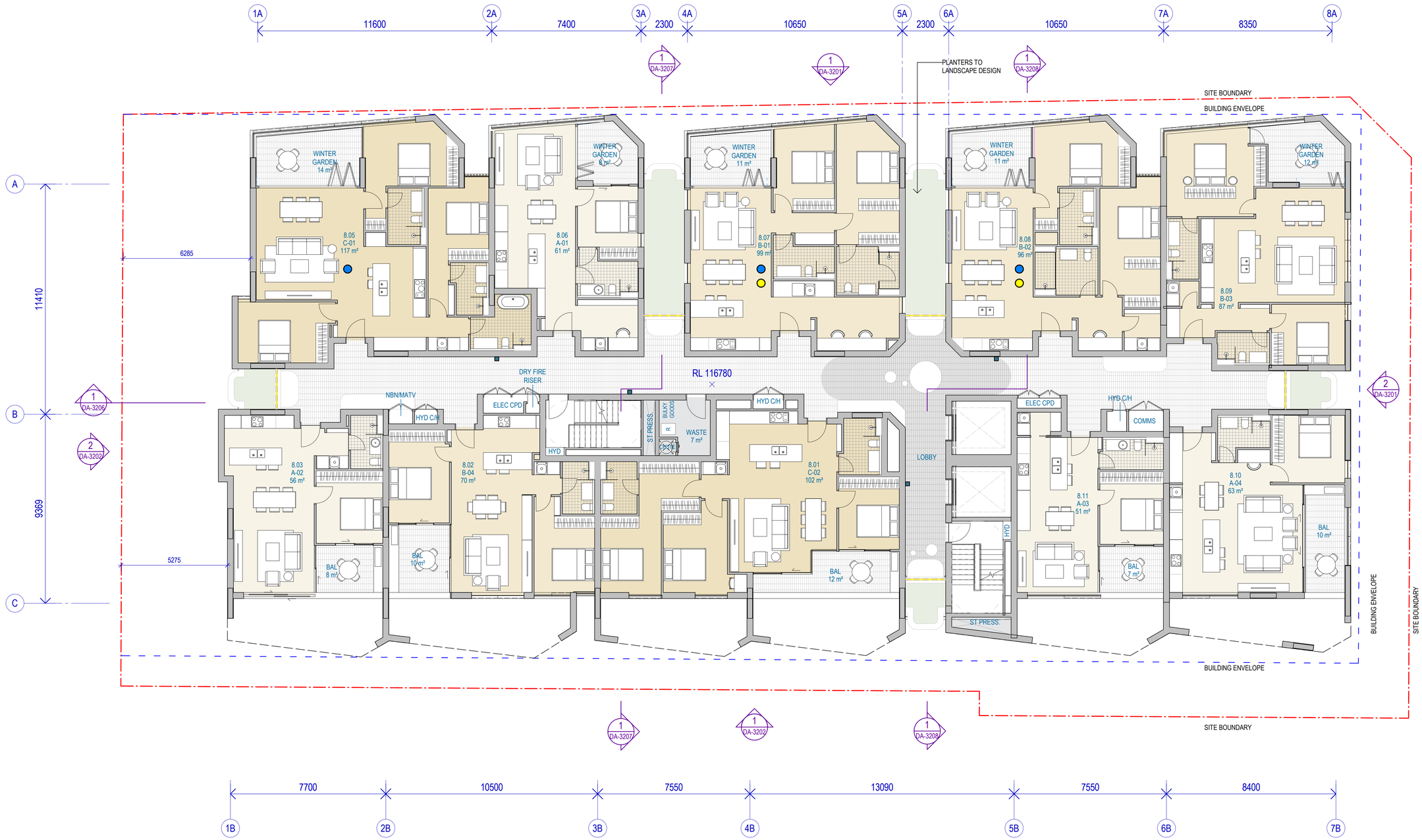
Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number 121809
Size check 25mm
Checked Checker
Approved Approver
Sheet size A1
Scale 1 : 100

Sheet title
LEVEL 07

Sheet number DA-2217
Revision A
Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:28:17 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

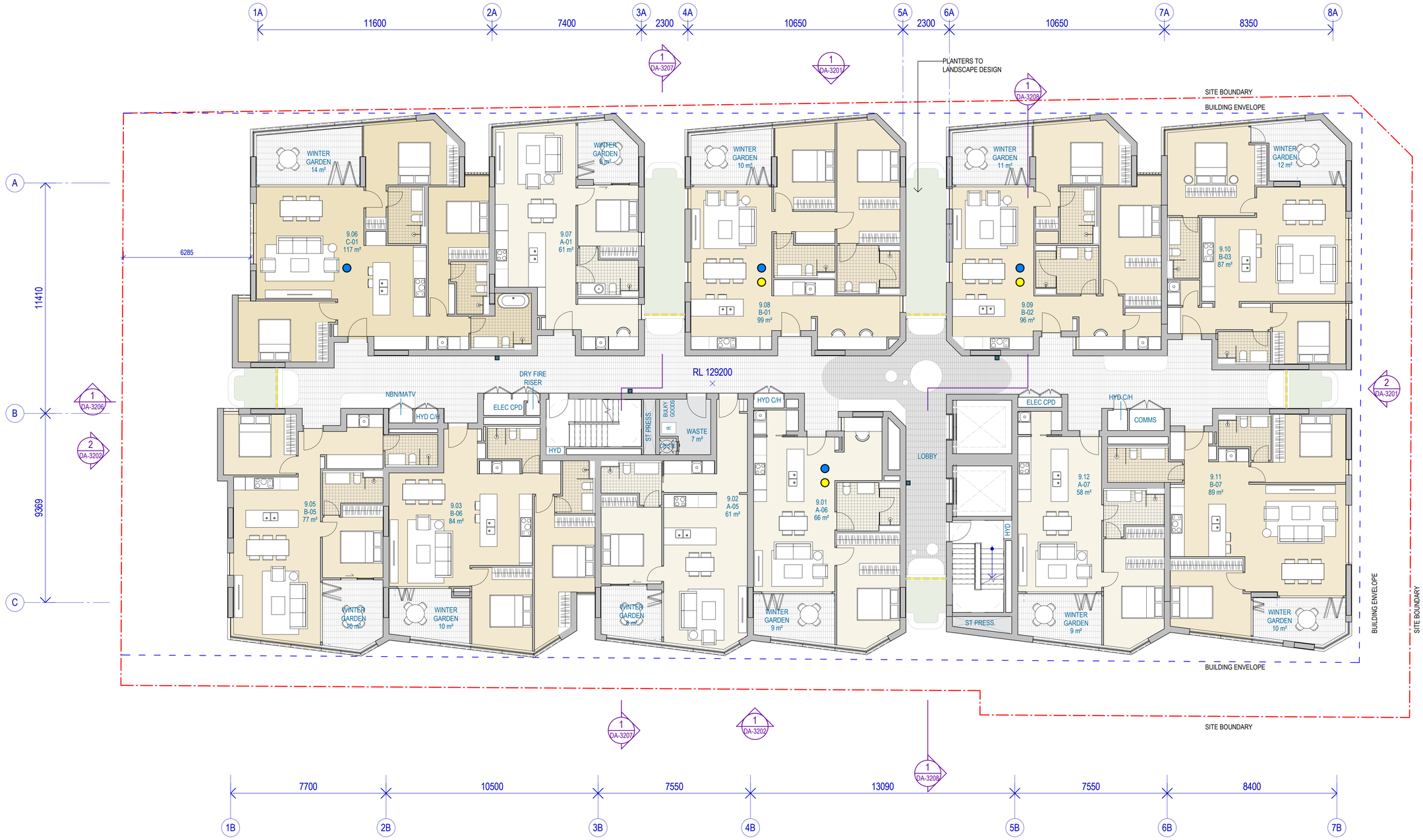
Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number 121809
Size check 25mm
Checked Checker
Approved Approver
Sheet size A1
Scale 1 : 100

Sheet title
LEVEL 08

Sheet number DA-2218
Revision A
Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:19:31 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W—B
WOODS BAGOT

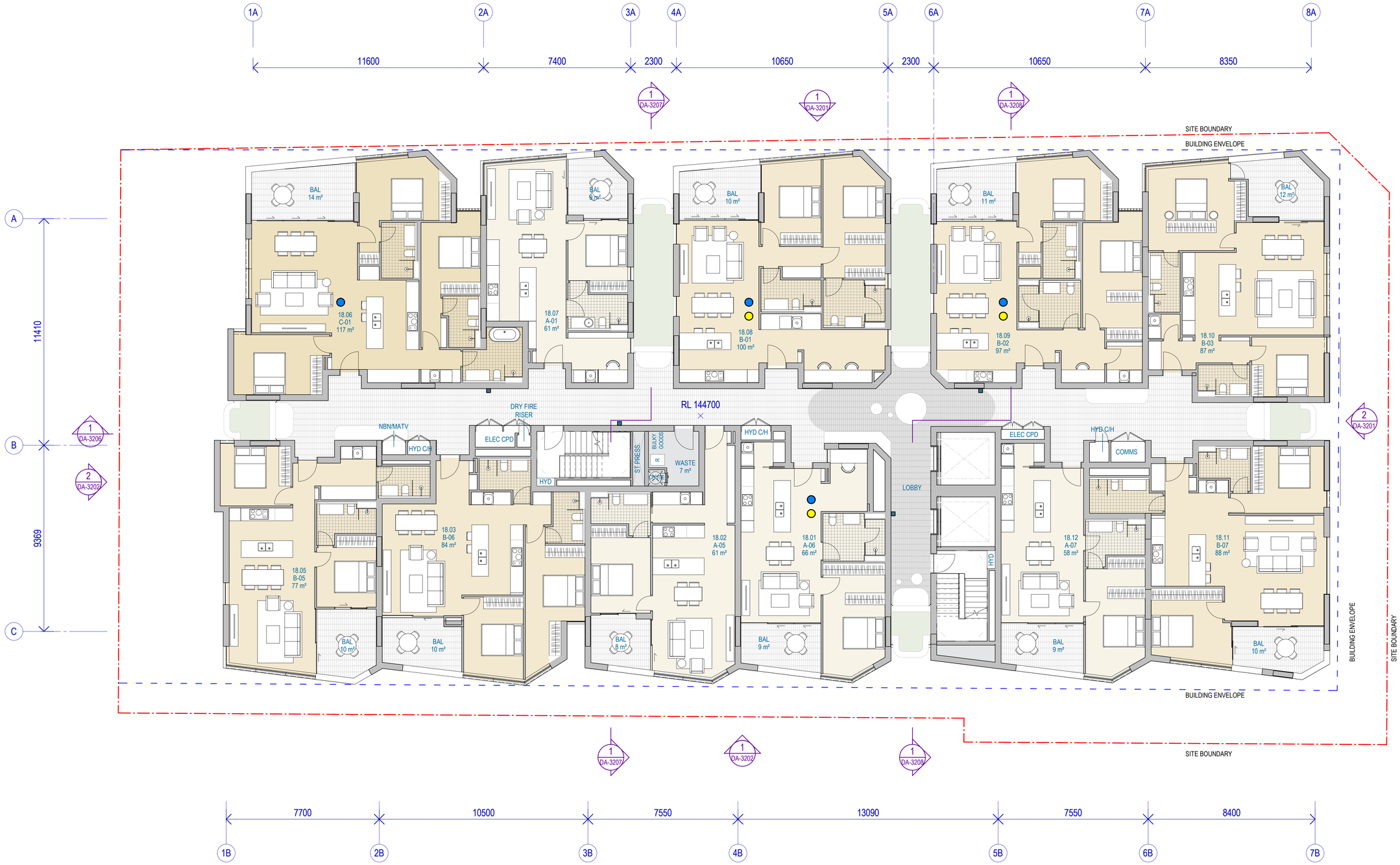
Project number	Size check
121809	25mm

Checked	Approved	Sheet size	Scale
Checker	Approver	A1	1 : 100

Sheet title
TYPICAL APARTMENT LEVELS - L09-16

Sheet number	Revision
DA-2219	A

Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:45:30 PM Autodesk Docs://121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

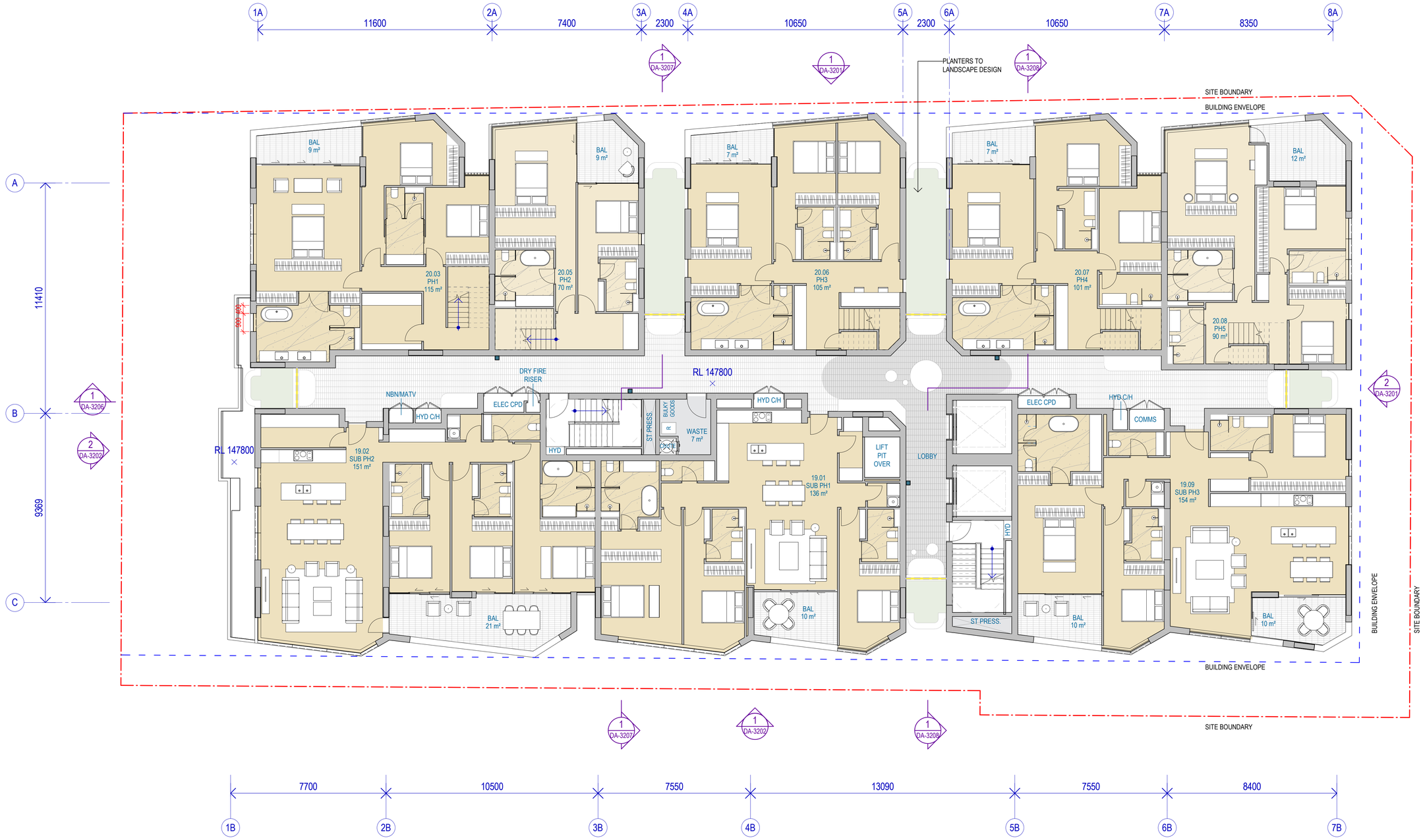
Scale
1 : 100

Sheet title
TYPICAL APARTMENT LEVELS - L17 - 18

Sheet number
DA-2228

Revision
A

Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:19:48 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number 121809
Size check 25mm
Checked Checker
Approved Approver
Sheet size A1
Scale 1 : 100

Sheet title
LOWER PENTHOUSE - L19

Sheet number DA-2229
Revision A
Status

LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name John Barrejo
Accreditation No. DMN/21/2042
Property Address 477 Pacific Highway, Sydney, NSW, 2060
http://www.hero-software.com.au/p/#HR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

Scale
1 : 100

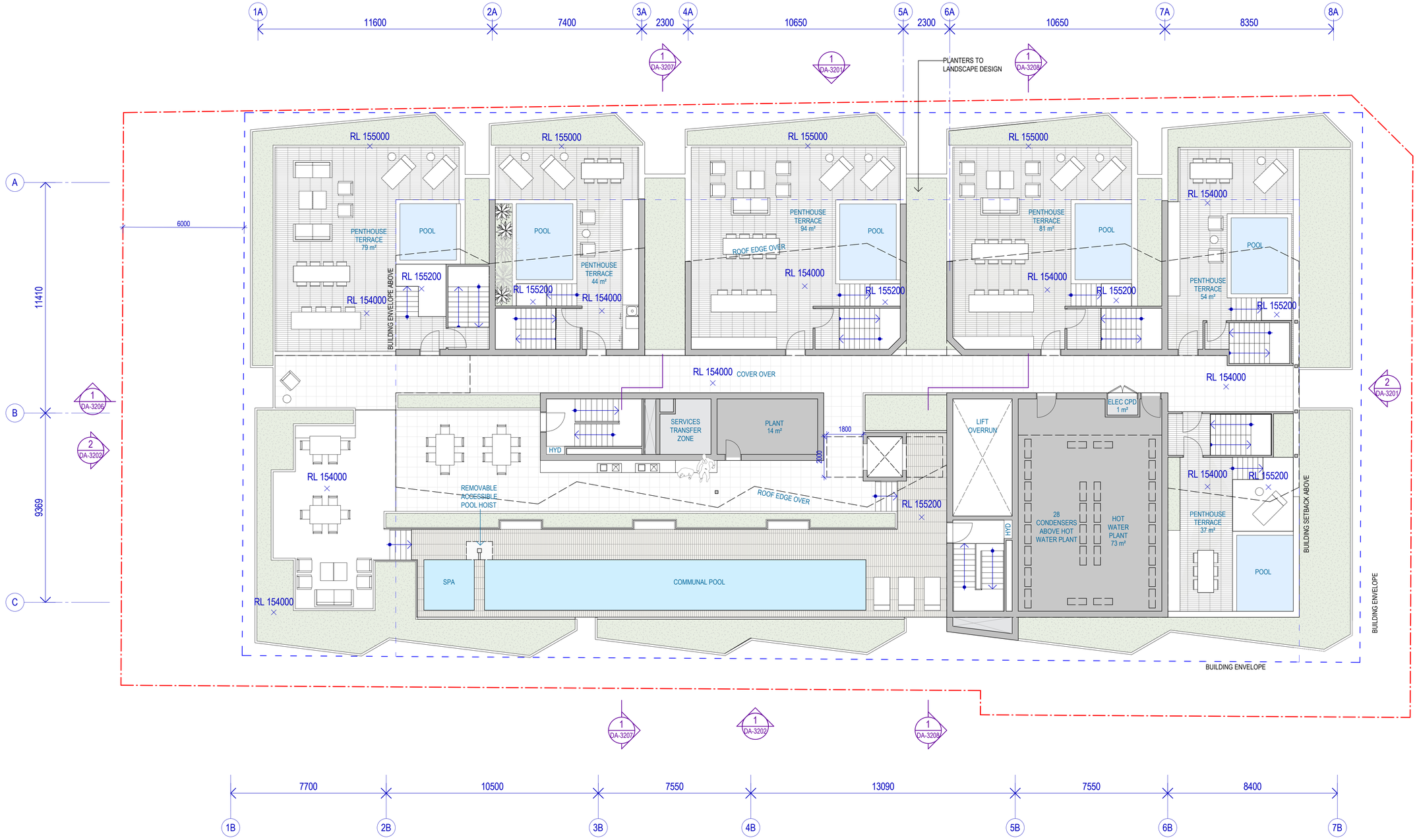
Sheet title
UPPER PENTHOUSE - L20

Sheet number
DA-2230

Revision
A

Status

Date generated 13/08/2024 3:20:04 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:20:20 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

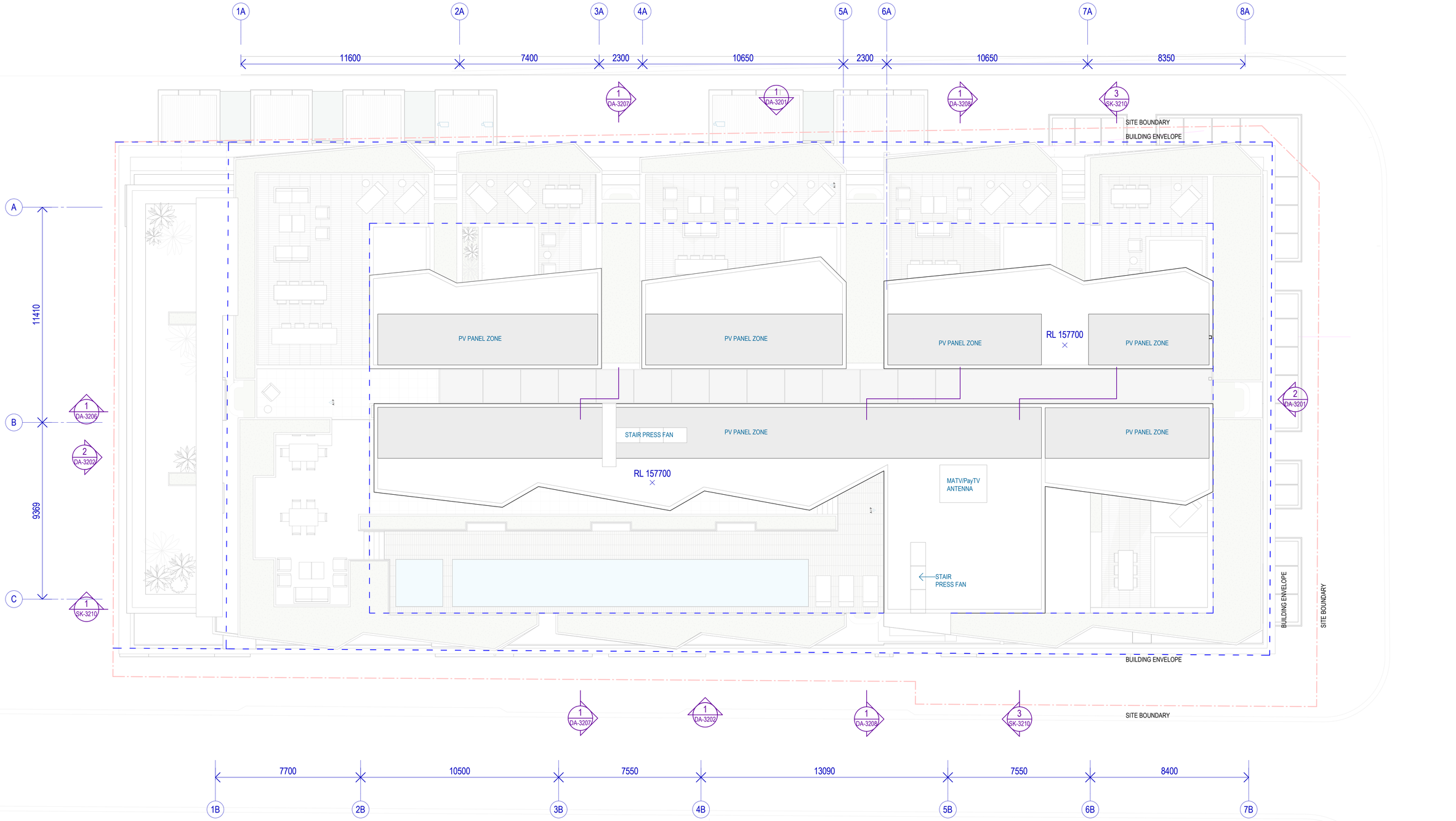
Client
Third.i

Issuer
W–B WOODS BAGOT

Project number 121809
Size check 25mm
Checked Checker
Approved Approver
Sheet size A1
Scale 1 : 100

Sheet title
ROOF TERRACE

Sheet number DA-2231
Revision A
Status



LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- OPERABLE LOUVRE OVERHEAD
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY
- LANDSCAPE
- SILVER LIVABLE UNIT
- ADAPTABLE UNIT
- FIRE EXTINGUISHER

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Date generated 13/08/2024 3:23:29 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

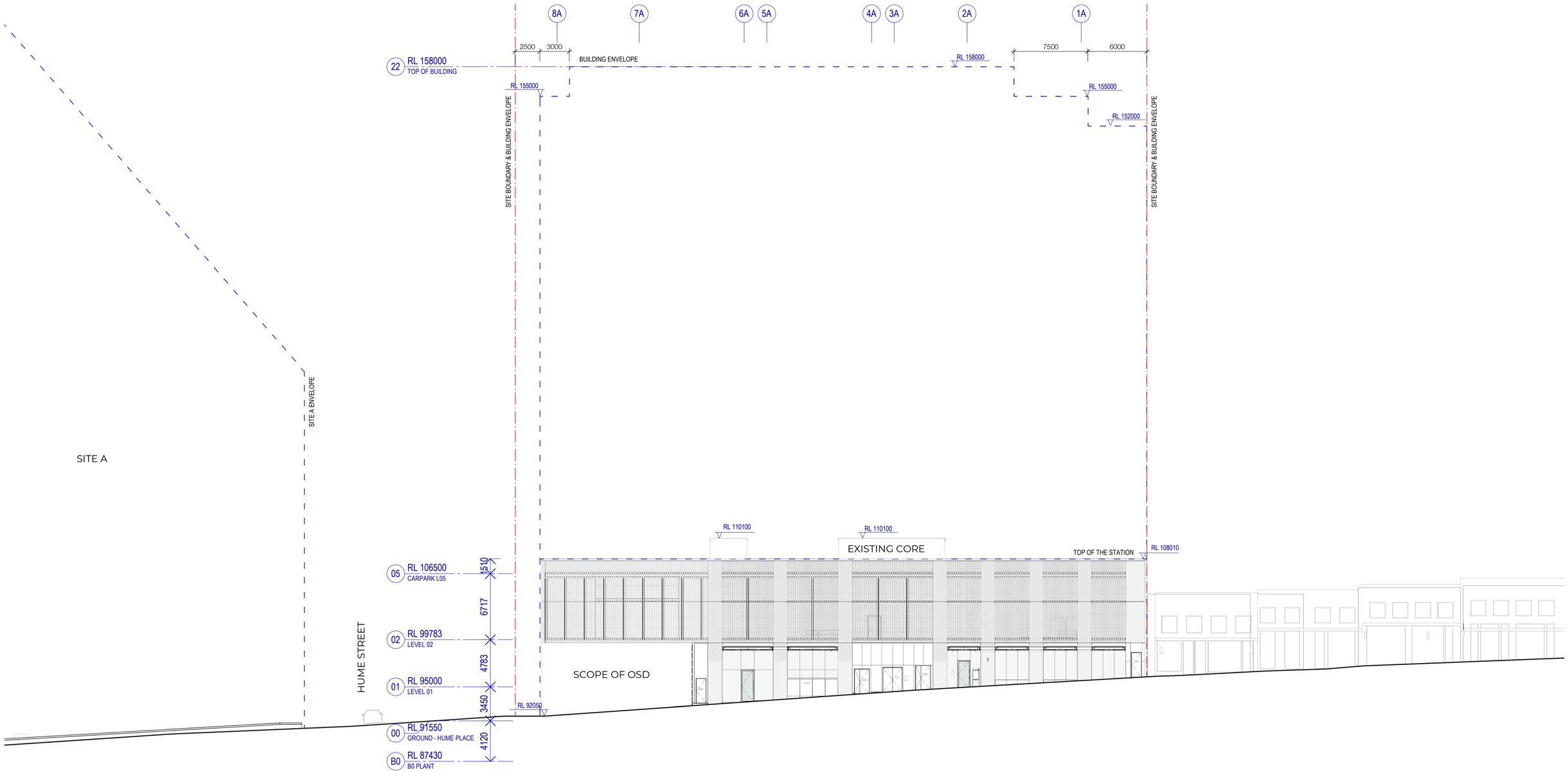
Checked Approved Sheet size Scale
Checker Approver A1 1 : 100

Sheet title
ROOF PLAN

Sheet number
DA-2232

Revision
A

Status



Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Date generated 13/08/2024 3:24:27 PM Autodesk Docs://121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

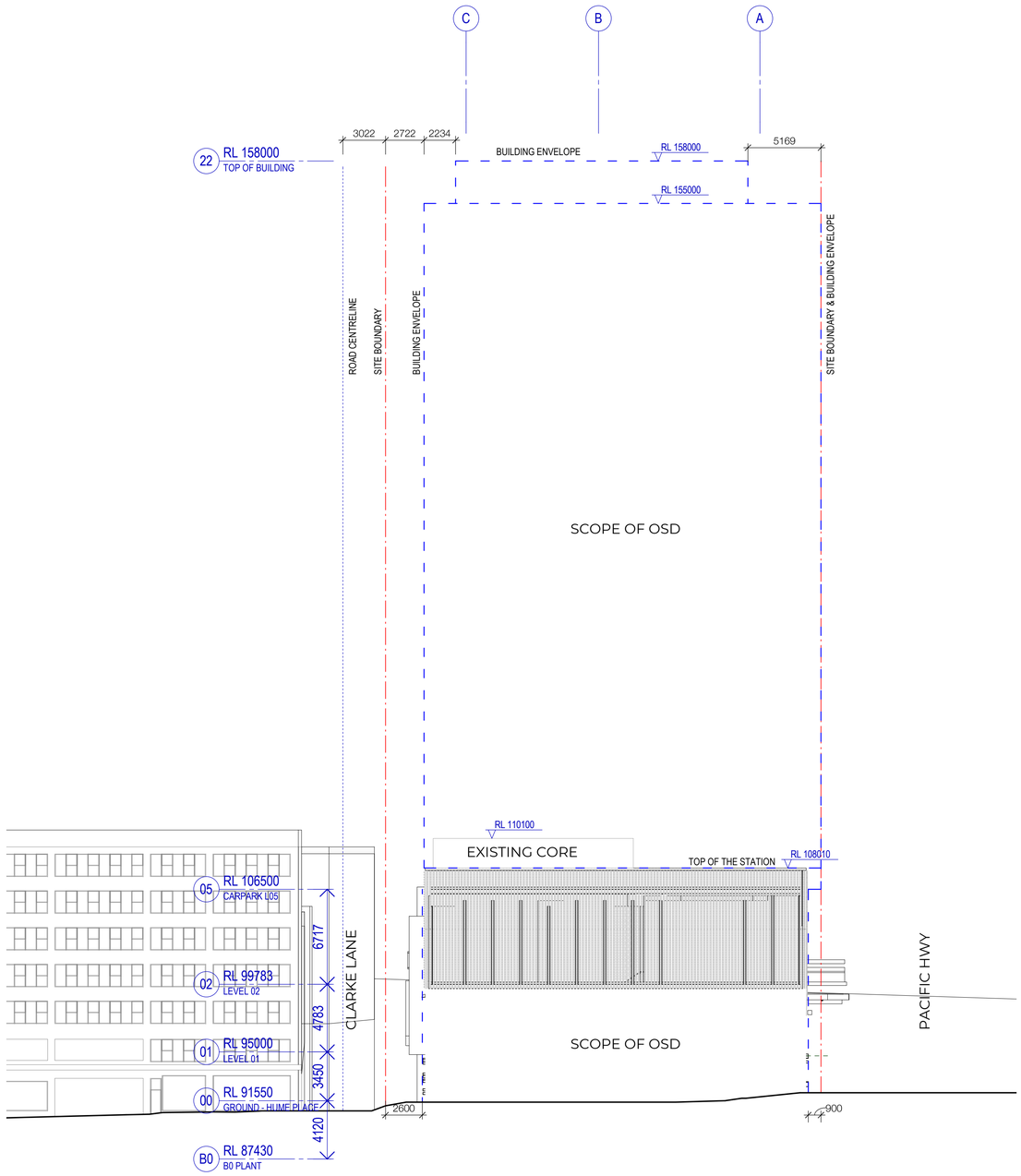
Scale
1 : 200

Sheet title
PACIFIC HIGHWAY ELEVATION EXISTING

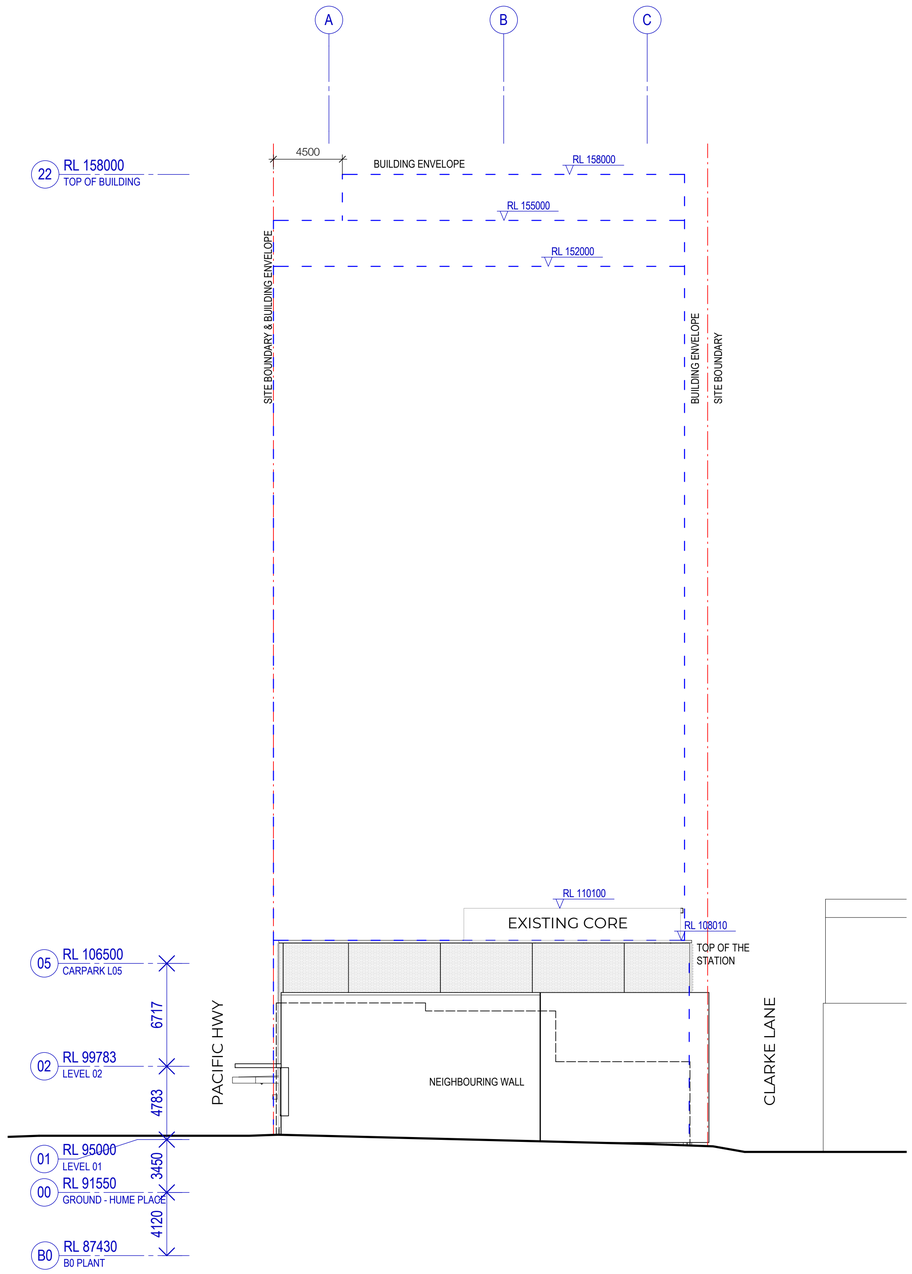
Sheet number
DA-3101

Revision
A

Status



1 EXISTING ELEVATION - HUME STREET
SCALE 1 : 200



2 EXISTING ELEVATION - SOUTH
SCALE 1 : 200

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:25:04 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

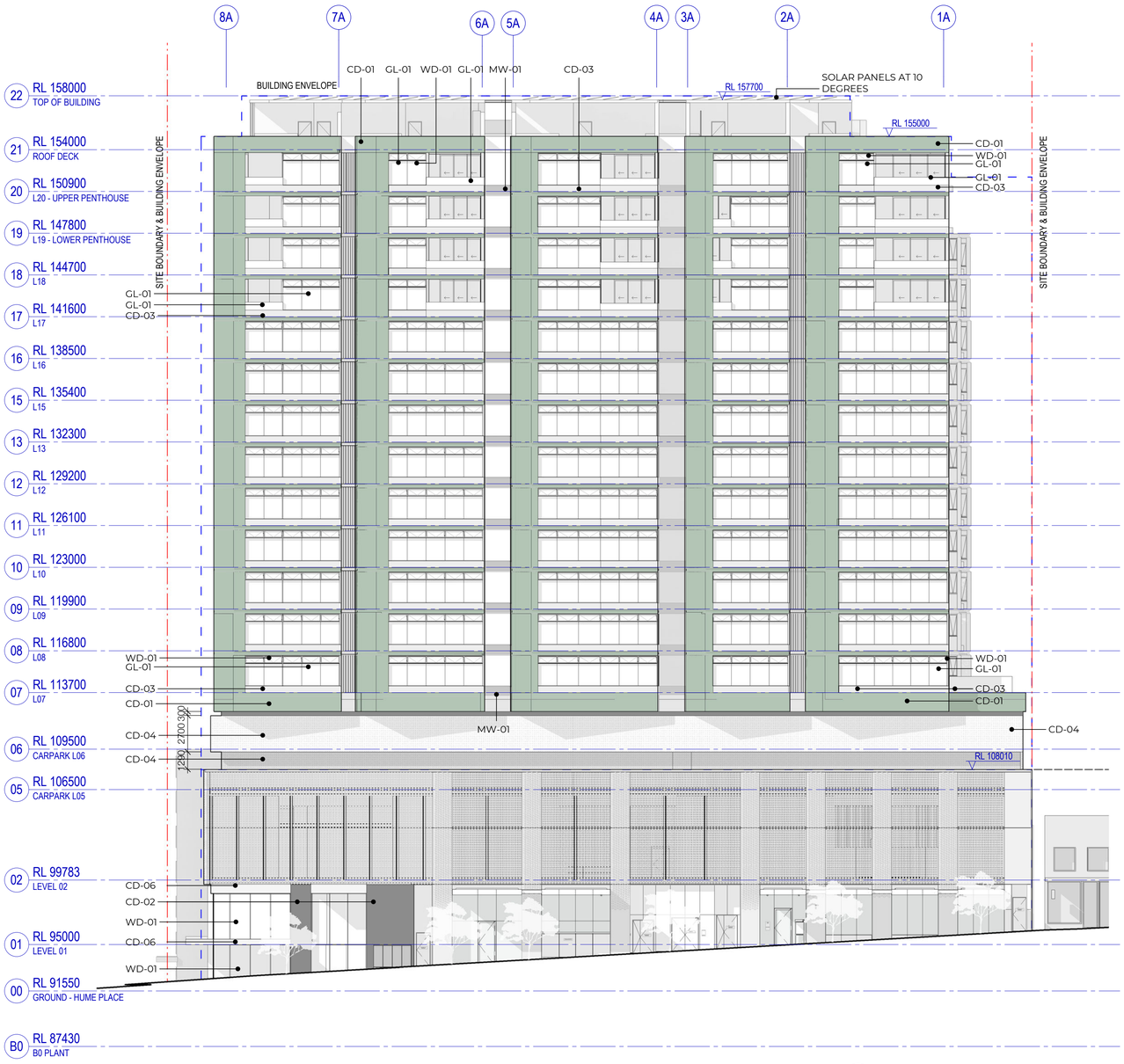
Checked Approved Sheet size Scale
Checker Approver A1 1 : 200

Sheet title
NORTH AND SOUTH ELEVATIONS EXISTING

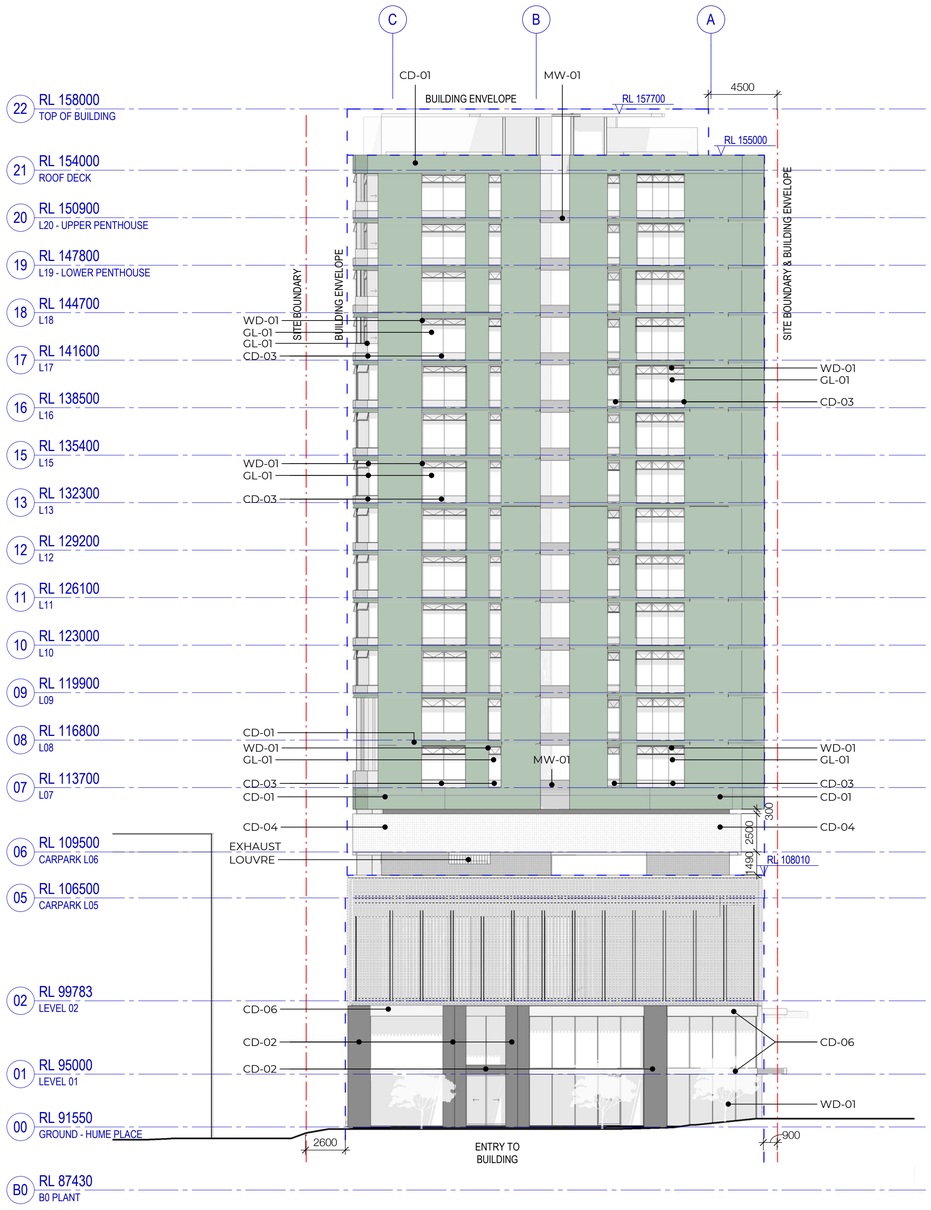
Sheet number
DA-3102

Revision
A

Status



1 PACIFIC HIGHWAY ELEVATION
SCALE 1 : 200



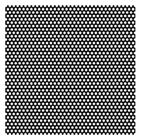
2 HUME STREET ELEVATION
SCALE 1 : 200

MATERIAL FINISHES LEGEND

CD-01
TERRACOTTA PANEL
DARK GREEN

CD-02
TERRACOTTA PANEL
BLACK

CD-03 RIBBED
ALUMINIUM PANEL



CD-04
PERFORATED METAL
PANEL

CD-05
TEXTURED WALL
PANELLING

CD-06
GREY METAL PANEL TO
MATCH METRO SELECTION

GL-01
GLAZING HIGH
PERFORMANCE

MW-01
WARM GREY
METAL PANEL

MW-02
WARM GREY
METAL BALUSTRADE RAIL

WD-01
WARM GREY FRAMED
GLAZING

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name John Barnett
Accreditation No. DMN/012042
Property Address 477 Pacific Highway, Sydney, NSW, 2060
http://www.hero-software.com.au/p/#HR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

Scale
As indicated

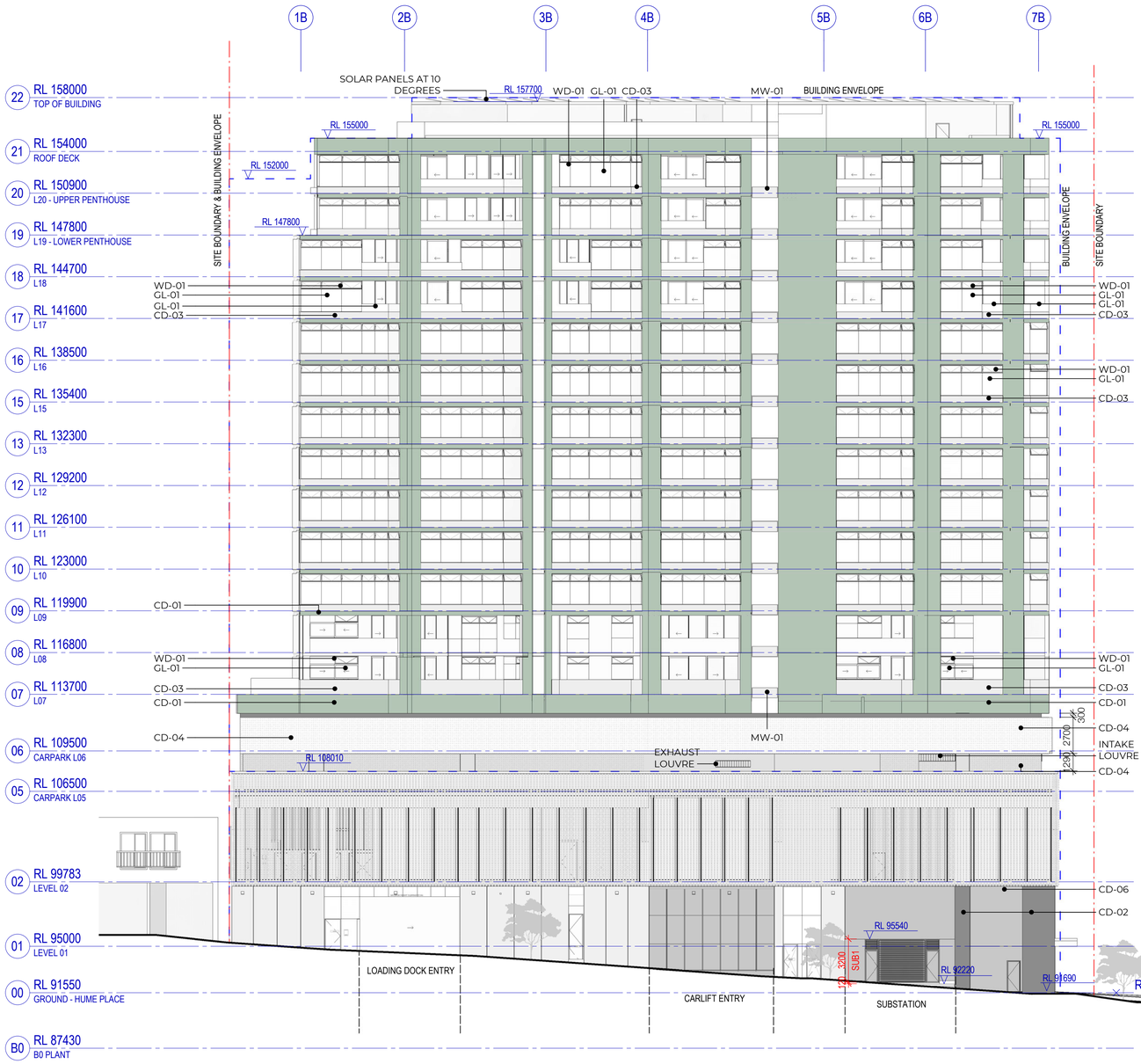
Sheet title
ELEVATIONS

Sheet number
DA-3201

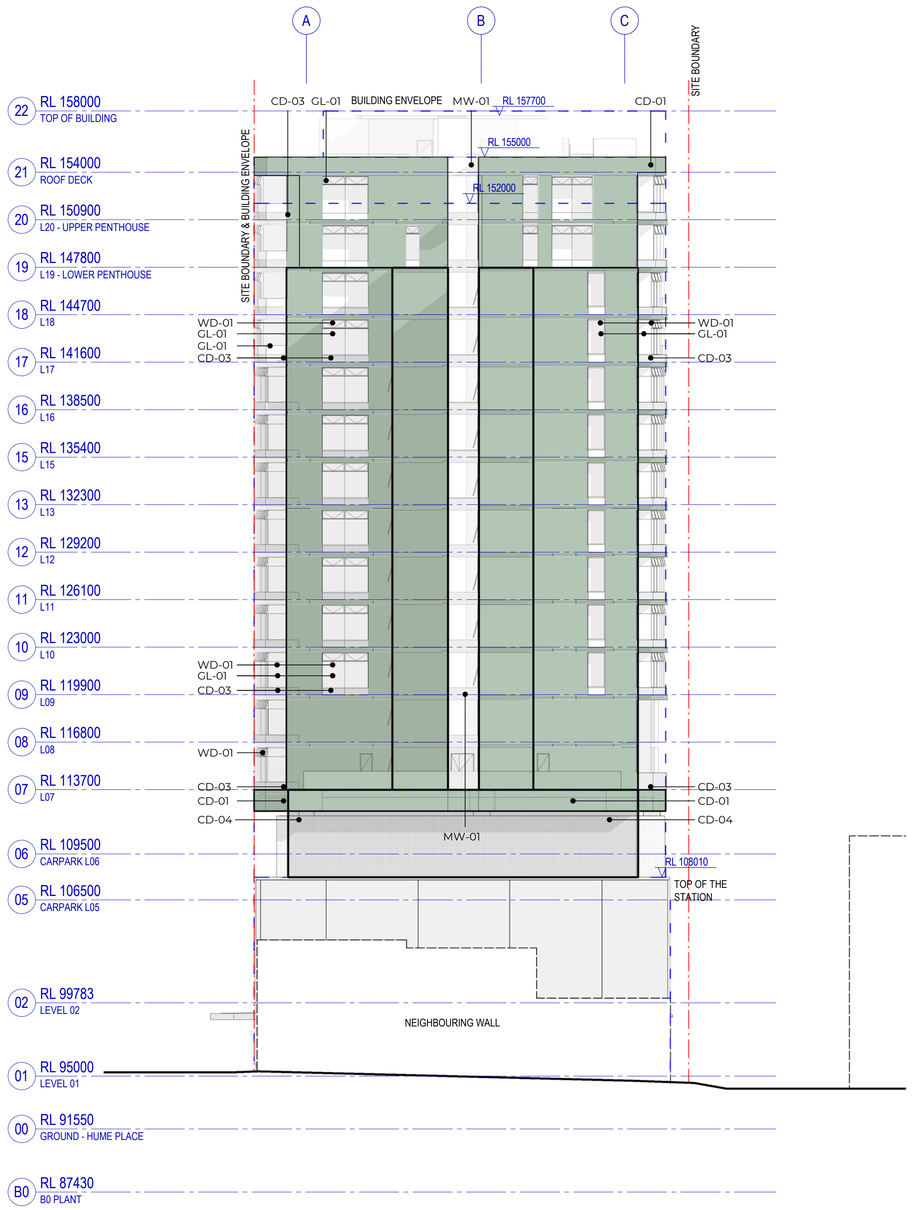
Revision
A

Status

Date generated 13/08/2024 3:36:57 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt



1 CLARKE LANE ELEVATION
SCALE 1 : 200



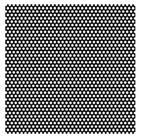
2 SOUTH ELEVATION
SCALE 1 : 200

MATERIAL FINISHES LEGEND

CD-01
TERRACOTTA PANEL
DARK GREEN

CD-02
TERRACOTTA PANEL
BLACK

CD-03 RIBBED
ALUMINIUM PANEL



CD-04
PERFORATED METAL
PANEL

CD-05
TEXTURED WALL
PANELLING

CD-06
GREY METAL PANEL TO
MATCH METRO SELECTION

GL-01
GLAZING HIGH
PERFORMANCE

MW-01
WARM GREY
METAL PANEL

MW-02
WARM GREY
METAL BALUSTRADE RAIL

WD-01
WARM GREY FRAMED
GLAZING

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Date generated 13/08/2024 3:39:28 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

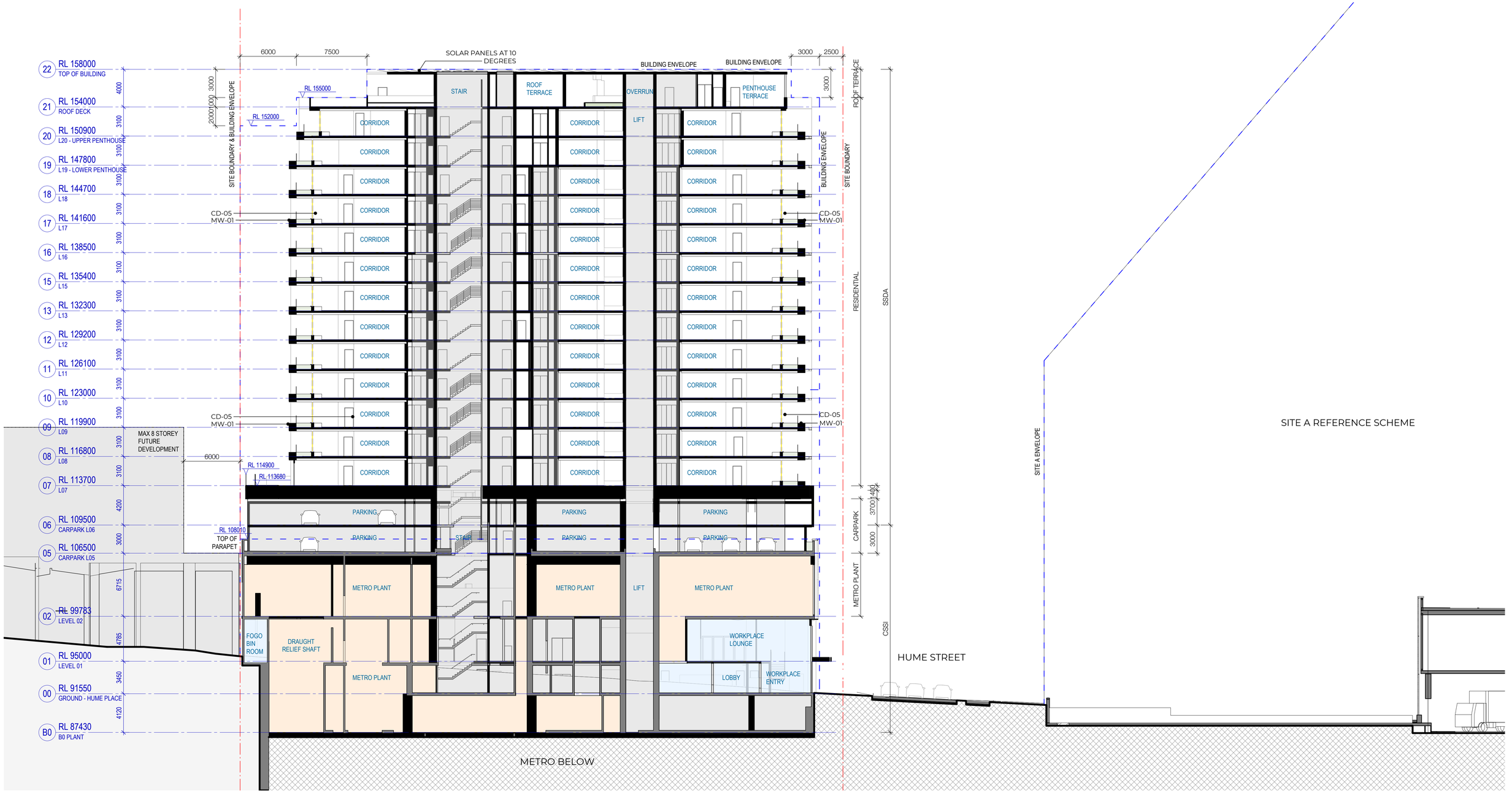
Scale
As indicated

Sheet title
ELEVATIONS

Sheet number
DA-3202

Revision
A

Status



1 LONG SECTION
SCALE 1 : 200

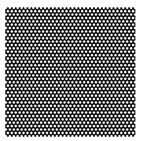
SITE A REFERENCE SCHEME

MATERIAL FINISHES LEGEND


CD-01
TERRACOTTA PANEL
DARK GREEN


CD-02
TERRACOTTA PANEL
BLACK


CD-03 RIBBED
ALUMINIUM PANEL


CD-04
PERFORATED METAL
PANEL

CD-05
TEXTURED WALL
PANELLING


CD-06
GREY METAL PANEL TO
MATCH METRO SELECTION


GL-01
GLAZING HIGH
PERFORMANCE

MW-01
WARM GREY
METAL PANEL


MW-02
WARM GREY
METAL BALUSTRADE RAIL


WD-01
WARM GREY FRAMED
GLAZING

LEGEND

- OSD services / stair, lift cores
- OSD internal spaces
- OSD structure
- Operable louvre over planters
- Existing Metro Box Structure
- Existing Metro Box Scope
- Existing Metro
- Shared
- Landscape

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name: Juhi Bansiy
Accreditation No.: DMN/21/2042
Property Address: 477 Pacific Highway, Sydney, NSW, 2065
http://www.hero-software.com.au/pdf/HR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

Size check
25mm

Checked
Checker

Approved
Approver

Sheet size
A1

Scale
As indicated

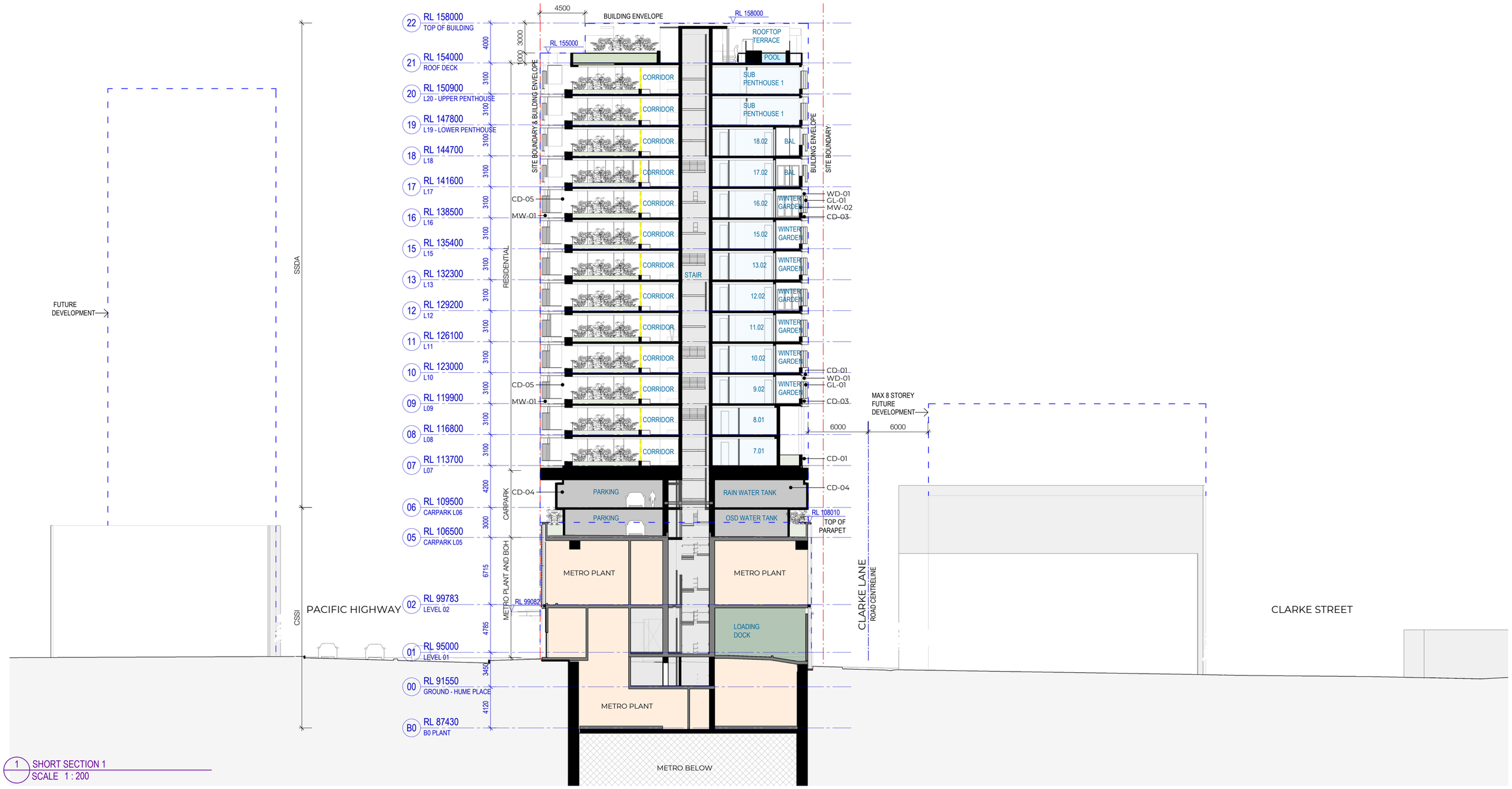
Sheet title
LONG SECTION

Sheet number
DA DA-3206

Revision
A

Status

Date generated 13/08/2024 3:06:51 PM Autodesk Docs:// 121809 – Crows Nest OSD – Site B/121809_CrowsNest OSD_Site B.rvt



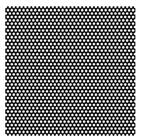
1 SHORT SECTION 1
SCALE 1 : 200

MATERIAL FINISHES LEGEND


CD-01
TERRACOTTA PANEL
DARK GREEN


CD-02
TERRACOTTA PANEL
BLACK


CD-03 RIBBED
ALUMINIUM PANEL


CD-04
PERFORATED METAL
PANEL

CD-05
TEXTURED WALL
PANELLING


CD-06
GREY METAL PANEL TO
MATCH METRO SELECTION


GL-01
GLAZING HIGH
PERFORMANCE

MW-01
WARM GREY
METAL PANEL


MW-02
WARM GREY
METAL BALUSTRADE RAIL


WD-01
WARM GREY FRAMED
GLAZING

LEGEND

- OSD services / stair, lift cores
- OSD internal spaces
- OSD structure
- Operable louvre over planters
- Existing Metro Box Structure
- Existing Metro Box Scope
- Existing Metro
- Shared
- Landscape

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Certificate No. #HR-2IKGOL-01
Scan QR code or follow website link for rating details.
Assessor name Juhi Banerji
Accreditation No. DMN/21/2542
Property Address 477 Pacific Highway, Sydney, NSW, 2060
http://www.hero-software.com.au/p/HR-2IKGOL-01

NOTE:
Minor changes to form and configuration may be required when drawings are subsequently prepared for construction purposes after the grant of development consent

Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W—B
WOODS BAGOT

Project number
121809

Size check
25mm

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Approved
Approver

Sheet size
A1

Scale
As indicated

Sheet title
SHORT SECTION

Sheet number
DA DA-3207

Revision
A

Status

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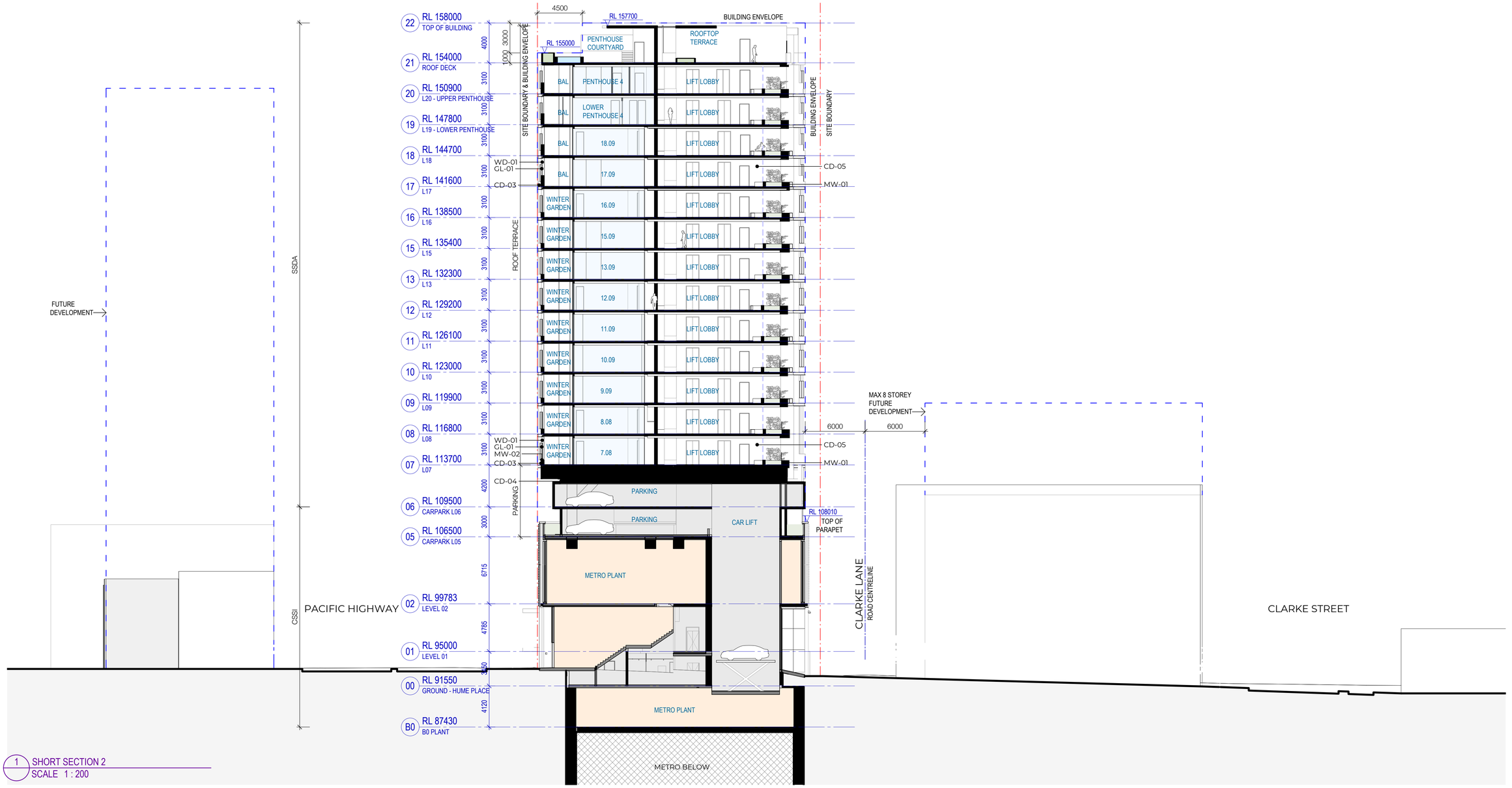

1 SHORT SECTION 2
SCALE 1 : 200

MATERIAL FINISHES LEGEND


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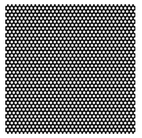
TERRACOTTA PANEL
DARK GREEN


CD-02
TERRACOTTA PANEL
BLACK


CD-03 RIBBED
ALUMINIUM PANEL


CD-04
PERFORATED METAL
PANEL

CD-05
TEXTURED WALL
PANELLING


CD-06
GREY METAL PANEL TO
MATCH METRO SELECTION


GL-01
GLAZING HIGH
PERFORMANCE

MW-01
WARM GREY
METAL PANEL


MW-02
WARM GREY
METAL BALUSTRADE RAIL


WD-01
WARM GREY FRAMED
GLAZING

LEGEND

- OSD services / stair, lift cores
- OSD internal spaces
- OSD structure
- Operable louvre over planters
- Existing Metro Box Structure
- Existing Metro Box Scope
- Existing Metro
- Shared
- Landscape

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

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Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number 121809
Size check 25mm
Checked Checker
Approved Approver
Sheet size A1
Scale As indicated

Sheet title
SHORT SECTION

Sheet number DA DA-3208
Revision A
Status

Appendix E – NCC Section J report

Crows Nest OSD- Site B

Sustainability Report

NCC Section J DTS

09/09/2024

Ref: 301351270

PREPARED FOR:

Adam Marshall – Thirdiproperty Pty Ltd

PREPARED BY:

Anu Pandey

Stantec

Revision Schedule

Revision No.	Date	Description	Prepared by	Quality Reviewer	Project Manager Final Approval
01	09/09/2024	Issue for SSDA	AP	TY	RD

Name: **Rebecca Dracup**

Signature: 

Disclaimer

The conclusions in the Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from the Client and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

The results generated from this analysis are based on specific criteria outlined in the NCC Volume One and are not considered to be a true representation of the actual operation of the building. The intent of these criteria is to permit the comparison of the estimated annual greenhouse gas emissions of a Proposed Building against that of a Reference Building and therefore determine if a specific building has the ability to be energy efficient and thermally comfortable as defined by Section J of the NCC.

The thermal properties described in the following report are to meet the minimum energy efficiency requirements stated by the NCC provisions only. It does not directly account for any requirements for the following aspects:

- Thermal Comfort – Thermal Comfort requirements of Section J are inherently meet under the Deemed to Satisfy verification method. This does not however assure thermally comfortable conditions in reality. Mechanical engineer to confirm any specific requirements for Air-Conditioning Systems
- Vapour Barriers and Condensation – Architect to ensure appropriate details for waterproofing and condensation risk management.
- Impact and Structural – Structural engineer to confirm requirements.
- Acoustic requirements – Acoustic engineer to confirm requirements.
- Fire Requirements – Fire Engineer or Building Surveyor to confirm requirements.
- Wind, Safety, Aesthetic- relevant consultant to confirm requirements, as required.

Contents

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Qualifications to this Report

The following qualifications apply to this report:

- Information has been based on our understanding of the proposed building and documentation provided, as noted. Architect to review & confirm any assumptions where required.
- This report outlines the scope of works required for NCC Section J Part J4 Building Fabric compliance only.

  The project design team (including the Architect) will be required to review and consider the implications of these recommendations on their design for the project.

  For example:

  - Glazing and insulation nominations have considered the thermal performance only. The design team should also coordinate these recommendations with any specific acoustic, wind, fire, condensation, structural, safety (during design and installation) or aesthetic considerations.
  - Estimations have been made regarding thermal bridging elements that require confirmation and possibly updating as design progresses. In some instances, this may not be until shop drawings are issued.
  - Different insulation products will have varying spatial allowances. The design team should coordinate the proposed insulation types, with specified R-values required throughout this report and ensure compliance is maintained throughout the project.
- As this project involves no detailed design or site supervision by Stantec, we advise that we will not prepare a Safety in Design report for this project. As detailed in our scope of work we will review the Safety in Design report prepared by the project designer and make comment as appropriate. We confirm that the responsibility for complying with the requirements of the state OS&H legislation remains with the project designer in conjunction with the project team and the client. We note that the OS&H legislation places particular obligations on the developers and owners of property with respect to the management of OS&H issues arising from the construction, use, maintenance and demolition of plant and buildings.

File Records

For records the files used in this report are as follows:

- All modelling completed on the basis of the following documents received : Drawing set "**240814 SSDA Drawing Set" from WOODS BAGOT**:

Drawing Number	Sheet Title	
00 GENERAL		
DA-0000	COVER SHEET	A
10 OVERALL ARRANGEMENT		
DA-1101	SITE LOCATION	A
DA-1102	SITE ANALYSIS	A
DA-1103	EXISTING SITE PLAN	A
DA-1104	PROPOSED SITE PLAN	A
DA-1105	DEMARCATION DIAGRAMS	A
DA-1111	CONCEPT APPROVAL BUILDING ENVELOPE	A
DA-1112	CONCEPT APPROVAL BUILDING ENVELOPE	A
DA-1113	DEVELOPMENT ENVELOPE DIAGRAM	A
DA-1121	COMPLIANCE MASSING STUDY - NORTH WEST	A
DA-1122	COMPLIANCE MASSING STUDY - SOUTH EAST	A
20 GENERAL ARRANGEMENT		
DA-2208	B0 PLANT MEZZANINE	A
DA-2209	GROUND LEVEL - HUME STREET	A
DA-2210	LEVEL 01	A
DA-2212	LEVEL 02	A
DA-2215	CARPARK LEVEL 05	A
DA-2216	CARPARK LEVEL 06	A
DA-2217	LEVEL 07	A
DA-2218	LEVEL 08	A
DA-2219	TYPICAL APARTMENT LEVELS - L09-16	A
DA-2228	TYPICAL APARTMENT LEVELS - L17 - 18	A
DA-2229	LOWER PENTHOUSE - L19	A
DA-2230	UPPER PENTHOUSE - L20	A
DA-2231	ROOF TERRACE	A
DA-2232	ROOF PLAN	A
DA-2301	GFA DIAGRAM	A
DA-2303	SOLAR ACCESS	A
DA-2304	CROSS VENTILATION	A
DA-2311	DETAILED PLAN - ADAPTABLE UNIT LAYOUTS	A
DA-2312	DETAILED PLAN - ADAPTABLE UNIT LAYOUTS	A
30 GENERAL ARRANGEMENT: ELEVATIONS AND SECTIONS		
DA-3101	PACIFIC HIGHWAY ELEVATION EXISTING	A
DA-3102	NORTH AND SOUTH ELEVATIONS EXISTING	A
DA-3201	ELEVATIONS	A
DA-3202	ELEVATIONS	A
DA-3206	LONG SECTION	A
DA-3207	SHORT SECTION	A
DA-3208	SHORT SECTION	A
77 SHADOW & SUN EYE		
DA-7701	SHADOW DIAGRAMS 1	A
DA-7702	SHADOW DIAGRAMS 2	A
DA-7703	SHADOW DIAGRAMS 3	A
DA-7704	SHADOW DIAGRAMS 4	A
DA-7705	SHADOW DIAGRAMS 5	A

Drawing Number	Sheet Title	
DA-7721	SUN EYE DIAGRAM	A
88 MATERIALITY AND VISUALS		
DA-8801	MATERIALITY	A
DA-8802	COMPUTER GENERATED IMAGES	A
DA-8803	COMPUTER GENERATED IMAGES	A
DA-8804	COMPUTER GENERATED IMAGES	A
DA-8805	COMPUTER GENERATED IMAGES	A

1. Executive Summary

This report has been prepared at the instruction of Third.i property Pty Ltd for the proposed Crows Nest Over Station Developments (OSD) – Site B at 477- 495 Pacific Highway, Crows Nest 2065, and is intended to:

- Identify the requirements of the National Construction Code (NCC) 2022 Volume 1 Section J; and
- Outline optional considerations where appropriate to ensure compliance with the NCC is maintained via a Deemed to Satisfy design solution.

Based on the documentation, we have carried out a review of the project against the following NCC 2022 Volume 1 Section J Deemed-to-Satisfy requirements:

- Part J4 Building Fabric
- Part J5 Building Sealing

We note that Parts J6, J7, J8 & J9 will be covered by Electrical, Mechanical and Hydraulics Services Design team.

Existing building fabric that will remain unchanged or subjected to minor works or repair is assumed to be exempt from mandatory compliance against the current NCC Section J part J1 provisions and is not considered in this report.

Subject to the conditions and requirements noted in this report, the proposed development has been found to be compliant with the NCC 2022 Volume One, Section J Part J4 requirements.

It is noted that any variation to the conditions and requirements noted herein may impact the performance outcomes and impact the level of compliance.

Where further feedback, action or clarification is required, these items are noted in ***bold italic*** text.

1.1 Outcome

Based on our design review, the buildings can demonstrate compliance with the Deemed-to-Satisfy provisions of the NCC 2022 Volume 1. For further information, refer to Sections 3 and 4 of this report regarding building fabric specification details.

The project architect shall be required to incorporate the following compliance detail into the project Tender Documentation to ensure compliance with the Deemed-to-Satisfy provisions of the NCC 2022 Volume 1.

1.2 Building Summary

The proposed development comprises of the construction of a retail space.

1.3 Conditions and Requirements

1.3.1 Performance Requirements - Façade

The Façade shall comply with the performance requirements outlined within this report;

- Location of insulation and the building fabric thermal performance requirements

The thermal performance of all construction materials associated with this specification has been summarised in Section 1.4

Reference is made to Appendix A for mark-up indicating extent of any added insulation included within the construction specifications.

1.3.2 Prescriptive Requirements

In addition to the performance related compliance requirements outlined above, there are further prescriptive Section J elements which must be complied with. These are outlined below and shall be complied with during the delivery phase of the project.

- Appendix B - Part J4 – Building Fabric
- Appendix C - Part J5 – Building Sealing

1.4 Building Fabric

1.4.1 Construction Thermal Performance

Overall thermal performance of the building fabric is shown below. Refer to Appendix A for the locations of insulation.

Table 1 NCC 2022 Part J4 Specific Building fabric thermal performance requirements

Climate Zone 7			
NCC Part	Building Element	Total Construction Thermal Performance Requirement	Comment
J4D4	Roof & Ceiling Construction	R_T 3.7	Upper surface solar absorptance of roof must not be more than 0.45. Total R value of R3.7 for an upward direction of heat flow. R value calculations must account for the effects of thermal bridging as per J4D3, the effect of any air spaces and associated surface resistance.
J4D6	External Wall	R_T 1.4	R value calculations must account for the effects of thermal bridging as per J4D3, the effect of any air spaces and associated surface resistance.
J4D6	Internal Wall	R_T 1.4	R value calculations must account for the effects of thermal bridging as per J4D3, the effect of any air spaces and associated surface resistance.
J4D6	Glazing	U3.1, SHGC 0.40	Performance values state whole-of-system, inclusive of framing and glass, and in accordance with Australian Fenestration Rating Council (AFRC) requirements.
J4D7	Floor	R_T 2.0	Total R value of R2.0 for downwards heat flow for a floor without an in-slab heating or cooling system.

*The Total R-value (RT) (m2K/W) means the sum of the R-values of the individual component layers in a composite element including any building material, insulating material, airspace, thermal bridging, and associated surface resistances

When selecting insulation types, the fire properties of the product shall comply with the NCC Deemed-to-Satisfy Provisions for fire hazard properties and a non-combustible material, as required and as nominated by the Building Surveyor.

Building Fabric Notes:

The Total R-value shall be calculated, including allowance for thermal bridging, in accordance with:

- AS/NZS 4859.2 for a roof or floor.
- AS/NZS 4859.2 for wall components.

The information contained in this report has been based on the following information:

- Architectural Drawings dated 24/08/2024.

The architect is required to review and approve details contained in the tables above as changes to the building fabric will result in variations to the modelling results.

2. Introduction

2.1 Section J Objective

This modelling report is for the construction of the Crows Nest OSD- Site B and sets out the DTS solution method by which the building will be assessed with respect to the NCC 2022 Volume One compliance for the project.

Due to the nature of the project, the most efficient form of compliance shall be to meet the “Deemed-to-Satisfy” (DTS) provisions of performance requirement JP1 outlined within Section J of the NCC 2022.

It is the intention of this report to outline these requirements to the project design team. It will then be the responsibility of each member to ensure these requirements are included within each discipline of the design, and that the builder is to construct the buildings in accordance with the relevant design. Variation from the design and allowances included in this report will require confirmation that compliance is maintained.

It is understood that the Client’s aim is to meet the following goal:

- Confirm compliance with the Parts J4 & J5 of Section J of the NCC Volume One utilizing the “Deemed to Satisfy-DTS” method.

This report should be read in conjunction with all relevant plans and specifications and any supplementary regulatory information.

2.2 General Project Information

Table 2 General Project Information Summary

Property Title	Crows Nest OSD- Site B
Address	477- 495 Pacific Highway, Crows Nest 2065
Building Class and Use	It is understood that the building(s) for this development have been deemed to be NCC classification 6 and 2
Number of storeys	19
Verification Method	This building has been assessed under the NCC Volume One Energy Efficiency J2 – J2D1 Deemed-to-Satisfy Provisions
NCC Volume One Climate Zone	Climate Zone 5

3. Part J1 – Building Fabric Design

3.1 Thermal Construction General

Any modification to the parameters outlined in this report shall require that performance of the building fabric, including Total System R-value and Total System U-value be calculated in accordance with the following:

- Including allowance for thermal bridging
- Calculated in accordance with AS/NZS 4859.2 for a roof or floor.
- Determined in accordance with NCC Specification J4D6 walls and glazing construction.
- Determined in accordance with NCC Specification J4D4 for roof and ceiling construction.
- Determined in accordance with NCC Specification J4D7 for floor construction.

To assist with compliance with Section J4D3 of the NCC 2022 Volume 1, general construction notes as contained in Error! Reference source not found. are to be included in the Architectural Specification or Architectural drawings.

3.2 Roof and Ceiling Construction

For compliance with section J4D4, a roof or ceiling that is part of the envelope, must achieve the total R-value of R3.7.

See Section 1.4 Building Fabric for design details of Roof and Ceiling Construction.

It has been assumed that insulation will be continuous over the entire roof and ceiling area of the identified building envelope. Any reduction in insulation area must be compensated with an increase in insulation R value so that overall performance on an area-weighted average is maintained.

3.3 Roof Lights

It is understood that there are no roof lights in conditioned areas of the proposed building. This section is therefore not applicable.

3.4 Wall Insulation

For compliance with section J4D6, glazing and wall performance is assessed on a combined basis. Walls and glazing performance have been separated within this report for clarity.

External walls on an average area-weighted basis must achieve the total R-value of 1.0.

See Section 1.4 Building Fabric for additional detail.

Insulation supplier to confirm R-Values for relevant wall constructions if differing from nominated.

3.5 Floor Insulation

For compliance with section J4D7, the floor that is part of the envelope must achieve the total R-value of R2.0.

See Section 1.4 Building Fabric for design details of floor construction.

It is understood that there are no in-slab or in-screed heating or cooling systems, except where used solely in a bathroom, amenity area or the like. As such, perimeter slab insulation is not required.

3.6 External and Internal Glazing

For compliance with J4D6, the proposed glazing configuration can comply with the Deemed to Satisfy provisions for all façade orientations.

Please refer to Appendix A-C for reference calculations. See Section 1.4 Building Fabric for additional details regarding glazing requirements.

Glazing supplier/façade engineer to confirm whole-of-system U-values and SHGC for the proposed selections.

4. Part J3 – Building Sealing

The building envelope must be appropriately sealed in order to manage the loss of conditioned air. The following elements, where forming the building envelope, must be sealed in accordance with requirements outlined in Appendix C

- Chimneys and Flues
- Roof Light
- Windows and Doors
- Exhaust Fans
- Ceiling, Walls, Floors
- Evaporative Coolers

To assist with compliance with Section J5D4 of the NCC 2022 Volume 1, general construction notes as contained in Appendix C are to be included in the Architectural Specification or Architectural drawings.

5. Conclusion

Subject to limitations and assumptions listed in this report, all new build elements of the façade system comply with NCC.

It can be confirmed that the proposed construction of the building with the design specification outlined within this report meets the requirements of the 2022 NCC Volume 1 Section J4 and J5 utilising the “DTS-Deemed to Satisfy” assessment method.

Conditions related to the use of this performance solution are outlined in the Disclaimer and Qualifications to this Report sections.

Additional requirements in order to comply with NCC Section J are detailed throughout the report and require implementation by the architect and design team.

Compliance with prescriptive requirements outlined in Appendix B and Appendix C are also required in order for compliance to be achieved under the “DTS-Deemed to Satisfy” assessment method.

Professional Engineer

Name: Rebecca Dracup

Date: 09/09/2024

Appendix A Insulation Markups

Legend

Insulation Requirements:

- Roof/Ceiling - Min R3.7 Total System
- Soffit - Min R2.0 Total System
- External Walls - Min R1.4 Total System
- Internal Walls - Min R1.4 Total System
- Unconditioned space

Note: Markup is preliminary in nature. Pending further modelling & coordination. Performance values may increase.

Stantec

PROJECT : Crows Nest OSD
PROJECT NUMBER : 301353270
SKETCH TITLE : Insulation Markup
AUTHOR : PH
DATE : 02/09/2024

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

NOTE:
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Project
Crows Nest OSD - Site B

Client
Third.i

Issuer
W–B
WOODS BAGOT

Project number
121809

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Sheet size
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Sheet title
B0 PLANT MEZZANINE

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DA-2208

Revision
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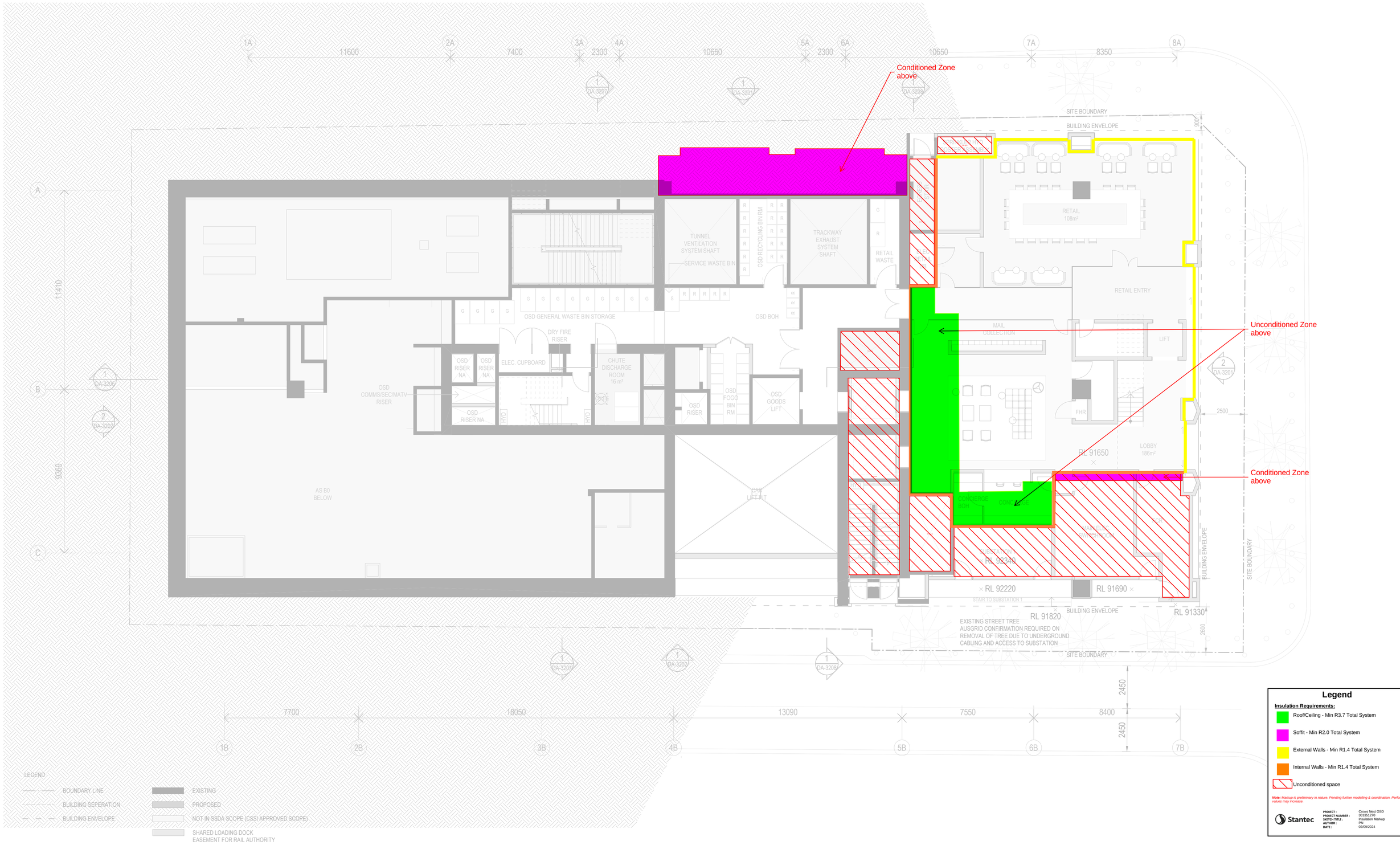

Legend

Insulation Requirements:

- Roof/Ceiling - Min R3.7 Total System
- Soffit - Min R2.0 Total System
- External Walls - Min R1.4 Total System
- Internal Walls - Min R1.4 Total System
- Unconditioned space

Note: Markup is preliminary in nature. Pending further modelling & coordination. Performance values may increase.

Stantec

PROJECT :	Crows Nest OSD
PROJECT NUMBER :	301351270
SKETCH TITLE :	Insulation Markup
AUTHOR :	PP
DATE :	02/09/2024

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

NOTE:
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Project
Crows Nest OSD - Site B

Client
Third.i

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W–B
WOODS BAGOT

Project number
121809

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Sheet title
GROUND LEVEL - HUME STREET

Sheet number
DA-2209

Revision
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Status

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LEGEND

- BOUNDARY LINE
- BUILDING SEPERATION
- BUILDING ENVELOPE
- EXISTING
- PROPOSED
- NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
- SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY

Legend

Insulation Requirements:

- Root/Ceiling - Min R3.7 Total System
- Soffit - Min R2.0 Total System
- External Walls - Min R1.4 Total System
- Internal Walls - Min R1.4 Total System
- Unconditioned space

Note: Markup is preliminary in nature. Pending further modelling & coordination. Performance values may increase.

Stantec

PROJECT : Crows Nest OSD
PROJECT NUMBER : 301351270
SAITECH TITLE : Insulation Markup
AUTHOR: PN
DATE : 02/09/2024

Recent revision history

#	Status	Description	Date
A		FOR SSDA	14/08/24

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

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Project
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Client
Third.i

Issuer
W–B WOODS BAGOT

Project number
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Approved: Approver
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Sheet number
DA-2210

Revision
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LEGEND

BOUNDARY LINE	EXISTING
BUILDING SEPERATION	PROPOSED
BUILDING ENVELOPE	NOT IN SSDA SCOPE (CSSI APPROVED SCOPE)
	SHARED LOADING DOCK EASEMENT FOR RAIL AUTHORITY

Legend

Insulation Requirements:

- Roof/Ceiling - Min R3.7 Total System
- Soffit - Min R2.0 Total System
- External Walls - Min R1.4 Total System
- Internal Walls - Min R1.4 Total System
- Unconditioned space

Note: Markup is preliminary in nature. Pending further modelling & coordination. Performance values may increase.

Stantec

PROJECT :	Crows Nest OSD
PROJECT NUMBER :	301351270
SKETCH TITLE :	Insulation Markup
AUTHOR :	PN
DATE :	02/09/2024

Recent revision history

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Project number
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LEVEL 02

Sheet number
DA-2212

Revision
A

Status

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Appendix B Part J4 Building Fabric

The following prescriptive performance requirements for the façade must be adhered to, as per the NCC 2022 – Volume One:

J4D3 – Thermal Construction General

For compliance with Section J4D3 of the NCC 2022, we recommend the following general construction notes to be included in the Architectural Specification or Architectural drawings.

(1) Where required, 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 butt against the member; and

(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.

(2) Reflective insulation 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; and

(b) The reflective insulation closely fitted against any penetration, door or window opening; and

(c) The reflective insulation adequately supported by framing members; and

(d) Each adjoining sheet of roll membrane being:

i. Overlapped not less than 50mm; or

ii. Taped together.

(3) Bulk insulation must be installed so that:

(a) It maintains its position and thickness, other than where it crosses roof battens, water pipes, electrical cabling, or the like; and

(b) In a ceiling, where there is no bulk insulation or reflective insulation in the wall beneath, it overlaps the wall by not less than 50mm

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

(a) Calculated in accordance with AS/NZS 4859.2 for a roof or floor; or

(b) Determined in accordance with Specification J1.5a for wall-glazing construction; or

(c) Determined in accordance with Specification J1.6 or Section 3.5 of CIBSE Guide A for soil or sub-floor spaces.

J4D6 – Walls and Glazing

The Total system U-Value of the wall component of a wall-glazing construction must be calculated as the inverse of the Total R-Value, including allowance for thermal bridging, in accordance with—

- AS/NZS 4859.2; or
- Specification 38 for spandrel panels.

Specification 38 – Spandrel Panel R-Value

Spandrel panels are deemed to have the thermal properties nominated in Table 2 below, where:

- Configuration 1 consists of—
  - a thermally unbroken (bridged) frame; and
  - a centre of spandrel panel consisting of—
    i. a single-glazed opaque or clear face; and
    ii. a 100 mm air gap; and
    iii. a 3 mm aluminium, 0.8 mm galvanised steel or zinc back pan; and
- Configuration 2 consists of—
  - a thermally unbroken (bridged) frame; and
  - a centre of spandrel panel consisting of—
    i. a double-glazed opaque face; and
    ii. a 50 mm air gap; and
    iii. a 3 mm aluminium, 0.8 mm galvanised steel or zinc back pan; and
- Configuration 3 consists of—
  - a thermally broken (unbridged) frame; and
  - a centre of spandrel panel consisting of—
    i. a double-glazed clear face; and
    ii. a 50 mm air gap; and
    iii. a 3 mm aluminium, 0.8 mm galvanised steel or zinc back pan; and
- Configuration 4 consists of—
  - a thermally broken (unbridged) frame; and
  - a centre of spandrel panel consisting of—
    i. a double-glazed low-e clear face; and
    ii. a 50 mm air gap; and
    iii. a 3 mm aluminium, 0.8 mm galvanised steel or zinc back pan.

Type	No insulation	R0.5 insulation	R1.0 insulation	R1.5 insulation	R2.0 insulation
Configuration 1	0.3	0.39	0.42	0.44	0.45
Configuration 2	0.35	0.41	0.43	0.44	0.45
Configuration 3	0.84	0.96	1.03	1.07	1.09
Configuration 4	0.91	1.00	1.05	1.09	1.11

J4D7 – Floors

(3) A floor must be insulated around the vertical edge of its perimeter with insulation having an R-Value greater than or equal to 1.0 when the floor—

i. is a concrete slab-on-ground in climate zone 8; or

ii. has an in-slab or in-screed heating or cooling system, except where used solely in a bathroom, amenity area or the like.

(c) Insulation required by (3) for a concrete slab-on-ground must—

(i) be water resistant; and

(ii) be continuous from the adjacent finished ground level—

(A) to a depth not less than 300 mm; or

(B) for the full depth of the vertical edge of the concrete slab-on-ground.

Appendix C Part J5 – Building Sealing

The following prescriptive performance requirements for the façade must be adhered to, as per the NCC:

J5D4 – Roof Lights

For compliance with Section J5D4 of the NCC 2022, we recommend the following general notes to be included in the Architectural Specification or Drawings.

(a) A roof light must be sealed, or capable of being sealed, when serving—

(i) a conditioned space; or

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

(b) A roof light required by (a) to be sealed, or capable of being sealed, must be constructed with—

(i) an imperforate ceiling diffuser or the like installed at the ceiling or internal lining level; or

(ii) a weatherproof seal; or

(iii) a shutter system readily operated either manually, mechanically or electronically by the occupant.

J5D5 – External Windows and Doors

For compliance with Section J5D5 of the NCC 2022, we recommend the following general notes to be included in the Architectural Specification or Drawings.

a) A door, openable window or the like must be sealed—

(i) when forming part of the envelope; or

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

(b) The requirements of (a) do not apply to—

(i) a window complying with AS 2047; or

(ii) a fire door or smoke door; or

(iii) a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security.

(c) A seal to restrict air infiltration—

(i) for the bottom edge of a door, must be a draft protection device; and

(ii) 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.

(d) 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—

(i) where the conditioned space has a floor area of not more than 50 m2; or

(ii) where a café, restaurant, open front shop or the like has—

(A) a 3 m deep un-conditioned zone between the main entrance, including an open front, and the conditioned space; and

(B) at all other entrances to the café, restaurant, open front shop or the like, self-closing doors.

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

J5D6 – Exhaust Fans

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

(i) a conditioned space; or

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

This requirement will be documented by the Mechanical Consultant

J5D7 – Construction of roofs, walls and floors

For compliance with Section J5D7 of the NCC 2022, we recommend the following general notes to be included in the Architectural Specification or Drawings.

(a) 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 (b) when forming part of—

(i) the envelope; or

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

(b) Construction required by (a) must be—

(i) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or

(ii) sealed at junctions and penetrations with—

(A) close fitting architrave, skirting or cornice; or

(B) expanding foam, rubber compressible strip, caulking or the like.

(c) The requirements of (a) do not apply to openings, grilles or the like required for smoke hazard management.

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