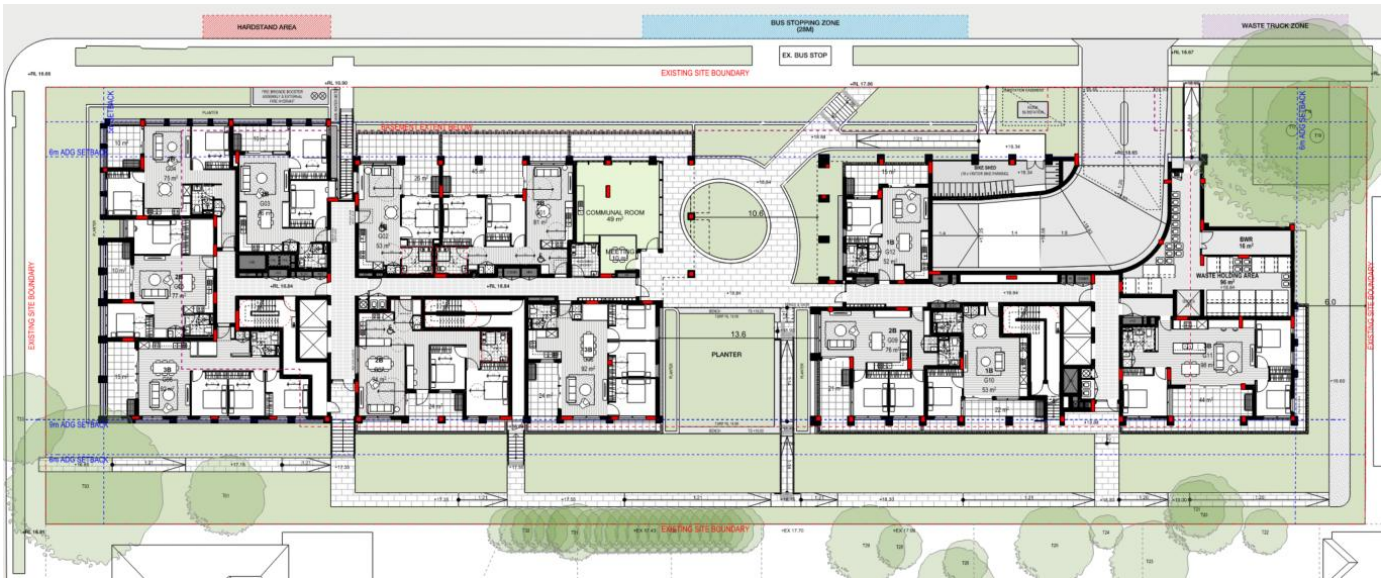
Belmore Affordable Housing State Significant Development - SSD 83257708

Ecological Sustainable Development Report

Prepared for: Homes NSW

Project No: SYD3636
Date: 3 November 2025
Revision: 03



Project:	Belmore Affordable Housing State Significant Development - SSD 83257708
Location:	270-278 Burwood Road and 54 Lakemba Street Belmore NSW 2192
Prepared by:	ADP Consulting Pty Ltd Level 6, 33 Erskine Street Sydney NSW 2000
Project No:	SYD3636
Revision:	03
Date:	3 November 2025

Rev	Date	Comment	Author	Signature	Technical Review	Signature	Authorisa-tion & QA	Signature
DRAFT	25/09/2025	Draft Report	Max Campbell	MC	Jacob Delailoa	JD	Borris Boschman	BB
01	24/10/2025	Amended Report	Max Campbell	MC	Matej Culanic	MC	Borris Boschman	BB
02	29/10/2025	Amended Report	Max Campbell	MC	Matej Culanic	MC	Borris Boschman	BB
03	03/11/2025	Amended Report	Max Campbell	MC	Matej Culanic	MC	Borris Boschman	BB

Project Team	
Client / Principal	Homes NSW
Architect	DKO

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1. Introduction

1.1 Project Overview

This Ecological Sustainable Development Report has been prepared by Max Campbell of ADP Consulting on behalf of Homes NSW for a State Significant Development Application (SSD-83257708) for construction of a residential flat building for the purpose of affordable housing at 270-278 Belmore Road and 54 Lakemba Street, Belmore.

The purpose of this Ecological Sustainable Development report is to the provide a list of Environmentally Sustainable Design (ESD) initiatives and recommendations to be considered for the proposed development and to support this State Significant Development Application (SSDA) process.

The report also addresses the Secretary's Environmental Assessment Requirements (SEARs) for the project issued on 13 October 2025 which identified the following project-specific assessment requirements:

1. Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development.

Following a review of the project brief, site location and architectural drawings, we propose the key opportunities to be explored during the design, construction, and operation of the proposed development:

- Façade design for affordability and decarbonisation
- Design for climate resilience and biodiversity
- Designing for sustainable transport

1.2 Project Description

1.2.1 Proposed Development

The proposed development comprises the construction of a new residential flat building for the purposes of affordable housing, a communal room and basement car parking including excavation, tree removal and associated servicing, landscaping and public domain works.

The tower at the northern end of the site contains 87 units, and the southern tower holds 58 units. There will be a community space, meeting room, and communal bathroom for residents on ground level. The building also includes 2 lower ground stories with bike parking spaces and 73 car spaces for car parking.

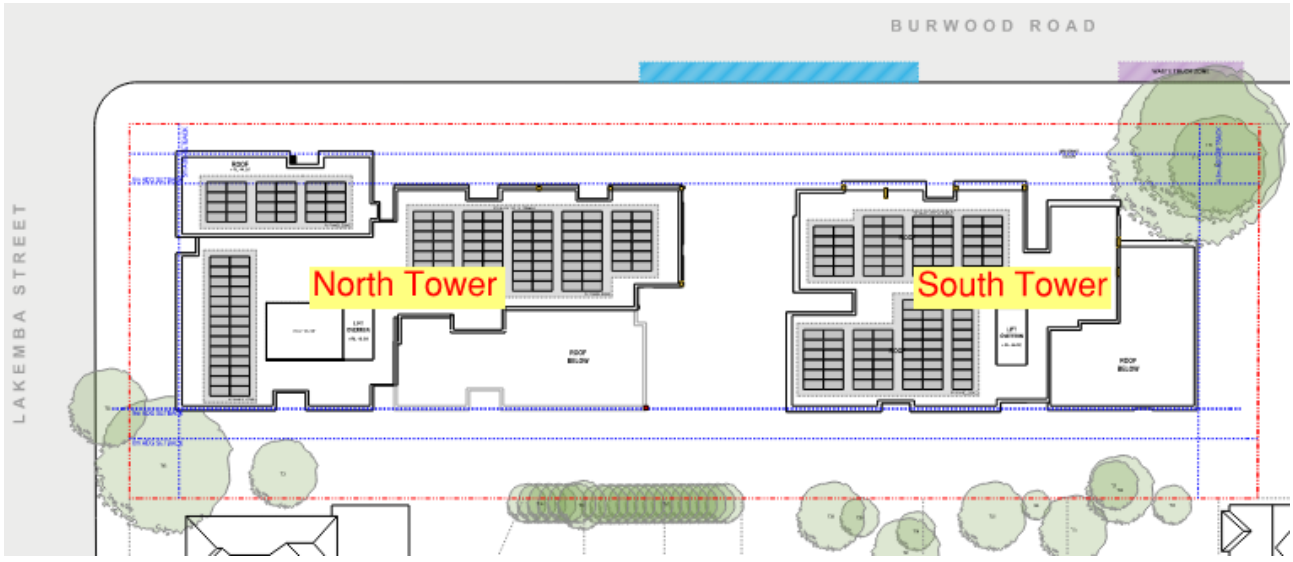
The proposed development will serve as affordable housing operated by Homes NSW.

1.2.2 Project context

The site is located at 270-278 Burwood Road, Belmore, NSW 2192. It is in the City of Canterbury-Bankstown Local Government Area (LGA) and is zoned R4 High Density Residential under the City of Canterbury-Bankstown Local Environmental Plan (LEP) 2023.

The project site has a total site area of 4,280sqm and has two street frontages, Lakemba Street to the North, and Burwood Road to the East. The project site is surrounded by majority low-rise and few mid-rise residential buildings to the East and West. There is a local centre directly to the south of the project site, and the Belmore train station 350 metres away offering various amenities. Please refer to Figure 1 for site plan.

Figure 1 Proposed Development Site: 270-278 Burwood Road and 54 Lakemba Street



1.3 Relevant Policies and Guidelines

The following were used to guide the development of the ESD opportunities and recommendations for the proposed development:

- Planning Secretary's Environmental Assessment Requirements (SEARS)
- Sustainable Buildings State Environmental Planning Policy (SEPP) 2022 - NSW Department of Planning
- Section J provisions of the NCC 2022 Building (BCA) Code of Australia
- NSW Land and Housing Corporation (LAHC) Design Requirements
- NSW Government Good Design for Social Housing (2020)
- Canterbury-Bankstown Development Control Plan (DCP) 2015
- Canterbury-Bankstown Local Environmental Plan (LEP)

1.3.1 Project-specific SEARs requirements

The report addresses the Secretary's Environmental Assessment Requirements (SEARs) for the project issued on 13 October 2025 which identified the following specific assessment requirements:

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

As the development is purely residential, the project is exempt from the second requirement.

The first SEARS requirement refers to section 193 of the EP&A Regulation (Environmental Planning and Assessment Regulation). Here it defines what the principles of a "ecologically sustainable development" are:

1. The precautionary principle
   - Section 1.4.2, 2.2-2.6 align with the precautionary principle in relation to protecting humans against future global warming and biodiversity loss, taking action even without absolute certainty to the extent of future harm.
2. Inter-generational equity
   - Section 1.4.1, 2.2-2.6 & 2.9 align with intergenerational equity because these measures aim to reduce energy consumption, waste production, and ensure the next generation inherits natural resources no worse off than the current generation.
3. Conservation of biological diversity and ecological integrity
   - Sections 1.4.2 & 2.9 directly align with conservation of biodiversity and ecological integrity, because they provide habitat in an urban environment, as well as protecting existing habitat features.
4. Improved valuation, pricing, and incentive mechanisms
   - Sections 1.4.3, 2.8, 2.10-2.11 align with this as these measures increase convenience for tenants and make the project a more attractive place to live; this bolsters the project value and ensures more social equity as affordable housing.

1.3.2 Sustainable Buildings SEPP 2022

The Sustainable Buildings State Environmental Planning Policy (SEPP) (2022) is a state-wide environmental planning policy that sets minimum sustainability requirements for residential and certain non-residential development with the aim of reducing greenhouse gas emissions in line with the NSW Net Zero Plan.

The SEPP also mandates BASIX assessments for residential developments. BASIX assesses how the building will conserve water, energy, materials embodied carbon and bolster thermal comfort.

Please see below for summary of BASIX compliance. Please refer to Appendix A for NatHERS certificate and Appendix B for the BASIX certificate:

Table 1 270-278 Burwood Road and 54 Lakemba Street BASIX scores

BASIX	Target	Score Achieved	Compliance
Water	40%	**41%**	**Pass**
Energy	60%	**67%**	**Pass**
Thermal Performance	Pass	**Pass**	**Pass**
Materials	N/A (Reporting only)	**100%**	**N/A** (Reporting only)

1.4 Key Opportunities

The following opportunities have been identified to be key areas of focus with the most potential upside considering the project-specific building context. ADP have identified 3 key opportunities as below:

1.4.1 Façade design for affordability and decarbonization

Serving as affordable housing means the project should aim to use passive building design to reduce reliance on lighting or mechanical heating and cooling so that tenants can enjoy cheaper utility bills. Efficient energy use is cheaper for tenants, but also reduces operational emissions, making the development more sustainable as well.

The cubic footprint and high-rise nature of the towers provides a high façade to roof ratio. Roof area is only roughly 20% of the building while façade area accounts for around 80% (figure 2).

The high façade to roof ratio means the most savings are generated when focusing on optimising the façade.

Figure 2 Visual representation of façade area (blue) versus roof area (red)

The project can achieve this through:

- Reduce window-to-wall ratio (WWR)
  - Walls have superior thermal performance compared to windows; hence more wall area will reduce heat loss in winter and heat gain in summer.
- Selection of efficient glazing
  - Provision of high-performing window systems to help reduce heat loss in winter and heat gain in summer.
  - The provision of glazing with a low solar heat gain coefficient to reduce unwanted heat gain from the morning (east) and evening (west) sun, optimising the thermal comfort levels and reducing the energy required to cool the space.

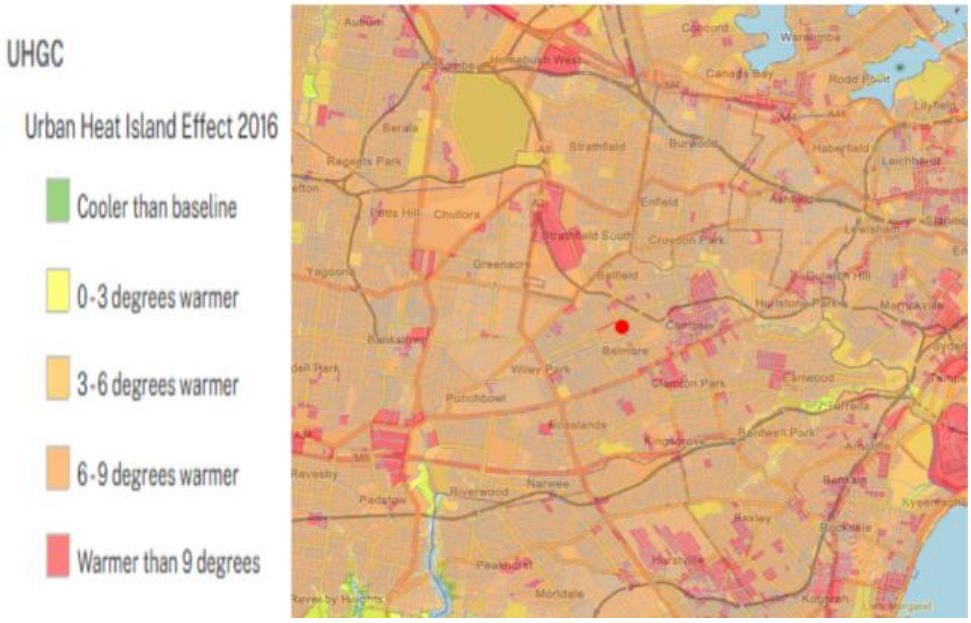
- Select façade and roof materials for low solar absorptance, low-maintenance and long life
  - Materials with low SA are lighter coloured; through this they reflect more solar radiation and absorb less heat, resulting in a cooler surface temperature and lower overall building temperature.
- Provision of high levels of insulation to the external walls, roof, and exposed floors that form part of the building envelope.

1.4.2 Design for climate resilience and biodiversity

In response to a warming climate and future biodiversity loss, the project should aim to create a cooler and more resilient development while also benefiting the local biodiversity.

The project site is 3-6 degrees warmer than rural areas (refer to Figure 3) due to the Urban Heat Island Effect (UHIE). It is situated between larger heat islands in all directions, adding to the future heat stress residents will face.

Figure 3 Sydney Urban Heat Island Map



However, the project site is also surrounded by areas which can be used for green space (Figure 4). The perimeter of the carpark does not extend past the floor plate of both apartment buildings, leaving the soil in this space deep, benefiting water retention and plant growth.

Figure 4 Potential greenspace area highlighted in green

This potential green space can be leveraged to achieve a more resilient development through the following strategies:

> Retaining healthy established and well-structured trees to provide canopy cover that will provide shade.

- Landscape design to give preference to mixed planting of differently sized plants (groundcover, shrubs, trees) to provide a well-shaded and "vertically layered" greenspace.
  - Mixed and layered planting will provide three-dimensional shading to create a cool communal space for residents to seek refuge on a hot day.
  - Stratified or "vertically layered" planting will support animals living in each "layer", creating more habitat and boosting biodiversity.
- Utilize landscape design with preference for native flora species of this bioregion, offering lower maintenance costs and water input.
- Reduce hardscape cover and utilize Water Sensitive Urban Design (WSUD):
  - Remove impermeable hardscape and where paving is necessary choose permeable options. This will reduce overland water flow, reducing burden on drainage systems & stormwater flow to neighbouring properties in heavy rainfall.
  - Water that's absorbed into the deep soil zone charges groundwater levels, which means less watering is required for plants.
  - Less hardscape reduces upfront carbon emissions
- Retaining/implementing habitat features such as fallen logs, rocks and leaf litter within planted areas to provide habitat and source of forage for animals
- Implement green infrastructure such as bird baths to attract wildlife

Figure 5 Cooling & biodiverse landscape design

1.4.3 Designing for sustainable transport

In line with objective of this project to be affordable for tenants, the project should motivate transport options that are also affordable.

The project is well-suited for this because there is a bus stop (Burwood Road before Lakemba Street) located immediately in front of the East end of the project site, and the Belmore train station is only a 350-metre away (Figure 6). Additionally, bike storage areas are already within the design of the project (Figure 7).

Figure 6 Google Earth Image – Project Site Highlighted in red dashed line

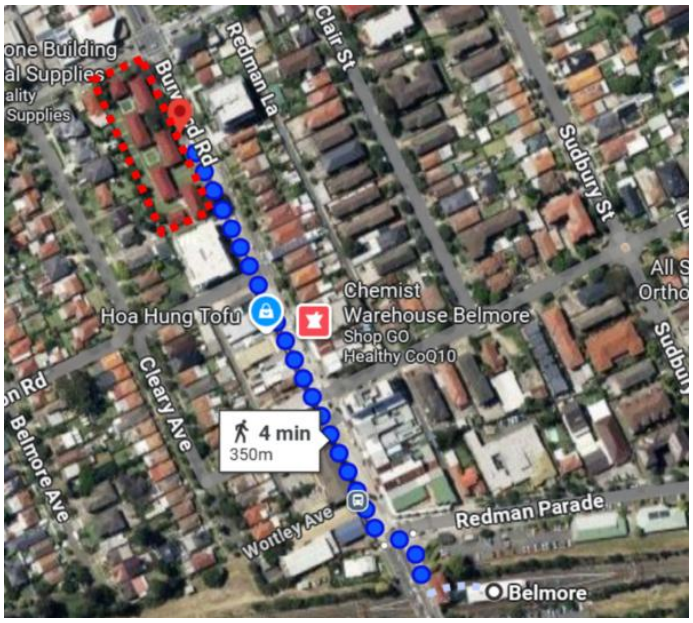


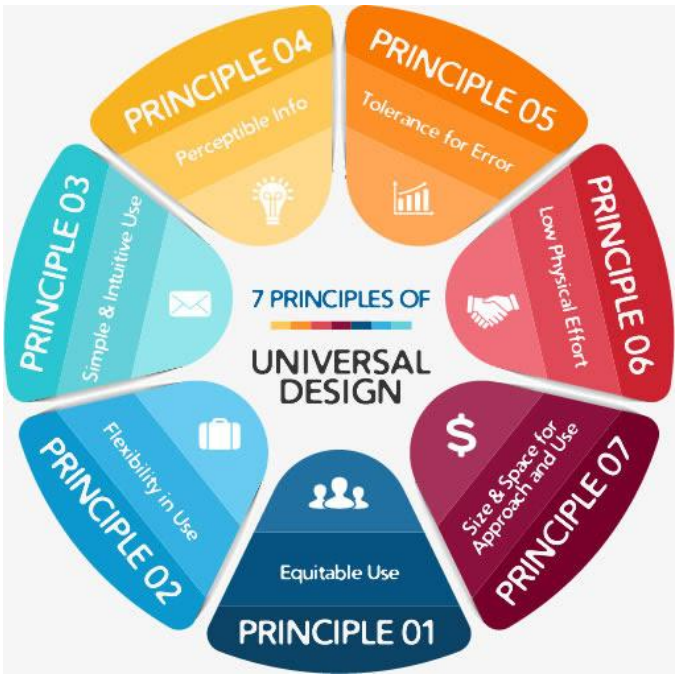
Figure 7 Proposed Bike Storage highlighted in green

Therefore, the project can consider the below initiatives to take advantage of affordable transport and enable tenants to stay connected with the wider city:

- Bike infrastructure:
  - Construction of bike path into project walkways
- Infrastructure for micromobility: Spaces for electric bicycle charging which can also be used for mobility scooters.
- Implementing recommended social initiatives (e.g. universal design principles)

Figure 8 Electric scooter and bike charging

Figure 9 Universal design principles



2. Environmentally Sustainable Design (ESD) Opportunities

2.1 General

This section outlines Environmentally Sustainable Design (ESD) measures outside of the key opportunities that still are applicable to addressing external drivers such as the guiding principles of the SEARs and Sustainable Buildings SEPP, as well as the internal sustainability ambitions of Homes NSW and Canterbury-Bankstown City Council.

Some measures are already embedded into the design; others are additional opportunities that can be considered during the detailed design stage of the project to support sustainability ambitions and targets.

Following a review of project requirements, site location and architectural drawings, we propose the following areas of sustainability to be explored during the design, construction, and operation of the proposed development:

- Energy & Greenhouse Gas Emissions
- Net Zero Operational Carbon Emissions
- Water Efficiency & Conservation
- Low Carbon Materials
- Waste Management Practice
- Healthy Indoor Environment Quality
- Recommended Social Initiatives
- Biodiversity
- Sustainable Transport
- Sustainable Management Practices

2.2 Energy & Greenhouse Gas Emissions Reduction

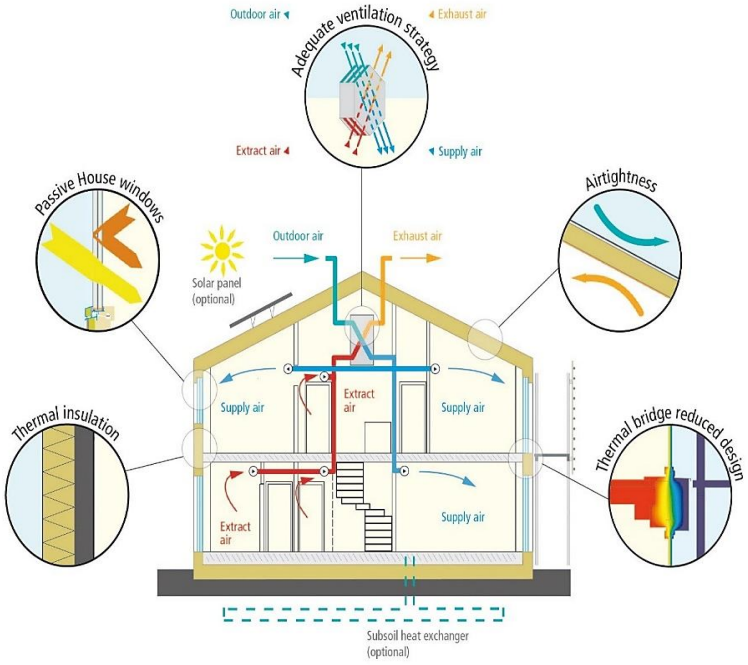
The project team are exploring opportunities to reduce the buildings greenhouse gas emissions impact, through the development of energy saving or energy generating design measures. The following section discusses design aspects of the building that are focused on energy efficiency in operation.

2.2.1 Building Fabric Design

Building fabric design impacts the ability of the building to maintain temperature, air quality and improve interior visibility. Ways the project will do this are as follows:

- Building orientation and form to be optimized for passive design
  - Passive cooling in the summer
  - Passive heating in the winter.
  - Optimisation of window to wall ratios to all facades of the residential areas.
- Efficient glazing systems:
  - Glazing selections that allow for high levels of Visual Light Transmission (VLT) to allow for useful daylight levels of daylight throughout the day.

Figure 10 Passive design strategies for dwellings. Source: Passive House Institute



2.2.2 Heating, Ventilation, & Air Conditioning (HVAC) Design

The HVAC design affects mainly the ongoing energy use and air quality of the building; the below items outline how the project will make the HVAC system more efficient.

- Allow for operable windows for apartments and other spaces that are occupied by people to reduce the need for mechanical ventilation and air conditioning. Install ceiling fans in residential apartments, helping to offset/supplement AC system usage and improve ventilation.

- Select high-efficiency HVAC systems for conditioned spaces:
  - Individual heating and cooling systems (1-phase air-conditioning) with an EER/COP of 3.0-3.5
  - Air conditioning systems to be day-night zoned

2.2.3 Lighting Design

Along with HVAC design, lighting design is one if the main ongoing energy users in a building. Ensuring the underlying design has considered efficiency is important for the ongoing operational costs of the project, the initiatives below are being implemented in the design phase:

- Building orientation and form to be optimized for passive design (cooling in the summer and passive heating in the winter) and natural lighting. Reduce the need for artificial lighting by introducing sunlight through sufficiently size glazed windows and clerestory windows where applicable.
- Select high-efficiency LED lights to provide adequate lighting levels and colour rendering with minimal energy expenditure.
- Consider impacts such as maintenance costs and access for easy maintenance in practice may also be considered.
- Lighting controls are customised to occupancy patterns

2.2.4 Domestic Hot Water

An area which affects both energy usage as well as water usage, the project will consider the below:

- Provide hot water via a central electric heat pump (air-sourced) with high efficiency i.e., 3.5 < COP <= 4.0
- Insulate pipes to reduce heat loss as the hot water is distributed, ensuring less energy for heating water is required.

2.2.5 Facilities

To reduce the energy consumption and corresponding greenhouse gas emissions, the project will be designed to be all-electric with the initiatives below:

- Induction cooktops and electric ovens
- Central electric hot water system

2.2.6 Onsite Renewables

On-site solar photovoltaic (PV) generation will be explored to enable greater reductions in greenhouse gas emissions, reduce the demand from the electricity grid, and to offset associated operational greenhouse emissions. The project will consider:

- Photovoltaic (PV) cells and system to be installed on the roof. The current output of the PV system is TBC, pending receipt of the frozen architectural set.
- We will consider a combination of different options, layouts, and orientations to optimise performance whilst considering the constrained space, orientation, maintenance, and aesthetics of the project.

Figure 11 Example of rooftop solar installation

2.2.7 Metering & Monitoring

An important aspect for any new development, metering, and monitoring allow building owners to measure and quantify operational efficiency metrics, as well as a feedback mechanism on sustainability initiatives. The project can consider:

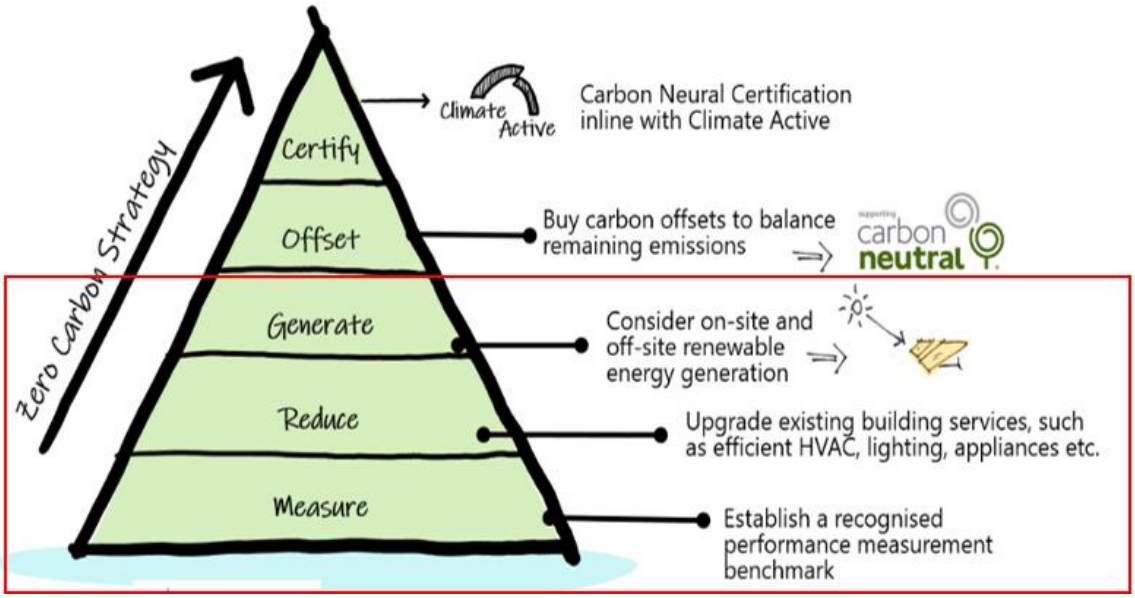
- Energy and water monitoring at the distribution level to identify main consumption factors and any building components that are associated with leakage/wastage.
- The metering strategy will aim to monitor the following major systems:
  - Incoming electrical and water mains supply
  - Electrical supply and thermal meters to distinct areas and uses
  - Metering for energy and water for individual dwelling units
  - Common area lighting systems

2.3 Net Zero Operational Carbon Emissions

In line with the NSW Net Zero Plan by 2050, the project has the opportunity to reduce its greenhouse gas emissions generated by its operational energy use. The following strategy has been proposed as a pathway for the development to achieve net zero:

- **Measure:** At a minimum, annual review of the building monitoring system and services efficiencies.
- **Reduce:** ESD initiatives explored in Section 2 – reduce operational energy and water consumption, encourage behaviour changes to reduce operational waste
- ***Generate:*** Generating energy on-site will decarbonise the project and supply carbon-neutral electricity in the long-term
- ***Offset:*** *Future Consideration*
- ***Certify:*** *Future Consideration*

Figure 12 Net-zero Pathway – the biggest impacts are in the bottom three rungs



2.4 Water Efficiency & Conservation

The project will explore opportunities to reduce water consumption and optimise reuse.

> To reduce potable water use, the project can consider installing highly efficient WELS rated fittings and fixtures, and appliances.

Table 2 Proposed WELS rating

Water fixture/fitting/appliance	Minimum WELS rating
Taps	5 Star
Toilets	4 Star
Showers	4 Star (> 4.5 but <= 6.0 L/ min)

2.5 Low Carbon Materials

The project has considered reducing its environmental impact through the following responsible materials initiatives:

> Design the building and consider construction methodologies for optimum reuse and recyclability of building components.

> Select materials for low-maintenance and long life to minimise compounding material impacts through repairs and refurbishments over the building's lifetime.

> Ensure the buildings structure, envelope, systems, and finishes are comprised of responsibly sourced products.

> Optimise design for most efficient use of materials to lower upfront carbon impacts.

2.6 Waste Management Practice

The project will develop waste management strategies that prioritise avoiding or reducing waste production and providing options to divert waste from landfill as shown in the waste hierarchy below:

Figure 13 Waste Hierarchy – prioritising strategies from the top of the pyramid.

The project will be supported by two waste management plans developed with best practice guidelines, as follows:

- A Construction & Demolition Waste Management Plan to reduce the total amount of waste being sent to landfill when compared against a typical building of its type.
- An Operational Waste Management Plan to reduce operational/occupancy waste, including:
  - Identifying the waste streams relevant to the different operational components of the building, and the individual roles responsible for implementation.
  - Methods for encouraging the separation of waste streams, such as bins, storage areas, or recycling facilities in public areas as required.
  - Identifying storage areas for all waste streams and outline best practice safety and access requirements for their collection.
  - Identifying safe methods for vehicle access and transfer of waste.

2.7 Healthy Indoor Environmental Quality

The project team will consider design initiatives that support the provision of a healthy, activated, and comfortable indoor environments that focus on improving the health and wellbeing of its occupants many of these are related to consideration around HVAC and building fabric design. The design will explore:

- Façade configurations that provide optimal levels of natural daylight
- Glazing selections that allow for high levels of Visual Light Transmission (VLT), flooding spaces with useful daylight levels throughout the day
- Glare mitigation measures through optimising the design for fixed or operable shading devices (including blinds) appropriate to the space.
- The HVAC system will be designed to mitigate the entry of outdoor pollutants and will provide access points for ease of maintenance and cleaning. The project will ensure that all relevant vents/diffusers will be cleaned prior to occupation and use.
- Responsible material selections will be considered to minimise exposure to harmful indoor pollutants such as Volatile Organic Compounds (VOC's), formaldehyde from engineered wood and PVC.

2.8 Recommended Social Initiatives

As part of an ongoing sustainability vision, it is important to also consider social sustainability initiatives. Initiatives that are being embedding into the project are:

- Engagement with Traditional Custodians to consider Designing with Country and possible interpretation sites within the project

Additionally, the project can consider:

- Responsible and inclusive contractors, with understood and ethical supply chains – e.g., responsible procurement and modern slavery requirements.

2.9 Biodiversity

NSW is at risk of half of all threatened species in the state going extinct by 2050. Hence, the development should aim to maximise biodiversity and provide habitat for future wildlife populations. Even in an urban area with little natural vegetation, landscaping design can boost local biodiversity, particularly in birds and invertebrates, which are both in decline.

Recommendations for this project include:

- Landscaping to give preference given to native or adaptive flora species for this bioregion, deepening connection to the natural heritage of the site
- A Construction Environmental Management Plan to minimise impacts to the existing neighbouring trees, erosion and sedimentation caused by construction activities, disposal and management of toxic waste e.g. paints and solvents.

2.10 Sustainable Transport

The project site is well-connected given the proximity to community amenities and the walkable distance between public transport options. Thus, the proposed development will explore:

- Secure bicycle storage/parking for the building visitors, to encourage more social traction to the development without having to accommodate for large car parking spaces.

- Accessible parking spaces for tenants with mobility impairments.

Bikes are cheap and affordable for most, while being an active form of transport that allows residents to exercise. These initiatives are also in line with the Canterbury-Bankstown Development Control Plan (DCP) 2015 and the LAHC design requirements, contributing to a positive domain for residents.

2.11 Sustainable Management Practices

The project team has considered initiatives to deliver best practice environmental management across the design and construction of the project. Initiatives that are being embedded into the project are:

- Design and implementation of Crime Prevention Through Environmental Design (CPTED) principles to increase the safety of occupants and visitors.

Additionally, the project can consider:

- Opportunities to set environmental targets, such as energy, water, waste, or indoor environmental quality.
- Development of a best practice Construction Environmental Management Plan (CEMP) for the demolition and construction phases of the project.

Appendix A
NatHERS Certificate

Nationwide House Energy Rating Scheme®
Class 2 Summary
NatHERS® Certificate No. #HR-IS2EGQ-01

Generated on 03 Nov 2025 using Hero 4.1

Property

Address	270-278 Burwood Road & 54 Lakemba Street, Belmore, NSW, 2192
Lot/DP	
NatHERS climate zone	56 - Mascot AMO

Accredited assessor

Name	Khyati Saxena
Business name	ADP Consulting
Email	k.saxena@adpconsulting.com.au
Phone	+61 405886583
Accreditation No.	10191
Assessor Accrediting Organisation	HERA

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com.au/pdf/HR-IS2EGQ-01. When using either link, ensure you are visiting http://www.hero-software.com.au

National Construction Code (NCC) requirements

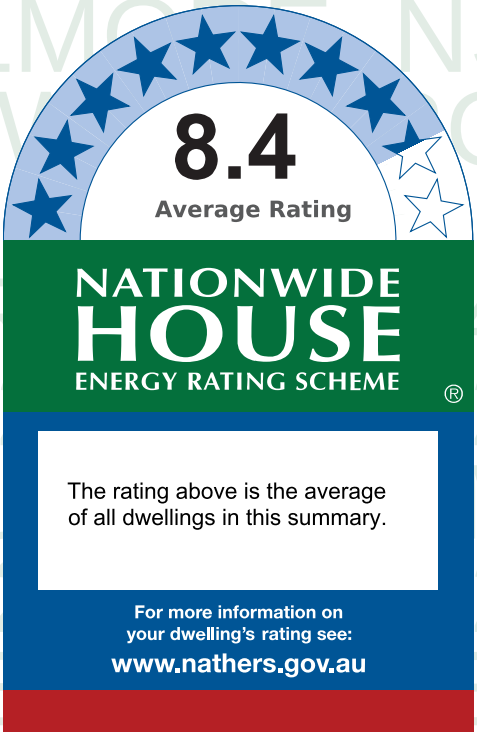
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. 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	10.2	6.9
Maximum load	29.8	16.7
Average limit	28.1	20.0
Maximum limit	34.4	21.4

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-L5GOHB-01	G05	0.6 (33)	3.5 (20)	4.0	10.0	n/a
HR-N8V6FB-01	N-101	6.1 (33)	7.6 (20)	13.8	8.8	n/a
HR-CH791B-01	N-102	1.4 (33)	6.6 (20)	8.0	9.7	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-B8PFD2-01	N-103	2.8 (33)	6.1 (20)	8.9	9.5	n/a
HR-GC5S91-01	N-104	8.7 (33)	7.3 (20)	15.9	8.5	n/a
HR-PE17QW-01	N-105	2.8 (33)	6.7 (20)	9.5	9.4	n/a
HR-8BJ5BA-01	N-106	0.6 (33)	8.9 (20)	9.4	9.4	n/a
HR-SHFA7T-01	N-107	0.5 (33)	3.2 (20)	3.7	10.0	n/a
HR-Q7CZU7-01	N-108	11.0 (33)	4.6 (20)	15.6	8.5	n/a
HR-81M9H9-01	N-109	16.6 (33)	3.1 (20)	19.7	8.1	n/a
HR-7GM8TT-01	N-110	18.2 (33)	4.7 (20)	22.8	7.8	n/a
HR-061A3G-01	N-201	9.2 (33)	8.2 (20)	17.4	8.4	n/a
HR-0Z2X5F-01	N-202	3.5 (33)	7.8 (20)	11.3	9.1	n/a
HR-AVMVRY-01	N-203	2.7 (33)	6.8 (20)	9.5	9.4	n/a
HR-QBH8TD-01	N-204	8.8 (33)	7.8 (20)	16.5	8.4	n/a
HR-AG1FRI-01	N-205	4.0 (33)	4.4 (20)	8.4	9.6	n/a
HR-EHFEPC-01	N-206	0.7 (33)	9.2 (20)	9.9	9.4	n/a
HR-EW1S8L-01	N-207	0.5 (33)	4.4 (20)	4.9	10.0	n/a
HR-NZHCFC-01	N-208	4.2 (33)	16.7 (20)	20.9	8.0	n/a
HR-P3A552-01	N-209	21.3 (33)	14.9 (20)	36.2	6.2	n/a
HR-0JI9O6-01	N-210	15.8 (33)	9.3 (20)	25.1	7.4	n/a
HR-02SLCA-01	N-211	10.3 (33)	3.0 (20)	13.3	8.8	n/a
HR-I90B0O-01	N-212	18.9 (33)	4.8 (20)	23.7	7.7	n/a
HR-V5XX37-01	N-301	10.4 (34)	7.4 (21)	17.8	8.3	n/a
HR-GKJ989-01	N-302	3.9 (34)	7.8 (21)	11.7	9.0	n/a
HR-1UY6EH-01	N-303	3.1 (34)	6.4 (21)	9.6	9.4	n/a
HR-WUXOL6-01	N-304	9.6 (34)	7.5 (21)	17.2	8.4	n/a
HR-NAS6GS-01	N-305	5.2 (34)	4.7 (21)	9.9	9.4	n/a
HR-H1EQ4E-01	N-306	0.6 (34)	7.5 (21)	8.1	9.7	n/a
HR-X95FRK-01	N-307	0.4 (34)	5.3 (21)	5.7	10.0	n/a
HR-KEP3L7-01	N-308	2.5 (34)	10.3 (21)	12.8	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-DJZW3B-01	N-309	19.3 (34)	7.7 (21)	27.0	7.3	n/a
HR-Q83A94-01	N-310	15.2 (34)	5.9 (21)	21.1	7.9	n/a
HR-0M9ZU5-01	N-311	12.4 (34)	4.0 (21)	16.5	8.4	n/a
HR-DNIH4N-01	N-312	20.8 (34)	4.5 (21)	25.3	7.4	n/a
HR-5GG9F5-01	N-401	10.5 (34)	7.3 (21)	17.8	8.3	n/a
HR-ASW0V3-01	N-402	4.3 (34)	8.0 (21)	12.3	8.9	n/a
HR-JNPAA6-01	N-403	3.5 (34)	6.6 (21)	10.2	9.3	n/a
HR-VWIW2Y-01	N-404	11.6 (34)	7.6 (21)	19.2	8.2	n/a
HR-HQTPR8-01	N-405	6.0 (34)	4.5 (21)	10.5	9.3	n/a
HR-S6SBZR-01	N-406	0.6 (34)	6.9 (21)	7.6	9.7	n/a
HR-20O7N9-01	N-407	0.6 (34)	5.3 (21)	5.9	10.0	n/a
HR-ZZN9GN-01	N-408	2.7 (34)	9.9 (21)	12.6	8.9	n/a
HR-8XIO0H-01	N-409	20.6 (34)	7.3 (21)	27.9	7.2	n/a
HR-GGCOT7-01	N-410	16.3 (34)	6.3 (21)	22.6	7.8	n/a
HR-CRH6B1-01	N-411	8.3 (34)	2.6 (21)	11.0	9.2	n/a
HR-L358EG-01	N-412	22.9 (34)	4.4 (21)	27.4	7.3	n/a
HR-H8SRR4-01	N-501	11.5 (34)	7.2 (21)	18.7	8.2	n/a
HR-BBZ4GO-01	N-502	4.9 (34)	7.8 (21)	12.7	8.9	n/a
HR-C00RGS-01	N-503	3.7 (34)	6.7 (21)	10.5	9.3	n/a
HR-SQGZMC-01	N-504	11.5 (34)	7.6 (21)	19.0	8.2	n/a
HR-VDI4YF-01	N-505	6.1 (34)	4.6 (21)	10.7	9.2	n/a
HR-IDUOPB-01	N-506	0.7 (34)	7.3 (21)	8.0	9.7	n/a
HR-ZOO1GB-01	N-507	0.7 (34)	5.1 (21)	5.8	10.0	n/a
HR-PR6N3H-01	N-508	2.9 (34)	9.5 (21)	12.4	8.9	n/a
HR-HGWTAI-01	N-509	21.0 (34)	6.6 (21)	27.7	7.2	n/a
HR-FG5E4R-01	N-510	16.8 (34)	5.7 (21)	22.5	7.8	n/a
HR-C9GN6F-01	N-511	8.7 (34)	2.6 (21)	11.2	9.1	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-E481M0-01	N-512	23.6 (34)	4.5 (21)	28.1	7.2	n/a
HR-CTUY6J-01	N-601	12.0 (34)	6.7 (21)	18.6	8.2	n/a
HR-0MDKZJ-01	N-602	5.2 (34)	7.6 (21)	12.8	8.9	n/a
HR-QEQXVJ-01	N-603	3.9 (34)	6.5 (21)	10.4	9.3	n/a
HR-1WZ005-01	N-604	12.2 (34)	7.1 (21)	19.3	8.2	n/a
HR-NDK7DZ-01	N-605	6.4 (34)	4.2 (21)	10.5	9.2	n/a
HR-0GEDOQ-01	N-606	0.7 (34)	7.2 (21)	7.9	9.7	n/a
HR-NRVK72-01	N-607	0.8 (34)	5.2 (21)	6.0	10.0	n/a
HR-GZ2X8X-01	N-608	3.0 (34)	9.5 (21)	12.5	8.9	n/a
HR-C8CCR4-01	N-609	22.3 (34)	9.9 (21)	32.2	6.7	n/a
HR-PUCNJW-01	N-610	24.0 (34)	8.2 (21)	32.1	6.7	n/a
HR-AURLZ2-01	N-611	18.4 (34)	4.0 (21)	22.4	7.8	n/a
HR-G1OO2G-01	N-612	29.8 (34)	7.9 (21)	37.7	6.0	n/a
HR-YYFB33-01	N-701	15.3 (34)	9.2 (21)	24.5	7.6	n/a
HR-HUGUYZ-01	N-702	9.0 (34)	9.9 (21)	18.9	8.2	n/a
HR-L7C03K-01	N-703	7.9 (34)	8.1 (21)	16.0	8.4	n/a
HR-NCJE1X-01	N-704	16.3 (34)	10.1 (21)	26.4	7.4	n/a
HR-915Y5K-01	N-705	11.6 (34)	7.0 (21)	18.5	8.2	n/a
HR-LPO83W-01	N-706	3.0 (34)	9.1 (21)	12.0	8.9	n/a
HR-STFEBE-01	N-707	3.6 (34)	8.1 (21)	11.7	9.1	n/a
HR-1QIFBS-01	N-708	8.1 (34)	14.4 (21)	22.5	7.8	n/a
HR-X7NOZK-01	N-709	22.4 (34)	14.3 (21)	36.7	6.2	n/a
HR-8KZ4TX-01	N-G01	7.2 (33)	7.1 (20)	14.3	8.7	n/a
HR-CIA5AV-01	N-G02	8.2 (33)	11.1 (20)	19.3	8.2	n/a
HR-1QM5NG-01	N-G03	9.4 (33)	7.3 (20)	16.7	8.4	n/a
HR-2Q15AX-01	N-G04	1.1 (33)	6.6 (20)	7.6	9.7	n/a
HR-UNN9OZ-01	N-G06	10.1 (33)	6.5 (20)	16.6	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-U4WZBB-01	N-G07	21.6 (33)	6.5 (20)	28.0	7.2	n/a
HR-ZQEL1B-01	N-G08	15.9 (33)	7.0 (20)	22.9	7.8	n/a
HR-I1T8NF-01	S-111	17.5 (33)	7.1 (20)	24.6	7.5	n/a
HR-D0ZD58-01	S-112	9.5 (33)	3.3 (20)	12.9	8.9	n/a
HR-H3YON4-01	S-113	12.0 (33)	3.1 (20)	15.1	8.6	n/a
HR-OSI9M9-01	S-114	18.0 (33)	3.9 (20)	21.9	7.9	n/a
HR-W5FHEE-01	S-115	9.0 (33)	6.6 (20)	15.6	8.5	n/a
HR-8DXIRO-01	S-116	12.0 (33)	5.7 (20)	17.6	8.3	n/a
HR-FNBYSO-01	S-117	9.3 (33)	5.7 (20)	15.0	8.6	n/a
HR-MLI47F-01	S-118	2.2 (33)	6.8 (20)	9.0	9.4	n/a
HR-GZAGPK-01	S-213	14.0 (33)	11.0 (20)	24.9	7.5	n/a
HR-N0N7T7-01	S-214	10.7 (33)	3.8 (20)	14.5	8.7	n/a
HR-1R7KRR-01	S-215	14.1 (33)	3.5 (20)	17.7	8.3	n/a
HR-DYTJ58-01	S-216	16.6 (33)	4.0 (20)	20.6	8.0	n/a
HR-07VENY-01	S-217	9.0 (33)	7.3 (20)	16.3	8.4	n/a
HR-CCUVFD-01	S-218	6.9 (33)	8.4 (20)	15.3	8.6	n/a
HR-VN6V0S-01	S-219	2.7 (33)	7.8 (20)	10.5	9.2	n/a
HR-UN5Q6K-01	S-220	2.7 (33)	6.9 (20)	9.6	9.4	n/a
HR-XBAUXA-01	S-313	8.5 (34)	13.4 (21)	21.9	7.9	n/a
HR-XOJX0V-01	S-314	4.5 (34)	5.2 (21)	9.7	9.4	n/a
HR-VS7LYS-01	S-315	14.7 (34)	3.7 (21)	18.4	8.3	n/a
HR-ZIO1U0-01	S-316	4.2 (34)	7.2 (21)	11.5	9.1	n/a
HR-SL3GIU-01	S-317	8.3 (34)	7.4 (21)	15.7	8.5	n/a
HR-X0WSV1-01	S-318	8.6 (34)	8.2 (21)	16.7	8.4	n/a
HR-T8PNQ8-01	S-319	4.7 (34)	7.8 (21)	12.6	8.9	n/a
HR-P9Z4FJ-01	S-320	2.4 (34)	6.9 (21)	9.2	9.4	n/a
HR-TN15UW-01	S-413	22.2 (34)	8.0 (21)	30.1	6.9	n/a
HR-PDVCEP-01	S-414	17.2 (34)	2.8 (21)	20.1	8.1	n/a
HR-63Q7VC-01	S-415	19.1 (34)	2.9 (21)	22.0	7.9	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-YAQKXA-01	S-416	6.9 (34)	6.3 (21)	13.2	8.8	n/a
HR-R40YX0-01	S-417	11.7 (34)	6.7 (21)	18.4	8.3	n/a
HR-3JAV3Z-01	S-418	11.3 (34)	7.4 (21)	18.7	8.2	n/a
HR-KB239O-01	S-419	5.6 (34)	7.3 (21)	12.9	8.9	n/a
HR-R2T4MO-01	S-420	4.2 (34)	5.0 (21)	9.2	9.4	n/a
HR-X3PF5B-01	S-513	18.7 (34)	8.0 (21)	26.8	7.3	n/a
HR-M7D4VQ-01	S-514	17.0 (34)	3.0 (21)	19.9	8.1	n/a
HR-9R6U4V-01	S-515	20.5 (34)	2.8 (21)	23.3	7.7	n/a
HR-TCW5HR-01	S-516	7.3 (34)	6.1 (21)	13.4	8.8	n/a
HR-EGGNSM-01	S-517	11.8 (34)	6.7 (21)	18.4	8.3	n/a
HR-MU96Y9-01	S-518	11.5 (34)	7.3 (21)	18.7	8.2	n/a
HR-334X0Y-01	S-519	7.5 (34)	6.3 (21)	13.8	8.8	n/a
HR-AG40P2-01	S-520	3.8 (34)	4.9 (21)	8.8	9.5	n/a
HR-4NY9MN-01	S-613	11.6 (34)	8.1 (21)	19.7	8.1	n/a
HR-HWUYK4-01	S-614	16.9 (34)	2.8 (21)	19.7	8.1	n/a
HR-3VFX57-01	S-615	29.0 (34)	4.8 (21)	33.9	6.5	n/a
HR-5RBQG3-01	S-616	12.8 (34)	8.3 (21)	21.0	7.9	n/a
HR-8P20R1-01	S-617	11.8 (34)	6.7 (21)	18.5	8.2	n/a
HR-CVWBMR-01	S-618	11.5 (34)	7.3 (21)	18.8	8.2	n/a
HR-E2KC21-01	S-619	7.7 (34)	6.0 (21)	13.7	8.8	n/a
HR-LWRJ3W-01	S-620	2.8 (34)	4.9 (21)	7.7	9.7	n/a
HR-WTBE41-01	S-710	18.0 (34)	12.1 (21)	30.1	6.9	n/a
HR-KLEMW5-01	S-711	27.3 (34)	5.5 (21)	32.8	6.6	n/a
HR-J3CTAP-01	S-712	20.8 (34)	7.7 (21)	28.5	7.2	n/a
HR-UTD0VN-01	S-713	13.3 (34)	11.0 (21)	24.3	7.6	n/a
HR-1WMYVA-01	S-714	14.6 (34)	8.7 (21)	23.4	7.7	n/a
HR-ZRMHGE-01	S-715	6.2 (34)	8.1 (21)	14.3	8.7	n/a
HR-NZPMQQ-01	S-G09	18.3 (33)	10.2 (20)	28.5	7.2	n/a
HR-UHFV7B-01	S-G10	15.7 (33)	10.9 (20)	26.7	7.3	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-WM2CHO-01	S-G11	17.9 (33)	6.4 (20)	24.3	7.6	n/a
HR-X696X5-01	S-G12	7.4 (33)	5.7 (20)	13.0	8.9	n/a
Averages	145x (Total)	10.2	6.9	17.1	8.4	n/a
Maximum Loads and Minimum Ratings		29.8	16.7	37.7	6.0	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 B
BASIX Certificate

BASIX™ Certificate

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

Multi Dwelling

Certificate number: 1818587M

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

Secretary
Date of issue: Thursday, 23 October 2025
To be valid, this certificate must be submitted with a development application or lodged with a complying development certificate application within 3 months of the date of issue.

When submitting this BASIX certificate with a development application or complying development certificate application, it must be accompanied by NatHERS certificate HR-H4XT0A-01.

Project summary	
Project name	54 Lakemba Street Belmore Rev02
Street address	270-278 BURWOOD ROAD BELMORE 2192
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 124465
Lot No.	1
Section no.	-
No. of residential flat buildings	2
Residential flat buildings: no. of dwellings	145
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	✔ 67	Target 60
Materials	✔ -100	Target n/a

Certificate Prepared by
Name / Company Name: ADP CONSULTANTS PTY LTD
ABN (if applicable): 68610202198

Description of project

Project address	
Project name	54 Lakemba Street Belmore Rev02
Street address	270-278 BURWOOD ROAD BELMORE 2192
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 124465
Lot No.	1
Section no.	-

Project type	
No. of residential flat buildings	2
Residential flat buildings: no. of dwellings	145
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Site details	
Site area (m²)	4281
Roof area (m²)	2083
Non-residential floor area (m²)	0
Residential car spaces	70
Non-residential car spaces	2

Common area landscape	
Common area lawn (m²)	117
Common area garden (m²)	1248
Area of indigenous or low water use species (m²)	873.6

Assessor details and thermal loads	
Assessor number	HERA10191
Certificate number	HR-H4XT0A-01
Climate zone	56

Project score			
Water	✔	41	Target 40
Thermal Performance	✔	Pass	Target Pass
Energy	✔	67	Target 60
Materials	✔	-100	Target n/a

Description of project

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

Residential flat buildings - North Tower, 87 dwellings, 7 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)
N - 101	1	54	0	0	0
N - 105	2	76	0	0	0
N - 109	3	109	0	0	0
N - 203	1	52	0	0	0
N - 207	1	50	0	0	0
N - 211	1	53	0	0	0
N - 303	1	52	0	0	0
N - 307	1	50	0	0	0
N - 311	1	53	0	0	0
N - 403	1	52	0	0	0
N - 407	1	50	0	0	0
N - 411	1	53	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
N - 102	1	52	0	0	0
N - 106	2	76	0	0	0
N - 110	3	90	0	0	0
N - 204	1	56	0	0	0
N - 208	2	73	0	0	0
N - 212	3	90	0	0	0
N - 304	1	56	0	0	0
N - 308	2	73	0	0	0
N - 312	2	77	0	0	0
N - 404	1	56	0	0	0
N - 408	2	73	0	0	0
N - 412	2	77	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
N - 103	1	52	0	0	0
N - 107	2	77	8	0	0
N - 201	1	54	0	0	0
N - 205	2	76	8	0	0
N - 209	1	51	0	0	0
N - 301	1	54	8	0	0
N - 305	2	76	0	0	0
N - 309	1	51	0	0	0
N - 401	1	54	0	0	0
N - 405	2	76	0	0	0
N - 409	1	51	0	0	0
N - 501	1	54	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
N - 104	1	56	0	0	0
N - 108	3	106	0	0	0
N - 202	1	52	0	0	0
N - 206	2	76	0	0	0
N - 210	1	51	8	0	0
N - 302	1	52	0	0	0
N - 306	2	76	8	0	0
N - 310	1	51	0	0	0
N - 402	1	52	8	0	0
N - 406	2	76	0	0	0
N - 410	1	51	0	0	0
N - 502	1	52	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
N - 503	1	52	0	0	0
N - 507	1	50	0	0	0
N - 511	1	53	0	0	0
N - 603	1	52	0	0	0
N - 607	1	50	0	0	0
N - 611	1	53	0	0	0
N - 703	1	54	0	0	0
N - 707	1	50	0	0	0
N - G03	2	76	0	0	0
N - G07	2	94	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
N - 504	1	56	0	0	0
N - 508	2	73	0	0	0
N - 512	2	77	0	0	0
N - 604	1	56	0	0	0
N - 608	2	73	0	0	0
N - 612	2	77	0	0	0
N - 704	1	54	0	0	0
N - 708	2	73	0	0	0
N - G04	2	75	0	0	0
N - G08	3	92	8	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
N - 505	2	76	0	0	0
N - 509	1	51	8	0	0
N - 601	1	54	0	0	0
N - 605	2	76	8	0	0
N - 609	1	51	0	0	0
N - 701	1	56	8	0	0
N - 705	2	76	0	0	0
N - G01	2	81	0	0	0
N - G05	2	77	0	0	0
N-709	1	51	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
N - 506	2	76	0	0	0
N - 510	1	51	0	0	0
N - 602	1	52	0	0	0
N - 606	2	76	0	0	0
N - 610	1	51	0	0	0
N - 702	1	54	0	0	0
N - 706	2	76	0	0	0
N - G02	1	53	0	0	0
N - G06	3	92	0	0	0

Residential flat buildings - South Tower, 58 dwellings, 7 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)
S - 111	3	95	0	0	0
S - 115	1	53	0	0	0
S - 213	3	93	0	0	0
S - 217	1	53	0	0	0
S - 313	3	93	0	0	0
S - 317	1	53	8	0	0
S - 413	3	93	8	0	0
S - 417	1	53	0	0	0
S - 513	3	93	0	0	0
S - 517	1	53	0	0	0
S - 613	3	93	8	0	0
S - 617	1	53	0	0	0
S - 710	3	93	0	0	0
S - 714	1	54	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
S - 112	1	55	8	0	0
S - 116	1	52	0	0	0
S - 214	1	55	0	0	0
S - 218	1	52	0	0	0
S - 314	1	55	0	0	0
S - 318	1	52	0	0	0
S - 414	1	55	0	0	0
S - 418	1	52	8	0	0
S - 514	1	55	8	0	0
S - 518	1	52	0	0	0
S - 614	1	55	0	0	0
S - 618	1	52	0	0	0
S - 711	1	55	0	0	0
S - 715	2	73	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
S - 113	2	70	0	0	0
S - 117	1	54	0	0	0
S - 215	2	70	0	0	0
S - 219	1	54	0	0	0
S - 315	2	70	0	0	0
S - 319	1	54	0	0	0
S - 415	2	70	0	0	0
S - 419	1	54	0	0	0
S - 515	2	70	0	0	0
S - 519	1	54	0	0	0
S - 615	2	70	0	0	0
S - 619	1	54	0	0	0
S - 712	1	53	0	0	0
S - G09	2	76	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
S - 114	2	73	0	0	0
S - 118	2	73	0	0	0
S - 216	2	74	0	0	0
S - 220	2	73	0	0	0
S - 316	2	73	0	0	0
S - 320	2	73	0	0	0
S - 416	2	73	0	0	0
S - 420	2	73	0	0	0
S - 516	2	73	0	0	0
S - 520	2	73	0	0	0
S - 616	2	73	0	0	0
S - 620	2	73	0	0	0
S - 713	1	52	0	0	0
S - G10	1	53	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
S - G11	3	98	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
S - G12	1	52	8	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)

Description of project

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

Common areas of the development (non-building specific)

Common area	Floor area (m²)
Undercover car park area	3208.8
B1 Bin Holding Area	75.45
B1 Fire Pump Room	56.78
B1 Cold Water Tank Room	24.97

Common area	Floor area (m²)
B1 Main Switch Room	30.2
B2 Carpark Exhaust Fan Room	38.24
B1 Main Comms Room	15.9
B1 Rainwater Pump Filtration & Storage Room	16.27

Common area	Floor area (m²)
B1 Waste Room	112.1
B1 Carpark Supply Fan Room	30.29
B2 Sewer Pump Room	9.45
B1 Carpark Exhaust Fan Room	38.9

Schedule of BASIX commitments

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

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

4. Commitments for single dwelling houses

(a) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance and Materials

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

(a) Buildings 'Other'

(i) Materials

(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 - North Tower

(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**
concrete slab on ground, frame:	1012	-	none
floors above habitable rooms, frame: suspended concrete slab	5778.68	-	-

External wall types				
External wall type	**Construction type**	**Area (m2)**	**Low emissions option**	**Insulation**
External wall type 1	concrete block/ plasterboard,frame:light steel frame	3580.5	-	fibreglass batts or roll

Internal wall types			
Internal wall type	**Construction type**	**Area (m2)**	**Insulation**
Internal wall type 1	plasterboard, frame:light steel frame	3368.75	-
Internal wall type 2	single skin masonry, frame:light steel frame	1245	fibreglass batts or roll

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	**Volume (m^3)**	**Low emissions option**
yes	203.84	-

Ceiling and roof types			
Ceiling and roof type	**Area (m^2)**	**Roof Insulation**	**Ceiling Insulation**
concrete - plasterboard internal, frame: no frame	1166.5	-	fibreglass batts or roll

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)**
1433.64	-	-	1433.64	-	-	-	-

(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
N-709	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	5 star	-	not specified	not specified	-	-	-	-	-	-	-

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All 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	manual switch on/off	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
N-709	-	-	-	-	0	-
All other dwellings	1-phase airconditioning - non ducted / EER 3.0 - 3.5	no individual system	1-phase airconditioning - non ducted / EER 3.0 - 3.5	no individual system	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
N-709	-	-	-	-	-	induction cooktop & electric oven	-	-	-	-
All other dwellings	-	-	-	-	-	induction cooktop & electric oven	-	-	no	no

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

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
N - 101	6.1	7.6	13.700
N - 102	1.4	6.6	8.000
N - 103	2.8	6.1	8.900
N - 104	8.7	7.3	16.000
N - 105	2.8	6.7	9.500
N - 106	0.6	8.9	9.500
N - 107	0.5	3.2	3.700
N - 108	11	4.6	15.600
N - 109	16.6	3.1	19.700
N - 110	18.2	4.7	22.900
N - 201	8.4	9.2	17.600
N - 202	9.1	3.5	12.600
N - 203	9.4	2.7	12.100
N - 204	8.4	8.8	17.200
N - 205	9.6	4	13.600
N - 206	9.4	0.7	10.100
N - 207	10	0.5	10.500
N - 208	8	4.2	12.200
N - 209	6.2	21.3	27.500
N - 210	7.7	18.9	26.600
N - 211	7.4	15.8	23.200
N - 212	8.8	10.3	19.100
N - 301	10.4	7.4	17.800
N - 302	3.9	7.8	11.700

	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)
N - 303	3.1	6.4	9.500
N - 304	9.6	7.5	17.100
N - 305	5.2	4.7	9.900
N - 306	0.6	7.5	8.100
N - 307	0.4	5.3	5.700
N - 308	2.9	9.5	12.400
N - 309	2.5	10.3	12.800
N - 310	19.3	7.7	27.000
N - 311	15.2	5.9	21.100
N - 312	12.4	4	16.400
N - 401	2.7	9.9	12.600
N - 402	20.6	7.3	27.900
N - 403	16.3	6.3	22.600
N - 404	8.3	2.6	10.900
N - 405	22.9	4.4	27.300
N - 406	11.5	7.2	18.700
N - 407	4.9	7.8	12.700
N - 408	3.7	6.7	10.400
N - 409	11.5	7.6	19.100
N - 410	6.1	4.6	10.700
N - 411	0.7	7.3	8.000
N - 412	0.7	5.1	5.800
N - 501	6.4	4.2	10.600
N - 502	0.7	7.2	7.900
N - 503	0.8	5.2	6.000
N - 504	3	9.5	12.500
N - 505	22.3	9.9	32.200
N - 506	24	8.2	32.200
N - 507	18.4	4	22.400
N - 508	29.8	7.9	37.700
N - 509	15.3	9.2	24.500

	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)
N - 510	9	9.9	18.900
N - 511	7.9	8.1	16.000
N - 512	16.3	10.1	26.400
N - 601	4.2	7.2	11.400
N - 602	8.3	7.4	15.700
N - 603	8.6	8.2	16.800
N - 604	4.7	7.8	12.500
N - 605	2.4	6.9	9.300
N - 606	22.2	8	30.200
N - 607	17.2	2.8	20.000
N - 608	19.1	2.9	22.000
N - 609	6.9	6.3	13.200
N - 610	11.7	6.7	18.400
N - 611	11.3	7.4	18.700
N - 612	5.6	7.3	12.900
N - 701	3.8	4.9	8.700
N - 702	11.6	8.1	19.700
N - 703	16.9	2.8	19.700
N - 704	29	4.8	33.800
N - 705	12.8	8.3	21.100
N - 706	11.8	6.7	18.500
N - 707	11.5	7.3	18.800
N - 708	7.7	6	13.700
N - G01	7.2	7.1	14.300
N - G02	8.2	11.1	19.300
N - G03	9.4	7.3	16.700
N - G04	1.1	6.6	7.700
N - G05	0.6	3.5	4.100
N - G06	10.1	6.5	16.600
N - G07	21.6	6.5	28.100
N - G08	15.9	7	22.900

	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)
All other dwellings	2.8	4.9	7.700

(c) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star

(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**
GL Communal Room	air conditioning system	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	no
GL W/C	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	no
GL Meeting Room	air conditioning system	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	no
Fire Stairs (N)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no
Lobbies/Hallways Breezeway (N)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no
Ground Floor Lobby (N)	ventilation supply only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	no
Lobbies/Hallways (N)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no

Central energy systems	Type	Specification
Lift bank (No. 1)	permanent magnet synchronous motor (PMSM) and regenerative drive	Number of levels with apartments served by a lift: 7 number of levels from the bottom of the lift shaft to the top of the lift shaft: 9 number of lifts: 2 lift load capacity: >= 1001 kg but <= 1500kg

2. Commitments for Residential flat buildings - South Tower

(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
concrete slab on ground, frame:	832	-	none
floors above habitable rooms, frame: suspended concrete slab	3847.81	-	-

External wall types

External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	concrete block/ plasterboard,frame:light steel frame	2894	-	fibreglass batts or roll

Internal wall types

Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 1	plasterboard, frame:light steel frame	3368.75	-
Internal wall type 2	single skin masonry, frame:light steel frame	1245	fibreglass batts or roll

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	Volume (m^3)	Low emissions option
yes	203.84	-

Ceiling and roof types			
Ceiling and roof type	Area (m^2)	Roof Insulation	Ceiling Insulation
concrete - plasterboard internal, frame: no frame	916.5	-	fibreglass batts or roll

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)
955.76	-	-	955.76	-	-	-	-

(b) Dwellings

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

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 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.	✔	✔	✔
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✔ ✔	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below;		✔	

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	Central hot water system (No. 1)	individual fan, ducted to façade or roof	interlocked to light with timer off	individual fan, ducted to façade or roof	manual switch on/off	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	1-phase airconditioning - non ducted / EER 3.0 - 3.5	no individual system	1-phase airconditioning - non ducted / EER 3.0 - 3.5	no individual system	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
All dwellings	-	-	-	-	-	induction cooktop & electric oven	-	-	no	no

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

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
S - 111	17.5	7.1	24.600
S - 112	9.5	3.3	12.800
S - 113	12	3.1	15.100
S - 114	18	3.9	21.900

	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)
S - 115	9	6.6	15.600
S - 116	12	5.7	17.700
S - 117	9.3	5.7	15.000
S - 118	2.2	6.8	9.000
S - 213	7.5	14	21.500
S - 214	8.7	10.7	19.400
S - 215	8.3	14.1	22.400
S - 216	8	16.6	24.600
S - 217	8.4	9	17.400
S - 218	8.6	6.9	15.500
S - 219	9.2	2.7	11.900
S - 220	9.4	2.7	12.100
S - 313	20.8	4.5	25.300
S - 314	10.5	7.3	17.800
S - 315	4.3	8	12.300
S - 316	3.5	6.6	10.100
S - 317	11.6	7.6	19.200
S - 318	6	4.5	10.500
S - 319	0.6	6.9	7.500
S - 320	0.6	5.3	5.900
S - 413	21	6.6	27.600
S - 414	16.8	5.7	22.500
S - 415	8.7	2.6	11.300
S - 416	23.6	4.5	28.100
S - 417	12	6.7	18.700
S - 418	5.2	7.6	12.800
S - 419	3.9	6.5	10.400
S - 420	12.2	7.1	19.300
S - 513	11.6	7	18.600
S - 514	3	9.1	12.100
S - 515	3.6	8.1	11.700

	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)
S - 516	8.1	14.4	22.500
S - 517	22.4	14.3	36.700
S - 518	8.5	13.4	21.900
S - 519	4.5	5.2	9.700
S - 520	14.7	3.7	18.400
S - 613	4.2	5	9.200
S - 614	18.7	8	26.700
S - 615	17	3	20.000
S - 616	20.5	2.8	23.300
S - 617	7.3	6.1	13.400
S - 618	11.8	6.7	18.500
S - 619	11.5	7.3	18.800
S - 620	7.5	6.3	13.800
S - 710	18	12.1	30.100
S - 711	27.3	5.5	32.800
S - 712	20.8	7.7	28.500
S - 713	13.3	11	24.300
S - 714	14.6	8.7	23.300
S - 715	6.2	8.1	14.300
S - G09	18.3	10.2	28.500
S - G10	15.7	10.9	26.600
S - G11	17.9	6.4	24.300
All other dwellings	7.4	5.7	13.100

(c) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star

(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
GL Bike Shed	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no
Fire Stairs (S)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no
GL Waste Holding Area	ventilation exhaust only	none i.e., continuous	light-emitting diode	time clock and motion sensors	no
GL BWR	ventilation exhaust only	none i.e., continuous	light-emitting diode	time clock and motion sensors	no
Lobbies/Hallways Breezeway (S)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no
Ground Floor Lobby (S)	ventilation supply only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	no
Lobbies/Hallways (S)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no

Central energy systems	Type	Specification
Lift bank (No. 2)	permanent magnet synchronous motor (PMSM) and regenerative drive	Number of levels with apartments served by a lift: 7 number of levels from the bottom of the lift shaft to the top of the lift shaft: 9 number of lifts: 2 lift load capacity: >= 1001 kg but <= 1500kg

3. Commitments for multi-dwelling housing

(a) Dwellings

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

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

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

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

4. Commitments for single dwelling houses

(a) Dwellings

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

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

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

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

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

(a) Buildings 'Other'

(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
concrete slab on ground, frame:	1828.7	-	none
suspended floor above garage, frame: suspended concrete slab	1828.65	fibreglass batts or roll	-

External wall types

External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	off form concrete,frame:no frame	1229	none	-

Internal wall types

Internal wall type	Construction type	Area (m2)	Insulation
-	-	-	-

Reinforcement concrete frames/columns

Building has reinforced concrete frame/columns?	Volume (m^3)	Low emissions option
-	-	-

Ceiling and roof types			
Ceiling and roof type	Area (m²)	Roof Insulation	Ceiling Insulation
-	-	-	

Glazing types			Frame types				
Single glazing (m²)	Double glazing (m²)	Triple glazing (m²)	Aluminium frames (m²)	Timber frames (m²)	uPVC frames (m²)	Steel frames (m²)	Composite frames (m²)
-	-	-	-	-	-	-	-

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 2083 square metres of roof area of buildings in the development - 0 square metres of impervious area in the development - 0 square metres of garden/lawn area in the development - 0 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 1365 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site

(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.		✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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
Undercover car park area	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	time clock and motion sensors	no
B1 Main Switch Room	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Waste Room	ventilation exhaust only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Bin Holding Area	ventilation exhaust only	-	light-emitting diode	motion sensors	no
B2 Carpark Exhaust Fan Room	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Carpark Supply Fan Room	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Fire Pump Room	ventilation (supply + exhaust)	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Main Comms Room	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B2 Sewer Pump Room	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Cold Water Tank Room	ventilation exhaust only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Rainwater Pump Filtration & Storage Room	ventilation exhaust only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Carpark Exhaust Fan Room	ventilation supply only	none i.e., continuous	light-emitting diode	motion sensors	no

Central energy systems	Type	Specification
Central hot water system (No. 1)	electric heat pump – air sourced	Piping insulation (ringmain & supply risers): (a) Piping external to building: R0.6 (~25 mm); (b) Piping internal to building: R0.6 (~25 mm) (c) Unit Efficiency: 3.0 < COP <= 3.5

Central energy systems	Type	Specification
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 30 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).

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