



ESD & BASIX Summary Report 25-27 Leeds Street Rhodes 2138

Prepared for
BILLBERGIA GROUP

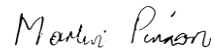
Prepared by
GREENPERCH
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SSD-101317213



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I, Martin Pinson (GREENPERCH) confirm this “ESD & BASIX Report” addresses the requirement of the Secretary’s Environmental Assessment (SEARS) dated 9 Dec. 2025 and issued for the SSDA (SSD-101317213). It also addresses the relevant State and local legislation, policies, and guidelines (including SEARs 15, Sustainable Building SEPP, NCC 2022, BASIX v4, NatHERS Protocol and Rhodes Development Control Plan). I further confirm that none of the information contained in this “ESD and BASIX Report” is deliberately false or misleading.

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1. Introduction and ESD Summary

Background

On 25 September 2025 the Applicant obtained development consent from the Minister for Planning (DPHI Reference: SSD-67419241) for a mixed use development with affordable housing comprising:

- Six mixed-use and residential towers (10 to 17 storeys) including:
 - 342 residential apartments (including 58 affordable housing apartments);
 - Ground level retail use in four buildings; and
 - Communal open spaces on rooftops and podiums.
- Part three level shared basement with 400 car parking spaces;
- Through site links and public domain works;
- Delivery of public open space, including a promenade and part of the ‘Foreshore Park’; and
- Associated landscaping, tree removal and flood mitigation works including construction of a new seawall.

The approved SSDA built upon a Regional Development Application (Council Reference: DA2023/0235) lodged with Canada Bay Council in October 2023 and approved by the Sydney Eastern Planning Panel on 8 August 2024 for a mixed use development containing six buildings ranging from 9 to 13 storeys, providing 249 apartments.

The Regional DA was ‘Amended’ by SSD-67419241 such that the ‘main’ building works were contained within the SSD, but the early works (demolition, tree removal, excavation, remediation) remained with the Regional DA, allowing works to commence on site.



Figure - CGI of Previous Approval (Building E)

Project Description

The Amending SSDA seeks approval for the following changes to the approved mixed-use development (SSD-67419241):

- Infill of the upper levels of Building B, maintaining the approved 10-storey height and replacing the previously approved part 8 and part 10 storey articulation.
- Provision of three additional levels to Building E.
- Provision of eight additional levels to Building F.
- Minor miscellaneous amendments, including the introduction of concrete awnings to the eastern elevation of Building E, minor reconfiguration of bicycle parking at ground level, and minor adjustments to basement layout, including to structural walls and car parking bays.

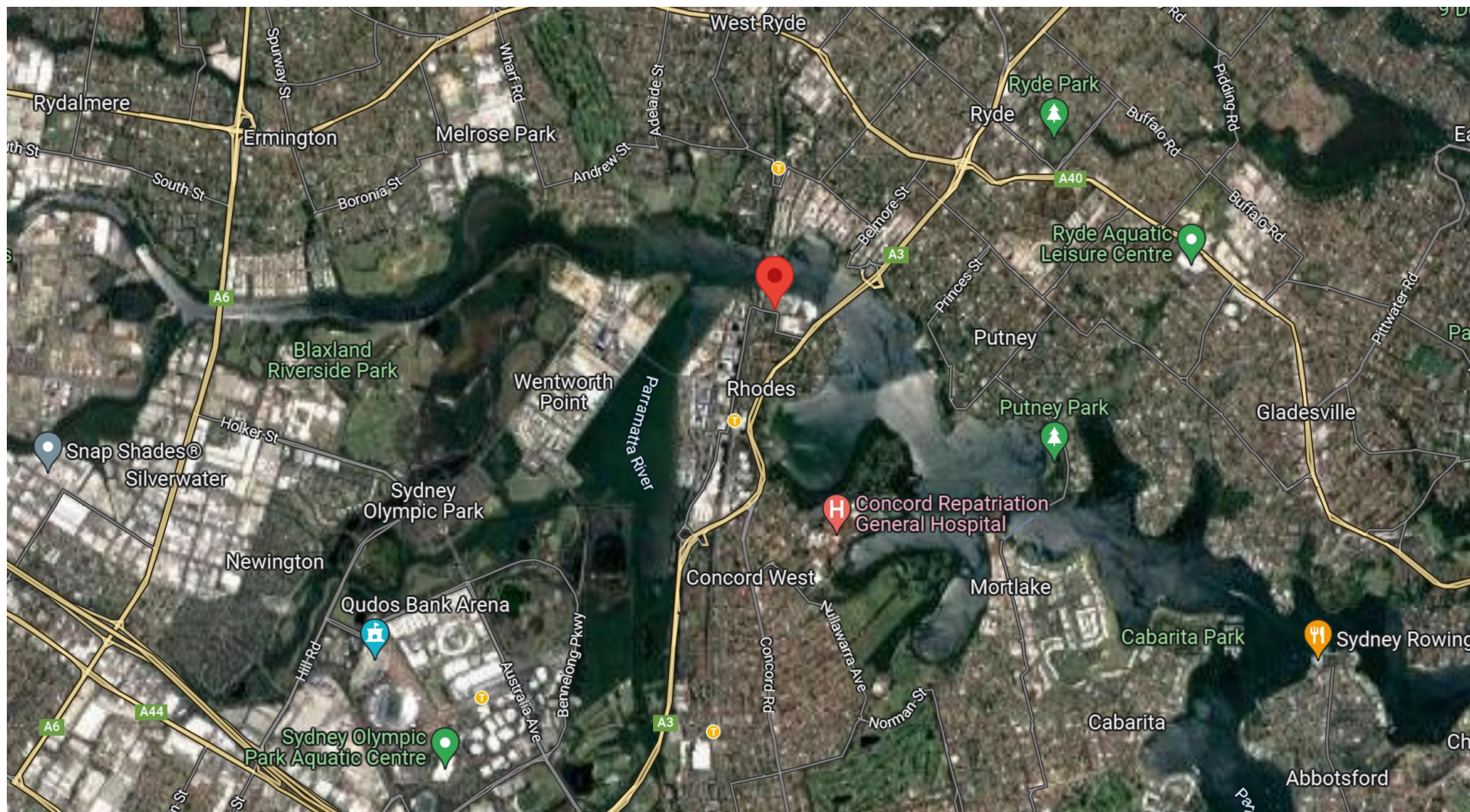
The proposed amendments will result in a total of 59 additional dwellings (49 market dwellings and 10 affordable dwellings).

All other aspects of the approved development, including early works, parking, public domain and landscaping, stormwater management, waste management, access arrangements, staging, associated works (including the seawall and substation arrangements) and Buildings A, C or D, remain unchanged.

The proposed development is illustrated in the photomontage and axonometric drawings below. Areas of additional massing are identified by a red cloud.



Figure - CGI of Proposal (l-r: Buildings B, F and E)



Site Location Plan - 25-27 Leeds Street, Rhodes NSW 2138

This ESD Report was prepared by GreenPerch to accompany an amending SSDA for a mixed use, residential development at 25-27 Leeds Street, Rhodes NSW 2138. The report has been prepared to address the Secretary’s Environmental Assessment Requirements (SEARs) issued for the project (SSD-101317213 on 9 December 2025). This report concludes that the proposed development is suitable, warrants approval, and satisfies SEAR 15 “Ecologically Sustainable Development (ESD)” and complies with Sustainable Building SEPP, NCC 2022, BASIX v4 2024, NatHERS Protocol and Rhodes DCP (prepared in consultation with City of Canada Bay Council).

The design has exceeded the BASIX and NatHERS targets. Furthermore, Clause 7.11 of the Canada Bay LEP stipulates that the relevant development area “may exceed the maximum floor space by 5% if the building” does the following (which it has):

- (a) exceeds the BASIX commitment for energy for the building by at least 15 points, and
- (b) exceeds the BASIX commitment for water for the building by at least 20 points.

The ESD report details the mitigation measures implemented within the design such as water, energy, materials, thermal comfort and ESD strategies (as discussed in detail in the report). If there are any queries regarding this report, please do not hesitate to contact GreenPerch.

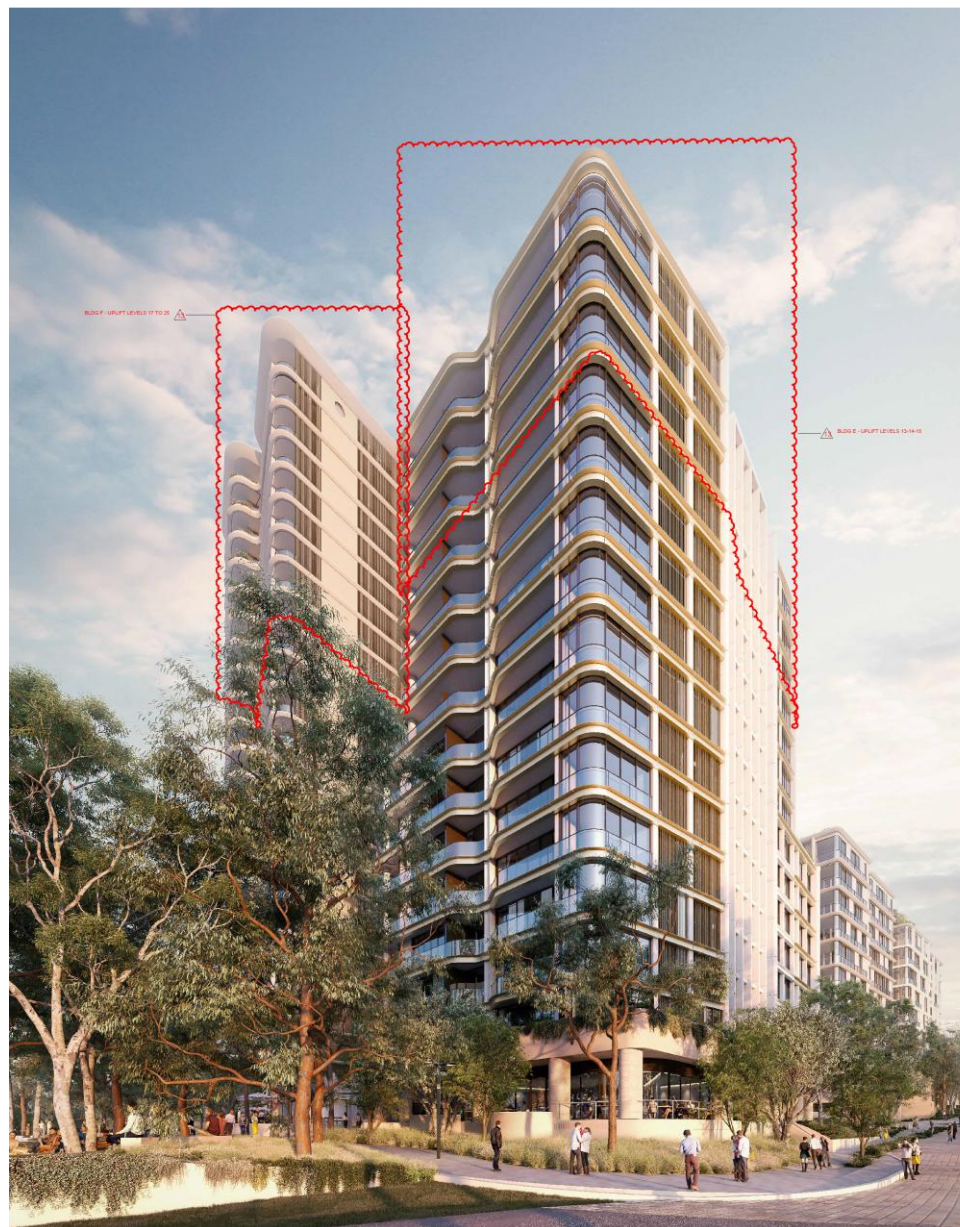
SEAR 9. Ecologically Sustainable Development (ESD)	
Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development.	Principles of ESD are discussed in pages 9-38 (refer to ESD specifications and ESD discussion). (a) the precautionary principle – this has guided all ESD decisions and the striving towards elevated scores. The site selection, planning, materials, water, energy and ESD aspects were all influenced. (b) inter-generational equity - likewise, this guided all ESD decisions and the striving towards elevated scores. The site selection, planning, materials, water, energy and ESD aspects were all influenced. (c) conservation of biological diversity and ecological integrity – the site selection, landscape design and ESD items adopted this. In particular a high % of locally indigenous plants (and natives) is proposed (d) improved valuation, pricing and incentive mechanisms – very high water, energy and NatHERS scores have been targeted to reduce running costs for residents. The fitout materials will also focus heavily on these principles. GECA, GreenTag and LCA tools will be used to reduce life cycle impacts.
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.	For non-residential, the principles of ESD are discussed in pages 23-38 (refer to ESD specifications and ESD discussion). This includes shared water tanks and PV solar power. Furthermore, updated Section J will be undertaken for energy assessment for the whole building (especially the conditioned retail and non-residential zones). Non-residential and residential parts of SEPP are applied, for commercial or non-residential. Please see the discussions within this ‘ESD and BASIX Report’ and also compliant certificates, with elevated scores for all aspects, including NatHERS, water, energy and thermal comfort. Embodied Emissions are also assessed in detail. The testing and reporting estimates (with limited DA details), the quantities of materials and associated emissions. Good materials and design were used to ensure that embodied emissions are minimised (including some recycled content and low emissions materials). The NABERS embodied emissions materials form has been prepared with the DA information.

This report summarises the BASIX and thermal comfort aspects for the proposed development, at 25-27 Leeds Street, Rhodes NSW 2138. The client and the design team have made a strong commitment to ESD, especially for items such as thermal comfort, water, energy, waste, materials and landscaping. This report discusses, in detail, the how the proposal has embraced numerous sustainability design principles.

The GREENPERCH team have worked very closely with the design team, to ensure a high level of energy-efficiency and environmental sustainability. Importantly, a strong emphasis was placed on the passive efficiency of the building (including passive heating, passive cooling, natural lighting and natural ventilation). The architects have done a superb job to ensure that these passive systems are working effectively, through an intelligent blend of innovative architectural design and low-energy, passive thermal techniques.

For example, the very intelligent building articulation and orientation was used to enhance natural lighting, passive heating and cross ventilation. These techniques are far too often neglected in buildings of this scale, especially in buildings with predominantly single-aspect dwellings. The excellent thermal comfort results are a testament to the success of this excellent architectural design, on a tricky site. Intelligent and high-tech facades have greatly helped this achievement, including performance glass for windows and glazed doors (including double glazing for units).

3D Render - 25-27 LEEDS STREET, RHODES (by SJB)



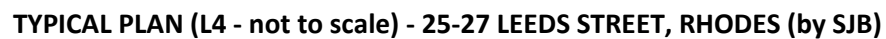
1.1 ESD Summary

Some of the main ESD targets suggested by council will be satisfied as follows:

1. An ecologically sustainable design (ESD) consultant was engaged in the design team. GREENPERCH have suggested and tested various suitable and effective ESD initiatives. GREENPERCH have many decades of experience and include engineers, architects and scientists.
2. Design for Climate Resilience - Design for extreme rainfall events; inclusion of ground level and rooftop shade structures; use of cross ventilation for night-time flushing and respite from extreme heat; materials selection (including generous thermal mass) which is cognisant of extreme heat; drought-tolerant landscaping; and buildings/spaces which can cope with extended heatwave conditions. Passive cooling processes were also used cleverly, such as thermal mass, shading devices, dual-aspect designs, overhangs and eaves, winter gardens, water features and large window openings.
3. The buildings express a strong commitment to passive design (such as optimal orientation, shading devices, cross ventilation, thermal, mass, winter gardens and open plan living). Performance glazing is also proposed for all the development, including double glazing, dark tinting and high-performance frames. Importantly, the intelligent use of performance-facades, rather than just ceiling fans should give an optimum summer performance, for the base building. That said, with generous ceiling fans, then a 7.0-star average would actually perform closer to a 7.5-star average.
4. To minimise energy use, the residential buildings have many low-energy initiatives, as discussed in the BASIX section. These include PV solar power of at least 125 kW, generous insulation; performance glazing; shading; energy-efficient appliances; efficient light fittings; light sensors; efficient heat-pump hot water; and metering systems.
5. Waste management plans will be prepared and implemented for all construction and the operational phases. These plans demonstrate the application of principles of the waste management hierarchy of waste: avoid use, reduction, re-use and recycling. In particular high levels of recycling of construction and demolition waste will be targeted (over 90% waste).
6. Water efficiency - Rainwater for irrigation (planting and lawn areas). Furthermore, rainwater will be utilised in units, through dual reticulation. Fixtures and fittings are highly rated, including near-top ratings for taps, showers and toilets.
7. Sensible access to public transport, car-sharing, electric charging and generous bicycle storage have all been incorporated. Electric car-charging has been included and is recognised as being very important. Travel information kits for residents and workers will also be generated later. This will encourage public transport, walking, bicycles and carshare schemes (over private motor vehicle use).

Some of the other ESD initiatives are listed below. These are also listed later in the report, in regard to BASIX:

- Generous PV solar power to provide power for common lighting or other uses – 125 kW for PV
- Energy-efficient whitegoods (highly-rated dryers, clothes washers and dishwashers)
- Motion-sensors and time-based controllers (time clocks) for lights, ventilation, etc.
- Air quality (CO/CO₂) monitors for the carpark ventilation system control and efficient VSD fans.
- Light-colour roofs, generous vegetation and passive cooling to reduce “urban heat-island effects”.
- Water-efficient fixtures (4-star toilets, 4-star showers, 5 star taps, etc) and reduced flow to sewer
- Rainwater reuse for irrigation (planting and lawn areas) and dual reticulation
- Recycling or reuse (closed loops) of water from fire pump testing.
- Efficient irrigation such as drip irrigation, timers and moisture -sensors for planters and gardens.
- At least 70% use by area of locally indigenous or “one-drop” water-efficient plants
- Proposed dual reticulation (for toilets and laundries) for rainwater and future treated wastewater
- Generous deep-soil allocation and planter bed gardens.
- Recycling of construction and demolition waste (over 90% of total waste by mass).
- The use of re-usable formwork for internal floors and core walls on site.
- Paints and floor-coverings with low VOCs, wherever possible.
- Wood products with low formaldehyde (and VOCs), wherever possible.
- Water-based and low-emission paints where possible, for internal 'low-sheen' areas.
- Low-emission and (where practical) water-based paints for internal gloss or semi-gloss finishes.
- Products will include some with recycled content or certified as sustainable by GreenTag/GECA.
- Specification of sustainable-timber, where possible, using FSC or PEFC (for structure, trims, etc).
- Sensible access to train and bus transport as well as an extensive network of bike paths.
- Generous Bicycle Parking and proposed Travel Kits to educate residents
- Investigation of suitable “Carshare” schemes, electric-car charging and other efficient-vehicle-alternatives, for the benefit of residents.
- Reduced topsoil removal, ecosystem renewal and mostly low-water or locally indigenous plants
- Reduced Operating Costs (water, gas and electricity) due to the good BASIX and NatHERS scores



1.2 NatHERS Thermal Comfort Summary

The development has achieved > 7 stars. To achieve these scores, the following materials and construction systems have been proposed:

Thermal Comfort Item	Details
External Walls	
External Walls 1 (Load bearing)	Concrete end wall + R2.5 added (90mm studs)
External Walls 2	Brick Veneer + R2.5 added (90mm studs)
External Walls 3	Metal/FC cladding + R2.5 added (90mm studs)
Special units	R2.7 Insulation to Walls – 903, c1003, c1006, d1102, d1103
Internal Walls	
Walls next to halls/lobbies 1	Plasterboard and 75mm Hebel + R1.8 acoustic insulation
Walls next to halls/lobbies 2	Concrete columns + plasterboard + R1.8 acoustic insulation
Party Walls 1	Plasterboard and 75mm Hebel + optional acoustic insulation
Party Walls 2	Concrete columns, lined plasterboard + optional acoustic insulation
Walls next to lifts and stairs	Concrete ≥ 150mm and plasterboard + optional insulation if needed
Internal Walls	Plasterboard on Studs
Floor	
Internal Floors	Concrete floors, with plasterboard below
External Floors	Concrete slab with basement below
External Floor Insulation over Basement	R2.0 subfloors for units over basement or open air
External Floor Insulation over Cantilever	R2.0 subfloors for units over basement or open air
Floor Finishes	Tiles-wet areas, Timber-beds/living
Special units	R1.5 Insulation to Floor in Living and WG – c1006, d1102
Roof	
Penthouse Roofs	Concrete roof + R3.5 under and plasterboard
Roofs – below balcony	Concrete roof + R2.5 under and plasterboard
Special units	R5 Insulation to roof – b1003, b1004, c1003, c1006, d1102, d1103, e805, f2503
Roof colour	Medium roof colour

Downlights near Insulation	Led downlights (sealed LEDs, 150mm holes)
Exhaust fans near Insulation	Fans wet areas (sealed fans, 300mm holes)
Shading	As shown (eaves, devices, etc)
Weather Stripping	All external doors and windows
Windows openings	As shown
System Values (external glazing)	System Values (external glazing)
1. Windows/glazed doors (AWNING)	IGU Low-E standard Alum Frame
Windows - U-value	≤ 2.7
Windows – SHGC	$0.32 \pm 5\%$
2. Windows/glazed (SLIDER)	IGU Low-E standard Alum Frame
Windows - U-value	≤ 2.8
Windows – SHGC	$0.32 \pm 5\%$
3. Windows (FIXED)	IGU Low-E standard Alum Frame
Windows - U-value	≤ 2.3
Windows – SHGC	$0.35 \pm 5\%$
Note: Internal glazing can use any values	Internal glazing can use single or double (and any tint at all)

SPECIAL UNITS:

R5 Insulation to roof – b1003, b1004, c1003, c1006, d1102, d1103, e805, f2503

R2.7 Insulation to Walls – 903, c1003, c1006, d1102, d1103

R1.5 Insulation to Floor in Living and WG – c1006, d1102

SIMULATION NOTES:

- Concrete type and width may need updating at CC stage with construction details (generic values assumed)
- No RCP prepared yet, so generic holes assumed for all downlights (may need extra checking and rerunning at CC stage)
- No RCP prepared yet, so generic holes assumed for exhaust fans (may need extra checking and rerunning at CC stage)
- Window sizes used from elevations and sections (and this may need re-checking at CC stage if shop drawings require window changes). The modelling will check shop drawings and other CC drawings and refine glazing values, if required.
- Neighbours modelled as shown on drawings (N,E,S,W) but no tree preservations in place and not modelled
- Project is to meet the glazing U-value and SHGC numerical targets and can ignore the other description.

1.3 BASIX Summary

The high BASIX scores were achieved with the following initiatives:

BASIX Item - Water	Proposed Specifications
Rainwater Tank	>20 kL tanks(s) to collect from >1,200 m ²
Rainwater Tank use	Rainwater reuse for irrigation (planting and lawn areas) and dual reticulation
Stormwater Tank	None
Blackwater/Greywater reuse	None
Dual Reticulation -Toilet/Laundry	Included for rainwater reuse and future treated wastewater
Fire Sprinklers	Sprinklers in both basement + buildings
Fire Sprinkler Test Water	Fire test water reused in closed loops
Showers	4 stars ≤ 6.0 L/min (mid in BASIX)
Toilets	4 stars
Kitchen Taps	5 stars
Bathroom Taps	6 stars
On demand hot recirculation	No
Clothes washers	4.5 stars WELS
Dishwashers	4.0 stars WELS
Planting and lawn	Approx 4,551 m ² total (3,657 + 894 m ² respectively)
Planting – low water species	70% of planting area (not lawn) is locally indigenous or 1-drop
Pools	Common area Pool (heat pump heating + pump timer + optional cover)
Pool size	Pool is 195 kL or less

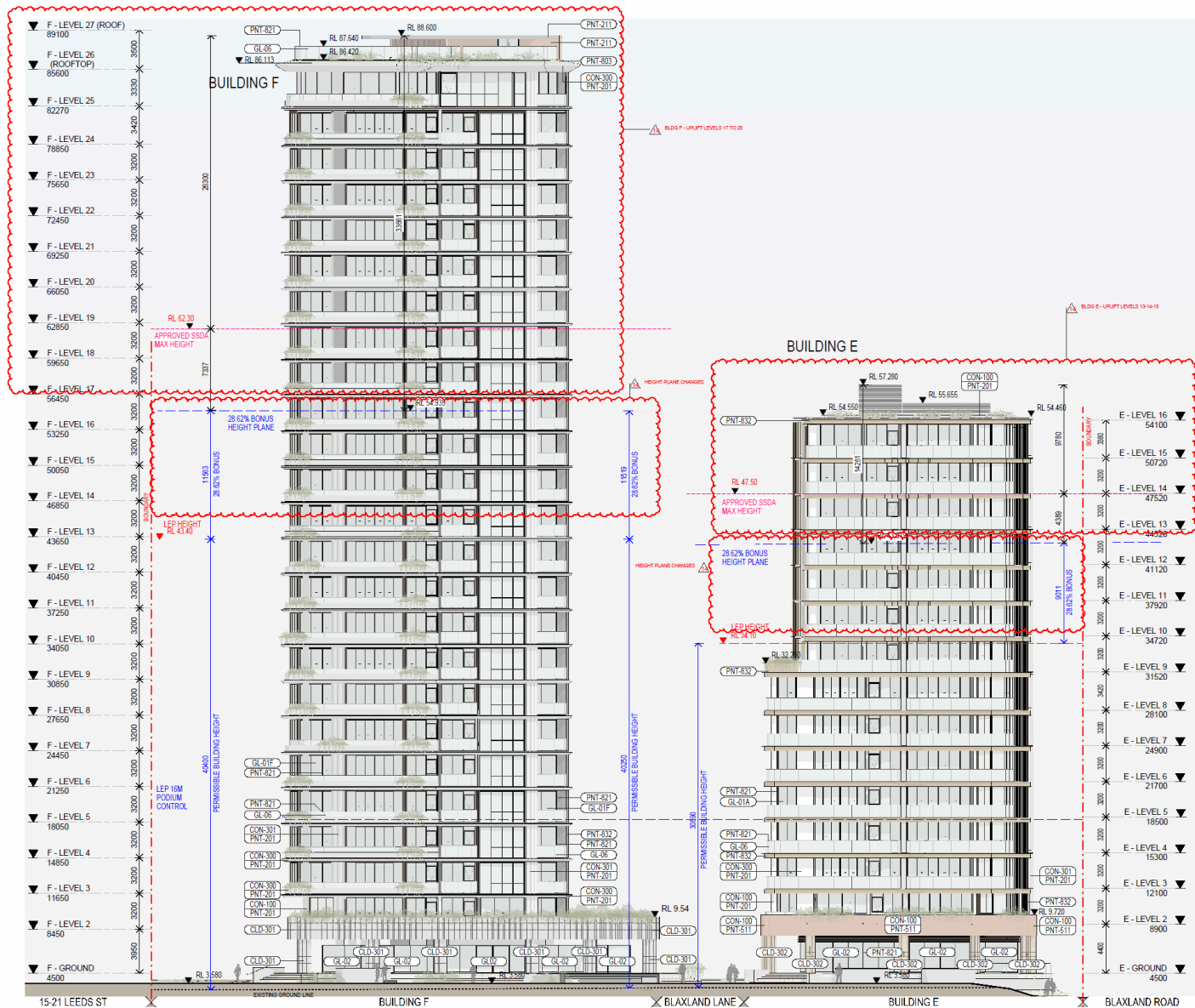
BASIX Item - Energy	Proposed Specifications
Heating for Units -Beds	1 phase, 3.5 EER or more (no day/night restriction)
Heating for Units -Living	1 phase, 3.5 EER or more (no day/night restriction)
Cooling for Units -Beds	1 phase, 3.0 EER or more (no day/night restriction)
Cooling for Units -Living	1 phase, 3.0 EER or more (no day/night restriction)
AC zoning (day or night)	Not used, so bed/living can now be used same time
Bathroom Exhaust	Fan to façade/roof, linked to the light
Laundry Exhaust	Fan to façade/roof, manual on and timer off
Kitchen Exhaust	Fan to façade/roof, manual on and manual off
Lighting for Apartments – all rooms	LEDs ≥80% fittings all rooms (dedicated)
Vented fridge-spaces	Not assessed anymore
Cooking	Induction cooktop & electric oven
Fridges	Not assessed anymore
Clothes washers	4.5 stars energy
Dishwashers	4 stars energy
Dryers	8 stars energy
Clothes lines private	No retractable lines (balcony/internal)

BASIX Item - Energy	Proposed Specifications
Hot Water	Electric Heat Pumps >3.5 COP + R1.0 to ringmains +supply risers
PV Solar Power	125 kW total peak output or more
Lifts	VVVF gearless traction (incl. waste lift + outdoor lift)
BMS	Yes, included
PFC - Power Factor Correction	Yes, included
Pools (no spa)	Pool 195 kL or less (heat pump heating + pump timer + optional cover)
Sauna	Infrared heating source and timer off

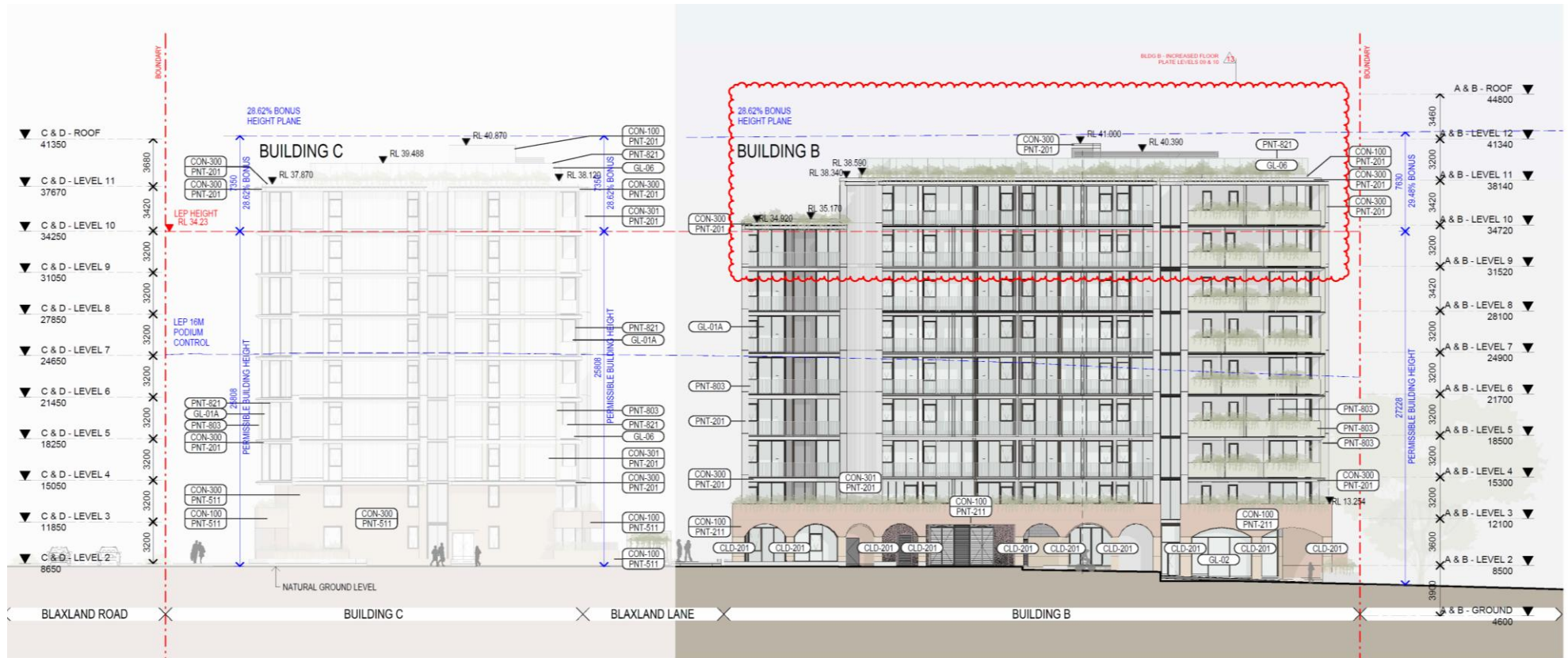
BASIX Energy - Proposed Specifications for Common Areas

Common area name	Select the ventilation system type *	Select the efficiency measure *
Car park area	ventilation (supply + exhaust) ▼	carbon monoxide monitor + VSD fan ▼
Switch and comms	ventilation supply only ▼	none i.e., continuous ▼
Waste rooms	ventilation exhaust only ▼	n/a
Loading/Waste collection	ventilation exhaust only ▼	n/a
Plant or service rooms	ventilation (supply + exhaust) ▼	none i.e., continuous ▼
Substations	no mechanical ventilation ▼	n/a
Pump and tank rooms	ventilation exhaust only ▼	thermostatically controlled ▼
WC communal and sauna	ventilation exhaust only ▼	time clock or BMS controlled ▼
Bulky storage	ventilation supply only ▼	time clock or BMS controlled ▼
Communal rooms	air conditioning system ▼	time clock or BMS controlled ▼
Dock Manager room	air conditioning system ▼	time clock or BMS controlled ▼
Ground floor lobbies	ventilation supply only ▼	time clock or BMS controlled ▼
Hallways upper levels	ventilation supply only ▼	time clock or BMS controlled ▼

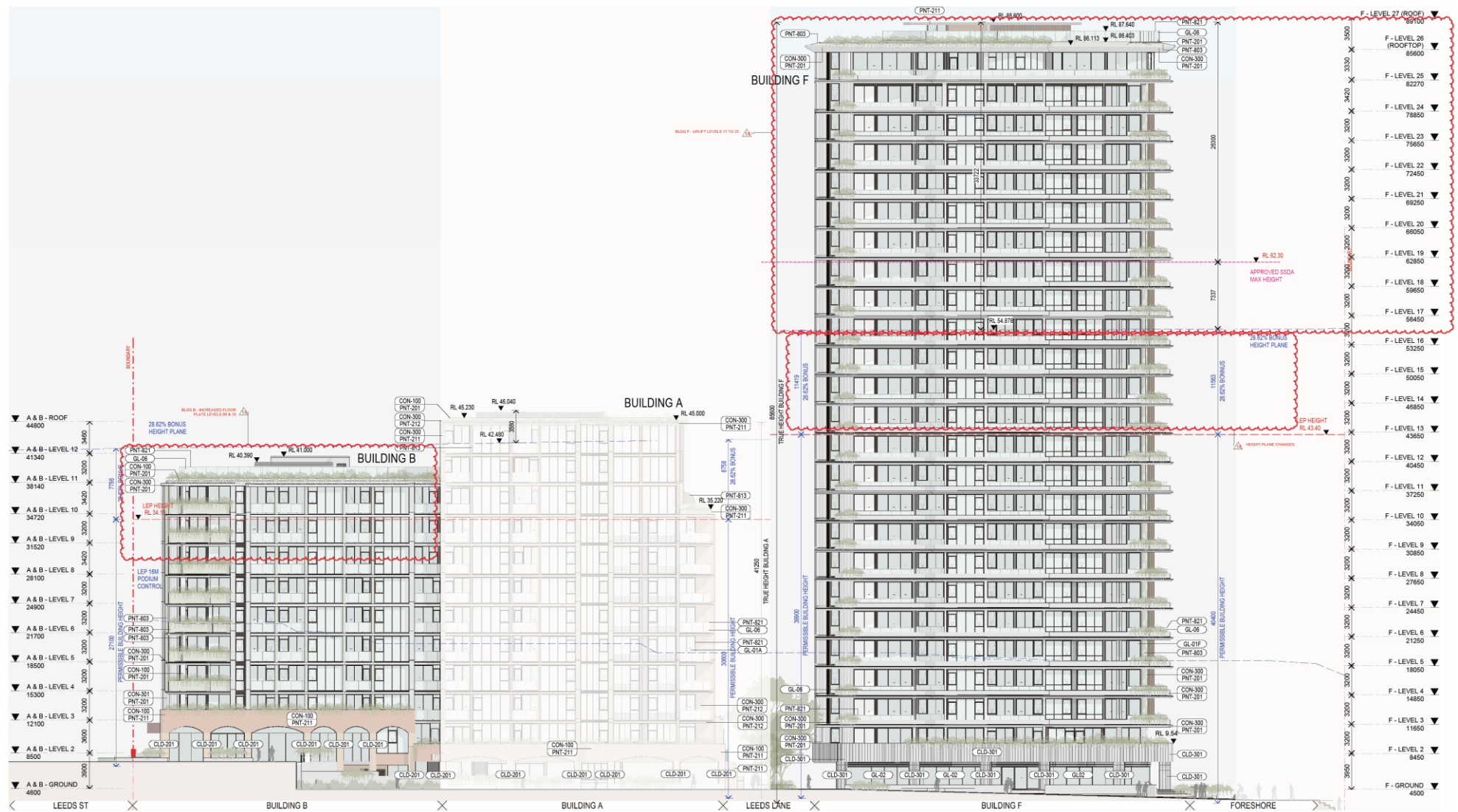
Common area name	Primary lighting system type * ⓘ	Efficiency measure *	Lighting control system / BMS ⓘ
Lift bank (No. 1)	light-emitting diode ▾	connected to lift call button ▾	☐ Yes ☒ No
Lift bank (No. 2)	light-emitting diode ▾	connected to lift call button ▾	☐ Yes ☒ No
Lift bank (No. 3)	light-emitting diode ▾	connected to lift call button ▾	☐ Yes ☒ No
Lift bank (No. 4)	light-emitting diode ▾	connected to lift call button ▾	☐ Yes ☒ No
Lift bank (No. 5)	light-emitting diode ▾	connected to lift call button ▾	☐ Yes ☒ No
Car park area	light-emitting diode ▾	zoned switching with motion ▾	☐ Yes ☒ No
Switch and comms	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Waste rooms	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Loading/Waste collection	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Plant or service rooms	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Substations	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Pump and tank rooms	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
WC communal and sauna	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Bulky storage	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Communal rooms	light-emitting diode ▾	motion sensors ▾	☐ Yes ☒ No
Dock Manager room	light-emitting diode ▾	manual on / manual off ▾	☐ Yes ☒ No
Ground floor lobbies	light-emitting diode ▾	zoned switching with motion ▾	☐ Yes ☒ No
Hallways upper levels	light-emitting diode ▾	zoned switching with motion ▾	☐ Yes ☒ No



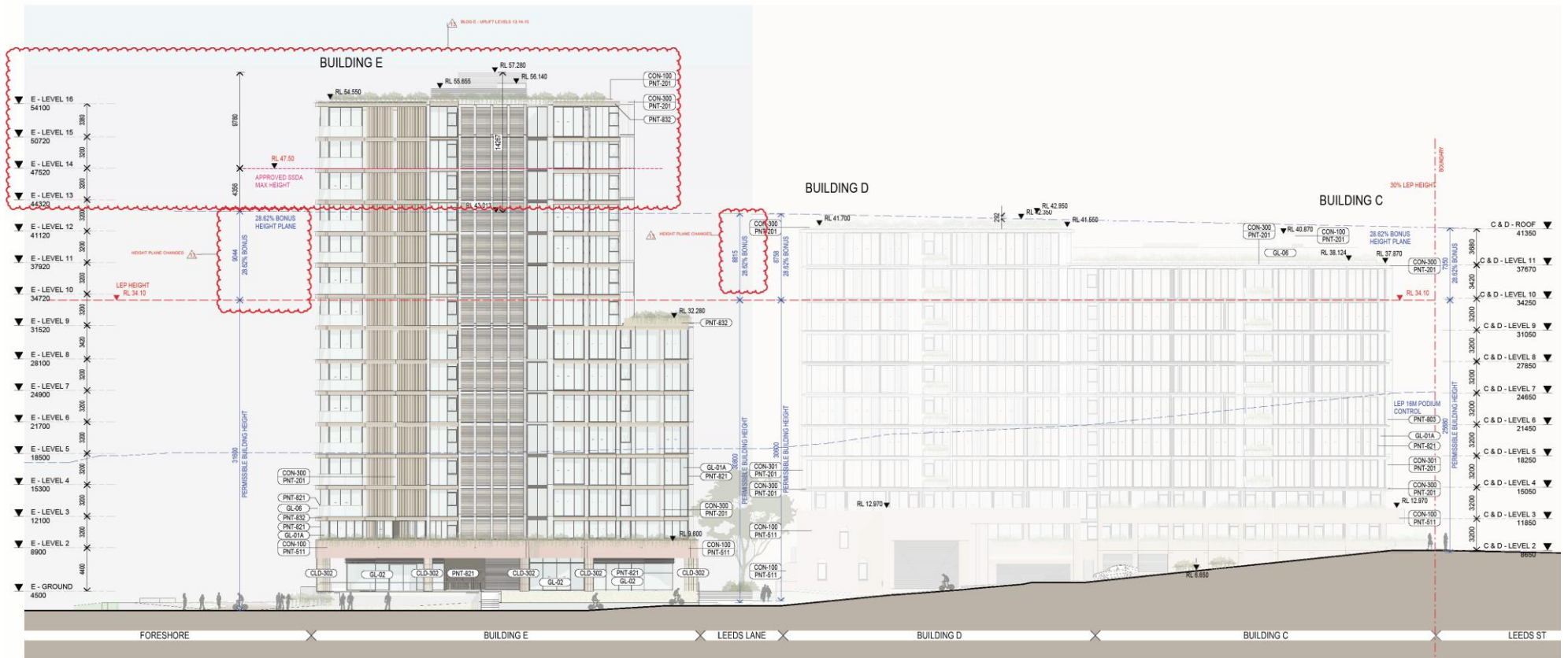
ELEVATION 1 (North, not to scale) - 25-27 LEEDS STREET, RHODES (by SJB)



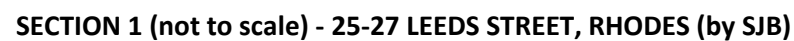
ELEVATION 2 (South, not to scale) - 25-27 LEEDS STREET, RHODES (by SJB)



ELEVATION 3 (East, not to scale) - 25-27 LEEDS STREET, RHODES (by SJB)



ELEVATION 4 (West, not to scale) - 25-27 LEEDS STREET, RHODES (by SJB)



1.4 EER – Energy Efficiency Report

The mechanisms for energy assessment will be Section J (for Retail / Community portions) and BASIX (for residential and common areas). The energy strategies below were implemented. Some of these items were listed previously in this BASIX report.

Greenhouse-gas reduction and energy-efficiency initiatives include:

- Development has well-surpassed the BASIX Energy Target of 60 (for 5+ stories)
- Project scoring an average >7-star NatHERS rating across the development. This target is well above the minimum required to pass BASIX and this contributed to the excellent, overall energy performance.
- PV solar power to provide power for common lighting or other uses – 125 kW or more peak
- Excellent Draft Section J results were achieved, due to generous insulation, shading, thermal mass and high-end double-glazing throughout.
- Lighting throughout the development will use LED technology (or high efficiency CFL's where appropriate).
- Fixtures, fittings and HVAC are very low-energy and include highly rated whitegoods and energy-efficient AC for units
- A building engineer/manager will be used to undertake a building commissioning, for required systems, upon completion.
- Unit design included effective cross-ventilation, generous insulation, operable glazing and suitable shading devices. In particular, the corner dwellings, the dual aspect dwellings, the thermal mass and the large openings (such as sliders) all helped the passive cooling and heating.
- Glazing was appropriately designed to reduce heat losses in winter, and to give opportunities for natural cooling in summer. Furthermore, performance glazing is proposed for all the development, including double-glazing for all apartments, all retail and all community areas.
- External walls, floors and roofs will all contain very generous added insulation, to help reduce the reliance on mechanical heating & cooling.
- Retail designs also included generous insulation, operable glazing and suitable shading devices. In particular, the generous eaves, the dual aspects, the thermal mass and the large openings (such as sliders) all helped the passive cooling and heating.

2. ESD Strategy (Environmentally Sustainable Development)

This project will be designed and built, in accordance with many best practice principles of "Ecologically Sustainable Development" (ESD). This following ESD discussion describes some of the initiatives relating to governance, indoor environmental quality, energy, water, transport, emissions, ecology, materials and community.

2.1 Governance

The proposed development will establish and maintain strong governance practices. These, in turn, will promote engagement, transparency and resilience to the conditions of a changing climate.

Good environmental management practices will be adopted, including enhanced commissioning, ongoing tuning and the production of building-user information. Best practice construction environmental management processes will also be implemented. Furthermore, waste diversion from landfill will be targeted, through intensive recycling of construction and operational waste, wherever possible. Metering and monitoring strategies will also ensure operational performance can be tracked and optimised, for water, energy and HVAC.

2.1.1 Commissioning and Tuning

Relevant subcontractors will undertake detailed commissioning and building tuning for all major systems in the building. These systems will relate to water, energy and HVAC.

2.1.2 Adaptation and Resilience

Climate change adaptation and resilience have been considered in detail. This "futureproofing" strategy will enable the building to adapt to potential climate change challenges and future extreme weather events (with the intention of minimising both risk and disruption to the occupants, the building and the community). In particular, the use of rainwater tanks will help reduce the impact of drought periods. The use of performance glass, generous insulation and other thermal comfort techniques will help to deal with changes in climatic conditions, without the excessive reliance on AC.

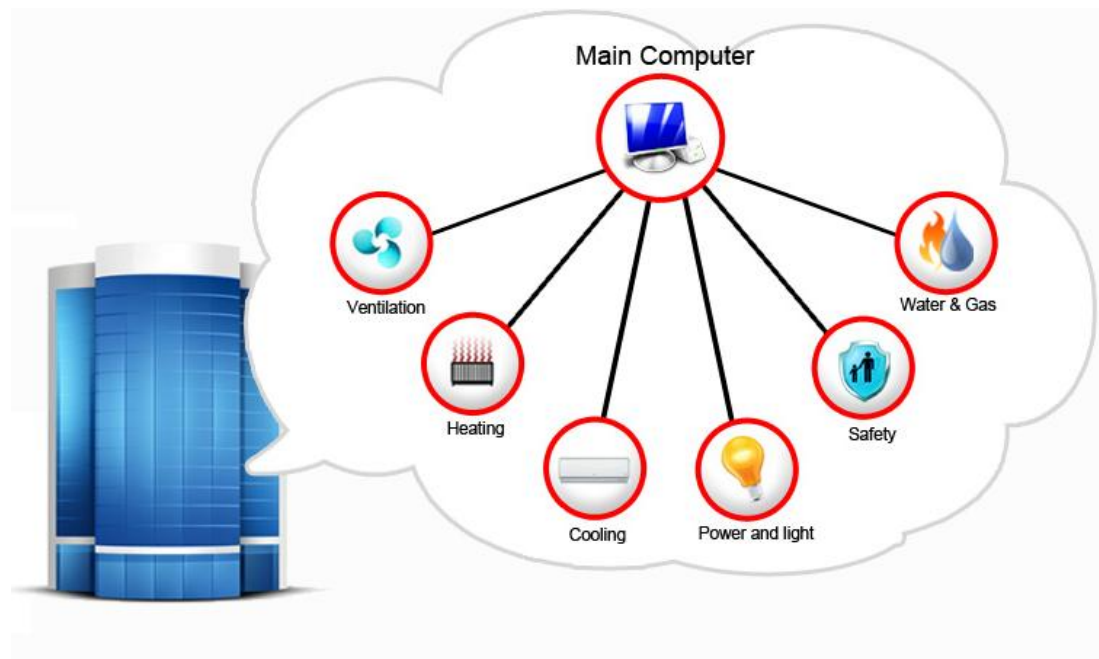


2.1.3 Building Information

Building operation and maintenance information will be provided and this information may be used to educate building occupants and visitors on the sustainability features of the buildings and how to use these features effectively, in order to reduce potential environmental impacts.

2.1.4 Metering and Monitoring

A metering and monitoring strategy will be implemented to track energy and water use. This system will also monitor progress against performance targets and assist with the identification of leaks, faults or excessive consumption. Sub-metering will be provided for major energy and water uses, supplying data to a Data Collection Point and/or a Building Management System (BMS). Energy sub-metering will be provided for end users. Likewise, water sub-metering may be provided for a variety of uses, pending the final design.



2.1.5 Construction Environmental Management

A Construction Environmental Management Plan (CEMP) will be developed and implemented by the head contractor. This CEMP will be critical to assist with managing the environmental performance, conditions, and impacts arising from excavations, the demolition work and the construction of the proposed buildings.

2.1.6 Operational Waste

Facilities will be provided for the collection, storage and separation of distinct waste streams for collection by the relevant waste contractors. A Waste Management Plan (WMP) will be provided for building operations. In addition, strategies such as well-located recycling facilities (for both the residential and retail/commercial zones) will be incorporated, to increase the enjoyment and recycling rates.

2.2 Indoor Environmental Quality

Indoor Environmental Quality (IEQ) will be improved through consideration of indoor air quality, acoustic conditions, thermal comfort, visual comfort, daylighting and external views. The various IEQ strategies are outlined in more detail below.

2.2.1 Indoor Air Quality

The ventilation system for the building will be designed under the guidance of ASHRAE Standard 62.1:2013, in regard to minimum separation distances between pollution sources and air intakes. Ductwork will also be protected during construction to ensure it remains free of moisture and debris prior to occupation.

Preference will be given to paints, adhesives, sealants, floor coverings and engineered wood products with low Volatile Organic Compound (VOC) emissions and low formaldehyde emissions. This will help to minimise indoor air contamination and to promote occupant health. For products with potential VOC emissions, priority will be given to E0 and Super E0, where possible, since these have significantly lower emissions than products with E2 ratings and below.

2.2.2 Acoustic Comfort

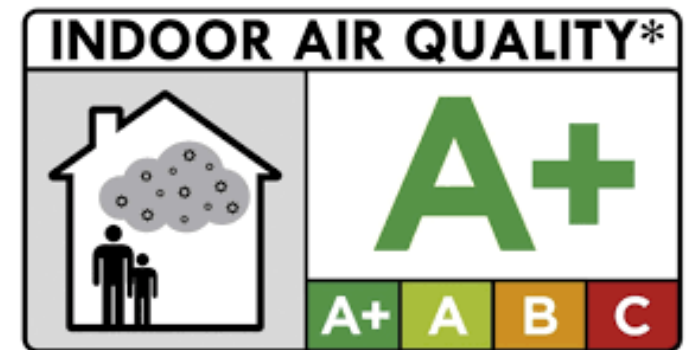
The design has considered acoustic comfort in detail, including general noise levels, reverberation and noise separation. For example, acoustic insulation has been proposed between apartments and corridors, and this was carefully selected to provide both acoustic and thermal benefits.

2.2.3 Visual Comfort

Glare control mechanisms such as internal blinds and shading devices will assist to maximise visual comfort for the occupants. The design has also carefully considered the availability of daylight and external views. Furthermore, artificial lighting will consider appropriate colour perception and lighting levels, reduced glare from lamps and uniformity.

2.2.4 Thermal Comfort

Performance glazing with some external shading will be utilised intelligently to improve thermal comfort for the occupants. Indeed, passive heating, passive cooling and natural ventilation have been carefully considered. To balance daylighting and views with thermal comfort, various performance-glazing products have been proposed (such as double-glazing for all apartments and priority zones). The glazing specifications were based on BASIX thermal comfort scores, to ensure that the correct glass is utilised for various orientations and building type.





It is also recognised that thermal comfort is extremely important for BASIX and sustainable design, however the windows also affect other important ESD issues. Therefore, a very careful and deliberate balance was made by the design team, to ensure good thermal comfort, minimal glare, good daylighting and connection to external views.

For example, the use of some darker tinting was implemented for privacy and glare reduction. However, too much tinting can make rooms unnecessarily dark (and less effective with passive heating in winter) so usually the lightest tint was selected to still pass the BASIX targets. The use of different tinting was also used to create an aesthetic effect and to generate variation and complexity for the building facades.

2.3 Energy

The design will seek to reduce energy consumption and greenhouse gas (GHG) emissions, by combining a well-designed building envelope and high-efficiency systems and services. Furthermore, smart controls, meters and automation will ensure that the major building services only operate when needed. Passive design principles have also been integrated (as discussed above) to reduce the demand on active systems such as HVAC and lighting.

2.3.1 National Construction Code Section J for Energy Efficiency

The NCC's Section J (National Construction Code) determines the minimum energy performance requirements for all new developments in Australia. The proposed design will meet all the NCC's Section J energy efficiency requirements. A detailed Section J summary report has already been prepared, to demonstrate the design strategies to comply with NCC 2022 Section J, under the DTS assessment. The Section J DTS testing has indicated that the retail zones will pass comfortably, since generous insulation and performance glazing is also being proposed in these zones, similar to the apartment designs.

The Section J report will assess each of the following energy categories:

- o Part J1 Energy efficiency performance requirements
- o Part J2 Energy efficiency
- o Part J3 Elemental provisions for a sole-occupancy unit Class 2 or Class 4
- o Part J4 Building fabric
- o Part J5 Building sealing
- o Part J6 Air-conditioning and ventilation
- o Part J7 Artificial lighting and power
- o Part J8 Heated water supply and swimming pool and spa pool plant
- o Part J9 Energy monitoring and on-site distributed energy resources

Importantly, the "conditioned" zones will include the retail and apartment zones (but not hallways, plant rooms, pool rooms or back-of-house zones such as plant rooms or fire stairs). Even if air-conditioning is not proposed for some "habitable" parts of those building types, those zones will still be classified as "conditioned", for the purpose of the DTS analysis. This will ensure that all those high-importance areas have an excellent level of passive thermal comfort.

2.3.2 Energy reduction strategies

The following strategies have been embraced to improve energy efficiency:

- Use of renewable energy sources including generous PV solar power (>125 kW)
- Low-carbon hot water systems (heat pumps)
- Efficient heating, ventilation and cooling (HVAC) systems including:
 - High efficiency condensers, pumps, fans, etc
 - Sensors or BMS to monitor and control building systems
 - Ventilation with efficiency controls such as zoning and/or occupancy sensors
 - Carbon Monoxide sensors and variable VSD fans in basement levels
 - Common area ventilation includes efficiency controls such as zoning, motion sensors or time clock controls



- Passive systems such as passive heating, passive cooling and natural ventilation (through the intelligent use and positioning of thermal mass, window openings, glazing, shading devices, etc).
- Efficient lighting, sensors and efficiency controls (with mainly LED lights). This includes internal, external and public domain lighting.
- Efficient whitegoods, fixtures and fittings for energy. In particular, the whitegoods have a huge influence (on per capita energy use) so good dryers and/or fridges will be provided (to educate the residents and also to boost the already high BASIX scores).
- Some areas with shut-off switches for lights and non-essential power to be turned off when unoccupied.
- Appliances and whitegoods (as listed, previously) will have very high energy efficiency ratings.
- Efficient taps, showers and water-consuming whitegoods, which will hence reduce the hot water use, per capita.
- Minimised infiltration through weather stripping for doors and windows, dampers for exhaust fans and compliance with Section J.

These energy strategies will also contribute to reducing peak electrical demand from the development. This factor is very important when it comes to reducing the stress on the surrounding energy networks and infrastructure.

2.4 Transport

The following alternative transport initiatives are being proposed to improve amenity, to promote occupant health and to reduce transport related GHG emissions.

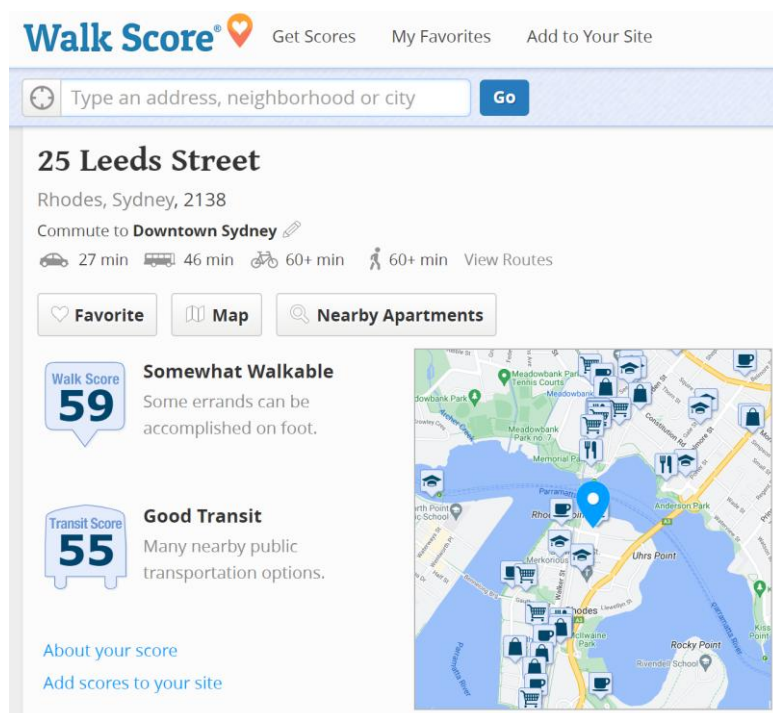
2.4.1 Active Transport Facilities

Secured bicycle parking and associated facilities have been proposed for patrons and visitors. Travel information kits for residents and workers will be generated later. This will encourage public transport, walking, bicycles and car sharing schemes (over private motor vehicle use). The provision of EOT facilities (end-of-trip) has also been implemented, for non-residential components of the building, and this will encourage staff to cycle to work.

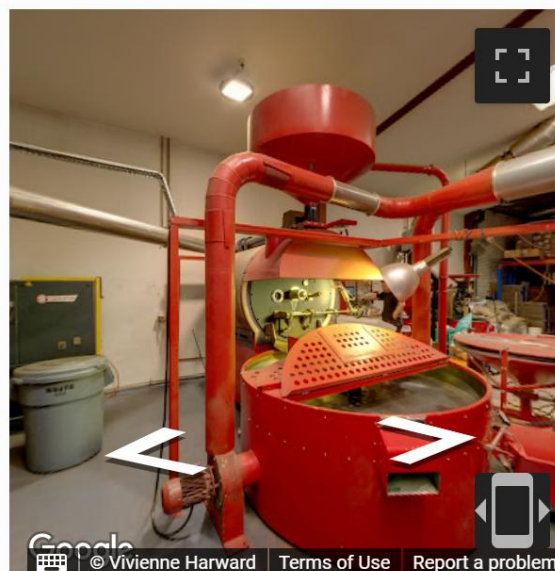


2.4.2 Walkable Neighbourhood & Public Transport

The site is located close to numerous amenities, with a 'walk score' of 59% (see below). A score above 59% is considered to be 'somewhat walkable', as shown below. The transit score is also quite good with a score of 55%.



About this Location



25 Leeds Street has a Walk Score of 59 out of 100. This location is Somewhat Walkable so some errands can be accomplished on foot.

This location is in the Rhodes neighborhood in Sydney. Nearby parks include Memorial Park, Helene Park and Ann Thorn Park.

Consequently, the project has been designed to optimise connectivity and pedestrian links within the site itself for "enhanced walkability". This will allow access to the numerous features within the site itself. The corner aspect of the site has been taken advantage of and there are now numerous (easily-accessed)entrance zones to the buildings.

The convenience, aesthetics and safety of the entrance zones have been carefully considered to encourage the building users to walk to places around the site, rather than driving cars.

What's Nearby

Restaurants:	
Madam Pho Rhodes	.9km >
Coffee:	
LAB Bakery Rhodes	.8km >
Bars:	
Parramatta RSL Club	8.5km >
Groceries:	
Woolworths Rhodes	.8km >
Parks:	
Helene Park	.5km >
Schools:	
Kent Road Public School	4.5km >
Shopping:	
Rhodes	.9km >
Entertainment:	
Five Dock	5.6km >
Errands:	
Expresso Car Wash Cafe	2.5km >
Search Nearby:	>

2.4.3 Electric car recharging stations

In order to encourage the use of sustainable motor-vehicle transportation, electric car recharging stations have been carefully considered and incorporated. Furthermore, more consideration and research will be invested into the possibility of pre-wiring for future changes, to allow for easy retrofitting of facilities into additional residential spots.

2.5 Water

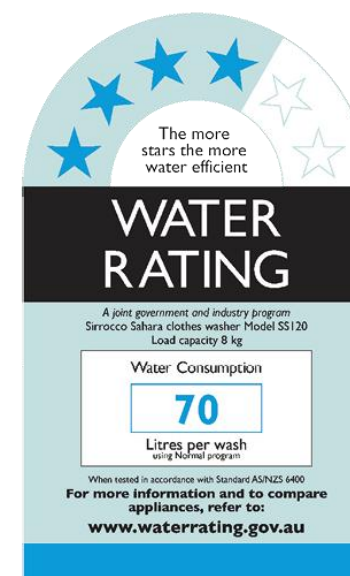
Potable water consumption will be minimised for the project by selecting very water-efficient fittings, fixtures and appliances. As shown by the BASIX specifications, products were generally selected within 1 star of the top star rating (using the WELS website). For example, toilets can be awarded up to 5 stars, so the architects chose 4-star ratings. Importantly, the top ratings can be very difficult from a cost, availability or functionality perspective. For example, a 5-star toilet requires a basin above the toilet cistern, and this is clearly not suitable for most designs.

2.5.1 Water strategies

The following strategies will be used to reduce potable water consumption. These initiatives may change slightly as detailed design is developed, provided scores are still maintained.

Main water initiatives for the development include:

- Rainwater harvesting and re-use on the site (>20kL of storage)
- Water efficient fittings, fixtures and appliances
- Rainwater reuse for irrigation (planting and lawn areas) and dual reticulation
- Dual Reticulation -Toilet/Laundry in Units – for rainwater and future treated wastewater
- Recycling or reuse (closed loops) of any water required for fire testing.
- Efficient irrigation such as drip irrigation to planters and gardens
- At least 70% use by area of locally indigenous or “one-drop” water-efficient plants
- Generous deep-soil allocation
- Generous garden areas and green-roof gardens/planters



2.6 Materials

2.6.1 Material Selection

Materials used in the building industry are responsible for significant waste generation, resource depletion, GHG emissions and water consumption. To minimise these environmental impacts, the following principles will be considered for material selection on the site:

- Selection of certified timbers, especially those with FSC-certification
- Selection of Best Practice Certified PVC products (or avoidance of PVC)
- Design major building components for longevity, adaptation, disassembly, re-use and recycling
- Local procurement to support the local economy and reduce transport emissions
- Design for robustness - review the design and the materials to ensure durability for high-traffic surfaces and high-use fittings.
- Specification of sustainable products where appropriate, such as those with recycled content or potential for recycling
- Specification of products with third-party certifications (e.g. GECA or GreenTag) or those with EPDs (Environmental Product Declarations)
- Consider responsible steel products sourced from accredited steel makers and fabricators
- Consider portland cement reduction in concrete mixes by using industrial waste products such as fly ash



2.6.2 Waste minimisation

A Waste Minimisation Plan has also been prepared to outline best practice waste management during the design, construction and operation of the project. The proposed waste strategy looks at issues such as:

- Establish waste targets (including minimum construction and demolition waste recycling targets).
- ‘Design out’ waste: Reduce the amount of materials used in the construction processes, wherever practical
- Implement best practice construction waste management plans and engage with the supply chain.
- Provide infrastructure and clear guidance (for the building users) to maximise waste recycling during operation.

The Head Contractor will develop a Construction Waste Management Plan (CWMP) in accordance with waste targets, and this will:

- Define responsibilities and actions to prevent, reduce and recover waste
- Strive to recycle >90% by weight of construction and demolition waste
- Set operational waste targets to be diverted from landfill including compostable organic and green waste.
- Identify the waste arising from construction and detail waste reuse and recycling routes
- Record waste movements and quantities during construction and benchmark the results against best practice targets



2.7 Land Use & Ecology

The project will enhance existing ecological value by reusing a previously developed site. Consequently, the objective of the landscaping and ecology strategies will be to restore the ecological value of the site and use locally indigenous species around the site. This will help to reduce water consumption and also to enhance biodiversity and the restoration of native flora and fauna in the area.

2.8 Emissions

Emissions to water, soil and the sky will be minimised during construction and operation. A CEMP will be prepared for the site demolition and construction, and the emissions will be addressed in this document.

2.8.1 Reduced Peak Discharge to Stormwater

The post-development peak event stormwater discharge from the site will be minimised (to be very close to or less than the pre-development peak event stormwater discharge).

Stormwater discharged from the site will be designed to achieve high levels of pollution removal for pollutants such as total suspended solids, gross pollutants, total nitrogen, total phosphorus, petroleum hydrocarbons and free oils.

2.8.2 Light Pollution

Outdoor lighting on the project will generally be designed in accordance with AS 4282:1997 and external light pollution will be minimised. The reduction in light pollution will alleviate the risk of impacts on neighbours and wildlife. In particular, lights be designed to face predominantly downwards. Lights with upspill or uplighting will be avoided.



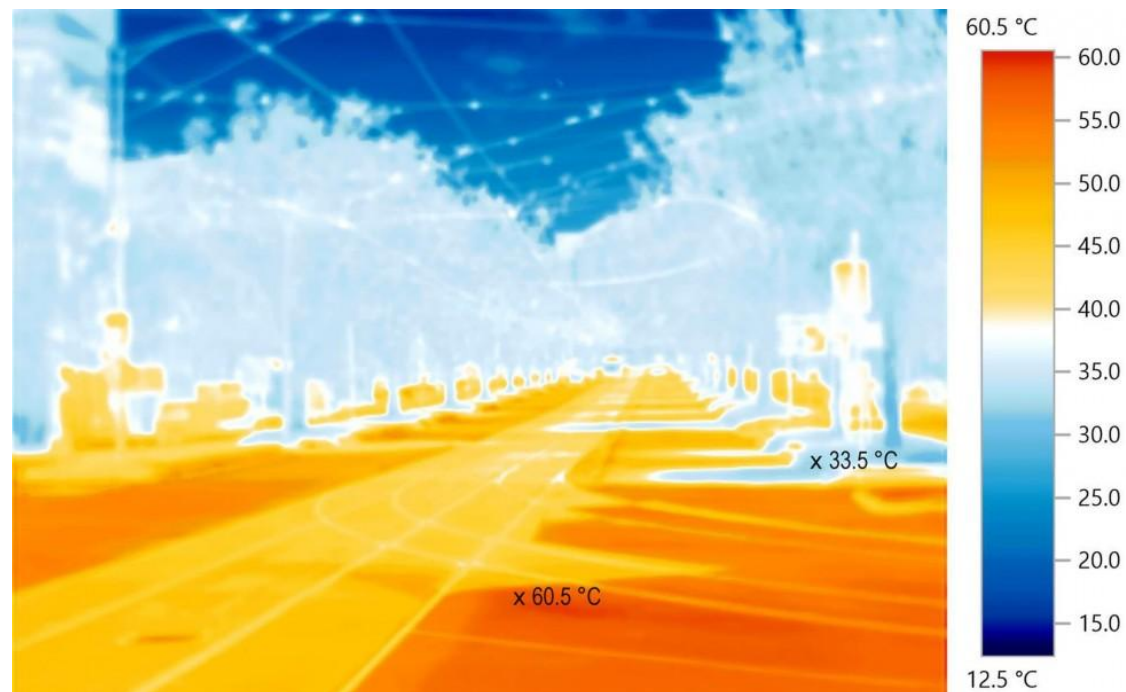
2.8.3 Heat Island Effect

Lighter-coloured pavements, walls and roofs (and generous planting) have been proposed, in most locations, as shown in the plans, sections, renders and elevations. This strategy was mainly conceived in order to reduce the potential heat island effect on the site and surrounding areas. Furthermore, this strategy will also improve internal thermal comfort, significantly, in summer.

2.8.4 Refrigerant impacts

Refrigerants will be selected to try and target an Ozone Depletion Potential (ODP) of zero. This includes most air conditioning systems and other refrigeration equipment. This may entail various HVAC&R systems and cold/freezer rooms found on the premises.

Environmental impacts from refrigerants leaking into the atmosphere must be minimised as far as possible, in order for this objective to be achieved.



2.8.5 Solar Reflectivity

Glass surfaces (and some other cladding materials) can be highly reflective. Various measures will be used to negate this effect and, in particular, low-reflectivity glass will be used, in accordance with council requirements. The main issues with reflectivity will typically occur at the lower levels, since this is where motorists, pedestrians and public transport operators will be focusing their gaze. This zone of peripheral vision is extremely important for solar reflectance, especially for motorists and train/bus drivers.



With this in mind, the building will use exclusively low-reflective materials and glass at the lower levels. This building (and other similar buildings nearby) has been investigated, for potential reflectivity. It was concluded that a conservative “reflectivity target” of 20% should be adequate to prevent negative issues with solar reflectance. Most councils support that conservative figure and (reflectivity index permitted for external glazed elements should not exceed a 20% value).

If the 20% reflectivity target is successful for the lower levels, then the higher levels will work as well (or even better) with that same solar reflectivity. Hence, overall, the 20% target should work well, for the proposed facades of the towers.

In addition to the low-reflectivity glazing, various other measures will also be used to negate unwanted reflection. In particular, vertical fins and building articulation will be used, in accordance with council’s general recommendations. The additional shading devices have been incorporated for thermal benefits, privacy and reflectivity benefits, at all levels.

2.9 Community

The project will be designed to maximise community benefit. In particular, it will encourage active lifestyles, maintain good pedestrian and cyclist linkages and facilitate ample, safe social interaction. The project will also be designed to minimise other undesirable impacts on the community such as glare and light pollution.

The following strategies will be considered:

- Marketing and education strategies to convey the numerous sustainability practices to wider audiences
- Ensuring that the building does not lead to hazardous or uncomfortable glare to pedestrians, motorists or surrounding buildings
- Minimise light spill to the sky, to protect local wildlife and light pollution.
- Promotion of healthy and active living through various design and education strategies (for example, with cycling storage and facilities)
- Incorporation of crime prevention through environmental design (CPTED)

3. Conclusion

The numerous initiatives outlined in this report demonstrate how the proposed development will incorporate best practice ESD initiatives into its design, construction and ongoing operation. Through a combination of ESD strategies, the project will indeed exceed the minimum requirements. The design has exceeded the BASIX and NatHERS targets (as shown by the certificates for BASIX and NatHERS).

It is acknowledged that some strategies will need further refinement, during the latter stages of design. These strategies may include:

- Refinement of renewable energy design (such as final PV type and possible BIPV solar power with “building-integrated photovoltaics”)
- Energy-efficient building fabric and services to deliver optimal energy savings
- Energy-efficient windows (double-glazing and performance frames) to maximise thermal comfort, natural daylighting and views
- Careful lighting design (further refinement for both energy efficiency and "indoor environment quality")
- Selection of non-toxic materials, finishes, adhesives and products to improve Indoor Environmental Quality (IEQ)
- Final model selection for water-efficient fittings, fixtures and appliances
- Water-reuse balance, with an intelligent synergy between the reuse strategies for rainwater, stormwater and dual reticulation
- Active transport facilities to encourage healthier living while reducing carbon emissions from transport
- Selective procurement of materials and internal finishings (to minimise any possible environmental and social impacts)
- Management and governance procedures (which will improve sustainability outcomes during operation).

As detailed earlier, the project will be designed under the guidance of BASIX, NatHERS, NCC's Section J Energy Efficiency and also the Rhodes East Development Plan (DCP). Furthermore, the energy testing and calculations suggest that the building will perform very well in relation to energy demands and greenhouse gas emissions.

4. Appendix A – BASIX and NatHERS Certificates

BASIX™ Certificate

Building Sustainability Index

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

Multi Dwelling

Certificate number: 1762032M_06

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

Secretary

Date of issue: Friday, 30 January 2026

To be valid, this certificate must be submitted with a development application or lodged with a complying development certificate application within 3 months of the date of issue.



When submitting this BASIX certificate with a development application or complying development certificate application, it must be accompanied by NatHERS certificate 0005635510.

Project summary

Project name	25 - 27 Leeds St RHODES - uplift AUG 24_06
Street address	25 LEEDS STREET RHODES 2138
Local Government Area	CANADA BAY
Plan type and plan number	Deposited Plan 329241
Lot No.	A
Section no.	-
No. of residential flat buildings	4
Residential flat buildings: no. of dwellings	401
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Project score

Water	✓ 54	Target 40
Thermal Performance	✓ Pass	Target Pass
Energy	✓ 69	Target 63
Materials	✓ -100	Target n/a

Certificate Prepared by

Name / Company Name: RENYI PTY LTD

ABN (if applicable): 81603204299

Description of project

Project address	
Project name	25 - 27 Leeds St RHODES - uplift AUG 24_06
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Lot No.	A
Section no.	-
Project type	
No. of residential flat buildings	4
Residential flat buildings: no. of dwellings	401
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0
Site details	
Site area (m²)	11962
Roof area (m²)	1990
Non-residential floor area (m²)	1461
Residential car spaces	355
Non-residential car spaces	42

Common area landscape		
Common area lawn (m²)	894	
Common area garden (m²)	3657	
Area of indigenous or low water use species (m²)	2560	
Assessor details and thermal loads		
Assessor number	DMN/18/1837	
Certificate number	0005635510	
Climate zone	56	
Project score		
Water	✓ 54	Target 40
Thermal Performance	✓ Pass	Target Pass
Energy	✓ 69	Target 63
Materials	✓ -100	Target n/a

Description of project

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

Residential flat buildings - Building CD, 103 dwellings, 11 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
C1001	1	52.4	0	0	0
C1005	1	71.2	0	0	0
C203	1	53.4	0	0	0
C302	2	76	0	0	0
C306	2	89.1	0	0	0
C404	1	58.6	0	0	0
C502	2	76	0	0	0
C506	2	104.5	0	0	0
C604	1	58.6	0	0	0
C702	2	76	0	0	0
C706	2	104.5	0	0	0
C804	1	58.6	0	0	0
C902	2	76	0	0	0
C906	2	104.5	0	0	0
D1004	3	101.3	0	0	0
D1104	3	100.8	0	0	0
D203	1	54.4	0	0	0
D304	3	100.9	0	0	0
D403	3	122.9	0	0	0
D502	2	98.5	0	0	0
D601	2	97.1	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
C1002	2	76	0	0	0
C1006	2	104.5	0	0	0
C204	1	56	0	0	0
C303	1	60.4	0	0	0
C401	1	52.4	0	0	0
C405	1	71.2	0	0	0
C503	1	82.4	0	0	0
C601	1	52.4	0	0	0
C605	1	71.2	0	0	0
C703	1	82.4	0	0	0
C801	1	52.4	0	0	0
C805	1	71.2	0	0	0
C903	1	82.4	0	0	0
D1001	2	97.1	0	0	0
D1005	1	53.5	0	0	0
D1105	1	53.5	0	0	0
D301	2	86.7	0	0	0
D305	1	53.5	0	0	0
D404	3	100.9	0	0	0
D503	3	122.9	0	0	0
D602	2	98.5	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
C1003	1	82.4	0	0	0
C201	2	77	0	0	0
C205	2	84.2	0	0	0
C304	1	51.4	0	0	0
C402	2	76	0	0	0
C406	2	104.5	0	0	0
C504	1	58.6	0	0	0
C602	2	76	0	0	0
C606	2	104.5	0	0	0
C704	1	58.6	0	0	0
C802	2	76	0	0	0
C806	2	104.5	0	0	0
C904	1	58.6	0	0	0
D1002	2	98.5	0	0	0
D1102	2	110.2	0	0	0
D201	2	86.1	0	0	0
D302	2	82.8	0	0	0
D401	2	97.1	0	0	0
D405	1	53.5	0	0	0
D504	3	100.9	0	0	0
D603	3	122.9	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
C1004	1	58.6	0	0	0
C202	1	59.3	0	0	0
C301	1	52.4	0	0	0
C305	1	54	0	0	0
C403	1	82.4	0	0	0
C501	1	52.4	0	0	0
C505	1	71.2	0	0	0
C603	1	82.4	0	0	0
C701	1	52.4	0	0	0
C705	1	71.2	0	0	0
C803	1	82.4	0	0	0
C901	1	52.4	0	0	0
C905	1	71.2	0	0	0
D1003	3	123.7	0	0	0
D1103	3	123.1	0	0	0
D202	1	43.3	0	0	0
D303	3	98.8	0	0	0
D402	2	98.5	0	0	0
D501	2	97.1	0	0	0
D505	1	53.5	0	0	0
D604	3	100.9	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
D605	1	53.5	0	0	0
D704	3	100.9	0	0	0
D803	3	122.9	0	0	0
D902	2	98.5	0	0	0
DG01	3	100.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
D701	2	97.1	0	0	0
D705	1	53.5	0	0	0
D804	3	100.9	0	0	0
D903	3	122.9	0	0	0
DG02	3	112	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
D702	2	98.5	0	0	0
D801	2	97.1	0	0	0
D805	1	53.5	0	0	0
D904	3	100.9	0	0	0
DG03	3	112	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
D703	3	122.9	0	0	0
D802	2	98.5	0	0	0
D901	2	97.1	0	0	0
D905	1	53.5	0	0	0

Residential flat buildings - Building AB, 117 dwellings, 12 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A1001	3	120.9	0	0	0
A1102	3	130.10	0	0	0
A1203	3	110.8	0	0	0
A301	3	99.1	0	0	0
A402	3	99.1	0	0	0
A501	1	52.9	0	0	0
A505	2	85.6	0	0	0
A604	2	80.9	0	0	0
A703	3	99.1	0	0	0
A802	3	99.1	0	0	0
A901	1	52.9	0	0	0
A905	2	85.6	0	0	0
AG04	3	113.6	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A1002	3	130.1	0	0	0
A1103	2	80.6	0	0	0
A201	2	86.3	0	0	0
A302	2	80.9	0	0	0
A403	3	99.1	0	0	0
A502	3	99.1	0	0	0
A601	1	52.9	0	0	0
A605	2	85.6	0	0	0
A704	2	80.9	0	0	0
A803	3	99.1	0	0	0
A902	3	99.1	0	0	0
AG01	3	113.6	0	0	0
B1001	2	89	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A1003	3	110.8	0	0	0
A1201	3	120.9	0	0	0
A202	2	80.9	0	0	0
A303	2	85.6	0	0	0
A404	2	80.9	0	0	0
A503	3	99.1	0	0	0
A602	3	99.1	0	0	0
A701	1	52.9	0	0	0
A705	2	85.6	0	0	0
A804	2	80.9	0	0	0
A903	3	99.1	0	0	0
AG02	3	113.6	0	0	0
B1002	2	81.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A1101	3	120.9	0	0	0
A1202	3	130.1	0	0	0
A203	2	85.6	0	0	0
A401	1	52.9	0	0	0
A405	2	85.6	0	0	0
A504	2	80.9	0	0	0
A603	3	99.1	0	0	0
A702	3	99.1	0	0	0
A801	1	52.9	0	0	0
A805	2	85.6	0	0	0
A904	2	80.9	0	0	0
AG03	3	113.6	0	0	0
B1003	2	75.3	4.2	0.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B1004	2	80.2	0.00	0.00	0.00
B201	2	90.9	0	0	0
B205	1	56.3	0	0	0
B304	2	80.2	0	0	0
B308	1	53.8	0	0	0
B404	2	80.2	0	0	0
B408	1	53.8	0	0	0
B504	2	80.2	0	0	0
B508	1	53.8	0	0	0
B604	2	80.2	0	0	0
B608	1	53.8	0	0	0
B704	2	80.2	0	0	0
B708	1	53.8	0	0	0
B804	2	80.2	0	0	0
B808	1	53.8	0	0	0
B904	2	80.2	0	0	0
B908	1	53.8	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B1005	2	78.3	0.00	0.00	0
B202	1	55.1	0	0	0
B301	2	89	0	0	0
B305	2	78.2	0	0	0
B401	2	89	0	0	0
B405	2	78.2	0	0	0
B501	2	89	0	0	0
B505	2	78.2	0	0	0
B601	2	89	0	0	0
B605	2	78.2	0	0	0
B701	2	89	0	0	0
B705	2	78.2	0	0	0
B801	2	89	0	0	0
B805	2	78.2	0	0	0
B901	2	89	0	0	0
B905	2	78.2	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B1007	2	82.8	0	0	0
B203	2	84.6	0	0	0
B302	2	81.4	0	0	0
B306	3	103.5	0	0	0
B402	2	81.4	0	0	0
B406	3	103.5	0	0	0
B502	2	81.4	0	0	0
B506	3	103.5	0	0	0
B602	2	81.4	0	0	0
B606	3	103.5	0	0	0
B702	2	81.4	0	0	0
B706	3	103.5	0	0	0
B802	2	81.4	0	0	0
B806	3	103.5	0	0	0
B902	2	81.4	0	0	0
B906	3	103.5	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B1008	1	53.8	0	0	0
B204	2	71.6	0	0	0
B303	2	75.3	4.2	0	0
B307	2	82.8	0	0	0
B403	2	75.3	4.2	0	0
B407	2	82.8	0	0	0
B503	2	75.3	4.2	0	0
B507	2	82.8	0	0	0
B603	2	75.3	4.2	0	0
B607	2	82.8	0	0	0
B703	2	75.3	4.2	0	0
B707	2	82.8	0	0	0
B803	2	75.3	4.2	0	0
B807	2	82.8	0	0	0
B903	2	75.3	4.2	0	0
B907	2	82.8	0	0	0

Residential flat buildings - Building E, 63 dwellings, 16 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1001	4+	149.5	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1002	3	112	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1003	3	134.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1101	4+	149.5	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1102	3	112	0	0	0
E1203	3	134.4	0	0	0
E1401	4+	149.5	0	0	0
E1502	3	112	0	0	0
E203	2	82.2	0	0	0
E301	3	118	0	0	0
E305	2	94.2	0	0	0
E403	2	82.2	0	0	0
E501	3	118	0	0	0
E505	2	94.2	0	0	0
E603	2	82.2	0	0	0
E701	3	118	0	0	0
E705	2	94.2	0	0	0
E803	2	82.2	0	0	0
E901	4+	149.5	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1103	3	134.4	0	0	0
E1301	4+	149.5	0	0	0
E1402	3	112	0	0	0
E1503	3	134.4	0	0	0
E204	2	86.5	0	0	0
E302	3	103.7	0	0	0
E306	1	63.4	0	0	0
E404	2	86.5	0	0	0
E502	3	103.7	0	0	0
E506	1	63.4	0	0	0
E604	2	86.5	0	0	0
E702	3	103.7	0	0	0
E706	1	63.4	0	0	0
E804	2	86.5	0	0	0
E902	3	112	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1201	4+	149.5	0	0	0
E1302	3	112	0	0	0
E1403	3	134.4	0	0	0
E201	3	118	0	0	0
E205	2	94.2	0	0	0
E303	2	82.2	0	0	0
E401	3	118	0	0	0
E405	2	94.2	0	0	0
E503	2	82.2	0	0	0
E601	3	118	0	0	0
E605	2	94.2	0	0	0
E703	2	82.2	0	0	0
E801	3	118	0	0	0
E805	2	94.2	0	0	0
E903	3	134.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
E1202	3	112	0	0	0
E1303	3	134.4	0	0	0
E1501	4+	149.5	0	0	0
E202	3	103.7	0	0	0
E206	1	63.4	0	0	0
E304	2	86.5	0	0	0
E402	3	103.7	0	0	0
E406	1	63.4	0	0	0
E504	2	86.5	0	0	0
E602	3	103.7	0	0	0
E606	1	63.4	0	0	0
E704	2	86.5	0	0	0
E802	3	103.7	0	0	0
E806	1	63.4	0	0	0

Residential flat buildings - Building F, 118 dwellings, 25 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1001	3	111.4	0	0	0
F1005	2	76.4	0	0	0
F1104	3	106.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1002	3	104.5	0	0	0
F1101	3	111.4	0	0	0
F1105	2	76.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1003	3	109.4	0	0	0
F1102	3	104.5	0	0	0
F1201	3	111.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1004	3	106.4	0	0	0
F1103	3	109.4	0	0	0
F1202	3	104.5	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1203	3	109.4	0	0	0
F1302	3	104.5	0	0	0
F1401	3	111.4	0	0	0
F1405	2	76.4	0	0	0
F1504	3	106.4	0	0	0
F1603	3	109.4	0	0	0
F1702	3	104.5	0	0	0
F1801	3	111.4	0	0	0
F1805	2	76.4	0	0	0
F1904	3	106.4	0	0	0
F2003	3	109.4	0	0	0
F202	3	102.7	0	0	0
F2101	3	111.4	0	0	0
F2105	2	76.4	0	0	0
F2204	3	106.4	0	0	0
F2303	3	109.4	0	0	0
F2402	3	104.5	0	0	0
F2501	4+	156.4	0	0	0
F302	3	104.5	0	0	0
F401	3	111.4	0	0	0
F405	2	75.9	0	0	0
F504	3	106.4	0	0	0
F603	3	109.4	0	0	0
F702	3	104.5	0	0	0
F801	3	111.4	0	0	0
F805	2	75.9	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1204	3	106.4	0	0	0
F1303	3	109.4	0	0	0
F1402	3	104.5	0	0	0
F1501	3	111.4	0	0	0
F1505	2	76.4	0	0	0
F1604	3	106.4	0	0	0
F1703	3	109.4	0	0	0
F1802	3	104.5	0	0	0
F1901	3	111.4	0	0	0
F1905	2	76.4	0	0	0
F2004	3	106.4	0	0	0
F203	3	103.5	0	0	0
F2102	3	104.5	0	0	0
F2201	3	111.4	0	0	0
F2205	2	76.4	0	0	0
F2304	3	106.4	0	0	0
F2403	3	109.4	0	0	0
F2502	4+	192.8	0	0	0
F303	3	109.4	0	0	0
F402	3	104.5	0	0	0
F501	3	111.4	0	0	0
F505	2	75.9	0	0	0
F604	3	106.4	0	0	0
F703	3	109.4	0	0	0
F802	3	104.5	0	0	0
F901	3	111.4	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1205	2	76.4	0	0	0
F1304	3	106.4	0	0	0
F1403	3	109.4	0	0	0
F1502	3	104.5	0	0	0
F1601	3	111.4	0	0	0
F1605	2	76.4	0	0	0
F1704	3	106.4	0	0	0
F1803	3	109.4	0	0	0
F1902	3	104.5	0	0	0
F2001	3	111.4	0	0	0
F2005	2	76.4	0	0	0
F204	3	106.4	0	0	0
F2103	3	109.4	0	0	0
F2202	3	104.5	0	0	0
F2301	3	111.4	0	0	0
F2305	2	76.4	0	0	0
F2404	3	106.4	0	0	0
F2503	4+	199.1	0	0	0
F304	3	106.4	0	0	0
F403	3	109.4	0	0	0
F502	3	104.5	0	0	0
F601	3	111.4	0	0	0
F605	2	75.9	0	0	0
F704	3	106.4	0	0	0
F803	3	109.4	0	0	0
F902	3	104.5	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F1301	3	111.4	0	0	0
F1305	2	76.4	0	0	0
F1404	3	106.4	0	0	0
F1503	3	109.4	0	0	0
F1602	3	104.5	0	0	0
F1701	3	111.4	0	0	0
F1705	2	76.4	0	0	0
F1804	3	106.4	0	0	0
F1903	3	109.4	0	0	0
F2002	3	104.5	0	0	0
F201	3	112.9	0	0	0
F205	2	75.9	0	0	0
F2104	3	106.4	0	0	0
F2203	3	109.4	0	0	0
F2302	3	104.5	0	0	0
F2401	3	111.4	0	0	0
F2405	2	76.4	0	0	0
F301	3	111.4	0	0	0
F305	2	75.9	0	0	0
F404	3	106.4	0	0	0
F503	3	109.4	0	0	0
F602	3	104.5	0	0	0
F701	3	111.4	0	0	0
F705	2	75.9	0	0	0
F804	3	106.4	0	0	0
F903	3	109.4	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)
F904	3	106.4	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)
F905	2	75.9	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)

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)
Lift bank (No. 1)	-
Lift bank (No. 4)	-
Switch and comms	115
Plant or service rooms	361
WC communal and sauna	33
Dock Manager room	8

Common area	Floor area (m²)
Lift bank (No. 2)	-
Lift bank (No. 5)	-
Waste rooms	372
Substations	77
Bulky storage	58
Ground floor lobbies	545

Common area	Floor area (m²)
Lift bank (No. 3)	-
Car park area	13869
Loading/Waste collection	286
Pump and tank rooms	225
Communal rooms	176
Hallways upper levels	2891

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building CD

(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 - Building AB

(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 Residential flat buildings - Building E

(a) Buildings

(i) Materials

(b) Dwellings

(i) Water

- (ii) Energy
- (iii) Thermal Performance

(c) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

4. Commitments for Residential flat buildings - Building F

(a) Buildings

- (i) Materials

(b) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Performance

(c) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

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 carried out. 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 - Building CD

(a) Buildings

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

Floor types

Floor type	Area (m2)	Insulation	Low emissions option
floors above habitable rooms, frame: suspended concrete slab	7343.9	-	-
suspended floor above open subfloor, frame: suspended concrete slab	195	foil-foam composite board	-
suspended floor above garage, frame: suspended concrete slab	920	foil-foam composite board	-

External wall types

External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	concrete panel/ plasterboard, frame: light steel frame	1640	-	rockwool batts, roll or pump-in
External wall type 2	framed (fibre cement sheet or boards), frame: light steel frame	675	-	rockwool batts, roll or pump-in

External wall types				
External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 3	brick veneer,frame:light steel frame	710	-	rockwool batts, roll or pump-in

Internal wall types			
Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 1	plasterboard, frame:light steel frame	9560	rockwool batts, roll or pump-in
Internal wall type 2	75 mm AAC panel, frame:light steel frame	4650	rockwool batts, roll or pump-in

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	Volume (m³)	Low emissions option
yes	840	-

Ceiling and roof types			
Ceiling and roof type	Area (m²)	Roof Insulation	Ceiling Insulation
concrete - plasterboard internal, frame: light steel frame	1040	-	foil-foam composite board

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)
0	3505	0	3505	0	0	0	0

(b) Dwellings

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

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	6 star	-	4.5 star	4 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All dwellings	Central water tank (No. 1)	See central systems	See central systems	no	yes	yes	no	no

(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	manual on / timer off

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
D202	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	no
All other dwellings	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	no

	Individual pool			Individual spa		Appliances other efficiency measures				
Dwelling no.	Pool heating system	Pool Pump	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Dishwasher	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
D202	-	-	-	-	-	induction cooktop & electric oven	4 star	8.0 star	no	no
All other dwellings	-	-	-	-	-	induction cooktop & electric oven	4 star	8.0 star	no	no

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

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
C1001	20.1	8.5	28.600
C1002	26.7	9.6	36.300
C1003	27.4	10.4	37.800
C1004	21.9	11.4	33.300

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
C1005	23.1	13.3	36.400
C1006	23	14.2	37.200
C201	19.9	4	23.900
C202	18.20	16.9	35.100
C203	7.7	11.4	19.100
C204	9.8	14.7	24.500
C205	13.8	9.6	23.400
C301	13.1	8.3	21.400
C302	17.2	5.9	23.100
C303	18.9	11.1	30.000
C304	9.5	13.5	23.000
C305	5.8	15	20.800
C306	10.4	15.7	26.100
C401	14	8.2	22.200
C402	19.9	6.9	26.800
C403	23.80	13.2	37.000
C404	18.8	10.9	29.700
C405	14.4	12.4	26.800
C406	16.4	18.6	35.000
C501	10.30	10.2	20.500
C502	20.3	7.6	27.900
C503	25	11.7	36.700
C504	22	11	33.000
C505	13	16.6	29.600
C506	17.60	18.3	35.900
C601	16.7	6.8	23.500
C602	27	5.8	32.800
C603	24.80	12.7	37.500
C604	22.6	10.2	32.800
C605	13.30	16.3	29.600
C606	18.8	15.3	34.100

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
C701	16.7	7.2	23.900
C702	25.4	5.8	31.200
C703	25.6	12.4	38.000
C704	21.8	10	31.800
C705	13.5	16.3	29.800
C801	16.50	7.2	23.700
C802	24.5	7.3	31.800
C803	27.3	10.7	38.000
C804	21.7	10.3	32.000
C805	13.6	16	29.600
C806	19.3	14.4	33.700
C901	15.7	7.5	23.200
C902	22.9	7.8	30.700
C903	27.10	10.9	38.000
C904	22.2	10.3	32.500
C905	13.9	15.6	29.500
D1001	19.90	14.8	34.700
D1002	23.20	11.9	35.100
D1003	19.8	16.1	35.900
D1004	13.4	9.5	22.900
D1005	21.5	7.6	29.100
D1102	25.4	10.1	35.500
D1103	22.5	14.6	37.100
D1104	14.10	7.3	21.400
D1105	25.60	8.1	33.700
D201	11.6	14.2	25.800
D202	20.3	9.7	30.000
D203	16.5	10.3	26.800
D301	8.6	14.7	23.300
D302	11.1	15.9	27.000
D303	13.3	7.6	20.900

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
D304	10.6	9.1	19.700
D305	14	8.6	22.600
D401	11.1	13	24.100
D402	19.3	14.1	33.400
D403	18.1	15.5	33.600
D404	7.6	15.4	23.000
D405	12.1	10.3	22.400
D501	10.50	13.3	23.800
D502	20.40	13.2	33.600
D503	18.6	16.4	35.000
D504	8	14.8	22.800
D505	12.9	10.8	23.700
D601	11	13	24.000
D602	21	12.9	33.900
D603	18.7	16.1	34.800
D604	8.4	14.6	23.000
D605	20.2	7.2	27.400
D701	11.3	12.6	23.900
D702	22.8	10.5	33.300
D703	19.1	15.5	34.600
D704	13.4	8.4	21.800
D705	20.5	7.1	27.600
D801	11.7	11.5	23.200
D802	21.9	12.7	34.600
D803	19.40	15.6	35.000
D804	12.80	8.6	21.400
D805	20.8	7.3	28.100
D901	11.4	12.5	23.900
D902	23.9	10	33.900
D903	19.7	16	35.700
D904	13.5	8.4	21.900

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
D905	20.8	7.6	28.400
DG01	23.8	6.7	30.500
DG02	29.3	5.1	34.400
DG03	18.2	6	24.200
All other dwellings	18.5	17.3	35.800

(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 (> 4.5 but <= 6 L/min)	4 star	6 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Fire sprinkler system (No. 3)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

Central energy systems	Type	Specification
Lift bank (No. 2)	gearless traction with V V V F motor and regenerative drive	Number of levels with apartments served by a lift: 10 number of levels from the bottom of the lift shaft to the top of the lift shaft: 13 number of lifts: 2 lift load capacity: >= 1001 kg but <= 1500kg

2. Commitments for Residential flat buildings - Building AB

(a) Buildings

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

Floor types

Floor type	Area (m2)	Insulation	Low emissions option
floors above habitable rooms, frame: suspended concrete slab	8875.9	-	-
suspended floor above open subfloor, frame: suspended concrete slab	230	foil-foam composite board	-
suspended floor above garage, frame: suspended concrete slab	870	foil-foam composite board	-

External wall types

External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	concrete panel/ plasterboard,frame:light steel frame	1820	-	rockwool batts, roll or pump-in
External wall type 2	framed (fibre cement sheet or boards),frame:light steel frame	520	-	rockwool batts, roll or pump-in
External wall type 3	brick veneer,frame:light steel frame	495	-	rockwool batts, roll or pump-in

Internal wall types			
Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 1	plasterboard, frame:light steel frame	12860	rockwool batts, roll or pump-in
Internal wall type 2	75 mm AAC panel, frame:light steel frame	4950	rockwool batts, roll or pump-in

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	Volume (m³)	Low emissions option
yes	970	-

Ceiling and roof types			
Ceiling and roof type	Area (m²)	Roof Insulation	Ceiling Insulation
concrete - plasterboard internal, frame: light steel frame	1265	-	foil-foam composite board

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)
0	4070	0	4070	0	0	0	0

(b) Dwellings

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

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	6 star	-	4.5 star	4 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All dwellings	Central water tank (No. 1)	See central systems	See central systems	no	yes	yes	no	no

(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	manual on / timer off

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
A1001, A1002, A1101, A1102, A1201, A1202	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	yes
A503, A603, AG01, AG02, B606, B706	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	no
A703, A803, A902, A903, B306, B406, B506, B806	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	no
B1003, B303, B403, B503, B603, B703, B803, B903	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	1	no
All other dwellings	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	no

	Individual pool			Individual spa		Appliances other efficiency measures				
Dwelling no.	Pool heating system	Pool Pump	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Dishwasher	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	-	induction cooktop & electric oven	4 star	8.0 star	no	no

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

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
A1001	17.7	10.1	27.800
A1002	11.2	16.6	27.800
A1003	18.6	11.2	29.800
A1101	17.4	12	29.400
A1102	11.2	18.4	29.600
A1103	17.5	7.9	25.400
A1201	26.80	10.8	37.600
A1202	18.90	17.3	36.200
A1203	26.1	11.5	37.600
A201	4.50	14.6	19.100
A202	14.3	13.2	27.500
A203	14.6	10.5	25.100
A301	4.4	13.8	18.200
A302	18.50	7.3	25.800
A303	12.2	12.5	24.700
A401	16.2	13	29.200
A402	8	10.6	18.600
A403	4.2	11.7	15.900
A404	19.5	7.2	26.700
A405	11.70	13.8	25.500
A501	14.5	11.9	26.400
A502	10.8	5.3	16.100
A503	4.8	13	17.800
A504	20.2	7.1	27.300
A505	19.8	7.7	27.500
A601	20.10	9.4	29.500

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
A602	9.9	6.2	16.100
A603	4.60	11.7	16.300
A604	23.4	7.2	30.600
A605	20.50	7.9	28.400
A701	19.80	10.5	30.300
A702	9.6	7	16.600
A703	4.4	10.7	15.100
A705	21	8.5	29.500
A801	22.1	11.9	34.000
A802	10.6	7.9	18.500
A803	6.70	14.1	20.800
A804	21.5	7.4	28.900
A901	19.4	10.9	30.300
A902	12.2	7.9	20.100
A903	6.80	11.3	18.100
A905	20.90	8.6	29.500
AG01	13.4	5.5	18.900
AG02	8	6.1	14.100
AG03	11.1	5.6	16.700
AG04	9.9	5.6	15.500
B1001	26.20	11.3	37.500
B1002	19.4	10.4	29.800
B1003	30	7.9	37.900
B1004	32.4	5.3	37.700
B1005	32.30	4.6	36.900
B1007	19	9.7	28.700
B1008	18	10.2	28.200
B201	13	20.4	33.400
B202	12.8	7.6	20.400
B203	13.4	5.6	19.000
B204	20.2	8.6	28.800

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
B205	23.50	8.7	32.200
B301	13.3	12.5	25.800
B302	5.5	11.9	17.400
B303	18.50	9.7	28.200
B304	20.60	7.3	27.900
B305	13.1	7.1	20.200
B306	11	7.8	18.800
B307	5.3	7.3	12.600
B308	6.5	7.6	14.100
B401	21.1	7.9	29.000
B402	9.80	8.7	18.500
B403	22.1	6.9	29.000
B404	18.3	7.4	25.700
B405	16.40	7	23.400
B406	13	12	25.000
B407	7	10	17.000
B408	7.7	9.7	17.400
B502	10.3	8.4	18.700
B503	22.90	6.8	29.700
B504	26.50	5.9	32.400
B505	25.2	5.2	30.400
B506	13.1	12.7	25.800
B507	7.4	9.9	17.300
B508	14.1	6.5	20.600
B601	21.70	9.1	30.800
B602	10.70	8.2	18.900
B603	23.7	6.9	30.600
B604	27.3	5.7	33.000
B605	27.5	5.2	32.700
B606	13.80	10	23.800
B607	7.3	10.5	17.800

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
B608	15.3	6.1	21.400
B701	20.90	9.5	30.400
B702	11.2	7.9	19.100
B703	24.3	6.9	31.200
B704	28	5.7	33.700
B705	26.60	5.2	31.800
B706	18.4	8	26.400
B707	7.3	10.6	17.900
B708	13.5	7	20.500
B801	20.9	10	30.900
B802	12.4	8.6	21.000
B803	26.5	7.4	33.900
B804	29.6	5.8	35.400
B805	27.60	6.9	34.500
B806	18.5	9.4	27.900
B807	13.20	8.1	21.300
B808	15.7	7.7	23.400
B901	21.30	10.8	32.100
B902	12.1	9.1	21.200
B903	26.5	7.5	34.000
B904	28.80	6.4	35.200
B905	26.9	7.1	34.000
B906	24.5	9.4	33.900
B907	12.3	8.6	20.900
B908	14.2	8.2	22.400
A704, A904	21.3	7.1	28.400
All other dwellings	22.3	8.7	31.000

(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 (> 4.5 but <= 6 L/min)	4 star	6 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Fire sprinkler system (No. 2)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

Central energy systems	Type	Specification
Lift bank (No. 1)	gearless traction with V V V F motor and regenerative drive	Number of levels with apartments served by a lift: 11 number of levels from the bottom of the lift shaft to the top of the lift shaft: 14 number of lifts: 2 lift load capacity: >= 1001 kg but <= 1500kg

3. Commitments for Residential flat buildings - Building E

(a) Buildings

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

Floor types			
Floor type	Area (m2)	Insulation	Low emissions option
floors above habitable rooms, frame: suspended concrete slab	6878.2	-	-
suspended floor above open subfloor, frame: suspended concrete slab	125	foil-foam composite board	-

External wall types				
External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	concrete panel/ plasterboard,frame:light steel frame	1020	-	rockwool batts, roll or pump-in
External wall type 2	framed (fibre cement sheet or boards),frame:light steel frame	290	-	rockwool batts, roll or pump-in
External wall type 3	brick veneer,frame:light steel frame	320	-	rockwool batts, roll or pump-in

Internal wall types			
Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 1	plasterboard, frame:light steel frame	7165	rockwool batts, roll or pump-in

Internal wall types			
Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 2	75 mm AAC panel, frame:light steel frame	3420	rockwool batts, roll or pump-in

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	Volume (m³)	Low emissions option
yes	520	-

Ceiling and roof types			
Ceiling and roof type	Area (m²)	Roof Insulation	Ceiling Insulation
concrete - plasterboard internal, frame: light steel frame	720	-	foil-foam composite board

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)
0	2480	0	2480	0	0	0	0

(b) Dwellings

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

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
E1301, E1302, E1303, E1401, E1402, E1403,	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	6 star	-	4.5 star	4 star	-	-	-	-	-	-	-

	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
E1501, E1502, E1503														
All other dwellings	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	6 star	-	4.5 star	4 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All dwellings	Central water tank (No. 1)	See central systems	See central systems	no	yes	yes	no	no

(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.		✓	✓

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

	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	manual on / timer off

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
E1003, E1103, E1203, E1303, E1403, E1503, E903	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	1	yes

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
All other dwellings	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	no

	Individual pool			Individual spa		Appliances other efficiency measures				
Dwelling no.	Pool heating system	Pool Pump	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Dishwasher	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	-	induction cooktop & electric oven	4 star	8.0 star	no	no

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

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
E1001	10.6	9.4	20.000
E1002	9.90	10.7	20.600
E1003	18.4	8.3	26.700
E1101	10.7	9.4	20.100
E1102	10.1	10.6	20.700
E1103	18.2	8	26.200
E1201	12.00	8.5	20.500
E1202	11.40	10	21.400
E1203	19.4	8	27.400
E1301	11.6	8	19.600
E1302	11.50	9.9	21.400
E1303	19.5	7.8	27.300
E1401	12.3	9	21.300
E1402	11.6	9.7	21.300
E1403	19.6	7.6	27.200
E1501	17.70	9.7	27.400
E1502	18.8	12.6	31.400
E1503	27.5	10.5	38.000
E201	9.3	7.7	17.000
E202	3.8	13.5	17.300
E203	11	6.4	17.400

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
E204	11.2	7.5	18.700
E205	17.3	7.3	24.600
E206	6.8	9.4	16.200
E301	10.50	10.6	21.100
E302	5.10	11.8	16.900
E303	10.4	7.2	17.600
E304	12	8.6	20.600
E305	15.7	11.1	26.800
E306	9.3	15.4	24.700
E401	10.9	10.4	21.300
E402	8.9	8.6	17.500
E403	17.70	5.1	22.800
E404	19.5	6	25.500
E405	16.3	10.6	26.900
E406	9.7	15.1	24.800
E501	11.3	10.2	21.500
E502	9.2	8.5	17.700
E503	17.9	5.1	23.000
E504	20.00	6.1	26.100
E505	16.6	10.2	26.800
E506	10.4	14.6	25.000
E601	11.6	10.2	21.800
E602	9.5	8	17.500
E603	20.2	4.7	24.900
E604	20.4	6	26.400
E605	17.2	10.2	27.400
E606	10.9	14.1	25.000
E701	12	10	22.000
E702	10.3	8.8	19.100
E703	19.1	5.1	24.200
E704	21.7	6	27.700

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
E705	16.9	10.1	27.000
E706	11	13.9	24.900
E801	12.9	11.1	24.000
E802	13.9	10.1	24.000
E803	22.4	5.7	28.100
E804	26.3	6.6	32.900
E805	24.2	13.3	37.500
E806	15.5	16.1	31.600
E901	10.20	8.8	19.000
E902	9.6	11.1	20.700
All other dwellings	19.9	8.8	28.700

(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 (> 4.5 but <= 6 L/min)	4 star	6 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Fire sprinkler system (No. 4)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

Central energy systems	Type	Specification
Lift bank (No. 3)	gearless traction with V V V F motor and regenerative drive	Number of levels with apartments served by a lift: 11 number of levels from the bottom of the lift shaft to the top of the lift shaft: 14 number of lifts: 2 lift load capacity: ≥ 1001 kg but ≤ 1500 kg

4. Commitments for Residential flat buildings - Building F

(a) Buildings

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

Floor types

Floor type	Area (m2)	Insulation	Low emissions option
floors above habitable rooms, frame: suspended concrete slab	12143.4	-	-
suspended floor above open subfloor, frame: suspended concrete slab	81	foil-foam composite board	-

External wall types

External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	concrete panel/ plasterboard,frame:light steel frame	1740	-	rockwool batts, roll or pump-in
External wall type 2	framed (fibre cement sheet or boards),frame:light steel frame	230	-	rockwool batts, roll or pump-in
External wall type 3	brick veneer,frame:light steel frame	315	-	rockwool batts, roll or pump-in

Internal wall types

Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 1	plasterboard, frame:light steel frame	8170	rockwool batts, roll or pump-in

Internal wall types			
Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 2	75 mm AAC panel, frame:light steel frame	3475	rockwool batts, roll or pump-in

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	Volume (m³)	Low emissions option
yes	690	-

Ceiling and roof types			
Ceiling and roof type	Area (m²)	Roof Insulation	Ceiling Insulation
concrete - plasterboard internal, frame: light steel frame	675	-	foil-foam composite board

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)
0	3810	0	3810	0	0	0	0

(b) Dwellings

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

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	6 star	-	4.5 star	4 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All dwellings	Central water tank (No. 1)	See central systems	See central systems	no	yes	yes	no	no

(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	manual on / timer off

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
F1001, F1101, F1201, F1301, F1401, F1501, F1601, F1701, F1801, F1901, F2001, F201, F2101, F2201, F2301, F2401, F2502, F301, F401, F501, F601, F701, F801, F901	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	yes
All other dwellings	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.5 - 4.0	1-phase airconditioning - ducted / EER 3.5 - 4.0	0	no

	Individual pool			Individual spa		Appliances other efficiency measures				
Dwelling no.	Pool heating system	Pool Pump	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Dishwasher	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	-	induction cooktop & electric oven	4 star	8.0 star	no	no

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

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
F1001	13.5	7.4	20.900
F1002	8.70	8.3	17.000
F1003	13.8	7.7	21.500
F1004	15.8	7.2	23.000
F1005	22.2	8.3	30.500
F1101	13.7	7.6	21.300
F1102	8.90	8.5	17.400
F1103	14	7.6	21.600
F1104	17.50	7	24.500
F1105	24	8.1	32.100
F1201	15	7.9	22.900
F1202	9.7	7.9	17.600
F1203	15.5	7	22.500
F1204	17.7	6.9	24.600
F1205	24.2	8.4	32.600
F1301	15	8	23.000
F1302	9.7	8	17.700
F1303	15.5	7.6	23.100
F1304	18	6.9	24.900
F1305	23	8.9	31.900
F1401	15.1	7.8	22.900
F1402	9.90	7.9	17.800
F1403	16	7.3	23.300
F1404	18	6.8	24.800
F1405	29.3	6.9	36.200
F1501	15.2	7.8	23.000

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
F1502	10	7.9	17.900
F1503	16.1	7.4	23.500
F1504	18.1	7	25.100
F1505	26.2	8.1	34.300
F1602	10	8	18.000
F1603	14	8	22.000
F1604	16.8	7.1	23.900
F1605	28.8	7.6	36.400
F1701	14.3	7.6	21.900
F1702	10.1	8.2	18.300
F1704	16.9	7	23.900
F1705	20.7	8.6	29.300
F1801	14.3	7.8	22.100
F1802	10.2	8.1	18.300
F1803	14.2	8	22.200
F1804	17	6.9	23.900
F1805	21.6	8.4	30.000
F1902	10.2	8	18.200
F1904	18.8	6.8	25.600
F1905	21.7	8.4	30.100
F2001	14.5	7.9	22.400
F2002	10.4	8	18.400
F2003	23.5	5.3	28.800
F2004	17.30	7	24.300
F2005	20.7	8.5	29.200
F201	4.9	11.9	16.800
F202	4.4	15.6	20.000
F203	8.3	15.1	23.400
F204	6.9	12.4	19.300
F205	23.3	7.5	30.800
F2101	14.5	7.8	22.300

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
F2102	10.60	8.1	18.700
F2103	14.5	7.7	22.200
F2104	17.4	6.8	24.200
F2105	21.00	8.5	29.500
F2201	14.60	7.8	22.400
F2202	10.7	7	17.700
F2203	17.5	6.4	23.900
F2204	17.5	6.9	24.400
F2205	21.1	8.6	29.700
F2302	10.9	8	18.900
F2303	15	7.5	22.500
F2304	17.60	6.9	24.500
F2305	21.2	8.3	29.500
F2401	14.8	7.6	22.400
F2402	11	8	19.000
F2403	14.80	7.7	22.500
F2404	17.8	6.9	24.700
F2405	21.3	8.2	29.500
F2501	15.6	9.3	24.900
F2502	20.5	12.9	33.400
F2503	28	9.8	37.800
F301	6.9	12.8	19.700
F302	4.8	13.2	18.000
F303	9.1	12.9	22.000
F304	8.1	13.4	21.500
F305	11.2	10.8	22.000
F401	12	7.5	19.500
F402	8.1	9.1	17.200
F403	11.9	8.2	20.100
F404	13.7	7.7	21.400
F405	26.5	7.1	33.600

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
F501	12.3	7.6	19.900
F502	7.7	7.3	15.000
F503	12.3	8.1	20.400
F504	14.4	7.5	21.900
F505	18.1	8.7	26.800
F601	12.6	7.4	20.000
F602	8.6	8.6	17.200
F603	12.8	7.8	20.600
F604	14.7	7.4	22.100
F605	27.8	7	34.800
F701	12.9	7.4	20.300
F702	8.9	8.6	17.500
F703	13.10	7.7	20.800
F704	15.5	7.3	22.800
F705	22.2	8.2	30.400
F801	13.10	7.3	20.400
F802	9.4	8.3	17.700
F803	13.2	7.7	20.900
F804	15.5	7.2	22.700
F805	22.7	8.3	31.000
F901	13.40	7.3	20.700
F902	9	8.4	17.400
F903	13.8	7.6	21.400
F904	15.6	7.2	22.800
F905	21.9	8.4	30.300
F1601, F2301	14.7	7.8	22.500
All other dwellings	14.3	7.9	22.200

(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 (> 4.5 but <= 6 L/min)	4 star	6 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Fire sprinkler system (No. 5)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

Central energy systems	Type	Specification
Lift bank (No. 4)	gearless traction with V V V F motor and regenerative drive	Number of levels with apartments served by a lift: 16 number of levels from the bottom of the lift shaft to the top of the lift shaft: 19 number of lifts: 2 lift load capacity: >= 1001 kg but <= 1500kg

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:	5463.29	-	none
suspended floor above garage, frame: suspended concrete slab	11960	foil-foam composite board	-

External wall types

External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	concrete panel/ plasterboard,frame:light steel frame	50	-	rockwool batts, roll or pump-in
External wall type 2	framed (fibre cement sheet or boards),frame:light steel frame	50	-	rockwool batts, roll or pump-in
External wall type 3	brick veneer,frame:light steel frame	50	-	rockwool batts, roll or pump-in

Internal wall types

Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 1	plasterboard, frame:light steel frame	50	rockwool batts, roll or pump-in

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	Volume (m³)	Low emissions option
yes	20	-

Ceiling and roof types			
Ceiling and roof type	Area (m²)	Roof Insulation	Ceiling Insulation
concrete - plasterboard internal, frame: light steel frame	100	-	foil-foam composite board

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 (> 4.5 but <= 6 L/min)	4 star	6 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Swimming pool (No. 1)	Volume: 195 kLs	Location: Other Pool shaded: no	-
Central water tank - rainwater or stormwater (No. 1)	20000.00	To collect run-off from at least: - 1200 square metres of roof area of buildings in the development - 0.00 square metres of impervious area in the development - 0.00 square metres of garden/lawn area in the development - 0.00 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 4551 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/ BMS
Lift bank (No. 1)	-	-	light-emitting diode	connected to lift call button	no
Lift bank (No. 2)	-	-	light-emitting diode	connected to lift call button	no
Lift bank (No. 3)	-	-	light-emitting diode	connected to lift call button	no
Lift bank (No. 4)	-	-	light-emitting diode	connected to lift call button	no
Lift bank (No. 5)	-	-	light-emitting diode	connected to lift call button	no
Car park area	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	zoned switching with motion sensor	no
Switch and comms	ventilation supply only	none i.e., continuous	light-emitting diode	motion sensors	no
Waste rooms	ventilation exhaust only	-	light-emitting diode	motion sensors	no
Loading/Waste collection	ventilation exhaust only	-	light-emitting diode	motion sensors	no
Plant or service rooms	ventilation (supply + exhaust)	none i.e., continuous	light-emitting diode	motion sensors	no
Substations	no mechanical ventilation	-	light-emitting diode	motion sensors	no
Pump and tank rooms	ventilation exhaust only	thermostatically controlled	light-emitting diode	motion sensors	no
WC communal and sauna	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	motion sensors	no
Bulky storage	ventilation supply only	time clock or BMS controlled	light-emitting diode	motion sensors	no
Communal rooms	air conditioning system	time clock or BMS controlled	light-emitting diode	motion sensors	no
Dock Manager room	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	no
Ground floor lobbies	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	no

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/ BMS
Hallways upper levels	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	no

Central energy systems	Type	Specification
Swimming pool (No. 1)	Heating source: electric heat pump	Pump controlled by timer: yes
Sauna (No. 1)	Heating source: electric infrared	Efficiency measure: manual on / timer off
Lift bank (No. 5)	gearless traction with V V V F motor and regenerative drive	Number of levels with apartments served by a lift: 9 number of levels from the bottom of the lift shaft to the top of the lift shaft: 12 number of lifts: 4 lift load capacity: ≥ 1001 kg but ≤ 1500 kg
Central hot water system (No. 1)	electric heat pump – air sourced	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm) (c) Unit Efficiency: $3.5 < COP \leq 4.0$
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 125 peak kW
Other	Building management system installed?: yes Active power factor correction installed?: yes	-

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).

Nationwide House Energy Rating Scheme®

Class 2 Summary

NatHERS® Certificate No. 0012570470

Generated on 30 Jan 2026 using BERS Pro v5.2.4 (3.23)

Property

Address 25-27 LEEDS STREET,
RHODES , NSW , 2138

Lot/DP Lot A DP 329241

NatHERS Climate Zone 56 Mascot (Sydney Airport)



Accredited assessor

Name Allan Ang

Business name Renyi Pty Ltd

Email allan@renyi.com.au

Phone 0406056446

Accreditation No. DMN/18/1837

Assessor Accrediting Organisation
Design Matters National

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=UKMydISSk. When using either link, ensure you are visiting hstar.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.

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.

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) [MJ/m ² /p.a.]	Cooling load (load limit) [MJ/m ² /p.a.]	Total load [MJ/m ² /p.a.]	Star Rating	Whole of Home Rating
0012535621-04	a201	4.5 (N/A)	14.6 (N/A)	19.1	8.2	0
0012535605-03	a202	14.3 (N/A)	13.2 (N/A)	27.4	7.3	0

Thermal performance
star rating



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

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled block average	16.2	9.5
Maximum block limit	N/A	N/A

Whole of Home performance rating

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



Summary of all dwellings (continued)

Certificate number and link	Unit Number	Heating load (load limit) [MJ/m ² /p.a.]	Cooling load (load limit) [MJ/m ² /p.a.]	Total load [MJ/m ² /p.a.]	Star Rating	Whole of Home Rating
<u>0012535613-03</u>	a203	14.6 (N/A)	10.5 (N/A)	25.0	7.5	0
<u>0012535647-03</u>	a301	4.4 (N/A)	13.8 (N/A)	18.1	8.3	0
<u>0012535662-02</u>	a302	18.5 (N/A)	7.3 (N/A)	25.8	7.4	0
<u>0012535670-02</u>	a303	12.2 (N/A)	12.5 (N/A)	24.7	7.5	0
<u>0012535746-02</u>	a401	16.2 (N/A)	13.0 (N/A)	29.2	7.1	0
<u>0012535761-02</u>	a402	8.0 (N/A)	10.6 (N/A)	18.5	8.3	0
<u>0012535712-02</u>	a403	4.2 (N/A)	11.7 (N/A)	16.0	8.5	0
<u>0012535720-02</u>	a404	19.5 (N/A)	7.2 (N/A)	26.7	7.3	0
<u>0012535738-02</u>	a405	11.7 (N/A)	13.8 (N/A)	25.5	7.4	0
<u>0012535795-02</u>	a501	14.5 (N/A)	11.9 (N/A)	26.3	7.4	0
<u>0012535787-02</u>	a502	10.8 (N/A)	5.3 (N/A)	16.2	8.4	0
<u>0012535837-02</u>	a503	4.8 (N/A)	13.0 (N/A)	17.8	8.3	0
<u>0012535811-02</u>	a504	20.2 (N/A)	7.1 (N/A)	27.2	7.3	0
<u>0012535829-02</u>	a505	19.8 (N/A)	7.7 (N/A)	27.5	7.3	0
<u>0012535852-02</u>	a601	20.1 (N/A)	9.4 (N/A)	29.4	7.1	0
<u>0012535902-02</u>	a602	9.9 (N/A)	6.2 (N/A)	16.1	8.4	0
<u>0012535878-02</u>	a603	4.6 (N/A)	11.7 (N/A)	16.3	8.4	0
<u>0012535894-02</u>	a604	23.4 (N/A)	7.2 (N/A)	30.6	6.9	0
<u>0012535886-02</u>	a605	20.5 (N/A)	7.9 (N/A)	28.4	7.2	0
<u>0012535951-02</u>	a701	19.8 (N/A)	10.5 (N/A)	30.3	6.9	0
<u>0012535936-02</u>	a702	9.6 (N/A)	7.0 (N/A)	16.6	8.4	0
<u>0012535944-02</u>	a703	4.4 (N/A)	10.7 (N/A)	15.1	8.6	0
<u>0012535928-02</u>	a704	21.3 (N/A)	7.1 (N/A)	28.4	7.2	0
<u>0012535985-02</u>	a705	21.0 (N/A)	8.5 (N/A)	29.5	7.1	0
<u>0012535977-02</u>	a801	22.1 (N/A)	11.9 (N/A)	34.0	6.5	0
<u>0012536041-02</u>	a802	10.6 (N/A)	7.9 (N/A)	18.5	8.3	0
<u>0012536017-03</u>	a803	6.7 (N/A)	14.1 (N/A)	20.9	8	0
<u>0012536033-03</u>	a804	21.5 (N/A)	7.4 (N/A)	28.9	7.1	0
<u>0012536025-03</u>	a805	22.3 (N/A)	8.7 (N/A)	30.9	6.9	0
<u>0012536082-02</u>	a901	19.4 (N/A)	10.9 (N/A)	30.2	6.9	0
<u>0012536074-02</u>	a902	12.2 (N/A)	7.9 (N/A)	20.1	8.1	0
<u>0012536124-02</u>	a903	6.8 (N/A)	11.3 (N/A)	18.1	8.3	0
<u>0012536116-02</u>	a904	21.3 (N/A)	7.1 (N/A)	28.4	7.2	0
<u>0012536140-02</u>	a905	20.9 (N/A)	8.6 (N/A)	29.5	7.1	0



<u>0012536181-02</u>	a1001	17.7 (N/A)	10.1 (N/A)	27.8	7.2	0
<u>0012536223-02</u>	a1002	11.2 (N/A)	16.6 (N/A)	27.8	7.2	0
<u>0012536207-02</u>	a1003	18.6 (N/A)	11.2 (N/A)	29.8	7	0
<u>0012536231-02</u>	a1101	17.4 (N/A)	12.0 (N/A)	29.4	7.1	0
<u>0012536215-02</u>	a1102	11.2 (N/A)	18.4 (N/A)	29.6	7	0
<u>0012536256-02</u>	a1103	17.5 (N/A)	7.9 (N/A)	25.5	7.4	0
<u>0012536298-03</u>	a1201	26.8 (N/A)	10.8 (N/A)	37.6	6.1	0
<u>0012536280-03</u>	a1202	18.9 (N/A)	17.3 (N/A)	36.1	6.2	0
<u>0012536306-03</u>	a1203	26.1 (N/A)	11.5 (N/A)	37.6	6.1	0
<u>0012536322-02</u>	aG01	13.4 (N/A)	5.5 (N/A)	19.0	8.2	0
<u>0012536348-02</u>	aG02	8.0 (N/A)	6.1 (N/A)	14.1	8.7	0
<u>0012536363-02</u>	aG03	11.1 (N/A)	5.6 (N/A)	16.7	8.4	0
<u>0012536389-02</u>	aG04	9.9 (N/A)	5.6 (N/A)	15.5	8.6	0
<u>0012536421-02</u>	b201	13.0 (N/A)	20.4 (N/A)	33.5	6.6	0
<u>0012536413-02</u>	b202	12.8 (N/A)	7.6 (N/A)	20.4	8.1	0
<u>0012536439-02</u>	b203	13.4 (N/A)	5.6 (N/A)	19.0	8.2	0
<u>0012536462-02</u>	b204	20.2 (N/A)	8.6 (N/A)	28.8	7.1	0
<u>0012536454-05</u>	b205	23.5 (N/A)	12.4 (N/A)	35.9	6.3	0
<u>0012536488-02</u>	b301	13.3 (N/A)	12.5 (N/A)	25.9	7.4	0
<u>0012536504-02</u>	b302	5.5 (N/A)	11.9 (N/A)	17.3	8.4	0
<u>0012536520-04</u>	b303	18.5 (N/A)	9.7 (N/A)	28.2	7.2	0
<u>0012536538-02</u>	b304	20.6 (N/A)	7.3 (N/A)	27.8	7.2	0
<u>0012536553-02</u>	b305	13.1 (N/A)	7.1 (N/A)	20.2	8.1	0
<u>0012536561-04</u>	b306	11.0 (N/A)	7.8 (N/A)	18.7	8.2	0
<u>0012536587-02</u>	b307	5.3 (N/A)	7.3 (N/A)	12.6	8.9	0
<u>0012536603-04</u>	b308	6.5 (N/A)	7.6 (N/A)	14.1	8.7	0
<u>0012536637-02</u>	b401	21.1 (N/A)	7.9 (N/A)	29.0	7.1	0
<u>0012536645-02</u>	b402	9.8 (N/A)	8.7 (N/A)	18.5	8.3	0
<u>0012536660-02</u>	b403	22.1 (N/A)	6.9 (N/A)	29.0	7.1	0
<u>0012536702-02</u>	b404	18.3 (N/A)	7.4 (N/A)	25.7	7.4	0
<u>0012536686-02</u>	b405	16.4 (N/A)	7.0 (N/A)	23.4	7.7	0
<u>0012536694-02</u>	b406	13.0 (N/A)	12.0 (N/A)	25.0	7.5	0
<u>0012536736-02</u>	b407	7.0 (N/A)	10.0 (N/A)	17.0	8.4	0
<u>0012536728-02</u>	b408	7.7 (N/A)	9.7 (N/A)	17.4	8.4	0
<u>0012536744-02</u>	b501	22.3 (N/A)	8.7 (N/A)	31.0	6.9	0
<u>0012536769-02</u>	b502	10.3 (N/A)	8.4 (N/A)	18.7	8.2	0
<u>0012536777-02</u>	b503	22.9 (N/A)	6.8 (N/A)	29.7	7	0
<u>0012536793-02</u>	b504	26.5 (N/A)	5.9 (N/A)	32.4	6.7	0



<u>0012536819-02</u>	b505	25.2 (N/A)	5.2 (N/A)	30.3	6.9	0
<u>0012536827-02</u>	b506	13.1 (N/A)	12.7 (N/A)	25.8	7.4	0
<u>0012536850-02</u>	b507	7.4 (N/A)	9.9 (N/A)	17.3	8.4	0
<u>0012536843-02</u>	b508	14.1 (N/A)	6.5 (N/A)	20.6	8	0
<u>0012536868-02</u>	b601	21.7 (N/A)	9.1 (N/A)	30.8	6.9	0
<u>0012536900-02</u>	b602	10.7 (N/A)	8.2 (N/A)	18.9	8.2	0
<u>0012536892-02</u>	b603	23.7 (N/A)	6.9 (N/A)	30.6	6.9	0
<u>0012536918-02</u>	b604	27.3 (N/A)	5.7 (N/A)	33.0	6.6	0
<u>0012536884-02</u>	b605	27.5 (N/A)	5.2 (N/A)	32.7	6.7	0
<u>0012536942-02</u>	b606	13.8 (N/A)	10.0 (N/A)	23.9	7.6	0
<u>0012536934-02</u>	b607	7.3 (N/A)	10.5 (N/A)	17.8	8.3	0
<u>0012536959-02</u>	b608	15.3 (N/A)	6.1 (N/A)	21.4	7.9	0
<u>0012536983-02</u>	b701	20.9 (N/A)	9.5 (N/A)	30.4	6.9	0
<u>0012536975-02</u>	b702	11.2 (N/A)	7.9 (N/A)	19.1	8.2	0
<u>0012536991-02</u>	b703	24.3 (N/A)	6.9 (N/A)	31.2	6.9	0
<u>0012537031-02</u>	b704	28.0 (N/A)	5.7 (N/A)	33.7	6.5	0
<u>0012537015-02</u>	b705	26.6 (N/A)	5.2 (N/A)	31.8	6.8	0
<u>0012537023-02</u>	b706	18.4 (N/A)	8.0 (N/A)	26.4	7.4	0
<u>0012537064-02</u>	b707	7.3 (N/A)	10.6 (N/A)	17.9	8.3	0
<u>0012537056-02</u>	b708	13.5 (N/A)	7.0 (N/A)	20.4	8.1	0
<u>0012537072-02</u>	b801	20.9 (N/A)	10.0 (N/A)	30.9	6.9	0
<u>0012537106-02</u>	b802	12.4 (N/A)	8.6 (N/A)	21.0	8	0
<u>0012537098-03</u>	b803	26.5 (N/A)	7.4 (N/A)	33.9	6.5	0
<u>0012537114-03</u>	b804	29.6 (N/A)	5.8 (N/A)	35.4	6.3	0
<u>0012537155-03</u>	b805	27.6 (N/A)	6.9 (N/A)	34.4	6.4	0
<u>0012537148-03</u>	b806	18.5 (N/A)	9.4 (N/A)	28.0	7.2	0
<u>0012537163-03</u>	b807	13.2 (N/A)	8.1 (N/A)	21.3	7.9	0
<u>0012537130-03</u>	b808	15.7 (N/A)	7.7 (N/A)	23.4	7.7	0
<u>0012572509-02</u>	b901	21.3 (N/A)	10.8 (N/A)	32.0	6.8	0
<u>0012572525-02</u>	b902	12.1 (N/A)	9.1 (N/A)	21.2	7.9	0
<u>0012572574-02</u>	b903	26.5 (N/A)	7.5 (N/A)	34.0	6.5	0
<u>0012572566-02</u>	b904	28.8 (N/A)	6.4 (N/A)	35.2	6.4	0
<u>0012572582-02</u>	b905	26.9 (N/A)	7.1 (N/A)	34.0	6.5	0
<u>0012572616-03</u>	b906	24.5 (N/A)	9.4 (N/A)	33.9	6.5	0
<u>0012572608-02</u>	b907	12.3 (N/A)	8.6 (N/A)	20.8	8	0
<u>0012572624-02</u>	b908	14.2 (N/A)	8.2 (N/A)	22.4	7.8	0
<u>0012572681-03</u>	b1001	26.2 (N/A)	11.3 (N/A)	37.5	6.1	0
<u>0012572715-03</u>	b1002	19.4 (N/A)	10.4 (N/A)	29.8	7	0



<u>0012572665-02</u>	b1003	30.0 (N/A)	7.9 (N/A)	37.9	6	0
<u>0012572699-02</u>	b1004	32.4 (N/A)	5.3 (N/A)	37.7	6	0
<u>0012572657-03</u>	b1005	32.3 (N/A)	4.6 (N/A)	36.9	6.1	0
<u>0012572673-03</u>	b1007	19.0 (N/A)	9.7 (N/A)	28.7	7.1	0
<u>0012572756-03</u>	b1008	18.0 (N/A)	10.2 (N/A)	28.1	7.2	0
<u>0012537213-02</u>	c201	19.9 (N/A)	4.0 (N/A)	23.9	7.6	0
<u>0012537205-02</u>	c202	18.2 (N/A)	16.9 (N/A)	35.1	6.4	0
<u>0012537221-02</u>	c203	7.7 (N/A)	11.4 (N/A)	19.1	8.2	0
<u>0012537197-02</u>	c204	9.8 (N/A)	14.7 (N/A)	24.5	7.6	0
<u>0012537262-02</u>	c205	13.8 (N/A)	9.6 (N/A)	23.4	7.7	0
<u>0012537296-02</u>	c301	13.1 (N/A)	8.3 (N/A)	21.4	7.9	0
<u>0012537254-02</u>	c302	17.2 (N/A)	5.9 (N/A)	23.1	7.7	0
<u>0012537270-02</u>	c303	18.9 (N/A)	11.1 (N/A)	30.1	6.9	0
<u>0012537288-02</u>	c304	4.2 (N/A)	18.5 (N/A)	22.7	7.8	0
<u>0012537247-02</u>	c305	5.8 (N/A)	15.0 (N/A)	20.8	8	0
<u>0012537312-02</u>	c306	10.4 (N/A)	15.7 (N/A)	26.1	7.4	0
<u>0012537320-02</u>	c401	14.0 (N/A)	8.2 (N/A)	22.2	7.9	0
<u>0012537346-02</u>	c402	19.9 (N/A)	6.9 (N/A)	26.8	7.3	0
<u>0012537387-02</u>	c403	23.8 (N/A)	13.2 (N/A)	37.0	6.1	0
<u>0012537379-02</u>	c404	18.8 (N/A)	10.9 (N/A)	29.7	7	0
<u>0012537395-02</u>	c405	14.4 (N/A)	12.4 (N/A)	26.8	7.3	0
<u>0012537361-02</u>	c406	16.4 (N/A)	18.6 (N/A)	35.0	6.4	0
<u>0012537437-02</u>	c501	10.3 (N/A)	10.2 (N/A)	20.5	8.1	0
<u>0012537429-02</u>	c502	20.3 (N/A)	7.6 (N/A)	27.9	7.2	0
<u>0012537445-02</u>	c503	25.0 (N/A)	11.7 (N/A)	36.8	6.2	0
<u>0012537486-02</u>	c504	22.0 (N/A)	11.0 (N/A)	33.0	6.6	0
<u>0012537478-02</u>	c505	13.0 (N/A)	16.6 (N/A)	29.6	7	0
<u>0012537494-02</u>	c506	17.6 (N/A)	18.3 (N/A)	35.8	6.3	0
<u>0012537460-02</u>	c601	16.7 (N/A)	6.8 (N/A)	23.6	7.7	0
<u>0012537528-02</u>	c602	27.0 (N/A)	5.8 (N/A)	32.9	6.6	0
<u>0012537510-02</u>	c603	24.8 (N/A)	12.7 (N/A)	37.6	6.1	0
<u>0012537536-02</u>	c604	22.6 (N/A)	10.2 (N/A)	32.7	6.7	0
<u>0012537569-02</u>	c605	13.3 (N/A)	16.3 (N/A)	29.6	7	0
<u>0012537551-02</u>	c606	18.8 (N/A)	15.3 (N/A)	34.1	6.4	0
<u>0012537601-02</u>	c701	16.7 (N/A)	7.2 (N/A)	23.8	7.7	0
<u>0012537585-02</u>	c702	25.4 (N/A)	5.8 (N/A)	31.2	6.9	0
<u>0012537619-02</u>	c703	25.6 (N/A)	12.4 (N/A)	38.0	6	0
<u>0012537593-02</u>	c704	21.8 (N/A)	10.0 (N/A)	31.8	6.8	0



<u>0012537635-02</u>	c705	13.5 (N/A)	16.3 (N/A)	29.8	7	0
<u>0012537643-02</u>	c706	18.5 (N/A)	17.3 (N/A)	35.7	6.3	0
<u>0012537684-02</u>	c801	16.5 (N/A)	7.2 (N/A)	23.7	7.7	0
<u>0012537692-02</u>	c802	24.5 (N/A)	7.3 (N/A)	31.8	6.8	0
<u>0012537759-02</u>	c803	27.3 (N/A)	10.7 (N/A)	38.0	6	0
<u>0012537718-02</u>	c804	21.7 (N/A)	10.3 (N/A)	32.1	6.7	0
<u>0012537742-02</u>	c805	13.6 (N/A)	16.0 (N/A)	29.6	7	0
<u>0012537734-02</u>	c806	19.3 (N/A)	14.4 (N/A)	33.8	6.5	0
<u>0012537775-02</u>	c901	15.7 (N/A)	7.5 (N/A)	23.3	7.7	0
<u>0012537841-02</u>	c902	22.9 (N/A)	7.8 (N/A)	30.6	6.9	0
<u>0012537783-02</u>	c903	27.1 (N/A)	10.9 (N/A)	38.0	6	0
<u>0012537809-02</u>	c904	22.2 (N/A)	10.3 (N/A)	32.5	6.7	0
<u>0012537817-02</u>	c905	13.9 (N/A)	15.6 (N/A)	29.4	7.1	0
<u>0012537833-03</u>	c906	18.5 (N/A)	17.3 (N/A)	35.8	6.3	0
<u>0012537866-03</u>	c1001	20.1 (N/A)	8.5 (N/A)	28.7	7.1	0
<u>0012537890-02</u>	c1002	26.7 (N/A)	9.6 (N/A)	36.4	6.2	0
<u>0012537908-02</u>	c1003	27.4 (N/A)	10.4 (N/A)	37.8	6	0
<u>0012537882-03</u>	c1004	21.9 (N/A)	11.4 (N/A)	33.2	6.6	0
<u>0012537932-03</u>	c1005	23.1 (N/A)	13.3 (N/A)	36.4	6.2	0
<u>0012537924-03</u>	c1006	23.0 (N/A)	14.2 (N/A)	37.1	6.1	0
<u>0012552808-02</u>	d201	11.6 (N/A)	14.2 (N/A)	25.7	7.4	0
<u>0012552816-02</u>	d202	20.3 (N/A)	9.7 (N/A)	29.9	7	0
<u>0012552865-02</u>	d203	16.5 (N/A)	10.3 (N/A)	26.8	7.3	0
<u>0012552899-02</u>	d301	8.6 (N/A)	14.7 (N/A)	23.2	7.7	0
<u>0012552857-02</u>	d302	11.1 (N/A)	15.9 (N/A)	27.0	7.3	0
<u>0012552873-02</u>	d303	13.3 (N/A)	7.6 (N/A)	20.9	8	0
<u>0012552881-02</u>	d304	9.5 (N/A)	13.5 (N/A)	22.9	7.8	0
<u>0012552840-02</u>	d305	14.0 (N/A)	8.6 (N/A)	22.6	7.8	0
<u>0012552949-02</u>	d401	11.1 (N/A)	13.0 (N/A)	24.1	7.6	0
<u>0012552915-02</u>	d402	19.3 (N/A)	14.1 (N/A)	33.4	6.6	0
<u>0012552931-02</u>	d403	18.1 (N/A)	15.5 (N/A)	33.5	6.6	0
<u>0012552923-02</u>	d404	7.6 (N/A)	15.4 (N/A)	22.9	7.8	0
<u>0012552956-02</u>	d405	12.1 (N/A)	10.3 (N/A)	22.4	7.8	0
<u>0012552998-02</u>	d501	10.5 (N/A)	13.3 (N/A)	23.8	7.7	0
<u>0012552972-02</u>	d502	20.4 (N/A)	13.2 (N/A)	33.5	6.6	0
<u>0012552980-02</u>	d503	18.6 (N/A)	16.4 (N/A)	34.9	6.4	0
<u>0012553020-02</u>	d504	8.0 (N/A)	14.8 (N/A)	22.7	7.8	0
<u>0012553012-02</u>	d505	12.9 (N/A)	10.8 (N/A)	23.6	7.7	0



<u>0012553061-02</u>	d601	11.0 (N/A)	13.0 (N/A)	24.1	7.6	0
<u>0012553046-02</u>	d602	21.0 (N/A)	12.9 (N/A)	33.9	6.5	0
<u>0012553053-02</u>	d603	18.7 (N/A)	16.1 (N/A)	34.8	6.4	0
<u>0012553111-02</u>	d604	8.4 (N/A)	14.6 (N/A)	23.0	7.8	0
<u>0012553087-02</u>	d605	20.2 (N/A)	7.2 (N/A)	27.5	7.3	0
<u>0012553137-02</u>	d701	11.3 (N/A)	12.6 (N/A)	24.0	7.6	0
<u>0012553103-02</u>	d702	22.8 (N/A)	10.5 (N/A)	33.2	6.6	0
<u>0012553129-02</u>	d703	19.1 (N/A)	15.5 (N/A)	34.7	6.4	0
<u>0012553178-02</u>	d704	13.4 (N/A)	8.4 (N/A)	21.8	7.9	0
<u>0012553202-02</u>	d705	20.5 (N/A)	7.1 (N/A)	27.6	7.2	0
<u>0012553160-02</u>	d801	11.7 (N/A)	11.5 (N/A)	23.2	7.7	0
<u>0012553194-02</u>	d802	21.9 (N/A)	12.7 (N/A)	34.7	6.4	0
<u>0012553210-02</u>	d803	19.4 (N/A)	15.6 (N/A)	35.0	6.4	0
<u>0012553152-02</u>	d804	12.8 (N/A)	8.6 (N/A)	21.4	7.9	0
<u>0012553186-02</u>	d805	20.8 (N/A)	7.3 (N/A)	28.1	7.2	0
<u>0012553251-02</u>	d901	11.4 (N/A)	12.5 (N/A)	23.9	7.6	0
<u>0012553236-02</u>	d902	23.9 (N/A)	10.0 (N/A)	34.0	6.5	0
<u>0012553244-02</u>	d903	19.7 (N/A)	16.0 (N/A)	35.8	6.3	0
<u>0012553293-02</u>	d904	13.5 (N/A)	8.4 (N/A)	22.0	7.9	0
<u>0012553277-02</u>	d905	20.8 (N/A)	7.6 (N/A)	28.3	7.2	0
<u>0012553319-02</u>	d1001	19.9 (N/A)	14.8 (N/A)	34.7	6.4	0
<u>0012553285-02</u>	d1002	23.2 (N/A)	11.9 (N/A)	35.1	6.4	0
<u>0012553301-02</u>	d1003	19.8 (N/A)	16.1 (N/A)	36.0	6.3	0
<u>0012553343-02</u>	d1004	13.4 (N/A)	9.5 (N/A)	23.0	7.8	0
<u>0012553335-02</u>	d1005	21.5 (N/A)	7.6 (N/A)	29.1	7.1	0
<u>0012553376-03</u>	d1102	25.4 (N/A)	10.1 (N/A)	35.5	6.3	0
<u>0012553400-02</u>	d1103	22.5 (N/A)	14.6 (N/A)	37.1	6.1	0
<u>0012553392-02</u>	d1104	14.1 (N/A)	7.3 (N/A)	21.4	7.9	0
<u>0012553418-02</u>	d1105	25.6 (N/A)	8.1 (N/A)	33.8	6.5	0
<u>0012553434-02</u>	dG01	23.8 (N/A)	6.7 (N/A)	30.5	6.9	0
<u>0012553459-02</u>	dG02	29.3 (N/A)	5.1 (N/A)	34.4	6.4	0
<u>0012553475-02</u>	dG03	18.2 (N/A)	6.0 (N/A)	24.2	7.6	0
<u>0012553533-02</u>	e201	9.3 (N/A)	7.7 (N/A)	16.9	8.4	0
<u>0012553566-02</u>	e202	3.8 (N/A)	13.5 (N/A)	17.3	8.4	0
<u>0012553582-02</u>	e203	11.0 (N/A)	6.4 (N/A)	17.4	8.4	0
<u>0012553483-02</u>	e204	11.2 (N/A)	7.5 (N/A)	18.7	8.2	0
<u>0012553517-02</u>	e205	17.3 (N/A)	7.3 (N/A)	24.6	7.6	0
<u>0012553541-02</u>	e206	6.8 (N/A)	9.4 (N/A)	16.2	8.4	0



<u>0012553574-02</u>	e301	10.5 (N/A)	10.6 (N/A)	21.1	7.9	0
<u>0012553491-02</u>	e302	5.1 (N/A)	11.8 (N/A)	16.9	8.4	0
<u>0012553525-02</u>	e303	10.4 (N/A)	7.2 (N/A)	17.6	8.3	0
<u>0012553558-02</u>	e304	12.0 (N/A)	8.6 (N/A)	20.6	8	0
<u>0012553608-02</u>	e305	15.7 (N/A)	11.1 (N/A)	26.8	7.3	0
<u>0012553616-02</u>	e306	9.3 (N/A)	15.4 (N/A)	24.7	7.5	0
<u>0012553640-02</u>	e401	10.9 (N/A)	10.4 (N/A)	21.2	7.9	0
<u>0012553624-02</u>	e402	8.9 (N/A)	8.6 (N/A)	17.5	8.4	0
<u>0012553707-02</u>	e403	17.7 (N/A)	5.1 (N/A)	22.7	7.8	0
<u>0012553731-02</u>	e404	19.5 (N/A)	6.0 (N/A)	25.5	7.4	0
<u>0012553756-02</u>	e405	16.3 (N/A)	10.6 (N/A)	26.9	7.3	0
<u>0012553665-02</u>	e406	9.7 (N/A)	15.1 (N/A)	24.8	7.5	0
<u>0012553681-02</u>	e501	11.3 (N/A)	10.2 (N/A)	21.6	7.9	0
<u>0012553715-02</u>	e502	9.2 (N/A)	8.5 (N/A)	17.7	8.3	0
<u>0012553749-02</u>	e503	17.9 (N/A)	5.1 (N/A)	23.0	7.8	0
<u>0012553673-02</u>	e504	20.0 (N/A)	6.1 (N/A)	26.1	7.4	0
<u>0012553699-02</u>	e505	16.6 (N/A)	10.2 (N/A)	26.8	7.3	0
<u>0012553723-02</u>	e506	10.4 (N/A)	14.6 (N/A)	25.0	7.5	0
<u>0012553822-02</u>	e601	11.6 (N/A)	10.2 (N/A)	21.9	7.9	0
<u>0012553780-02</u>	e602	9.5 (N/A)	8.0 (N/A)	17.5	8.4	0
<u>0012553814-02</u>	e603	20.2 (N/A)	4.7 (N/A)	24.9	7.5	0
<u>0012553798-02</u>	e604	20.4 (N/A)	6.0 (N/A)	26.5	7.4	0
<u>0012553806-02</u>	e605	17.2 (N/A)	10.2 (N/A)	27.5	7.3	0
<u>0012553889-02</u>	e606	10.9 (N/A)	14.1 (N/A)	25.0	7.5	0
<u>0012553905-02</u>	e701	12.0 (N/A)	10.0 (N/A)	21.9	7.9	0
<u>0012553848-02</u>	e702	10.3 (N/A)	8.8 (N/A)	19.1	8.2	0
<u>0012553871-02</u>	e703	19.1 (N/A)	5.1 (N/A)	24.2	7.6	0
<u>0012553897-02</u>	e704	21.7 (N/A)	6.0 (N/A)	27.7	7.2	0
<u>0012553855-02</u>	e705	16.9 (N/A)	10.1 (N/A)	27.0	7.3	0
<u>0012553863-02</u>	e706	11.0 (N/A)	13.9 (N/A)	24.9	7.5	0
<u>0012553970-02</u>	e801	12.9 (N/A)	11.1 (N/A)	24.0	7.6	0
<u>0012553996-02</u>	e802	13.9 (N/A)	10.1 (N/A)	24.0	7.6	0
<u>0012554010-02</u>	e803	22.4 (N/A)	5.7 (N/A)	28.1	7.2	0
<u>0012553939-02</u>	e804	26.3 (N/A)	6.6 (N/A)	33.0	6.6	0
<u>0012553962-02</u>	e805	24.2 (N/A)	13.3 (N/A)	37.5	6.1	0
<u>0012553988-02</u>	e806	15.5 (N/A)	16.1 (N/A)	31.7	6.8	0
<u>0012554002-02</u>	e901	10.2 (N/A)	8.8 (N/A)	19.0	8.2	0
<u>0012553947-02</u>	e902	9.6 (N/A)	11.1 (N/A)	20.7	8	0



<u>0012553954-02</u>	e903	19.9 (N/A)	8.8 (N/A)	28.7	7.1	0
<u>0012554069-02</u>	e1001	10.6 (N/A)	9.4 (N/A)	19.9	8.1	0
<u>0012554085-02</u>	e1002	9.9 (N/A)	10.7 (N/A)	20.6	8	0
<u>0012554036-02</u>	e1003	18.4 (N/A)	8.3 (N/A)	26.7	7.3	0
<u>0012554051-02</u>	e1101	10.7 (N/A)	9.4 (N/A)	20.0	8.1	0
<u>0012554077-02</u>	e1102	10.1 (N/A)	10.6 (N/A)	20.6	8	0
<u>0012554044-02</u>	e1103	18.2 (N/A)	8.0 (N/A)	26.2	7.4	0
<u>0012572731-02</u>	e1201	12.0 (N/A)	8.5 (N/A)	20.6	8	0
<u>0012572749-02</u>	e1202	11.4 (N/A)	10.0 (N/A)	21.4	7.9	0
<u>0012572863-02</u>	e1203	19.4 (N/A)	8.0 (N/A)	27.4	7.3	0
<u>0012572848-02</u>	e1301	11.6 (N/A)	8.0 (N/A)	19.6	8.1	0
<u>0012572855-02</u>	e1302	11.5 (N/A)	9.9 (N/A)	21.3	7.9	0
<u>0012572889-02</u>	e1303	19.5 (N/A)	7.8 (N/A)	27.3	7.3	0
<u>0012572962-02</u>	e1401	12.3 (N/A)	9.0 (N/A)	21.3	7.9	0
<u>0012572947-02</u>	e1402	11.6 (N/A)	9.7 (N/A)	21.3	7.9	0
<u>0012572970-02</u>	e1403	19.6 (N/A)	7.6 (N/A)	27.2	7.3	0
<u>0012572921-03</u>	e1501	17.7 (N/A)	9.7 (N/A)	27.4	7.3	0
<u>0012572939-03</u>	e1502	18.8 (N/A)	12.6 (N/A)	31.4	6.8	0
<u>0012572954-03</u>	e1503	27.5 (N/A)	10.5 (N/A)	38.0	6	0
<u>0012554135-02</u>	f201	4.9 (N/A)	11.9 (N/A)	16.9	8.4	0
<u>0012554119-02</u>	f202	4.4 (N/A)	15.6 (N/A)	20.1	8.1	0
<u>0012554127-02</u>	f203	8.3 (N/A)	15.1 (N/A)	23.4	7.7	0
<u>0012554192-02</u>	f204	6.9 (N/A)	12.4 (N/A)	19.4	8.2	0
<u>0012554218-02</u>	f205	23.3 (N/A)	7.5 (N/A)	30.8	6.9	0
<u>0012554168-02</u>	f301	6.9 (N/A)	12.8 (N/A)	19.7	8.1	0
<u>0012554176-02</u>	f302	4.8 (N/A)	13.2 (N/A)	18.1	8.3	0
<u>0012554200-02</u>	f303	9.1 (N/A)	12.9 (N/A)	22.0	7.9	0
<u>0012554143-02</u>	f304	8.1 (N/A)	13.4 (N/A)	21.5	7.9	0
<u>0012554184-02</u>	f305	11.2 (N/A)	10.8 (N/A)	21.9	7.9	0
<u>0012554259-02</u>	f401	12.0 (N/A)	7.5 (N/A)	19.5	8.2	0
<u>0012554242-02</u>	f402	8.1 (N/A)	9.1 (N/A)	17.2	8.4	0
<u>0012554317-02</u>	f403	11.9 (N/A)	8.2 (N/A)	20.1	8.1	0
<u>0012554341-02</u>	f404	13.7 (N/A)	7.7 (N/A)	21.4	7.9	0
<u>0012554283-02</u>	f405	26.5 (N/A)	7.1 (N/A)	33.6	6.6	0
<u>0012554291-02</u>	f501	12.3 (N/A)	7.6 (N/A)	19.9	8.1	0
<u>0012554325-02</u>	f502	7.7 (N/A)	7.3 (N/A)	15.0	8.6	0
<u>0012554275-02</u>	f503	12.3 (N/A)	8.1 (N/A)	20.4	8.1	0
<u>0012554309-02</u>	f504	14.4 (N/A)	7.5 (N/A)	21.8	7.9	0



<u>0012554333-02</u>	f505	18.1 (N/A)	8.7 (N/A)	26.8	7.3	0
<u>0012554408-02</u>	f601	12.6 (N/A)	7.4 (N/A)	20.1	8.1	0
<u>0012554374-02</u>	f602	8.6 (N/A)	8.6 (N/A)	17.2	8.4	0
<u>0012554390-02</u>	f603	12.8 (N/A)	7.8 (N/A)	20.5	8.1	0
<u>0012554382-02</u>	f604	14.7 (N/A)	7.4 (N/A)	22.1	7.9	0
<u>0012554457-02</u>	f605	27.8 (N/A)	7.0 (N/A)	34.8	6.4	0
<u>0012554473-02</u>	f701	12.9 (N/A)	7.4 (N/A)	20.3	8.1	0
<u>0012554432-02</u>	f702	8.9 (N/A)	8.6 (N/A)	17.5	8.4	0
<u>0012554440-02</u>	f703	13.1 (N/A)	7.7 (N/A)	20.9	8	0
<u>0012554465-02</u>	f704	15.5 (N/A)	7.3 (N/A)	22.8	7.8	0
<u>0012554424-02</u>	f705	22.2 (N/A)	8.2 (N/A)	30.4	6.9	0
<u>0012554523-02</u>	f801	13.1 (N/A)	7.3 (N/A)	20.4	8.1	0
<u>0012554507-02</u>	f802	9.4 (N/A)	8.3 (N/A)	17.6	8.3	0
<u>0012554515-02</u>	f803	13.2 (N/A)	7.7 (N/A)	21.0	8	0
<u>0012554580-02</u>	f804	15.5 (N/A)	7.2 (N/A)	22.7	7.8	0
<u>0012554606-02</u>	f805	22.7 (N/A)	8.3 (N/A)	31.0	6.9	0
<u>0012554556-02</u>	f901	13.4 (N/A)	7.3 (N/A)	20.7	8	0
<u>0012554572-02</u>	f902	9.0 (N/A)	8.4 (N/A)	17.4	8.4	0
<u>0012554598-02</u>	f903	13.8 (N/A)	7.6 (N/A)	21.4	7.9	0
<u>0012554549-02</u>	f904	15.6 (N/A)	7.2 (N/A)	22.8	7.8	0
<u>0012554564-02</u>	f905	21.9 (N/A)	8.4 (N/A)	30.3	6.9	0
<u>0012554671-02</u>	f1001	13.5 (N/A)	7.4 (N/A)	20.9	8	0
<u>0012554648-02</u>	f1002	8.7 (N/A)	8.3 (N/A)	17.0	8.4	0
<u>0012554663-02</u>	f1003	13.8 (N/A)	7.7 (N/A)	21.4	7.9	0
<u>0012554630-02</u>	f1004	15.8 (N/A)	7.2 (N/A)	23.0	7.8	0
<u>0012554655-02</u>	f1005	22.2 (N/A)	8.3 (N/A)	30.5	6.9	0
<u>0012554739-02</u>	f1101	13.7 (N/A)	7.6 (N/A)	21.3	7.9	0
<u>0012554697-02</u>	f1102	8.9 (N/A)	8.5 (N/A)	17.4	8.4	0
<u>0012554713-02</u>	f1103	14.0 (N/A)	7.6 (N/A)	21.6	7.9	0
<u>0012554705-02</u>	f1104	17.5 (N/A)	7.0 (N/A)	24.5	7.6	0
<u>0012554721-02</u>	f1105	24.0 (N/A)	8.1 (N/A)	32.0	6.8	0
<u>0012554788-02</u>	f1201	15.0 (N/A)	7.9 (N/A)	22.8	7.8	0
<u>0012554762-02</u>	f1202	9.7 (N/A)	7.9 (N/A)	17.6	8.3	0
<u>0012554770-02</u>	f1203	15.5 (N/A)	7.0 (N/A)	22.5	7.8	0
<u>0012554846-02</u>	f1204	17.7 (N/A)	6.9 (N/A)	24.6	7.6	0
<u>0012554861-02</u>	f1205	24.2 (N/A)	8.4 (N/A)	32.6	6.7	0
<u>0012554804-02</u>	f1301	15.0 (N/A)	8.0 (N/A)	23.0	7.8	0
<u>0012554838-02</u>	f1302	9.7 (N/A)	8.0 (N/A)	17.7	8.3	0



<u>0012554853-02</u>	f1303	15.5 (N/A)	7.6 (N/A)	23.2	7.7	0
<u>0012554812-02</u>	f1304	18.0 (N/A)	6.9 (N/A)	24.9	7.5	0
<u>0012554820-02</u>	f1305	23.0 (N/A)	8.9 (N/A)	31.8	6.8	0
<u>0012554879-02</u>	f1401	15.1 (N/A)	7.8 (N/A)	23.0	7.8	0
<u>0012554937-02</u>	f1402	9.9 (N/A)	7.9 (N/A)	17.9	8.3	0
<u>0012554960-02</u>	f1403	16.0 (N/A)	7.3 (N/A)	23.3	7.7	0
<u>0012554986-02</u>	f1404	18.0 (N/A)	6.8 (N/A)	24.8	7.5	0
<u>0012554911-02</u>	f1405	29.3 (N/A)	6.9 (N/A)	36.2	6.2	0
<u>0012554929-02</u>	f1501	15.2 (N/A)	7.8 (N/A)	23.0	7.8	0
<u>0012554952-02</u>	f1502	10.0 (N/A)	7.9 (N/A)	17.9	8.3	0
<u>0012554978-02</u>	f1503	16.1 (N/A)	7.4 (N/A)	23.5	7.7	0
<u>0012554903-02</u>	f1504	18.1 (N/A)	7.0 (N/A)	25.1	7.4	0
<u>0012554945-02</u>	f1505	26.2 (N/A)	8.1 (N/A)	34.4	6.4	0
<u>0012573846-02</u>	f1601	14.7 (N/A)	7.8 (N/A)	22.5	7.8	0
<u>0012573853-02</u>	f1602	10.0 (N/A)	8.0 (N/A)	18.0	8.3	0
<u>0012573929-02</u>	f1603	14.0 (N/A)	8.0 (N/A)	22.0	7.9	0
<u>0012573945-02</u>	f1604	16.8 (N/A)	7.1 (N/A)	23.9	7.6	0
<u>0012573960-02</u>	f1605	28.8 (N/A)	7.6 (N/A)	36.4	6.2	0
<u>0012573887-02</u>	f1701	14.3 (N/A)	7.6 (N/A)	22.0	7.9	0
<u>0012573911-02</u>	f1702	10.1 (N/A)	8.2 (N/A)	18.3	8.3	0
<u>0012573937-02</u>	f1703	14.3 (N/A)	7.9 (N/A)	22.2	7.9	0
<u>0012573952-02</u>	f1704	16.9 (N/A)	7.0 (N/A)	23.9	7.6	0
<u>0012573895-02</u>	f1705	20.7 (N/A)	8.6 (N/A)	29.4	7.1	0
<u>0012574034-02</u>	f1801	14.3 (N/A)	7.8 (N/A)	22.1	7.9	0
<u>0012574059-02</u>	f1802	10.2 (N/A)	8.1 (N/A)	18.3	8.3	0
<u>0012574083-02</u>	f1803	14.2 (N/A)	8.0 (N/A)	22.2	7.9	0
<u>0012574000-02</u>	f1804	17.0 (N/A)	6.9 (N/A)	23.9	7.6	0
<u>0012574067-02</u>	f1805	21.6 (N/A)	8.4 (N/A)	29.9	7	0
<u>0012574091-02</u>	f1901	14.3 (N/A)	7.9 (N/A)	22.2	7.9	0
<u>0012573994-02</u>	f1902	10.2 (N/A)	8.0 (N/A)	18.2	8.3	0
<u>0012574018-02</u>	f1903	14.3 (N/A)	7.9 (N/A)	22.1	7.9	0
<u>0012574042-02</u>	f1904	18.8 (N/A)	6.8 (N/A)	25.6	7.4	0
<u>0012574075-02</u>	f1905	21.7 (N/A)	8.4 (N/A)	30.1	6.9	0
<u>0012574141-02</u>	f2001	14.5 (N/A)	7.9 (N/A)	22.4	7.8	0
<u>0012574125-02</u>	f2002	10.4 (N/A)	8.0 (N/A)	18.5	8.3	0
<u>0012574133-02</u>	f2003	23.5 (N/A)	5.3 (N/A)	28.8	7.1	0
<u>0012574117-02</u>	f2004	17.3 (N/A)	7.0 (N/A)	24.2	7.6	0
<u>0012574190-02</u>	f2005	20.7 (N/A)	8.5 (N/A)	29.2	7.1	0



<u>0012574216-02</u>	f2101	14.5 (N/A)	7.8 (N/A)	22.4	7.8	0
<u>0012574174-02</u>	f2102	10.6 (N/A)	8.1 (N/A)	18.7	8.2	0
<u>0012574182-02</u>	f2103	14.5 (N/A)	7.7 (N/A)	22.2	7.9	0
<u>0012574208-02</u>	f2104	17.4 (N/A)	6.8 (N/A)	24.2	7.6	0
<u>0012574166-02</u>	f2105	21.0 (N/A)	8.5 (N/A)	29.5	7.1	0
<u>0012574232-02</u>	f2201	14.6 (N/A)	7.8 (N/A)	22.5	7.8	0
<u>0012574240-02</u>	f2202	10.7 (N/A)	7.0 (N/A)	17.7	8.3	0
<u>0012574315-02</u>	f2203	17.5 (N/A)	6.4 (N/A)	23.9	7.6	0
<u>0012574349-02</u>	f2204	17.5 (N/A)	6.9 (N/A)	24.4	7.6	0
<u>0012574273-02</u>	f2205	21.1 (N/A)	8.6 (N/A)	29.7	7	0
<u>0012574299-02</u>	f2301	14.7 (N/A)	7.8 (N/A)	22.5	7.8	0
<u>0012574323-02</u>	f2302	10.9 (N/A)	8.0 (N/A)	18.9	8.2	0
<u>0012574281-02</u>	f2303	15.0 (N/A)	7.5 (N/A)	22.4	7.8	0
<u>0012574307-02</u>	f2304	17.6 (N/A)	6.9 (N/A)	24.6	7.6	0
<u>0012574331-02</u>	f2305	21.2 (N/A)	8.3 (N/A)	29.5	7.1	0
<u>0012574406-02</u>	f2401	14.8 (N/A)	7.6 (N/A)	22.4	7.8	0
<u>0012574430-02</u>	f2402	11.0 (N/A)	8.0 (N/A)	19.0	8.2	0
<u>0012574372-02</u>	f2403	14.8 (N/A)	7.7 (N/A)	22.5	7.8	0
<u>0012574398-02</u>	f2404	17.8 (N/A)	6.9 (N/A)	24.6	7.6	0
<u>0012574414-02</u>	f2405	21.3 (N/A)	8.2 (N/A)	29.5	7.1	0
<u>0012574380-02</u>	f2501	15.6 (N/A)	9.3 (N/A)	25.0	7.5	0
<u>0012574422-02</u>	f2502	20.5 (N/A)	12.9 (N/A)	33.4	6.6	0
<u>0012574455-03</u>	f2503	28.0 (N/A)	9.8 (N/A)	37.9	6	0

Explanatory notes

About this ratings

The thermal performance star rating in this Certificate is the average rating of all NCC Class 2 dwellings in an 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.

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.