ESD Report

17-24 Loftus Crescent
Homebush, 2140

Prepared for
HOMEBUSH DEVELOPMENTS
NO.1 PTY LTD

Prepared by
GREENPERCH PTY LTD
Oct 2025

GreenPerch

Prepared on behalf of
HOMEBUSH DEVELOPMENTS
NO.1 PTY LTD
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3b (15/10/2025)	MP and checked VG	DA SET – 07.10.2025 DKO Architects

I, Martin Pinson (GREENPERCH), confirm this ''BASIX and ESD Report'' addresses the requirement of the Secretary's Environmental Assessment (SEARS) dated 17/04/2025 for SSD-81767963. 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 the Strathfield Consolidated Development Control Plan). I further confirm that none of the information contained in this ''BASIX and ESD Report'' is deliberately false or misleading.

Table of Contents

1. Introduction and ESD Summary 4
1.1 ESD Summary 12
1.2 Thermal Comfort Summary 14
1.3 BASIX Summary 16
1.4 EER – Energy Efficiency Report 26
2. ESD Strategy (Environmentally Sustainable Development) 27
2.1 Governance 27
2.1.1 Commissioning and Tuning 27
2.1.2 Adaptation and Resilience 27
2.1.3 Building Information 28
2.1.4 Metering and Monitoring 28
2.1.5 Construction Environmental Management 28
2.1.6 Operational Waste 28

2.2 Indoor Environmental Quality 29
2.2.1 Indoor Air Quality 29
2.2.2 Acoustic Comfort 29
2.2.3 Visual Comfort 29
2.2.4 Daylighting 29
2.2.5 Thermal Comfort 30
2.3 Energy 31
2.3.1 National Construction Code Section J for Energy Efficiency 31
2.3.2 Energy reduction strategies 32
2.4 Transport 33
2.4.1 Active Transport Facilities 33
2.4.2 Walkable Neighbourhood & Public Transport 34
2.4.2 Electric car recharging stations 35
2.5 Water 36
2.5.1 Water strategies 36
2.6 Materials 37
2.6.1 Material Selection 37
2.6.2 Waste minimisation 38
2.7 Land Use & Ecology 39
2.8 Emissions 39
2.8.1 Reduced Peak Discharge to Stormwater 39
2.8.2 Light Pollution 39
2.8.3 Heat Island Effect 40
2.8.4 Refrigerant impacts 40
2.8.5 Solar Reflectivity 40
2.9 Community 41
3. Conclusion 42
4. Appendix 1 – BASIX and ESD Certificates 43

1. Introduction and ESD Summary

This ESD Report was prepared by GreenPerch Pty Ptd**,** on behalf of Homebush Developments No.1 Pty Ltd ('the Applicant') in support of a concurrent Rezoning Proposal and State Significant Development Application (Rezoning and SSDA) for a mixed-use development for the site at 17-24 Loftus Crescent, Homebush (the site).

This SSDA seeks approval for:

- Demolition of existing structures on the site, tree removal and site excavation for basement levels.
- Construction of a new mixed-use development consisting of:
- Ground floor retail premises consisting of 1,193sqm of GFA.
- Two residential towers, ranging from 27-35 storeys and comprising a total of 318 apartments including:
  - Approx. 306 market apartments;
  - Approx. 12 affordable apartments;
  - Residential lobbies and a podium; and
  - Communal open space.
- Car and bicycle parking for residents, workers and visitors across two (2) basement level and podium levels 1 to 3 including:
  - 352 car parking spaces, inclusive of 48 accessible spaces;
  - Garbage storage.
  - Plant rooms and other associated services.
- Public domain upgrades to Loftus Lane, including road widening and the provision of a site through link from Loftus Crescent through to Loftus Lane.
- Associated landscaping and public domain works.

The concurrent Rezoning seeks the following amendments to the *Strathfield Local Environmental Plan 2012* (SLEP 2012) to facilitate the proposed development:

- Amend the Height of Buildings Map under Clause 4.3 to increase the building height from 75m to 90m and 116m; and
- Amend the Maximum Floor Space Ratio Map under Clause 4.4 to change the maximum Floorspace Ratio (FSR) from from 3.6:1 to 7.81:1.

For a further detailed project description, please refer to the Environmental Impact Statement and Rezoning Report prepared by Ethos Urban.

This report should be read in conjunction with the Rezoning Request and Environmental Impact Statement prepared by Ethos Urban, the Architectural Plans prepared by DKO Architects, and the other accompanying technical documents that form part of the State Significant Development Application.

Site Description

The site is situated at 17-24 Loftus Crescent, Homebush, approximately 14.6km west of the Sydney CBD and within the Stratfield Local Government Area (LGA). It is strategically located within the Homebush Precinct being approximately 250m from Homebush Train Station which provides services to Parramatta, Penrith, Leppington and the Sydney CBD. It is within proximity to the local retail shopping strip along Parramatta Road Corridor, two (2) schools including Homebush Public School and Homebush Boys High School and multiple areas of public open space including Augustus Loftus Reserve, Ismay Reserve and Crane Street Park.

The site consists of the following parcels of land and is legally described in **Table 1.**

Table 1 Site Description

Legal Description	Address
Lots A DP 405742	17 Loftus Crescent
Lot 14 DP 9154	18 Loftus Crescent
Lot 15 DP 9154	19 Loftus Crescent
Lot 16 DP 9154	20 Loftus Crescent
Lot 17 DP 9154	21 Loftus Crescent
Lot 18 DP 9154	22 Loftus Crescent
Lot 19 DP 9154	23 Loftus Crescent
Lot 20 DP 9154	24 Loftus Crescent

The land is wholly owned by **Homebush Developments No.1 Pty Ltd**. The site is irregularly shaped with an area of approximately 3,980m^2, with frontages to Loftus Crescent, Subway Lane and Loftus Lane. Additionally, the site is significantly underutilised being currently occupied by seven (7) detached dwellings and one empty lot. An aerial of the site is provided in Figure 1.

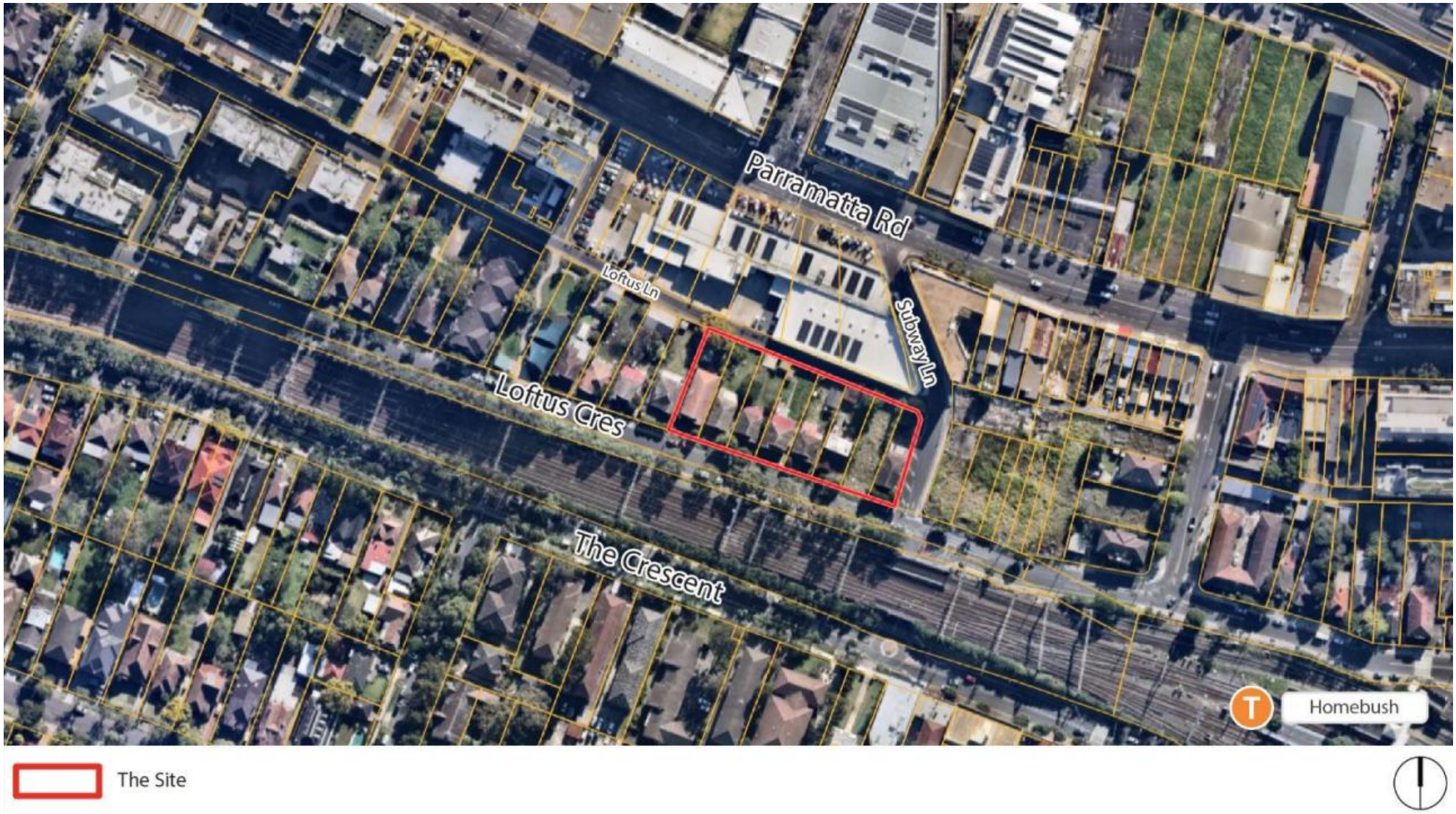

Figure 1 Site Aerial (highlighted in red) - Source: Nearmap and Ethos Urban
Secretary's Environmental Assessment Requirements

This report has been prepared to respond to the Secretary's Environmental Assessment Requirements (SEARS) dated 17 April 2025 for SSD-81767963. Specifically, this report has been prepared to respond to those SEARS outlined in the table below.

SEAR 15 - Ecologically Sustainable Development (ESD)	**ESD Discussion - Secretary's Environmental Assessment Requirements relevant to this Report**
• 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. Includes ESD Report + BASIX Certificate	Principles of ESD are discussed in pages 10-38 (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.	Non-residential and residential parts of SEPP are applied, for commercial or non-residential. Please see the discussions within this 'ESD Summary Report' and Appendices for compliant certificates, with elevated scores for all aspects, including NatHERS, water, energy and thermal comfort. For non-residential, the principles of ESD are discussed in pages 10-38 (refer to ESD specifications and ESD discussion). This includes shared water tanks and PV solar power. Furthermore, Section J will be undertaken for energy assessment for the whole building (especially the conditioned retail). Embodied Emissions will also be assessed in detail. The testing and reporting will disclose 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 construction technologies). The NABERS embodied emissions materials form will be used.

Site Context Photo - 17-24 Loftus Crescent, Homebush, NSW 2140

This 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 the undersigned.

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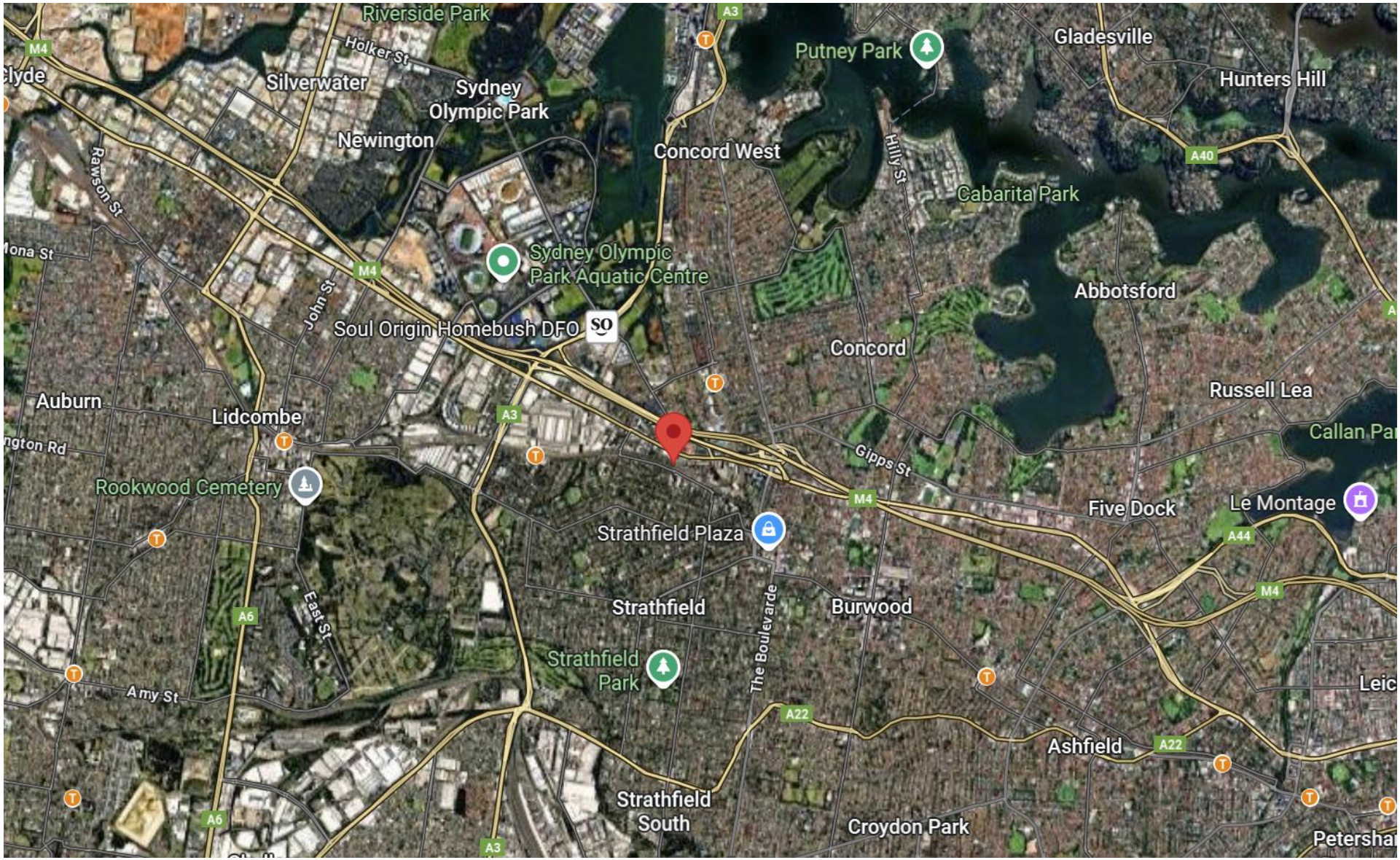
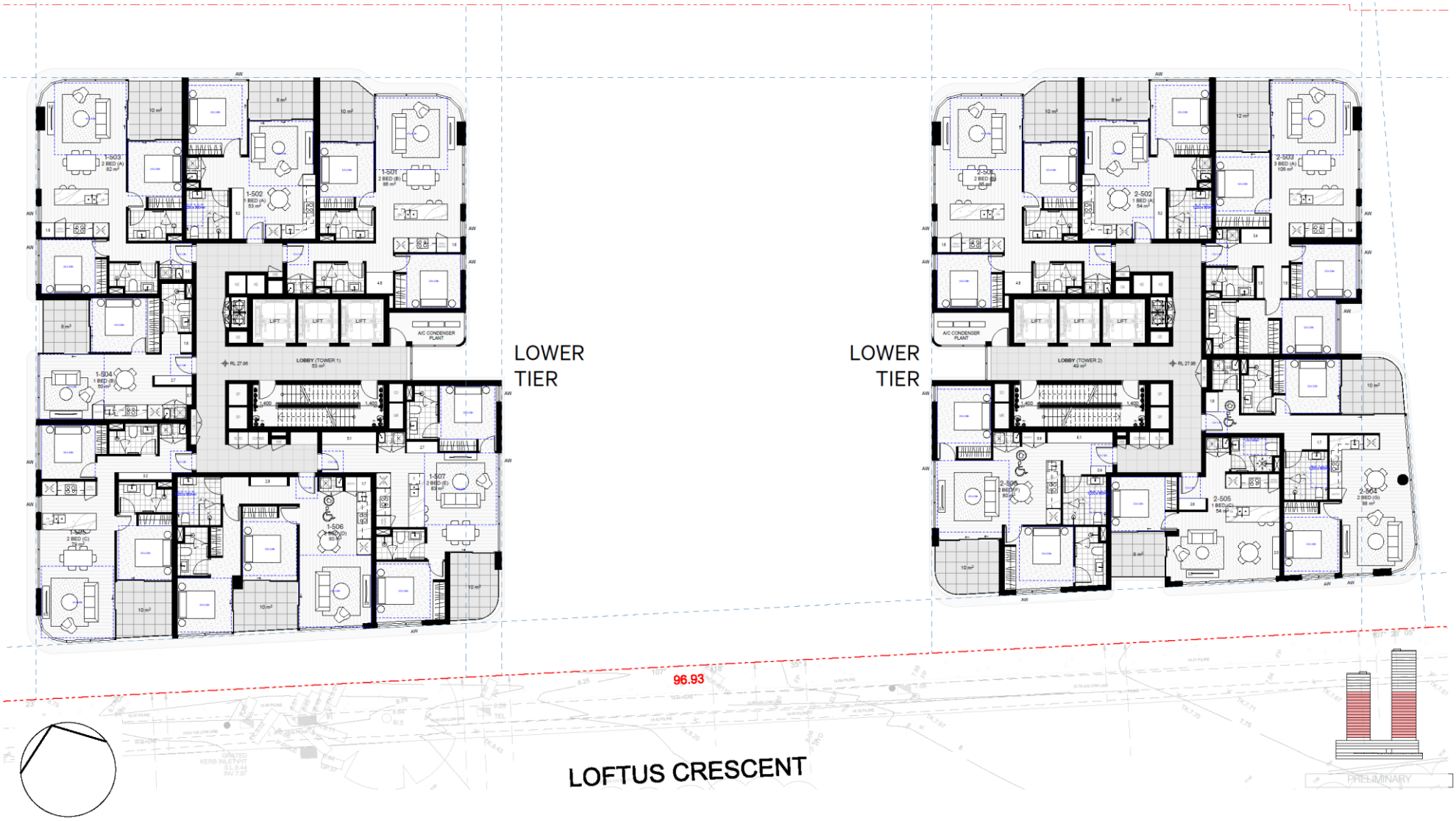


Site Location Plan - 17-24 Loftus Crescent, Homebush, NSW 2140 (source Google Maps)



Typical plan layout (level 5 example) - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)

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 a well-balanced and intelligent blend of innovative architectural design and passive thermal comfort techniques.

For example, the use of building articulation and orientation was used to enhance natural lighting, passive heating and cross ventilation. These techniques are very often neglected in buildings of this scale, especially those similar buildings with predominantly single-aspect dwellings. The very good thermal comfort results are a testament to the success of this excellent architectural design. The intelligent and high-tech facades have greatly helped this achievement, including shading devices, overhangs and high-performance glazing specifications for all windows and glazed doors (including double glazing and performance frames, for apartments and non-residential zones).

Perspective - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)

1.1 ESD Summary

Some of the main ESD categories (for residential and non-residential) will be targeted as follows:

1. ESD - An ecologically sustainable design (ESD) consultant was part of the design team. GreenPerch have suggested and tested numerous effective ESD options. GreenPerch has many decades of experience and includes engineers, architects and energy experts.

2. Climate Resilience – Approaches have included: designing for extreme rainfall events; inclusion of low-level and rooftop shade structures; use of cross ventilation for night-time flushing; cross-ventilation for fresh air and respite from extreme heat; materials selection (including generous thermal mass) which is supportive of passive cooling; drought-tolerant landscaping; and careful building design to cope with extended heatwave conditions. Passive cooling processes were also used cleverly, throughout the buildings, such as thermal mass, good glass, performance frames, shading devices, dual-aspect designs, overhangs, eaves and large window openings.

3. Passive Design - The buildings express a strong commitment to passive design (such as optimal orientation, shading devices, cross ventilation, thermal, mass and open plan living). Performance glazing is also proposed for all the development, including double glazing, appropriate tinting and high-performance frames. Importantly, the intelligent use of facades, rather than just ceiling fans should give an optimum summer performance, for the base building. That said, the ceiling fans, where proposed, are adding extra stars to the NatHERS scores and these are rewarded (correctly) as 'passive systems', since they are so energy-efficient.

4. Energy efficiency - To minimise energy use, the residential buildings have many low-energy initiatives, as discussed in the Energy and BASIX sections of this report. These include items such as PV solar power; generous insulation; performance glazing; shading devices; low-energy HVAC: efficient appliances; efficient lighting; timers/sensors; electric heat-pump hot water; and metering systems.

5. Waste reduction - Waste management plans have been prepared for the construction and the operational phases. These plans clearly 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 80% waste). The project will also target high levels of operational waste to be diverted from landfill including compostable organics and green waste.

6. Water efficiency - Rainwater for irrigation and car washing is proposed. Water fixtures and fittings are also highly rated, including close-to-best ratings for taps, showers and toilets. Furthermore, a high % of planting uses locally indigenous or low-water species.

7. Eco Transport – Good access to public transport, car-sharing, electric car chargers and bicycle storage has been proposed. Electric car-charging switchboards are proposed, with flexibility for current and future scenarios. Travel information kits for building users 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 water, energy, ESD and BASIX:

- PV solar power to provide power for common lighting or other uses – 40 kW or more
- Energy-efficient whitegoods (high-rated dishwashers, etc)
- Rainwater reuse for irrigation and car wash (22 kL minimum rainwater storage)
- Water-efficient fixtures (very high ratings for toilets, showers and taps) and reduced flow to sewer
- Recycling or reusing (closed loops) of water from fire pump testing.
- Efficient irrigation such as drip irrigation, timers and moisture -sensors for planters and gardens.
- At least 50% use by area of locally indigenous or “one-drop” water-efficient plants
- Generous deep-soil allocation and planter bed gardens.
- Recycling construction and demolition waste (over 80% 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.
- Intent to research and include, where possible, some products/materials certified by GreenTag/GECA.
- Specification of sustainable-timber, where possible, using FSC or PEFC (for structure, trims, etc).
- Motion-sensors and time-based controllers (time clocks) for lights, ventilation, etc.
- Air quality (CO/CO2) monitors for the car park ventilation system control and efficient VSD fans.
- Light-colour roofs, generous vegetation and passive cooling to reduce ‘’urban heat-island effects’’.
- 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
- Use of “Carshare” schemes, electric-car charging and other efficient-vehicle-alternatives
- Reduced topsoil removal, ecosystem renewal and mostly low-water or locally indigenous plants
- Reduced Operating Costs (water, gas, electricity) due to the good ESD, BASIX and NatHERS scores

1.2 Thermal Comfort Summary

The development has achieved the following NatHERS scores:

- Average NatHERS rating > 7.4 stars
- Average cooling load = 8.7 MJ/m2.year (permitted average is 20 MJ/m2.year) – approx. 56% better than target
- Average heating load = 17.7 MJ/m2.year (permitted average is 28 MJ/m2.year) – approx. 37% better than target

To achieve these scores, the following materials and construction systems have been proposed:

NatHERS - Thermal Comfort Items	Proposed Specifications
External Walls 1	Concrete wall with R2.7 and foil added (Metal studs +R0.2 break added)
External Walls 2	Metal cladding with R2.7 and foil added (Metal studs +R0.2 break added)
External Walls 3	FC/Glass cladding with R2.7 and foil added (Metal studs +R0.2 break added)
Unit Walls next to halls/lobbies 1	Plasterboard and 75mm Hebel + R1.8 acoustic insulation
Unit Walls next to halls/lobbies 2	Concrete columns + plasterboard + R1.8 acoustic insulation
Party walls 1	Plasterboard and 75mm Hebel + optional insulation
Party walls 2	Concrete columns, lined plasterboard + optional insulation
Walls next to lifts	Concrete ≥150mm and plasterboard
Walls next to stairs	Concrete ≥150mm and plasterboard
Internal Walls	Plasterboard on Studs
Internal Floors	Concrete floors, with plasterboard below
External Floors (units with air below)	Concrete slab with basement or air below
Floor Insulation Rooms over basement/air	R2.9 added under unit over open air (and over basement / car parking)
Floor Finishes	Tiles - wet areas, carpet - bedrooms, timber – living/dining
Roofs 1 - penthouse roofs	Concrete roof + R4.8 + foil + plasterboard (Primepanel or similar)
Roofs 1 - below balconies/terraces	Concrete roof + R2.9 + foil + plasterboard (Primepanel or similar)
Roof Colour	Light colour roofs
Skylights for units	None proposed
Window Shading	Eaves and overhangs + Screens as shown

Weather Stripping	All external doors and windows
Ceiling Penetrations Lights	LED downlights - generic holes assumed, as per NatHERS protocol (TBC at CC)
Ceiling Penetrations Fans	Bathroom, laundry, kitchen: generic holes from NatHERS protocol (TBC at CC)
Ceilings fans – all major rooms	Fans in bedrooms and living zones, with ≥1400 diam. for living and ≥1200 for beds Note: 2 fans in living/dining for 2 hotter units - 1-2505, 2-3402

Thermal Comfort Glazing Item	**Details**
1. Windows – awning/bifold/hinged	Metal frames + clear or light double-glazing
Windows - U-value	≤ 2.9
Windows - SHGC	0.44 ± 5% awning/bifold/hinged
2. Window sliders (except glass 3 for some south-unit sliders TBC)	Metal frames + clear or light double-glazing
Windows - U-value	≤ 2.9
Windows - SHGC	0.42 ± 5% sliders/hung
3. Window fixed glass (and some south-unit sliders -see below)	Metal frames + clear or light double-glazing
Windows - U-value	≤ 2.2
Windows - SHGC	0.39 ± 5% fixed
1-404, 1-2503, 1-2602, 1-2603 + 2-3203, 2-3204, 2-3302, 2-3402 – use glass 3 for sliders 1-506 to 1-2007 + 1-2105 to 1-2506 + 2-405 to 2-2206 – use glass 3 for sliders	

Simulation Notes:
- No RCP provided at DA so generic holes assumed for all downlights (must have extra checking and rerunning at CC stage)
- No RCP provided at DA so generic holes assumed for exhaust fans (must have extra checking and rerunning at CC stage)
- Concrete walls and floor thickness need checking at CC stage, due to complexity of the proposed construction.
- All wall types, ceiling types, floor types need checking at CC stage, due to complexity of the proposed construction.
- Window sizes used from elevations, sections and plan mark-ups (plans take priority and all this needs re-checking at CC stage).
- Windows hidden (with no size or operability shown) are assumed as full height and fixed (this needs re-checking at CC stage).
- Door sizes used from elevations, sections and plan mark-ups (this needs re-checking at CC stage).
- Neighbours modelled as shown on drawings but no tree preservations in place and not modelled
- Shading devices used from elevations, sections and plan mark-ups (this needs re-checking at CC stage).

1.3 BASIX Summary

The following specifications are proposed for BASIX water and energy items:

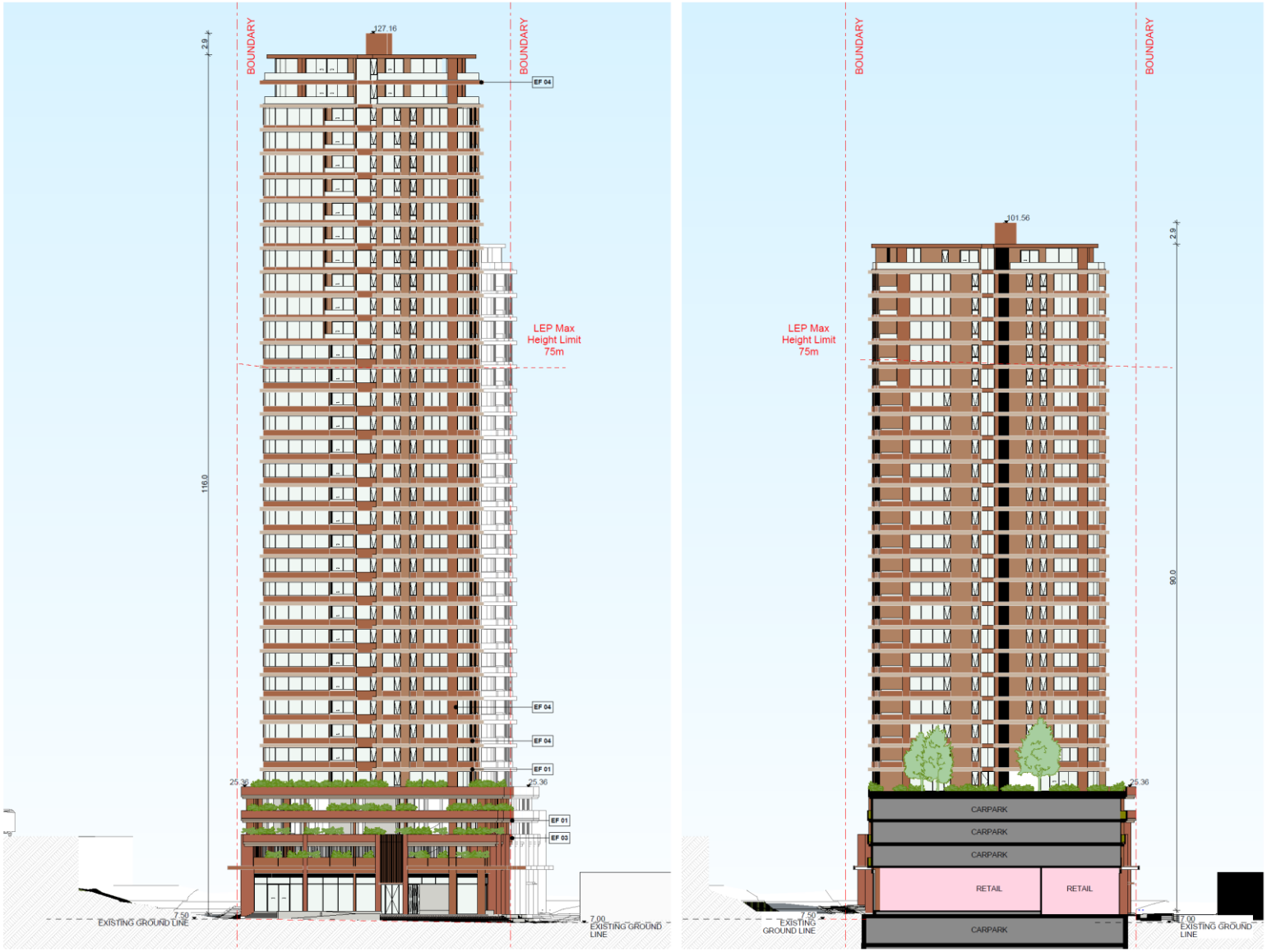
BASIX Item – Water	Proposed Specifications
Rainwater Tank	22 kL total collects most of main roofs >500 m2
Rainwater Tank use	Rainwater for all irrigation (and all car wash for resi/retail)
Stormwater Tank	None proposed
Blackwater/Greywater reuse	None proposed
Other reticulated water reuse	None proposed
Fire Sprinklers	Sprinklers in basements and one each building (4 total systems)
Fire Sprinkler Test Water	Fire test water reused in closed loops
Showers	4 stars ≤ 6.0 L/min (low-flow range in BASIX)
Toilets	4 stars
Kitchen Taps	5 stars
Bathroom Taps	5 stars
On demand hot recirculation	No
Clothes washers	Not supplied
Dishwashers	4 stars WELS or better
Planting & lawn (respectively)	1,600 m2 total = <1,300 m2 plants + <300 m2 lawn
Planting – low water species	50% of plants (not lawn) are locally indigenous or 1-drop, 650 m2
Pools	1 x shared pool with <130 kL or less
Pool Details	Heat Pump Heating + Pump Timer + Optional covers

BASIX Item – Energy	Proposed Specifications
Hot Water	Heat Pumps, medium/high COP (>3.0 COP)
Hot Water Pipe insulation	R1.0 to ringmains +supply risers
PV Solar Power	40 kW – minimum peak output
Lifts	VVVF gearless traction (with regenerative drives) – 1,001 to 1,500 kg
BMS	Yes - included in some form
PFC, Power Factor Correction	No - Optional
Pools	1 x shared pool with <130 kL or less
Pool Details	Heat Pump Heating + Pump Timer + Optional covers
Heating for Units -Beds	1-phase airconditioning - ducted with EER > 3.0
Heating for Units -Living	1-phase airconditioning - ducted with EER > 3.0
Cooling for Units -Beds	1-phase airconditioning - ducted with EER > 3.0
Cooling for Units -Living	1-phase airconditioning - ducted with EER > 3.0
AC zoning (day or night)	No longer assessed by BASIX
Bathroom Exhaust	Fan to façade/roof, linked to lights
Laundry Exhaust	Fan to façade/roof, manual on / timer off
Kitchen Exhaust	Fan to façade/roof, manual on/off
Lighting for Apartments – Each Room	LEDs ≥80% fittings all rooms (dedicated)
Cooking	Induction cooktop & electric oven
Internal clothes lines	None for private dwellings
External clothes lines	None for private dwellings
Dryers	7 stars energy
Dishwashers	4 stars energy
Clothes washers	Not supplied
Fridges	No longer assessed by BASIX
Vented fridge-spaces	No longer assessed by BASIX

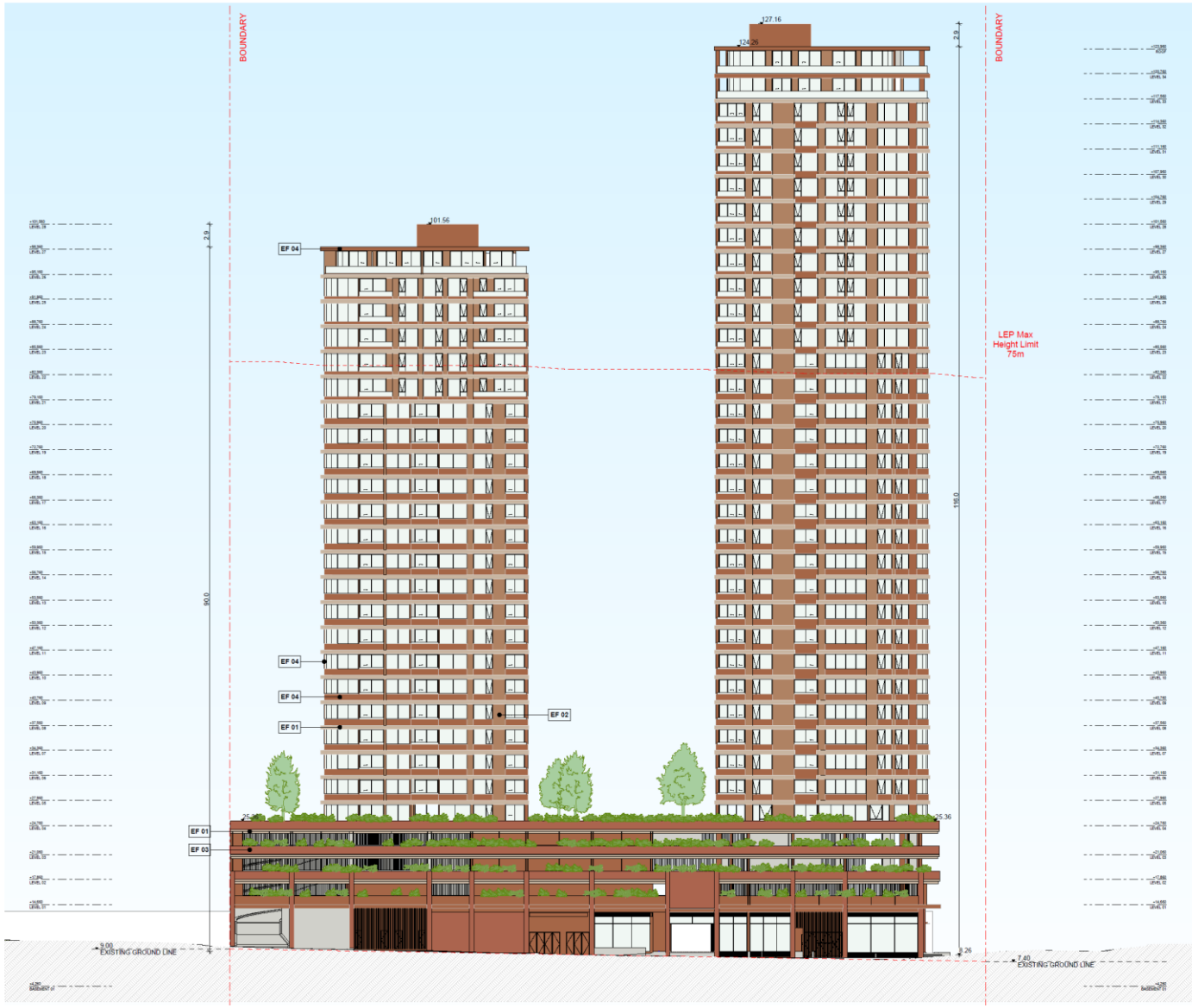
Common area name	Select the ventilation system type *	Select the efficiency measure *
Enclosed car park area (No. 1)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan
Open car park area (No. 2)	no mechanical ventilation	n/a
Bulky Waste	ventilation supply only	n/a
Waste room T1	ventilation exhaust only	n/a
Waste room T2	ventilation exhaust only	n/a
Community amenity	air conditioning system	time clock or BMS controlled
Substation	no mechanical ventilation	n/a
Pump room	ventilation (supply + exhaust)	thermostatically controlled
Plant or service room	ventilation (supply + exhaust)	thermostatically controlled
Bin holding area	ventilation exhaust only	time clock or BMS controlled
Loading bay	ventilation (supply + exhaust)	time clock or BMS controlled
Resi lobby T1	ventilation supply only	time clock or BMS controlled
Resi lobby T2	ventilation supply only	time clock or BMS controlled
Corridor T1	ventilation supply only	time clock or BMS controlled
Corridor T2	ventilation supply only	time clock or BMS controlled

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
Enclosed car park area (No. 1)	light-emitting diode	zoned switching with motion	○ Yes ● No
Open car park area (No. 2)	light-emitting diode	zoned switching with motion	○ Yes ● No
Bulky Waste	light-emitting diode	motion sensors	○ Yes ● No
Waste room T1	light-emitting diode	motion sensors	○ Yes ● No
Waste room T2	light-emitting diode	motion sensors	○ Yes ● No
Community amenity	light-emitting diode	motion sensors	○ Yes ● No
Substation	light-emitting diode	motion sensors	○ Yes ● No
Pump room	light-emitting diode	motion sensors	○ Yes ● No
Plant or service room	light-emitting diode	motion sensors	○ Yes ● No
Bin holding area	light-emitting diode	motion sensors	○ Yes ● No
Loading bay	light-emitting diode	motion sensors	○ Yes ● No
Resi lobby T1	light-emitting diode	motion sensors	○ Yes ● No
Resi lobby T2	light-emitting diode	motion sensors	○ Yes ● No
Corridor T1	light-emitting diode	zoned switching with motion	○ Yes ● No
Corridor T2	light-emitting diode	zoned switching with motion	○ Yes ● No

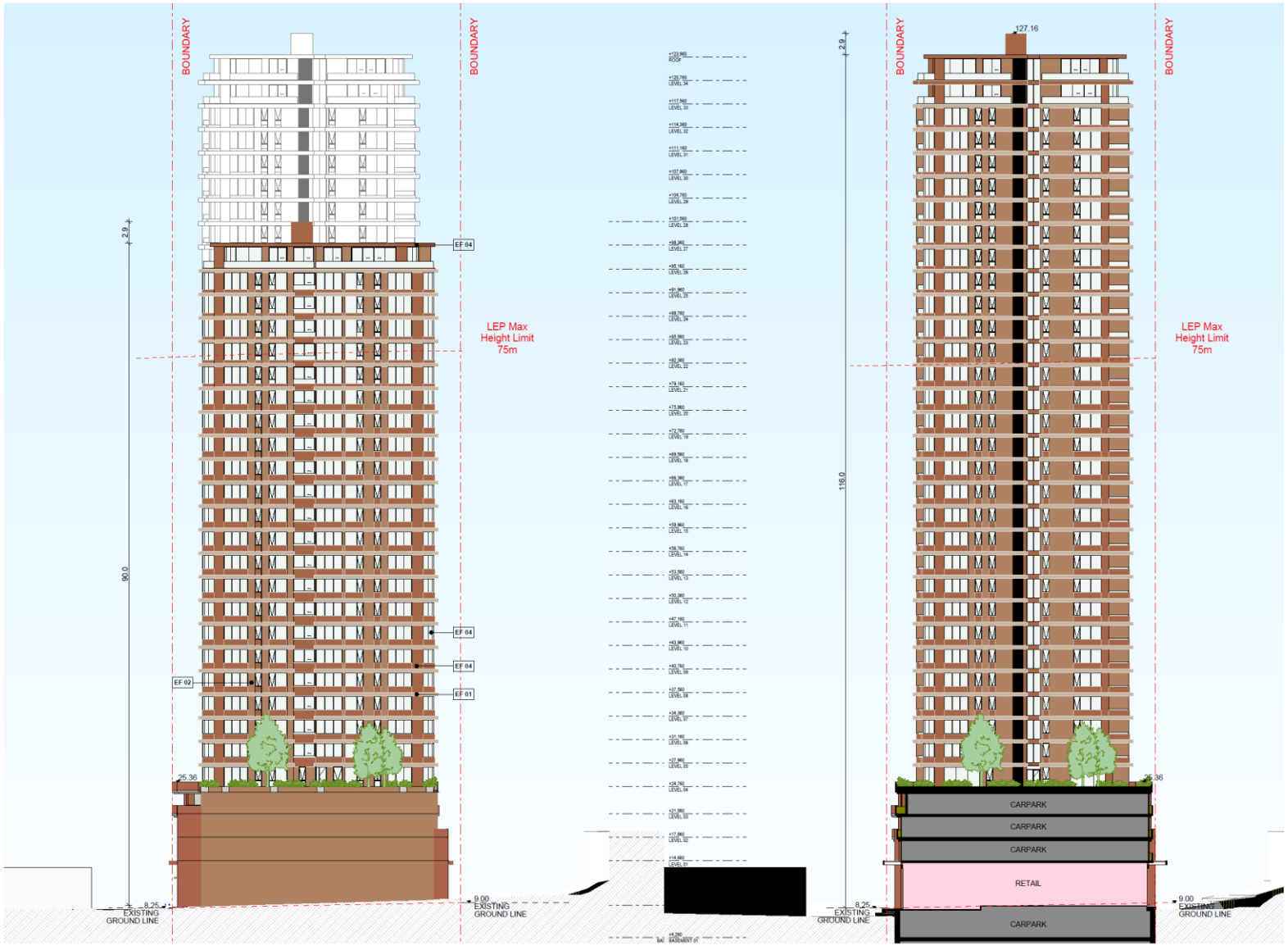
ELEVATIONS 1 - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)



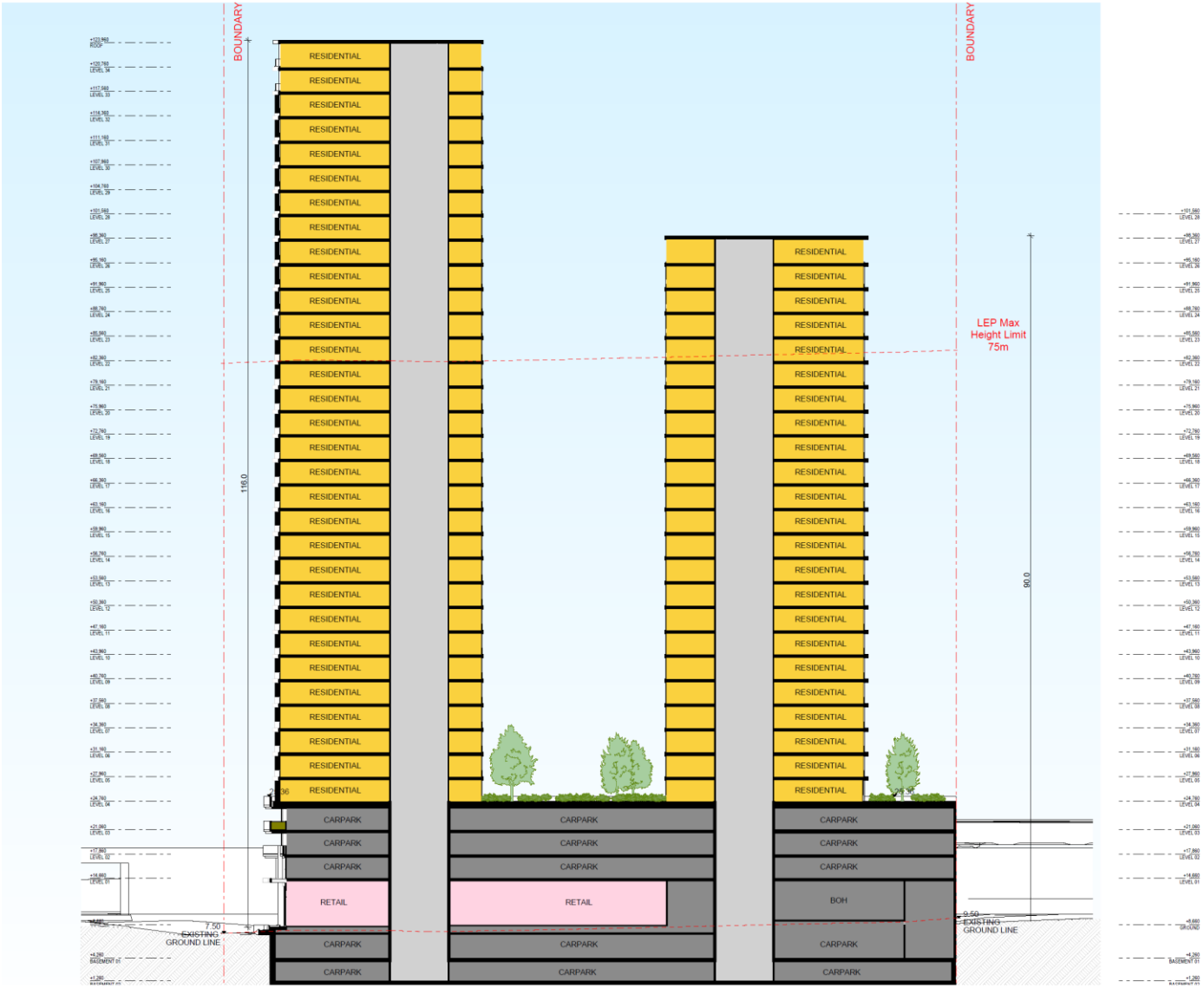
ELEVATIONS 2 - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)



ELEVATIONS 3 - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)



SECTIONS 1 - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)



SECTIONS 2 - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)

Perspective - 17-24 Loftus Crescent, Homebush, NSW 2140 (by DKO ARCHITECTS)

1.4 EER – Energy Efficiency Report

The mechanisms for energy assessment will be Section J (for Retail / Commercial 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 (well above the 63 target for 5+ stories).
- Project scoring an average >7.4-star NatHERS rating across the development. This is above the minimum required to pass BASIX and this contributed towards the excellent energy performance.
- Average cooling load = 8.7 MJ/m2.year (permitted average is 20 MJ/m2.year) – approx. 56% better than target
- Average heating load = 17.7 MJ/m2.year (permitted average is 28 MJ/m2.year) – approx. 37% better than target
- PV solar power to provide power for common lighting or other uses
- 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 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 of the development, including double-glazing for all apartments, retail and commercial areas.
- External walls, floors and roofs will all contain very generous added insulation, to help reduce the reliance on mechanical heating & cooling.
- Ceiling fans in most zones, as an excellent way to improve NatHERS scores and provide very-low-energy options for passive cooling.

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

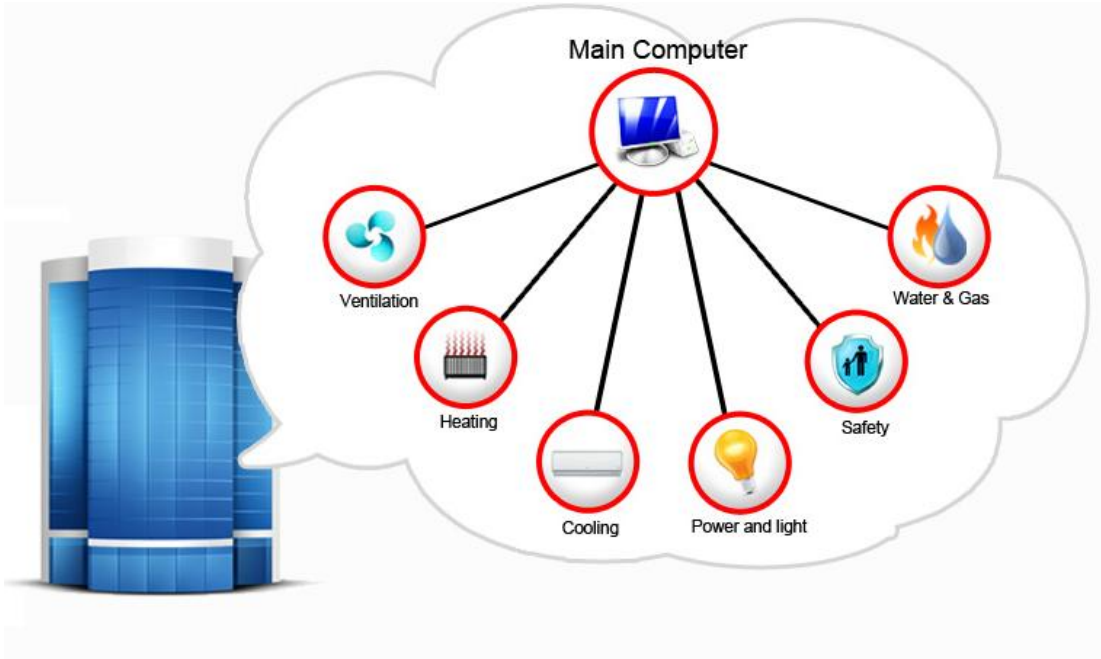
Relevant subcontractors will undertake detailed commissioning and building tuning for all major systems in the building. These systems will relate to water, energy and HVAC.

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, for irrigation. 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. Light colours, shading and generous planting will also reduce heat-island effects.

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 may also 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) has been prepared 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 ease of recycling.

A detailed operational waste managaement plan (OWMP) has also been prepared. This OWMP details all recycling and waste management for the various building zones, during the operational phase.

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 Standards, for issues such as 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

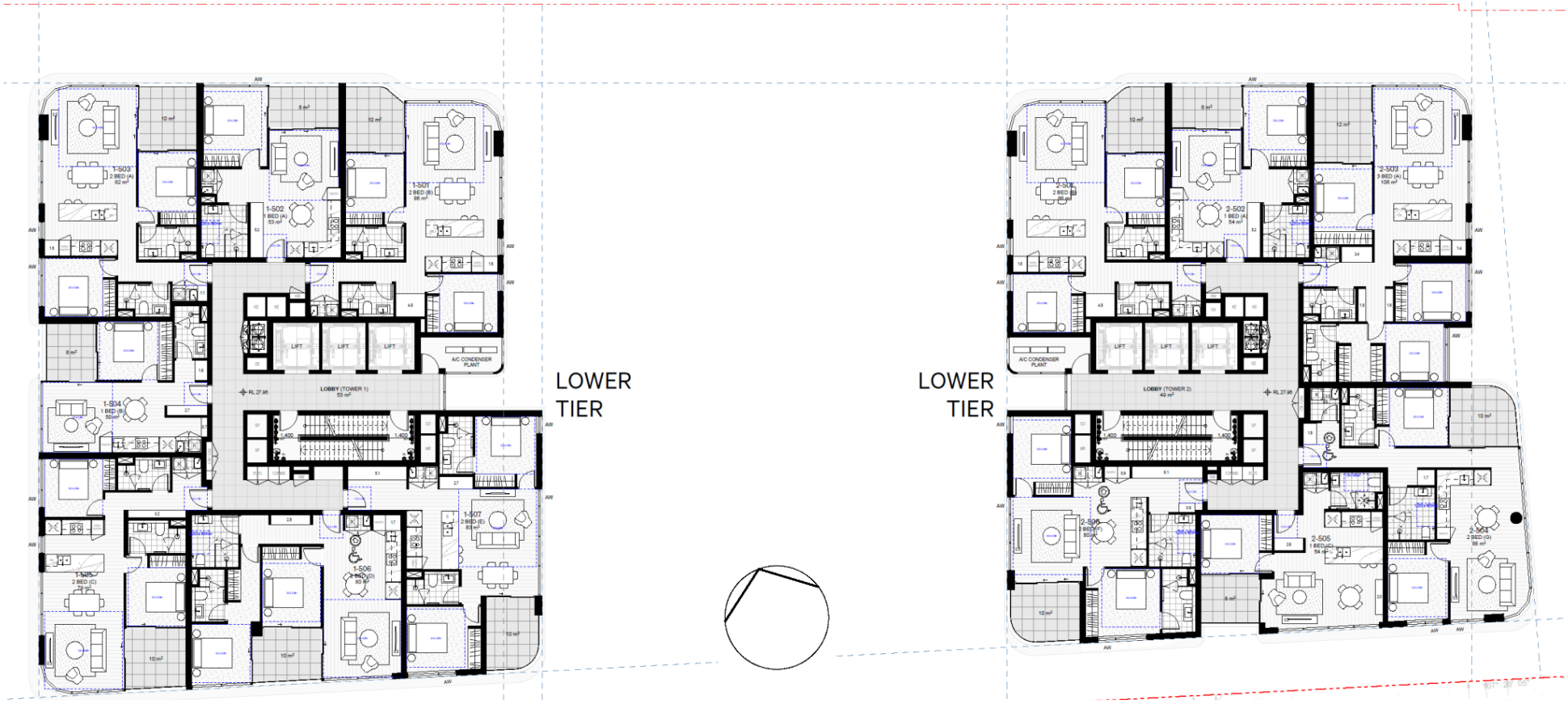
The design has considered acoustic comfort in detail, including general noise levels, reverberation and noise separation. For example, acoustic insulation has been proposed between apartments and corridors, and this was selected to provide both acoustic and thermal comfort benefits.

2.2.3 Visual Comfort

Glare control mechanisms such as internal blinds and shading devices will assist in maximizing 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 Daylighting

Simulations by the design team have shown excellent solar access to most dwellings, across the building. The fortunate position, orientation and surrounding environment, have allowed for this. The increased daylighting will improve the indoor environment and reduce the reliance on electric lighting. It will also improve productivity, health and overall well-being. The good thermal comfort results have shown that daylighting was not implemented at the expense of overheating. The NatHERS results were excellent, and cooling estimates were very good, as discussed.



Solar Access through sensible plan layout and form (typical level) - 17-24 Loftus Crescent, Homebush, NSW 2140

2.2.5 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 types.

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 tinting was included for thermal comfort, privacy and glare reduction. However, too much tinting can make rooms unnecessarily dark (and less effective with passive heating in winter) so lighter tints were often selected, if they were passing BASIX targets. The use of glazed balustrades was also implemented, to create exciting building aesthetics and to optimise passive heating and daylighting, through 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 for 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 will be prepared, to demonstrate the design strategies to comply with NCC 2022 Section J, under the DTS assessment. Section J DTS testing has indicated that the retail zones will pass comfortably, since generous insulation and performance glazing are also being proposed in these zones, similar to the apartment designs.

The Section J report will be prepared in future stages, and this looks in detail at each of the following energy categories:

- Part J1 Energy efficiency performance requirements
- Part J2 Energy efficiency
- Part J3 Elemental provisions for a sole-occupancy unit of a Class 2 or Class 4
- Part J4 Building fabric
- Part J5 Building sealing
- Part J6 Air-conditioning and ventilation
- Part J7 Artificial lighting and power
- Part J8 Heated water supply and swimming pool and spa pool plant
- 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.
- Low-carbon hot water systems (electric heat pumps, air-sourced)
- 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 occupancy sensors
  - Carbon Monoxide sensors and variable VSD fans in basement levels
  - Common area ventilation to include efficiency controls such as zoning, motion sensors and 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 excellent dryers and dishwashers 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

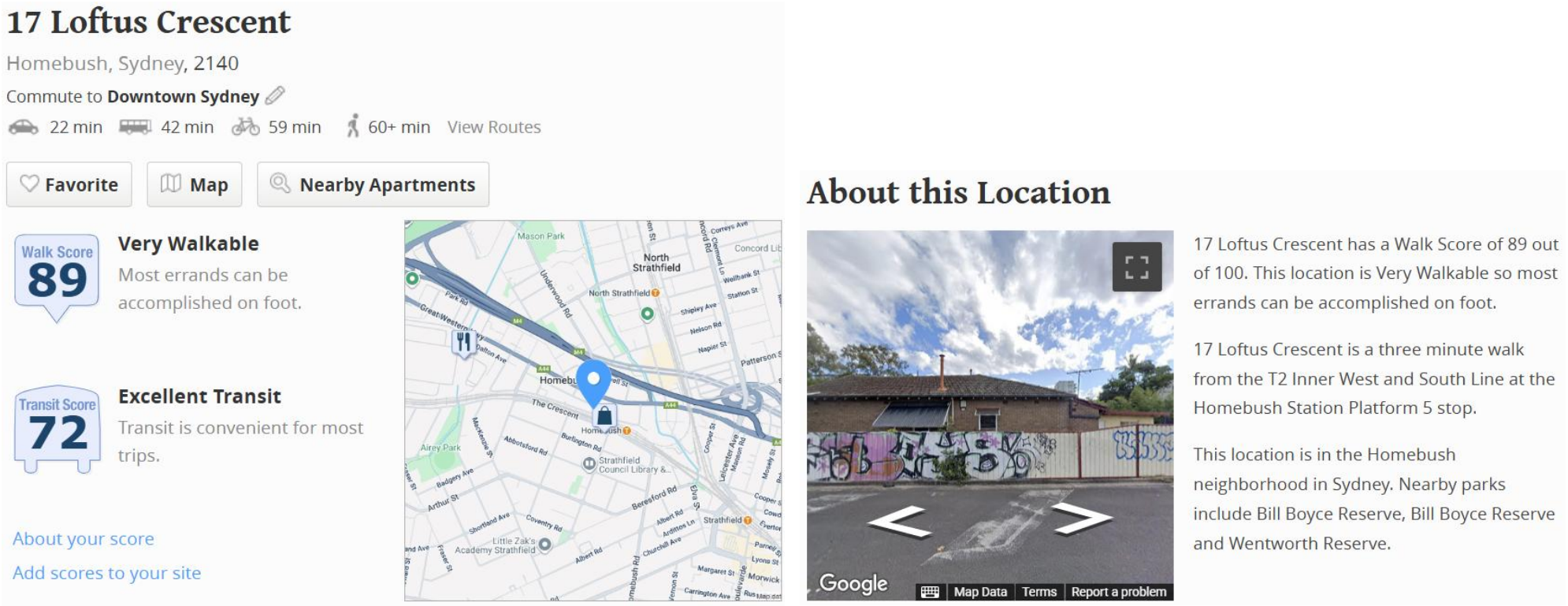
The following alternative transport initiatives are being proposed to improve amenity, to promote occupant health and to reduce transport related GHG emissions.

2.4.1 Active Transport Facilities

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

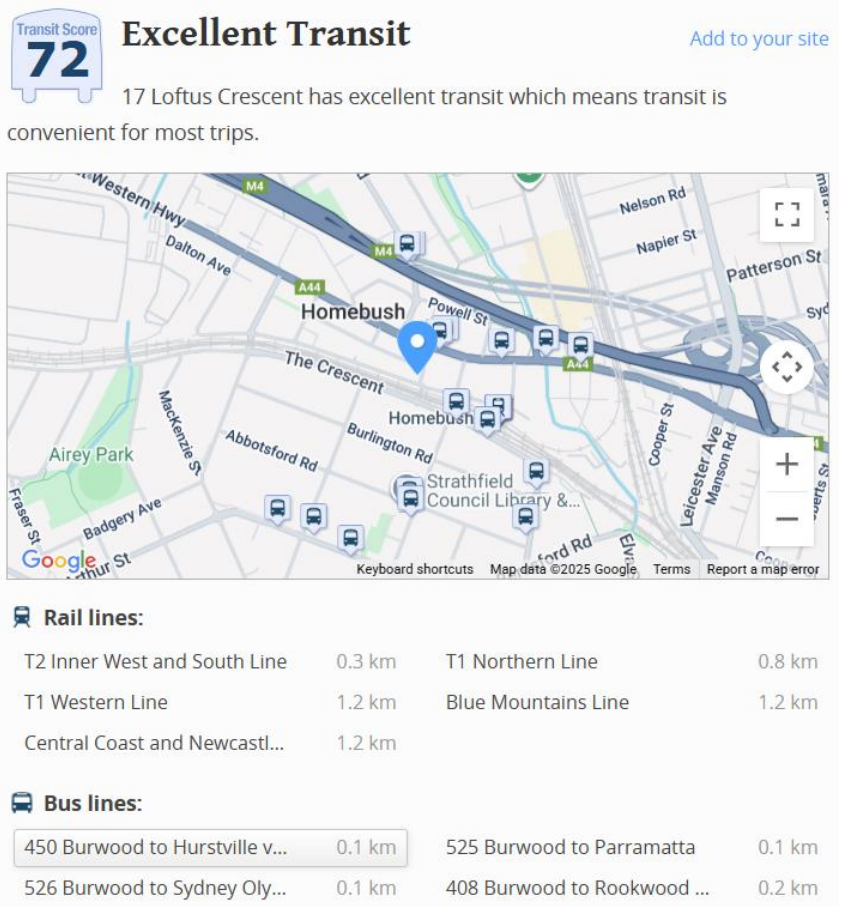
2.4.2 Walkable Neighbourhood & Public Transport

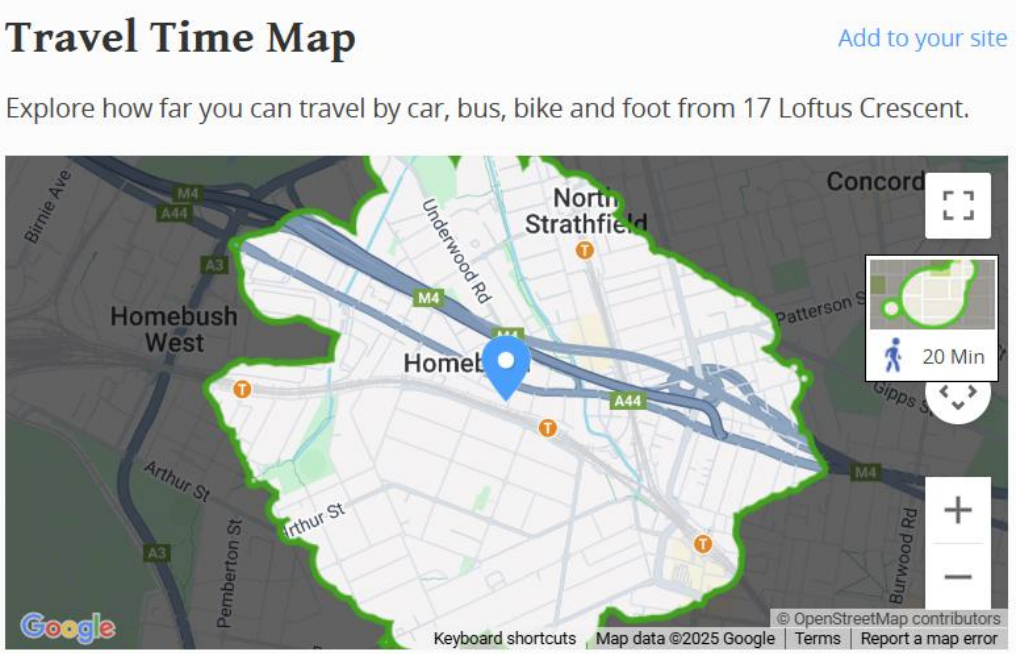
The site is located close to numerous amenities, with a superb 'walk score' of 89 (see below) and a transit score of 72.



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 design have been carefully considered to encourage users to walk and cycle, rather than driving cars.





2.4.2 Electric car recharging stations

To encourage sustainable motor-vehicles, electric-car recharging facilities have been carefully considered, for future installation. Electric car-charging capabilities have been proposed for the development (with charging facilities and switchboards to be compliant with the new NCC 2022 Section J provisions). Travel information kits for residents and workers will also be generated later.

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.

- Water efficient fittings and fixtures (especially taps, showers and toilets)
- Water efficient appliances (especially dishwashers)
- Rainwater harvesting and re-use on the site (22 kL minimum, for rainwater storage)
- Rainwater reuse for irrigation and car wash facilities
- Recycling or reuse (closed loops) of any water required for fire testing.
- Efficient irrigation such as drip irrigation to planters and gardens
- At least 50% use by area of locally indigenous or “one-drop” water-efficient plants
- Generous deep-soil allocation
- Generous garden areas and green-roof gardens/planters, with low-water species

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, as the design progresses:

- Selection of certified timbers, especially those with FSC-certification
- Consider Best Practice PVC products (or aim for avoidance of PVC, if possible)
- 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 and implement 'green steel products', where feasible, from accredited steel makers and fabricators
- Consider and implement cement-replacements in concrete, where feasible, by using low-carbon options and fly ash. Detailed studies will be undertaken in design development to maximise this low-carbon approach.

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 more detailed 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 >80% by weight of construction and demolition waste
- Target a high proportion of operational waste to be diverted from landfill including compostable organics 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 is prepared for the site demolition and construction, and the emissions are 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).

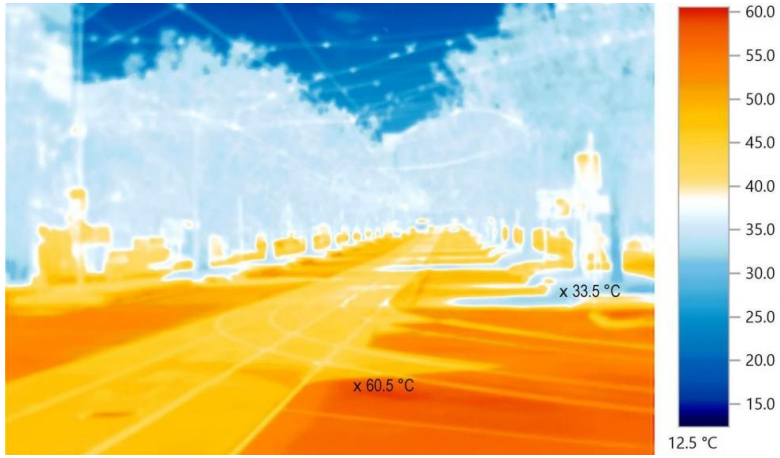
Stormwater discharged from the site will be designed to achieve high levels of pollution removal for pollutants such as total suspended solids, gross pollutants, total nitrogen, total phosphorus, petroleum hydrocarbons and free oils.

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.

The final glazing products will be carefully selected, with these targets in mind. Importantly, the thermal comfort, acoustic and reflectivity targets should all be compatible with the targets listed above.

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 design and the building materials do not lead to hazardous, undesirable or uncomfortable glare to pedestrians, motorists or occupants of surrounding buildings
- Minimise light spill to the sky.
- 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 energy, water and other ESD strategies, the project will indeed exceed the minimum requirements for sustainable development.

It is acknowledged that some strategies will need further refinement, during the latter stages of design. Strategies to be explored and refined in the future design stages include:

- Refinement of renewable energy design (such as final PV type and sizing, to optimise all available space – but currently 40 kW or more)
- 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 brand and model selection for efficient fittings, fixtures and appliances (noting that better options may be available in 1-2 years)
- Water-reuse balance, with an intelligent synergy between the reuse strategies for rainwater and future treated-wastewater supply
- 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).

In summary, we believe that the design carefully and adequately addresses all the requirements of the Secretary's Environmental Assessment (SEARS) dated 17/04/2025 for SSD-81767963. 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 the Strathfield Consolidated Development Control Plan).

4. Appendix 1 – BASIX and ESD Certificates

BASIX™ Certificate

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

Multi Dwelling

Certificate number: 1817146M

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: Wednesday, 15 October 2025
To be valid, this certificate must be submitted with a development application or lodged with a complying development certificate application within 3 months of the date of issue.

When submitting this BASIX certificate with a development application or complying development certificate application, it must be accompanied by NatHERS certificate 0012225910.

Project summary	
Project name	17-24 Loftus Crescent, Homebush 2140
Street address	17-24 LOFTUS CRESCENT HOMEBUSH 2140
Local Government Area	STRATHFIELD COUNCIL
Plan type and plan number	Deposited Plan DP405742
Lot no.	A
Section no.	-
No. of residential flat buildings	2
Residential flat buildings: no. of dwellings	318
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Project score		
Water	✔ 43	Target 40
Thermal Performance	✔ Pass	Target Pass
Energy	✔ 66	Target 63
Materials	✔ -42	Target n/a

Certificate Prepared by
Name / Company Name: GREENPERCH PTY LTD
ABN (if applicable): 81679640825

Description of project

Project address	
Project name	17-24 Loftus Crescent, Homebush 2140
Street address	17-24 LOFTUS CRESCENT HOMEBUSH 2140
Local Government Area	STRATHFIELD COUNCIL
Plan type and plan number	Deposited Plan DP405742
Lot no.	A
Section no.	-

Project type	
No. of residential flat buildings	2
Residential flat buildings: no. of dwellings	318
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Site details	
Site area (m²)	3978
Roof area (m²)	1385
Non-residential floor area (m²)	1342
Residential car spaces	328
Non-residential car spaces	24

Common area landscape	
Common area lawn (m²)	300
Common area garden (m²)	1300
Area of indigenous or low water use species (m²)	650

Assessor details and thermal loads	
Assessor number	DMN/19/1921
Certificate number	0012225910
Climate zone	56

Project score			
Water	✔	43	Target 40
Thermal Performance	✔	Pass	Target Pass
Energy	✔	66	Target 63
Materials	✔	-42	Target n/a

Description of project

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

Residential flat buildings - Building1, 150 dwellings, 27 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
10401	1	53	0	0	0
10405	2	83	0	0	0
10504	1	50	0	0	0
10601	2	86	0	0	0
10605	2	79	0	0	0
10702	1	53	0	0	0
10706	2	81	0	0	0
10803	2	81	0	0	0
10807	2	83	0	0	0
10904	1	50	0	0	0
11001	2	86	0	0	0
11005	2	79	0	0	0
11102	1	53	0	0	0
11106	2	81	0	0	0
11203	2	81	0	0	0
11207	2	83	0	0	0
11304	1	50	0	0	0
11401	2	86	0	0	0
11405	2	79	0	0	0
11502	1	53	0	0	0
11506	2	81	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)
10402	3	103	0	0	0
10501	2	86	0	0	0
10505	2	79	0	0	0
10602	1	53	0	0	0
10606	2	81	0	0	0
10703	2	81	0	0	0
10707	2	83	0	0	0
10804	1	50	0	0	0
10901	2	86	0	0	0
10905	2	79	0	0	0
11002	1	53	0	0	0
11006	2	81	0	0	0
11103	2	81	0	0	0
11107	2	83	0	0	0
11204	1	50	0	0	0
11301	2	86	0	0	0
11305	2	79	0	0	0
11402	1	53	0	0	0
11406	2	81	0	0	0
11503	2	81	0	0	0
11507	2	83	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)
10403	2	96	0	0	0
10502	1	53	0	0	0
10506	2	81	0	0	0
10603	2	81	0	0	0
10607	2	83	0	0	0
10704	1	50	0	0	0
10801	2	86	0	0	0
10805	2	79	0	0	0
10902	1	53	0	0	0
10906	2	81	0	0	0
11003	2	81	0	0	0
11007	2	83	0	0	0
11104	1	50	0	0	0
11201	2	86	0	0	0
11205	2	79	0	0	0
11302	1	53	0	0	0
11306	2	81	0	0	0
11403	2	81	0	0	0
11407	2	83	0	0	0
11504	1	50	0	0	0
11601	2	86	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)
10404	2	81	0	0	0
10503	2	81	0	0	0
10507	2	83	0	0	0
10604	1	50	0	0	0
10701	2	86	0	0	0
10705	2	79	0	0	0
10802	1	53	0	0	0
10806	2	81	0	0	0
10903	2	81	0	0	0
10907	2	83	0	0	0
11004	1	50	0	0	0
11101	2	86	0	0	0
11105	2	79	0	0	0
11202	1	53	0	0	0
11206	2	81	0	0	0
11303	2	81	0	0	0
11307	2	83	0	0	0
11404	1	50	0	0	0
11501	2	86	0	0	0
11505	2	79	0	0	0
11602	1	53	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
11603	2	81	0	0	0
11607	2	83	0	0	0
11704	1	50	0	0	0
11801	2	86	0	0	0
11805	2	79	0	0	0
11902	1	53	0	0	0
11906	2	81	0	0	0
12003	2	81	0	0	0
12007	2	83	0	0	0
12104	1	50	0	0	0
12202	1	53	0	0	0
12206	3	132	0	0	0
12304	1	50	0	0	0
12402	1	53	0	0	0
12406	3	132	0	0	0
12504	1	50	0	0	0
12602	3	120	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)
11604	1	50	0	0	0
11701	2	86	0	0	0
11705	2	79	0	0	0
11802	1	53	0	0	0
11806	2	81	0	0	0
11903	2	81	0	0	0
11907	2	83	0	0	0
12004	1	50	0	0	0
12101	2	86	0	0	0
12105	3	118	0	0	0
12203	2	81	0	0	0
12301	2	86	0	0	0
12305	3	118	0	0	0
12403	2	81	0	0	0
12501	2	86	0	0	0
12505	3	118	0	0	0
12603	3	101	7	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)
11605	2	79	0	0	0
11702	1	53	0	0	0
11706	2	81	0	0	0
11803	2	81	0	0	0
11807	2	83	0	0	0
11904	1	50	0	0	0
12001	2	86	0	0	0
12005	2	79	0	0	0
12102	1	53	0	0	0
12106	3	132	0	0	0
12204	1	50	0	0	0
12302	1	53	0	0	0
12306	3	132	0	0	0
12404	1	50	0	0	0
12502	1	53	0	0	0
12506	3	132	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)
11606	2	81	0	0	0
11703	2	81	0	0	0
11707	2	83	0	0	0
11804	1	50	0	0	0
11901	2	86	0	0	0
11905	2	79	0	0	0
12002	1	53	0	0	0
12006	2	81	0	0	0
12103	2	81	0	0	0
12201	2	86	0	0	0
12205	3	118	0	0	0
12303	2	81	0	0	0
12401	2	86	0	0	0
12405	3	118	0	0	0
12503	2	81	0	0	0
12601	4+	183	0	0	0

Residential flat buildings - Building2, 168 dwellings, 35 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
20401	2	86	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)
20402	1	53	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
20403	3	106	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)
20404	2	88	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)
20405	1	54	0	0	0
20503	3	106	0	0	0
20601	2	86	0	0	0
20605	1	54	0	0	0
20703	3	106	0	0	0
20801	2	86	0	0	0
20805	1	54	0	0	0
20903	3	106	0	0	0
21001	2	86	0	0	0
21005	1	54	0	0	0
21103	3	106	0	0	0
21201	2	86	0	0	0
21205	1	54	0	0	0
21303	3	106	0	0	0
21401	2	86	0	0	0
21405	1	54	0	0	0
21503	3	106	0	0	0
21601	2	86	0	0	0
21605	1	54	0	0	0
21703	3	106	0	0	0
21801	2	86	0	0	0
21805	1	54	0	0	0
21903	3	106	0	0	0
22001	2	86	0	0	0
22005	1	54	0	0	0
22103	3	106	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)
20406	2	80	0	0	0
20504	2	88	0	0	0
20602	1	53	0	0	0
20606	2	80	0	0	0
20704	2	88	0	0	0
20802	1	53	0	0	0
20806	2	80	0	0	0
20904	2	88	0	0	0
21002	1	53	0	0	0
21006	2	80	0	0	0
21104	2	88	0	0	0
21202	1	53	0	0	0
21206	2	80	0	0	0
21304	2	88	0	0	0
21402	1	53	0	0	0
21406	2	80	0	0	0
21504	2	88	0	0	0
21602	1	53	0	0	0
21606	2	80	0	0	0
21704	2	88	0	0	0
21802	1	53	0	0	0
21806	2	80	0	0	0
21904	2	88	0	0	0
22002	1	53	0	0	0
22006	2	80	0	0	0
22104	2	88	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)
20501	2	86	0	0	0
20505	1	54	0	0	0
20603	3	106	0	0	0
20701	2	86	0	0	0
20705	1	54	0	0	0
20803	3	106	0	0	0
20901	2	86	0	0	0
20905	1	54	0	0	0
21003	3	106	0	0	0
21101	2	86	0	0	0
21105	1	54	0	0	0
21203	3	106	0	0	0
21301	2	86	0	0	0
21305	1	54	0	0	0
21403	3	106	0	0	0
21501	2	86	0	0	0
21505	1	54	0	0	0
21603	3	106	0	0	0
21701	2	86	0	0	0
21705	1	54	0	0	0
21803	3	106	0	0	0
21901	2	86	0	0	0
21905	1	54	0	0	0
22003	3	106	0	0	0
22101	2	86	0	0	0
22105	1	54	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
20502	1	53	0	0	0
20506	2	80	0	0	0
20604	2	88	0	0	0
20702	1	53	0	0	0
20706	2	80	0	0	0
20804	2	88	0	0	0
20902	1	53	0	0	0
20906	2	80	0	0	0
21004	2	88	0	0	0
21102	1	53	0	0	0
21106	2	80	0	0	0
21204	2	88	0	0	0
21302	1	53	0	0	0
21306	2	80	0	0	0
21404	2	88	0	0	0
21502	1	53	0	0	0
21506	2	80	0	0	0
21604	2	88	0	0	0
21702	1	53	0	0	0
21706	2	80	0	0	0
21804	2	88	0	0	0
21902	1	53	0	0	0
21906	2	80	0	0	0
22004	2	88	0	0	0
22102	1	53	0	0	0
22106	2	80	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)
22201	2	86	0	0	0
22205	1	54	0	0	0
22303	3	106	0	0	0
22402	1	53	0	0	0
22501	2	86	0	0	0
22505	3	96	0	0	0
22604	3	131	0	0	0
22703	3	106	0	0	0
22802	1	53	0	0	0
22901	2	86	0	0	0
22905	3	96	0	0	0
23004	3	131	0	0	0
23103	3	106	0	0	0
23202	1	53	0	0	0
23301	4+	188	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)
22202	1	53	0	0	0
22206	2	80	0	0	0
22304	3	131	0	0	0
22403	3	106	0	0	0
22502	1	53	0	0	0
22601	2	86	0	0	0
22605	3	96	0	0	0
22704	3	131	0	0	0
22803	3	106	0	0	0
22902	1	53	0	0	0
23001	2	86	0	0	0
23005	3	96	0	0	0
23104	3	131	0	0	0
23203	3	106	0	0	0
23302	4+	166	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)
22203	3	106	0	0	0
22301	2	86	0	0	0
22305	3	96	0	0	0
22404	3	131	0	0	0
22503	3	106	0	0	0
22602	1	53	0	0	0
22701	2	86	0	0	0
22705	3	96	0	0	0
22804	3	131	0	0	0
22903	3	106	0	0	0
23002	1	53	0	0	0
23101	2	86	0	0	0
23105	3	96	0	0	0
23204	3	131	0	0	0
23401	4+	188	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)
22204	2	88	0	0	0
22302	1	53	0	0	0
22401	2	86	0	0	0
22405	3	96	0	0	0
22504	3	131	0	0	0
22603	3	106	0	0	0
22702	1	53	0	0	0
22801	2	86	0	0	0
22805	3	96	0	0	0
22904	3	131	0	0	0
23003	3	106	0	0	0
23102	1	53	0	0	0
23201	2	86	0	0	0
23205	3	96	0	0	0
23402	4+	166	0	0	0

Description of project

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

Common areas of unit building - Building1

Common area	Floor area (m²)
Enclosed car park area (No. 1)	2425
Substation	42
Bin holding area	182
Corridor T1	1124

Common area	Floor area (m²)
Waste room T1	188
Pump room	161
Loading bay	403

Common area	Floor area (m²)
Community amenity gym	94
Plant or service room	1628
Resi lobby T1	77

Common areas of unit building - Building2

Common area	Floor area (m²)
Lift bank (No. 1)	-
Bulky Waste	67
Corridor T2	1526

Common area	Floor area (m²)
Lift bank (No. 2)	-
Waste room T2	216

Common area	Floor area (m²)
Open car park area (No. 2)	7854
Resi lobby T2	67

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building1

(a) Buildings

(i) Materials

(b) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance

(c) Common areas and central systems/facilities

(i) Water

(ii) Energy

2. Commitments for Residential flat buildings - Building2

(a) Buildings

(i) Materials

(b) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance

(c) Common areas and central systems/facilities

(i) Water

(ii) Energy

3. Commitments for multi-dwelling housing

(a) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance and Materials

4. Commitments for single dwelling houses

(a) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance and Materials

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

(b) Common areas and central systems/facilities

(i) Water

(ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Building1

(a) Buildings

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

Floor types			
Floor type	**Area (m2)**	**Insulation**	**Low emissions option**
suspended floor above enclosed subfloor, frame: suspended concrete slab	665	foil-foam composite board	-
suspended floor above open subfloor, frame: suspended concrete slab	35	foil-foam composite board	-
floors above habitable rooms, frame: suspended concrete slab	17255	-	-

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	3985	-	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	6130	-
Internal wall type 2	75 mm AAC panel, frame:light steel frame	1120	-
Internal wall type 3	75 mm AAC panel, frame:light steel frame	1425	rockwool batts, roll or pump-in

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	**Volume (m^3)**	**Low emissions option**
yes	1260	-

Ceiling and roof types			
Ceiling and roof type	**Area (m^2)**	**Roof Insulation**	**Ceiling Insulation**
concrete - plasterboard internal, frame: light steel frame	745	-	foil-foam composite board

Glazing types			Frame types				
Single glazing (m^2)	**Double glazing (m^2)**	**Triple glazing (m^2)**	**Aluminium frames (m^2)**	**Timber frames (m^2)**	**uPVC frames (m^2)**	**Steel frames (m^2)**	**Composite frames (m^2)**
0	5145	0	5145	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	5 star	-	no washing machine taps	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	No alternative water supply	-	-	-	-	-	-	-

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	Central hot water system (No. 1)	individual fan, ducted to façade or roof	interlocked to light with timer off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	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
12603	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1	no
10401, 10403, 10405, 10501, 10503, 10505, 10601, 10603, 10605, 10701, 10703, 10705, 10801, 10803, 10805, 10901, 10903, 10905, 11001, 11003, 11005, 11101, 11103, 11105, 11201, 11203, 11205, 11301, 11303, 11305, 11401, 11403, 11405, 11501, 11503, 11505,	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	0	yes

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
11601, 11603, 11605, 11701, 11703, 11705, 11801, 11803, 11805, 11901, 11903, 11905, 12001, 12003, 12005, 12101, 12103, 12105, 12106, 12201, 12203, 12205, 12206, 12301, 12303, 12305, 12306, 12401, 12403, 12405, 12406, 12501, 12503, 12505, 12506, 12602						
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 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	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	7.0 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.			

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

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
10401	9.40	4.50	13.900
10402	14.40	14.60	29.000
10403	19.50	15.70	35.200
10404	27.90	5.40	33.300
10405	22.00	4.00	26.000
10501	10.10	7.50	17.600
10502	7.80	5.00	12.800

	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)
10503	11.10	13.20	24.300
10504	17.50	9.40	26.900
10505	19.00	15.00	34.000
10506	23.40	4.80	28.200
10507	17.80	5.70	23.500
10601	10.40	7.40	17.800
10602	8.10	4.80	12.900
10603	11.40	12.90	24.300
10604	16.10	9.10	25.200
10605	19.40	14.90	34.300
10606	23.80	4.70	28.500
10607	18.20	5.50	23.700
10701	10.70	7.50	18.200
10702	8.30	4.80	13.100
10703	11.60	12.90	24.500
10704	16.50	9.20	25.700
10705	19.70	14.70	34.400
10706	24.10	4.70	28.800
10707	18.60	5.60	24.200
10801	10.90	7.60	18.500
10802	8.60	4.70	13.300
10803	11.80	12.80	24.600
10804	16.70	9.10	25.800
10805	20.00	14.70	34.700
10806	24.50	4.70	29.200
10807	18.90	5.60	24.500
10901	11.10	7.50	18.600
10902	8.80	4.60	13.400
10903	12.00	12.80	24.800
10904	16.90	9.10	26.000
10905	20.10	14.10	34.200

	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)
10906	24.70	4.70	29.400
10907	19.10	5.50	24.600
11001	11.30	7.50	18.800
11002	9.00	4.90	13.900
11003	12.20	12.70	24.900
11004	17.10	9.30	26.400
11005	20.30	14.60	34.900
11006	25.00	4.70	29.700
11007	19.40	5.30	24.700
11101	11.50	7.50	19.000
11102	9.10	4.70	13.800
11103	12.40	12.50	24.900
11104	17.20	9.30	26.500
11105	20.60	14.20	34.800
11106	25.10	4.60	29.700
11107	19.60	5.40	25.000
11201	11.60	7.50	19.100
11202	9.30	4.70	14.000
11203	12.50	12.40	24.900
11204	17.30	9.50	26.800
11205	20.70	14.20	34.900
11206	25.40	4.80	30.200
11207	19.80	5.30	25.100
11301	11.80	7.40	19.200
11302	9.50	4.70	14.200
11303	12.60	12.40	25.000
11304	17.60	9.50	27.100
11305	21.00	14.00	35.000
11306	25.60	4.80	30.400
11307	20.00	5.20	25.200
11401	11.90	7.40	19.300

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
11402	9.50	4.60	14.100
11403	12.70	12.30	25.000
11404	17.70	9.60	27.300
11405	21.10	13.90	35.000
11406	25.70	4.90	30.600
11407	20.20	5.20	25.400
11501	12.10	7.40	19.500
11502	9.70	4.60	14.300
11503	12.90	12.10	25.000
11504	18.00	9.70	27.700
11505	21.40	13.80	35.200
11506	26.00	4.80	30.800
11507	20.40	5.10	25.500
11601	12.20	7.50	19.700
11602	9.80	4.70	14.500
11603	13.00	12.00	25.000
11604	18.30	9.80	28.100
11605	21.50	13.90	35.400
11606	26.10	4.80	30.900
11607	20.60	5.10	25.700
11701	12.40	7.50	19.900
11702	9.90	4.60	14.500
11703	13.10	11.90	25.000
11704	18.50	9.70	28.200
11705	21.70	13.60	35.300
11706	26.40	4.90	31.300
11707	20.70	5.20	25.900
11801	12.50	7.50	20.000
11802	10.10	4.80	14.900
11803	13.20	11.90	25.100
11804	18.60	9.60	28.200

	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)
11805	21.80	13.70	35.500
11806	26.50	5.00	31.500
11807	20.80	5.20	26.000
11901	12.60	7.40	20.000
11902	10.20	4.90	15.100
11903	13.40	11.90	25.300
11904	18.70	9.60	28.300
11905	21.90	13.90	35.800
11906	26.60	5.00	31.600
11907	21.00	5.20	26.200
12001	12.70	7.40	20.100
12002	10.30	5.00	15.300
12003	13.40	11.80	25.200
12004	18.80	9.80	28.600
12005	22.00	14.00	36.000
12006	26.60	5.20	31.800
12007	21.80	5.60	27.400
12101	12.70	9.20	21.900
12102	10.40	4.80	15.200
12103	14.300	15.70	30.000
12104	19.50	10.60	30.100
12106	21.40	7.50	28.900
12202	10.50	4.80	15.300
12203	14.40	15.70	30.100
12204	19.70	10.90	30.600
12206	20.80	7.70	28.500
12302	10.70	4.80	15.500
12303	14.50	15.70	30.200
12304	19.90	10.70	30.600
12305	19.60	12.20	31.800
12306	20.80	7.60	28.400

	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)
12401	13.10	9.20	22.300
12402	10.80	4.80	15.600
12403	14.70	15.80	30.500
12404	19.90	10.60	30.500
12405	19.80	12.20	32.000
12406	21.00	7.80	28.800
12501	19.80	13.70	33.500
12502	12.50	5.20	17.700
12503	16.70	20.00	36.700
12504	22.10	15.20	37.300
12505	15.60	19.80	35.400
12506	22.10	8.30	30.400
12601	22.30	11.60	33.900
12602	24.70	8.00	32.700
12603	25.50	5.10	30.600
12105, 12205	19.60	12.10	31.700
All other dwellings	12.90	9.20	22.100

(c) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	22000	To collect run-off from at least: - 500 square metres of roof area of buildings in the development - 0 square metres of impervious area in the development - 0 square metres of garden/lawn area in the development - 0 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 1600 square metres of common landscaped area on the site - car washing in 1 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
Enclosed car park area (No. 1)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	zoned switching with motion sensor	no
Waste room T1	ventilation exhaust only	-	light-emitting diode	motion sensors	no
Community amenity gym	air conditioning system	time clock or BMS controlled	light-emitting diode	motion sensors	no
Substation	no mechanical ventilation	-	light-emitting diode	motion sensors	no
Pump room	ventilation (supply + exhaust)	thermostatically controlled	light-emitting diode	motion sensors	no
Plant or service room	ventilation (supply + exhaust)	thermostatically controlled	light-emitting diode	motion sensors	no
Bin holding area	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	motion sensors	no
Loading bay	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	motion sensors	no
Resi lobby T1	ventilation supply only	time clock or BMS controlled	light-emitting diode	motion sensors	no
Corridor T1	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	no

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: 23 number of levels from the bottom of the lift shaft to the top of the lift shaft: 28 number of lifts: 3 lift load capacity: >= 1001 kg but <= 1500kg

Central energy systems	Type	Specification
Central hot water system (No. 1)	electric heat pump – air sourced	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm) (c) Unit Efficiency: 3.0 < COP <= 3.5

2. Commitments for Residential flat buildings - Building2

(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
suspended floor above enclosed subfloor, frame: suspended concrete slab	625	foil-foam composite board	-
suspended floor above open subfloor, frame: suspended concrete slab	20	foil-foam composite board	-
floors above habitable rooms, frame: suspended concrete slab	23465	-	-

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	4130	-	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	7985	-
Internal wall type 2	75 mm AAC panel, frame:light steel frame	1360	-

Internal wall types			
Internal wall type	**Construction type**	**Area (m2)**	**Insulation**
Internal wall type 3	75 mm AAC panel, frame:light steel frame	1565	rockwool batts, roll or pump-in

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	**Volume (m³)**	**Low emissions option**
yes	1585	-

Ceiling and roof types			
Ceiling and roof type	**Area (m²)**	**Roof Insulation**	**Ceiling Insulation**
concrete - plasterboard internal, frame: light steel frame	665	-	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	6425	0	6425	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	5 star	-	no washing machine taps	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	No alternative water supply	-	-	-	-	-	-	-

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	Central hot water system (No. 2)	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
20401, 20403, 20501, 20503, 20601, 20603, 20701, 20703, 20801, 20803, 20901, 20903, 21001, 21003, 21101, 21103, 21201, 21203, 21301, 21303, 21401, 21403, 21501, 21503, 21601, 21603, 21701, 21703, 21801, 21803, 21901, 21903, 22001, 22003, 22101, 22103, 22201, 22203, 22301, 22303,	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	0	yes

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
22401, 22403, 22404, 22501, 22503, 22504, 22601, 22603, 22604, 22701, 22703, 22704, 22801, 22803, 22804, 22901, 22903, 22904, 23001, 23003, 23004, 23101, 23103, 23104, 23201, 23203, 23204, 23302, 23402						
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 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	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	7.0 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.			

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

	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)
20401	11.00	10.60	21.600
20402	10.70	3.80	14.500
20403	20.20	17.10	37.300
20404	22.10	13.30	35.400
20405	29.90	8.10	38.000
20406	25.90	8.80	34.700
20501	10.10	6.50	16.600
20502	8.10	4.70	12.800

	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)
20503	15.90	12.20	28.100
20504	20.50	9.80	30.300
20505	22.00	6.10	28.100
20506	22.20	7.10	29.300
20601	10.40	6.30	16.700
20602	8.40	4.70	13.100
20603	16.20	12.40	28.600
20604	21.00	9.80	30.800
20605	22.40	5.90	28.300
20606	22.60	7.10	29.700
20701	10.60	6.30	16.900
20702	8.60	4.70	13.300
20703	16.40	12.00	28.400
20704	21.30	9.70	31.000
20705	22.70	5.90	28.600
20706	22.90	7.20	30.100
20801	10.80	6.30	17.100
20802	8.90	4.70	13.600
20803	16.50	12.00	28.500
20804	21.60	9.70	31.300
20805	23.10	6.10	29.200
20806	23.30	7.30	30.600
20901	11.10	6.30	17.400
20902	9.10	4.70	13.800
20903	16.80	12.00	28.800
20904	22.00	9.80	31.800
20905	23.40	6.20	29.600
20906	23.60	7.20	30.800
21001	11.30	6.30	17.600
21002	9.30	4.70000	14.000
21003	17.00	12.00	29.000

	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)
21004	22.30	9.70	32.000
21005	23.70	6.00	29.700
21006	23.80	7.30	31.100
21101	11.40	6.20	17.600
21102	9.40	4.50	13.900
21103	17.10	11.90	29.000
21104	22.50	9.70	32.200
21105	23.90	6.00	29.900
21106	23.90	7.30	31.200
21201	11.60	6.40000	18.000
21202	9.60	4.20	13.800
21203	17.30	11.80	29.100
21204	22.80	9.60	32.400
21205	24.20	5.80000	30.000
21206	24.20	6.90	31.100
21301	11.80	6.80	18.600
21302	9.80	4.20	14.000
21303	17.50	11.70	29.200
21304	23.10	9.50	32.600
21305	24.40	5.90	30.300
21306	24.40	7.00	31.400
21401	11.90	6.90	18.800
21402	9.90	4.20	14.100
21403	17.60	11.80	29.400
21404	23.20	9.50	32.700
21405	24.60	5.90	30.500
21406	24.50	7.00	31.500
21501	12.00	6.80	18.800
21502	10.10	4.20	14.300
21503	17.80	11.70	29.500
21504	23.50	9.30	32.800

	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)
21505	24.90	5.90	30.800
21506	24.80	7.00	31.800
21601	12.10	6.90	19.000
21603	17.80	11.60	29.400
21604	23.70	9.30	33.000
21605	25.00	5.90	30.900
21606	24.90	6.90	31.800
21701	12.20	6.80	19.000
21703	18.00	11.40	29.400
21704	23.90	9.30	33.200
21705	25.10	5.90	31.000
21706	25.00	6.90	31.900
21801	12.40	7.20	19.600
21802	10.40	4.20	14.600
21803	19.10	10.80	29.900
21804	24.10	9.20	33.300
21805	25.40	5.90	31.300
21806	25.10	7.00	32.100
21901	12.50	7.40	19.900
21902	10.50	4.20	14.700
21903	19.20	10.50	29.700
21904	24.20	9.10	33.300
21905	25.50	6.00	31.500
21906	24.90	7.00	31.900
22001	12.50	7.90	20.400
22003	19.30	10.50	29.800
22004	24.40	9.10	33.500
22005	25.70	6.00	31.700
22006	24.50	6.90	31.400
22101	12.60	8.50	21.100
22103	19.40	10.50	29.900

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
22104	24.50	9.10	33.600
22105	25.80	5.90	31.700
22106	23.90	6.90	30.800
22201	12.50	8.80	21.300
22202	10.70	4.50	15.200
22203	19.30	10.40	29.700
22204	25.60	9.40	35.000
22205	25.80	5.80	31.600
22206	23.20	7.20	30.400
22301	13.10	12.10	25.200
22302	10.80	4.70	15.500
22303	19.80	13.60	33.400
22304	24.50	10.40	34.900
22305	20.90	10.70	31.600
22401	12.90	12.60	25.500
22403	19.80	13.90	33.700
22404	24.50	10.20	34.700
22405	19.40	10.20	29.600
22501	13.50	12.20	25.700
22503	19.90	13.70	33.600
22505	18.50	10.30	28.800
22605	17.60	9.90	27.500
22704	24.80	9.90	34.700
22705	17.60	10.10	27.700
22801	13.30	12.50	25.800
22802	11.80	4.50	16.300
22803	20.00	13.60	33.600
22804	24.90	9.80	34.700
22805	17.60	10.30	27.900
22901	13.40	12.20	25.600
22902	11.90	4.50	16.400

	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)
22903	20.10	13.40	33.500
22904	25.00	9.80	34.800
22905	17.80	10.40	28.200
23003	20.20	13.30	33.500
23004	25.10	9.80	34.900
23005	17.80	10.10	27.900
23103	20.20	13.50	33.700
23104	25.00	10.10	35.100
23105	17.90	10.30	28.200
23201	17.10	19.70	36.800
23202	13.80	5.00	18.800
23203	20.70	15.70	36.400
23204	23.60	11.50	35.100
23205	20.70	12.60	33.300
23301	17.70	8.50	26.200
23302	23.20	6.20	29.400
23401	21.80	11.60	33.400
23402	29.70	8.20	37.900
21602, 21702	10.20	4.20	14.400
22002, 22102	10.60	4.50	15.100
22402, 22502	11.60	4.60	16.200
22504, 22604	24.70	9.90	34.600
22601, 22701	13.20	12.50	25.700
22602, 22702	11.70	4.60	16.300
22603, 22703	19.90	13.60	33.500
23001, 23101	13.50	12.10	25.600
All other dwellings	12.00	4.50	16.500

(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	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Swimming pool (No. 1)	Volume: 130 kLs	Location: Building2 Pool shaded: no	-
Fire sprinkler system (No. 2)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-
Fire sprinkler system (No. 3)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-
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.		✔	✔

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

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/ BMS
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
Open car park area (No. 2)	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	no
Bulky Waste	ventilation supply only	-	light-emitting diode	motion sensors	no
Waste room T2	ventilation exhaust only	-	light-emitting diode	motion sensors	no
Resi lobby T2	ventilation supply only	time clock or BMS controlled	light-emitting diode	motion sensors	no
Corridor T2	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
Lift bank (No. 2)	gearless traction with V V V F motor and regenerative drive	Number of levels with apartments served by a lift: 31 number of levels from the bottom of the lift shaft to the top of the lift shaft: 36 number of lifts: 3 lift load capacity: >= 1001 kg but <= 1500kg
Central hot water system (No. 2)	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: 3.0 < COP <= 3.5

3. Commitments for multi-dwelling housing

(a) Dwellings

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

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

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

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

4. Commitments for single dwelling houses

(a) Dwellings

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

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

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

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

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

(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	5 star	no common laundry facility

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

Central energy systems	Type	Specification
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 40 peak kW
Other	Building management system 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. 0012225910

Generated on 15 Oct 2025 using BERS Pro v5.2.4 (3.23)

Property

Address	17-24 Loftus Crescent, Homebush, Homebush , NSW , 2140
Lot/DP	Lot A DP 405742
NatHERS Climate Zone	56 Mascot (Sydney Airport)

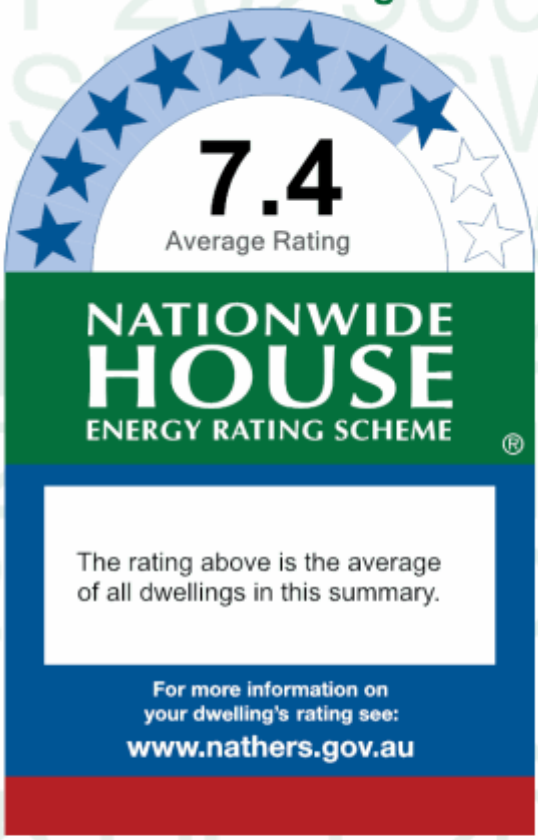
Accredited assessor

Name	Martin Pinson
Business name	GREENPERCH
Email	consulting@greenperch.com.au
Phone	0422144603
Accreditation No.	DMN/19/1921

Assessor Accrediting Organisation

Design Matters National

Thermal performance Star rating



Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=oBEVSXqXg . 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.

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

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

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

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

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled block average	17.7	8.7
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

Certificate number and link	Unit Number	Heating load (load limit) [MJ/m²/p.a.]	Cooling load (load limit) [MJ/m²/p.a.]	Total load [MJ/m²/p.a.]	Star Rating	Whole of Home Rating
0012226098-01	1-401	9.4 (N/A)	4.5 (N/A)	13.9	8.8	0
0012226130-01	1-402	14.4 (N/A)	14.6 (N/A)	29.0	7.1	0

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
0012226189-01	1-403	19.5 (N/A)	15.7 (N/A)	35.1	6.4	0
0012226239-01	1-404	27.9 (N/A)	5.4 (N/A)	33.3	6.6	0
0012226288-01	1-405	22.0 (N/A)	4.0 (N/A)	26.0	7.4	0
0012226320-01	1-501	10.1 (N/A)	7.5 (N/A)	17.6	8.3	0
0012226361-01	1-502	7.8 (N/A)	5.0 (N/A)	12.8	8.9	0
0012226395-01	1-503	11.1 (N/A)	13.2 (N/A)	24.4	7.6	0
0012226429-01	1-504	17.5 (N/A)	9.4 (N/A)	26.9	7.3	0
0012226452-01	1-505	19.0 (N/A)	15.0 (N/A)	34.0	6.5	0
0012226486-02	1-506	23.4 (N/A)	4.8 (N/A)	28.2	7.2	0
0012226510-01	1-507	17.8 (N/A)	5.7 (N/A)	23.5	7.7	0
0012225900-02	1-602	8.1 (N/A)	4.8 (N/A)	12.9	8.9	0
0012226593-01	1-603	11.4 (N/A)	12.9 (N/A)	24.3	7.6	0
0012226627-01	1-604	16.1 (N/A)	9.1 (N/A)	25.3	7.4	0
0012226650-01	1-605	19.4 (N/A)	14.9 (N/A)	34.3	6.4	0
0012226684-02	1-606	23.8 (N/A)	4.7 (N/A)	28.5	7.2	0
0012226718-01	1-607	18.2 (N/A)	5.5 (N/A)	23.7	7.7	0
0012226742-01	1-701	10.7 (N/A)	7.5 (N/A)	18.2	8.3	0
0012226775-01	1-702	8.3 (N/A)	4.8 (N/A)	13.1	8.9	0
0012226809-01	1-703	11.6 (N/A)	12.9 (N/A)	24.6	7.6	0
0012226833-01	1-704	16.5 (N/A)	9.2 (N/A)	25.7	7.4	0
0012226866-01	1-705	19.7 (N/A)	14.7 (N/A)	34.4	6.4	0
0012226890-02	1-706	24.1 (N/A)	4.7 (N/A)	28.8	7.1	0
0012226924-01	1-707	18.6 (N/A)	5.6 (N/A)	24.2	7.6	0
0012226965-01	1-801	10.9 (N/A)	7.6 (N/A)	18.4	8.3	0
0012226981-01	1-802	8.6 (N/A)	4.7 (N/A)	13.3	8.8	0
0012227013-01	1-803	11.8 (N/A)	12.8 (N/A)	24.6	7.6	0
0012227047-01	1-804	16.7 (N/A)	9.1 (N/A)	25.7	7.4	0
0012227062-01	1-805	20.0 (N/A)	14.7 (N/A)	34.6	6.4	0
0012227070-02	1-806	24.5 (N/A)	4.7 (N/A)	29.1	7.1	0
0012227088-01	1-807	18.9 (N/A)	5.6 (N/A)	24.4	7.6	0
0012227096-01	1-901	11.1 (N/A)	7.5 (N/A)	18.6	8.2	0
0012227104-01	1-902	8.8 (N/A)	4.6 (N/A)	13.4	8.8	0
0012227112-01	1-903	12.0 (N/A)	12.8 (N/A)	24.8	7.5	0
0012226072-01	1-904	16.9 (N/A)	9.1 (N/A)	26.0	7.4	0

0012226114-01	1-905	20.1 (N/A)	14.1 (N/A)	34.3	6.4	0
0012226122-02	1-906	24.7 (N/A)	4.7 (N/A)	29.4	7.1	0
0012226155-01	1-907	19.1 (N/A)	5.5 (N/A)	24.6	7.6	0
0012228441-01	2-401	11.0 (N/A)	10.6 (N/A)	21.6	7.9	0
0012228474-01	2-402	10.7 (N/A)	3.8 (N/A)	14.5	8.7	0
0012228508-01	2-403	20.2 (N/A)	17.1 (N/A)	37.3	6.1	0
0012228532-01	2-404	22.1 (N/A)	13.3 (N/A)	35.4	6.3	0
0012228557-01	2-405	29.9 (N/A)	8.1 (N/A)	38.0	6	0
0012228581-01	2-406	25.9 (N/A)	8.8 (N/A)	34.8	6.4	0
0012228615-01	2-501	10.1 (N/A)	6.5 (N/A)	16.6	8.4	0
0012228649-01	2-502	8.1 (N/A)	4.7 (N/A)	12.9	8.9	0
0012228672-01	2-503	15.9 (N/A)	12.2 (N/A)	28.1	7.2	0
0012228706-02	2-504	20.5 (N/A)	9.8 (N/A)	30.3	6.9	0
0012228763-01	2-505	22.0 (N/A)	6.1 (N/A)	28.1	7.2	0
0012228797-02	2-506	22.2 (N/A)	7.1 (N/A)	29.2	7.1	0
0012228821-01	2-601	10.4 (N/A)	6.3 (N/A)	16.7	8.4	0
0012228854-01	2-602	8.4 (N/A)	4.7 (N/A)	13.2	8.9	0
0012228888-01	2-603	16.2 (N/A)	12.4 (N/A)	28.6	7.1	0
0012228912-02	2-604	21.0 (N/A)	9.8 (N/A)	30.8	6.9	0
0012228946-01	2-605	22.4 (N/A)	5.9 (N/A)	28.3	7.2	0
0012228979-02	2-606	22.6 (N/A)	7.1 (N/A)	29.7	7	0
0012229001-01	2-701	10.6 (N/A)	6.3 (N/A)	16.9	8.4	0
0012229035-01	2-702	8.6 (N/A)	4.7 (N/A)	13.3	8.8	0
0012229068-01	2-703	16.4 (N/A)	12.0 (N/A)	28.3	7.2	0
0012229092-02	2-704	21.3 (N/A)	9.7 (N/A)	31.0	6.9	0
0012229134-01	2-705	22.7 (N/A)	5.9 (N/A)	28.6	7.1	0
0012229159-02	2-706	22.9 (N/A)	7.2 (N/A)	30.1	6.9	0
0012229175-01	2-801	10.8 (N/A)	6.3 (N/A)	17.1	8.4	0
0012229191-01	2-802	8.9 (N/A)	4.7 (N/A)	13.6	8.8	0
0012229217-01	2-803	16.5 (N/A)	12.0 (N/A)	28.5	7.2	0
0012229225-02	2-804	21.6 (N/A)	9.7 (N/A)	31.3	6.8	0
0012227120-01	2-805	23.1 (N/A)	6.1 (N/A)	29.2	7.1	0
0012227161-02	2-806	23.3 (N/A)	7.3 (N/A)	30.6	6.9	0
0012227203-01	2-901	11.1 (N/A)	6.3 (N/A)	17.4	8.4	0
0012227229-01	2-902	9.1 (N/A)	4.7 (N/A)	13.8	8.8	0
0012225892-02	2-903	16.8 (N/A)	12.0 (N/A)	28.8	7.1	0
0012227278-02	2-904	22.0 (N/A)	9.8 (N/A)	31.9	6.8	0
0012227302-01	2-905	23.4 (N/A)	6.2 (N/A)	29.7	7	0

0012227336-02	2-906	23.6 (N/A)	7.2 (N/A)	30.8	6.9	0
0012226171-01	1-1001	11.3 (N/A)	7.5 (N/A)	18.8	8.2	0
0012226205-01	1-1002	9.0 (N/A)	4.9 (N/A)	13.9	8.8	0
0012226213-01	1-1003	12.2 (N/A)	12.7 (N/A)	25.0	7.5	0
0012226247-01	1-1004	17.1 (N/A)	9.3 (N/A)	26.4	7.4	0
0012226262-01	1-1005	20.3 (N/A)	14.6 (N/A)	34.9	6.4	0
0012226296-02	1-1006	25.0 (N/A)	4.7 (N/A)	29.7	7	0
0012226312-01	1-1007	19.4 (N/A)	5.3 (N/A)	24.7	7.5	0
0012226346-01	1-1101	11.5 (N/A)	7.5 (N/A)	19.0	8.2	0
0012226379-01	1-1102	9.1 (N/A)	4.7 (N/A)	13.8	8.8	0
0012226403-01	1-1103	12.4 (N/A)	12.5 (N/A)	24.9	7.5	0
0012226437-01	1-1104	17.2 (N/A)	9.3 (N/A)	26.5	7.4	0
0012226460-01	1-1105	20.6 (N/A)	14.2 (N/A)	34.8	6.4	0
0012226494-02	1-1106	25.1 (N/A)	4.6 (N/A)	29.7	7	0
0012226528-01	1-1107	19.6 (N/A)	5.4 (N/A)	25.0	7.5	0
0012226551-01	1-1201	11.6 (N/A)	7.5 (N/A)	19.1	8.2	0
0012226577-01	1-1202	9.3 (N/A)	4.7 (N/A)	14.0	8.8	0
0012226601-01	1-1203	12.5 (N/A)	12.4 (N/A)	24.8	7.5	0
0012226635-01	1-1204	17.3 (N/A)	9.5 (N/A)	26.8	7.3	0
0012226668-01	1-1205	20.7 (N/A)	14.2 (N/A)	34.9	6.4	0
0012226700-02	1-1206	25.4 (N/A)	4.8 (N/A)	30.2	6.9	0
0012226726-01	1-1207	19.8 (N/A)	5.3 (N/A)	25.1	7.4	0
0012226759-01	1-1301	11.8 (N/A)	7.4 (N/A)	19.2	8.2	0
0012226783-01	1-1302	9.5 (N/A)	4.7 (N/A)	14.1	8.7	0
0012226817-01	1-1303	12.6 (N/A)	12.4 (N/A)	25.0	7.5	0
0012226841-01	1-1304	17.6 (N/A)	9.5 (N/A)	27.1	7.3	0
0012226874-01	1-1305	21.0 (N/A)	14.0 (N/A)	35.0	6.4	0
0012226908-02	1-1306	25.6 (N/A)	4.8 (N/A)	30.4	6.9	0
0012226932-01	1-1307	20.0 (N/A)	5.2 (N/A)	25.3	7.4	0
0012226957-01	1-1401	11.9 (N/A)	7.4 (N/A)	19.2	8.2	0
0012226999-01	1-1402	9.5 (N/A)	4.6 (N/A)	14.1	8.7	0
0012227021-01	1-1403	12.7 (N/A)	12.3 (N/A)	25.0	7.5	0
0012227054-01	1-1404	17.7 (N/A)	9.6 (N/A)	27.3	7.3	0
0012226080-01	1-1405	21.1 (N/A)	13.9 (N/A)	35.0	6.4	0
0012226106-02	1-1406	25.7 (N/A)	4.9 (N/A)	30.6	6.9	0
0012226148-01	1-1407	20.2 (N/A)	5.2 (N/A)	25.3	7.4	0
0012226163-01	1-1501	12.1 (N/A)	7.4 (N/A)	19.5	8.2	0
0012226197-01	1-1502	9.7 (N/A)	4.6 (N/A)	14.3	8.7	0

0012226221-01	1-1503	12.9 (N/A)	12.1 (N/A)	25.0	7.5	0
0012226254-01	1-1504	18.0 (N/A)	9.7 (N/A)	27.7	7.2	0
0012226270-01	1-1505	21.4 (N/A)	13.8 (N/A)	35.2	6.4	0
0012226304-02	1-1506	26.0 (N/A)	4.8 (N/A)	30.8	6.9	0
0012226338-01	1-1507	20.4 (N/A)	5.1 (N/A)	25.5	7.4	0
0012226353-01	1-1601	12.2 (N/A)	7.5 (N/A)	19.7	8.1	0
0012226387-01	1-1602	9.8 (N/A)	4.7 (N/A)	14.4	8.7	0
0012226411-01	1-1603	13.0 (N/A)	12.0 (N/A)	25.1	7.4	0
0012226445-01	1-1604	18.3 (N/A)	9.8 (N/A)	28.1	7.2	0
0012226478-01	1-1605	21.5 (N/A)	13.9 (N/A)	35.4	6.3	0
0012226502-02	1-1606	26.1 (N/A)	4.8 (N/A)	30.9	6.9	0
0012226536-01	1-1607	20.6 (N/A)	5.1 (N/A)	25.7	7.4	0
0012226569-01	1-1701	12.4 (N/A)	7.5 (N/A)	20.0	8.1	0
0012226585-01	1-1702	9.9 (N/A)	4.6 (N/A)	14.5	8.7	0
0012226619-01	1-1703	13.1 (N/A)	11.9 (N/A)	25.0	7.5	0
0012226643-01	1-1704	18.5 (N/A)	9.7 (N/A)	28.1	7.2	0
0012226676-01	1-1705	21.7 (N/A)	13.6 (N/A)	35.3	6.3	0
0012226692-02	1-1706	26.4 (N/A)	4.9 (N/A)	31.3	6.8	0
0012226734-01	1-1707	20.7 (N/A)	5.2 (N/A)	25.9	7.4	0
0012226767-01	1-1801	12.5 (N/A)	7.5 (N/A)	20.0	8.1	0
0012226791-01	1-1802	10.1 (N/A)	4.8 (N/A)	14.9	8.6	0
0012226825-01	1-1803	13.2 (N/A)	11.9 (N/A)	25.1	7.4	0
0012226858-01	1-1804	18.6 (N/A)	9.6 (N/A)	28.2	7.2	0
0012226882-01	1-1805	21.8 (N/A)	13.7 (N/A)	35.5	6.3	0
0012226916-02	1-1806	26.5 (N/A)	5.0 (N/A)	31.5	6.8	0
0012226940-01	1-1807	20.8 (N/A)	5.2 (N/A)	26.0	7.4	0
0012226973-01	1-1901	12.6 (N/A)	7.4 (N/A)	20.0	8.1	0
0012227005-01	1-1902	10.2 (N/A)	4.9 (N/A)	15.1	8.6	0
0012227039-01	1-1903	13.4 (N/A)	11.9 (N/A)	25.2	7.4	0
0012236865-01	1-1904	18.7 (N/A)	9.6 (N/A)	28.3	7.2	0
0012227146-01	1-1905	21.9 (N/A)	13.9 (N/A)	35.8	6.3	0
0012227179-02	1-1906	26.6 (N/A)	5.0 (N/A)	31.6	6.8	0
0012227195-01	1-1907	21.0 (N/A)	5.2 (N/A)	26.2	7.4	0
0012227237-01	1-2001	12.7 (N/A)	7.4 (N/A)	20.1	8.1	0
0012227252-01	1-2002	10.3 (N/A)	5.0 (N/A)	15.3	8.6	0
0012227286-01	1-2003	13.4 (N/A)	11.8 (N/A)	25.2	7.4	0
0012227310-01	1-2004	18.8 (N/A)	9.8 (N/A)	28.6	7.1	0
0012227344-01	1-2005	22.0 (N/A)	14.0 (N/A)	36.0	6.3	0

0012227377-02	1-2006	26.6 (N/A)	5.2 (N/A)	31.8	6.8	0
0012227419-01	1-2007	21.8 (N/A)	5.6 (N/A)	27.4	7.3	0
0012227443-01	1-2101	12.7 (N/A)	9.2 (N/A)	21.8	7.9	0
0012227476-01	1-2102	10.4 (N/A)	4.8 (N/A)	15.2	8.6	0
0012227500-01	1-2103	14.3 (N/A)	15.7 (N/A)	29.9	7	0
0012227534-01	1-2104	19.5 (N/A)	10.6 (N/A)	30.1	6.9	0
0012227567-01	1-2105	19.6 (N/A)	12.1 (N/A)	31.8	6.8	0
0012227591-01	1-2106	21.4 (N/A)	7.5 (N/A)	28.9	7.1	0
0012227633-01	1-2201	12.9 (N/A)	9.2 (N/A)	22.0	7.9	0
0012227666-01	1-2202	10.5 (N/A)	4.8 (N/A)	15.3	8.6	0
0012227690-01	1-2203	14.4 (N/A)	15.7 (N/A)	30.2	6.9	0
0012227724-01	1-2204	19.7 (N/A)	10.9 (N/A)	30.6	6.9	0
0012227757-01	1-2205	19.6 (N/A)	12.1 (N/A)	31.7	6.8	0
0012227781-01	1-2206	20.8 (N/A)	7.7 (N/A)	28.5	7.2	0
0012227815-01	1-2301	12.9 (N/A)	9.2 (N/A)	22.1	7.9	0
0012227849-01	1-2302	10.7 (N/A)	4.8 (N/A)	15.5	8.6	0
0012227872-01	1-2303	14.5 (N/A)	15.7 (N/A)	30.3	6.9	0
0012227906-01	1-2304	19.9 (N/A)	10.7 (N/A)	30.6	6.9	0
0012227930-01	1-2305	19.6 (N/A)	12.2 (N/A)	31.8	6.8	0
0012227963-01	1-2306	20.8 (N/A)	7.6 (N/A)	28.5	7.2	0
0012227997-01	1-2401	13.1 (N/A)	9.2 (N/A)	22.3	7.8	0
0012228037-01	1-2402	10.8 (N/A)	4.8 (N/A)	15.6	8.6	0
0012228060-01	1-2403	14.7 (N/A)	15.8 (N/A)	30.5	6.9	0
0012228102-01	1-2404	19.9 (N/A)	10.6 (N/A)	30.5	6.9	0
0012228128-01	1-2405	19.8 (N/A)	12.2 (N/A)	32.0	6.8	0
0012228151-01	1-2406	21.0 (N/A)	7.8 (N/A)	28.8	7.1	0
0012228185-01	1-2501	19.8 (N/A)	13.7 (N/A)	33.5	6.6	0
0012228219-01	1-2502	12.5 (N/A)	5.2 (N/A)	17.7	8.3	0
0012228243-01	1-2503	16.7 (N/A)	20.0 (N/A)	36.6	6.2	0
0012228268-01	1-2504	22.1 (N/A)	15.2 (N/A)	37.3	6.1	0
0012228292-01	1-2505	15.6 (N/A)	19.8 (N/A)	35.4	6.3	0
0012228326-01	1-2506	22.1 (N/A)	8.3 (N/A)	30.4	6.9	0
0012228359-01	1-2601	22.3 (N/A)	11.6 (N/A)	33.9	6.5	0
0012228383-01	1-2602	24.7 (N/A)	8.0 (N/A)	32.6	6.7	0
0012228417-01	1-2603	25.5 (N/A)	5.1 (N/A)	30.6	6.9	0
0012227369-01	2-1001	11.3 (N/A)	6.3 (N/A)	17.5	8.4	0
0012227393-01	2-1002	9.3 (N/A)	4.7 (N/A)	14.0	8.8	0
0012227427-01	2-1003	17.0 (N/A)	12.0 (N/A)	29.1	7.1	0

0012227450-02	2-1004	22.3 (N/A)	9.7 (N/A)	32.0	6.8	0
0012227484-01	2-1005	23.7 (N/A)	6.0 (N/A)	29.7	7	0
0012227518-02	2-1006	23.8 (N/A)	7.3 (N/A)	31.1	6.9	0
0012227542-01	2-1101	11.4 (N/A)	6.2 (N/A)	17.6	8.3	0
0012227575-01	2-1102	9.4 (N/A)	4.5 (N/A)	13.9	8.8	0
0012227609-01	2-1103	17.1 (N/A)	11.9 (N/A)	29.0	7.1	0
0012227625-02	2-1104	22.5 (N/A)	9.7 (N/A)	32.1	6.7	0
0012227658-01	2-1105	23.9 (N/A)	6.0 (N/A)	29.9	7	0
0012227682-02	2-1106	23.9 (N/A)	7.3 (N/A)	31.2	6.9	0
0012227716-01	2-1201	11.6 (N/A)	6.4 (N/A)	18.0	8.3	0
0012227740-01	2-1202	9.6 (N/A)	4.2 (N/A)	13.8	8.8	0
0012227773-01	2-1203	17.3 (N/A)	11.8 (N/A)	29.2	7.1	0
0012227807-02	2-1204	22.8 (N/A)	9.6 (N/A)	32.4	6.7	0
0012227831-01	2-1205	24.2 (N/A)	5.8 (N/A)	29.9	7	0
0012227864-02	2-1206	24.2 (N/A)	6.9 (N/A)	31.1	6.9	0
0012227898-01	2-1301	11.8 (N/A)	6.8 (N/A)	18.6	8.2	0
0012227922-01	2-1302	9.8 (N/A)	4.2 (N/A)	14.0	8.8	0
0012227955-01	2-1303	17.5 (N/A)	11.7 (N/A)	29.2	7.1	0
0012227989-02	2-1304	23.1 (N/A)	9.5 (N/A)	32.5	6.7	0
0012228011-01	2-1305	24.4 (N/A)	5.9 (N/A)	30.4	6.9	0
0012228045-02	2-1306	24.4 (N/A)	7.0 (N/A)	31.4	6.8	0
0012228078-01	2-1401	11.9 (N/A)	6.9 (N/A)	18.7	8.2	0
0012228094-01	2-1402	9.9 (N/A)	4.2 (N/A)	14.1	8.7	0
0012228136-01	2-1403	17.6 (N/A)	11.8 (N/A)	29.4	7.1	0
0012228169-02	2-1404	23.2 (N/A)	9.5 (N/A)	32.7	6.7	0
0012228193-01	2-1405	24.6 (N/A)	5.9 (N/A)	30.5	6.9	0
0012228227-02	2-1406	24.5 (N/A)	7.0 (N/A)	31.5	6.8	0
0012228250-01	2-1501	12.0 (N/A)	6.8 (N/A)	18.9	8.2	0
0012228284-01	2-1502	10.1 (N/A)	4.2 (N/A)	14.3	8.7	0
0012228300-01	2-1503	17.8 (N/A)	11.7 (N/A)	29.5	7.1	0
0012228334-02	2-1504	23.5 (N/A)	9.3 (N/A)	32.8	6.7	0
0012228367-01	2-1505	24.9 (N/A)	5.9 (N/A)	30.7	6.9	0
0012228391-02	2-1506	24.8 (N/A)	7.0 (N/A)	31.8	6.8	0
0012228425-01	2-1601	12.1 (N/A)	6.9 (N/A)	19.0	8.2	0
0012228458-01	2-1602	10.2 (N/A)	4.2 (N/A)	14.4	8.7	0
0012228482-01	2-1603	17.8 (N/A)	11.6 (N/A)	29.4	7.1	0
0012228516-02	2-1604	23.7 (N/A)	9.3 (N/A)	33.0	6.6	0
0012228540-01	2-1605	25.0 (N/A)	5.9 (N/A)	30.9	6.9	0

0012228573-02	2-1606	24.9 (N/A)	6.9 (N/A)	31.8	6.8	0
0012228607-01	2-1701	12.2 (N/A)	6.8 (N/A)	19.0	8.2	0
0012228631-01	2-1702	10.2 (N/A)	4.2 (N/A)	14.5	8.7	0
0012228664-01	2-1703	18.0 (N/A)	11.4 (N/A)	29.4	7.1	0
0012228698-02	2-1704	23.9 (N/A)	9.3 (N/A)	33.2	6.6	0
0012228722-01	2-1705	25.1 (N/A)	5.9 (N/A)	31.0	6.9	0
0012228755-02	2-1706	25.0 (N/A)	6.9 (N/A)	31.9	6.8	0
0012228789-01	2-1801	12.4 (N/A)	7.2 (N/A)	19.7	8.1	0
0012228813-01	2-1802	10.4 (N/A)	4.2 (N/A)	14.6	8.7	0
0012228847-01	2-1803	19.1 (N/A)	10.8 (N/A)	29.9	7	0
0012228870-02	2-1804	24.1 (N/A)	9.2 (N/A)	33.3	6.6	0
0012228904-01	2-1805	25.4 (N/A)	5.9 (N/A)	31.3	6.8	0
0012228938-02	2-1806	25.1 (N/A)	7.0 (N/A)	32.2	6.7	0
0012228961-01	2-1901	12.5 (N/A)	7.4 (N/A)	19.9	8.1	0
0012228995-01	2-1902	10.5 (N/A)	4.2 (N/A)	14.7	8.7	0
0012229027-01	2-1903	19.2 (N/A)	10.5 (N/A)	29.7	7	0
0012229050-02	2-1904	24.2 (N/A)	9.1 (N/A)	33.4	6.6	0
0012229084-01	2-1905	25.5 (N/A)	6.0 (N/A)	31.5	6.8	0
0012229118-02	2-1906	24.9 (N/A)	7.0 (N/A)	31.9	6.8	0
0012229142-01	2-2001	12.5 (N/A)	7.9 (N/A)	20.5	8.1	0
0012229167-01	2-2002	10.6 (N/A)	4.5 (N/A)	15.0	8.6	0
0012229183-01	2-2003	19.3 (N/A)	10.5 (N/A)	29.8	7	0
0012229209-02	2-2004	24.4 (N/A)	9.1 (N/A)	33.5	6.6	0
0012227138-01	2-2005	25.7 (N/A)	6.0 (N/A)	31.7	6.8	0
0012227153-02	2-2006	24.5 (N/A)	6.9 (N/A)	31.4	6.8	0
0012227187-01	2-2101	12.6 (N/A)	8.5 (N/A)	21.0	8	0
0012227211-01	2-2102	10.6 (N/A)	4.5 (N/A)	15.1	8.6	0
0012227245-01	2-2103	19.4 (N/A)	10.5 (N/A)	29.8	7	0
0012227260-02	2-2104	24.5 (N/A)	9.1 (N/A)	33.6	6.6	0
0012227294-01	2-2105	25.8 (N/A)	5.9 (N/A)	31.7	6.8	0
0012227328-02	2-2106	23.9 (N/A)	6.9 (N/A)	30.8	6.9	0
0012227351-01	2-2201	12.5 (N/A)	8.8 (N/A)	21.3	7.9	0
0012227385-01	2-2202	10.7 (N/A)	4.5 (N/A)	15.2	8.6	0
0012227401-01	2-2203	19.3 (N/A)	10.4 (N/A)	29.7	7	0
0012227435-02	2-2204	25.6 (N/A)	9.4 (N/A)	35.0	6.4	0
0012227468-01	2-2205	25.8 (N/A)	5.8 (N/A)	31.6	6.8	0
0012227492-02	2-2206	23.2 (N/A)	7.2 (N/A)	30.4	6.9	0
0012227526-01	2-2301	13.1 (N/A)	12.1 (N/A)	25.2	7.4	0

0012227559-01	2-2302	10.8 (N/A)	4.7 (N/A)	15.5	8.6	0
0012227583-01	2-2303	19.8 (N/A)	13.6 (N/A)	33.4	6.6	0
0012227617-01	2-2304	24.5 (N/A)	10.4 (N/A)	34.9	6.4	0
0012227641-01	2-2305	20.9 (N/A)	10.7 (N/A)	31.6	6.8	0
0012227674-01	2-2401	12.9 (N/A)	12.6 (N/A)	25.5	7.4	0
0012227708-01	2-2402	11.6 (N/A)	4.6 (N/A)	16.3	8.4	0
0012227732-01	2-2403	19.8 (N/A)	13.9 (N/A)	33.8	6.5	0
0012227765-01	2-2404	24.5 (N/A)	10.2 (N/A)	34.7	6.4	0
0012227799-01	2-2405	19.4 (N/A)	10.2 (N/A)	29.5	7.1	0
0012227823-01	2-2501	13.5 (N/A)	12.2 (N/A)	25.7	7.4	0
0012227856-01	2-2502	11.6 (N/A)	4.6 (N/A)	16.3	8.4	0
0012227880-01	2-2503	19.9 (N/A)	13.7 (N/A)	33.6	6.6	0
0012227914-01	2-2504	24.7 (N/A)	9.9 (N/A)	34.6	6.4	0
0012227948-01	2-2505	18.5 (N/A)	10.3 (N/A)	28.8	7.1	0
0012227971-01	2-2601	13.2 (N/A)	12.5 (N/A)	25.7	7.4	0
0012228003-01	2-2602	11.7 (N/A)	4.6 (N/A)	16.3	8.4	0
0012228029-01	2-2603	19.9 (N/A)	13.6 (N/A)	33.5	6.6	0
0012228052-01	2-2604	24.7 (N/A)	9.9 (N/A)	34.7	6.4	0
0012228086-01	2-2605	17.6 (N/A)	9.9 (N/A)	27.4	7.3	0
0012228110-01	2-2701	13.2 (N/A)	12.5 (N/A)	25.7	7.4	0
0012228144-01	2-2702	11.7 (N/A)	4.6 (N/A)	16.3	8.4	0
0012228177-01	2-2703	19.9 (N/A)	13.6 (N/A)	33.5	6.6	0
0012228201-01	2-2704	24.8 (N/A)	9.9 (N/A)	34.7	6.4	0
0012228235-01	2-2705	17.6 (N/A)	10.1 (N/A)	27.7	7.2	0
0012228276-01	2-2801	13.3 (N/A)	12.5 (N/A)	25.7	7.4	0
0012228318-01	2-2802	11.8 (N/A)	4.5 (N/A)	16.3	8.4	0
0012228342-01	2-2803	20.0 (N/A)	13.6 (N/A)	33.6	6.6	0
0012228375-01	2-2804	24.9 (N/A)	9.8 (N/A)	34.7	6.4	0
0012228409-01	2-2805	17.6 (N/A)	10.3 (N/A)	27.9	7.2	0
0012228433-01	2-2901	13.4 (N/A)	12.2 (N/A)	25.6	7.4	0
0012228466-01	2-2902	11.9 (N/A)	4.5 (N/A)	16.4	8.4	0
0012228490-01	2-2903	20.1 (N/A)	13.4 (N/A)	33.5	6.6	0
0012228524-01	2-2904	25.0 (N/A)	9.8 (N/A)	34.8	6.4	0
0012228565-01	2-2905	17.8 (N/A)	10.4 (N/A)	28.2	7.2	0
0012228599-01	2-3001	13.5 (N/A)	12.1 (N/A)	25.6	7.4	0
0012228623-01	2-3002	12.0 (N/A)	4.5 (N/A)	16.5	8.4	0
0012228656-01	2-3003	20.2 (N/A)	13.3 (N/A)	33.5	6.6	0
0012228680-01	2-3004	25.1 (N/A)	9.8 (N/A)	34.9	6.4	0

0012228714-01	2-3005	17.8 (N/A)	10.1 (N/A)	27.9	7.2	0
0012228748-01	2-3101	13.5 (N/A)	12.1 (N/A)	25.6	7.4	0
0012228771-01	2-3102	12.0 (N/A)	4.5 (N/A)	16.5	8.4	0
0012228805-01	2-3103	20.2 (N/A)	13.5 (N/A)	33.8	6.5	0
0012228839-01	2-3104	25.0 (N/A)	10.1 (N/A)	35.1	6.4	0
0012228862-01	2-3105	17.9 (N/A)	10.3 (N/A)	28.2	7.2	0
0012228896-01	2-3201	17.1 (N/A)	19.7 (N/A)	36.8	6.2	0
0012228920-01	2-3202	13.8 (N/A)	5.0 (N/A)	18.8	8.2	0
0012228953-01	2-3203	20.7 (N/A)	15.7 (N/A)	36.4	6.2	0
0012228987-01	2-3204	23.6 (N/A)	11.5 (N/A)	35.1	6.4	0
0012229019-01	2-3205	20.7 (N/A)	12.6 (N/A)	33.3	6.6	0
0012229043-01	2-3301	17.7 (N/A)	8.5 (N/A)	26.3	7.4	0
0012229076-01	2-3302	23.2 (N/A)	6.2 (N/A)	29.4	7.1	0
0012229100-01	2-3401	21.8 (N/A)	11.6 (N/A)	33.4	6.6	0
0012229126-01	2-3402	29.7 (N/A)	8.2 (N/A)	37.9	6	0
0012226544-01	1-601	10.4 (N/A)	7.4 (N/A)	17.8	8.3	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 â€˜Summary of all dwellingsâ€™ section of this Certificate.
NatHERS ratings use computer modelling to evaluate a homeâ€™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 homeâ€™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 dwellingâ€™s assessment, refer to the individual dwellingâ€™s NatHERS Certificate (accessible via link).

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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.

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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 dwellingâ€™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.