



BASIX REPORT

FIVEWAYS CROWS NEST

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Prepared for:

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DOCUMENT CONTROL

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INTRODUCTION

This report presents the results of a detailed BASIX assessment of the various residential dwellings within the proposed development known as Fiveways, located at Crows Nest. The assessment is carried out using online BASIX and BERS Pro Thermal Performance assessment tool. This assessment is based on the architectural drawings prepared by Turner, received March 2024.

BASIX ASSESSMENT METHODOLOGY

A BASIX assessment is split into three sections; Water, Thermal Comfort and Energy. Each section measures the efficiency of the development in these areas. For the Water and Energy sections, the development is given a score based on the efficiency. BASIX sets a minimum score in these areas that the development must satisfy. The Thermal Performance section of the BASIX assessment requires a BERS Pro simulation to be undertaken. BASIX sets requirements on the maximum heating and cooling loads for each residential apartment of the development. The results of this are rated in BASIX as either a pass or fail.

2.1 Water Usage

The water usage of the development is measured based on the area of gardens/lawn and the number and efficiency of permanent fixtures within the development (such as showerheads, taps and toilets). The development is given a rating, with BASIX requiring a minimum rating of 40% to pass this section.

2.2 Thermal Comfort

The thermal comfort of the development is measured using the BERS Pro Thermal Performance assessment tool. This gives an expected level of energy consumption (expressed in Mega Joules used per square metre per annum) for the heating and cooling loads.

The thermal comfort of the development can be improved by using higher performance building materials (such as performance glazing) and/or insulation materials. BASIX sets a maximum heating and cooling load that the development is to achieve. This is given as a weighted average heating and cooling load for the entire development, and for each individual dwelling to achieve.

2.3 Energy Usage

The energy section of the BASIX assessment measures the energy efficiency of the development based on the efficiency of the fixed appliances to be used. This includes the hot water system, air-conditioning system, exhaust fans, lighting and the cook top/oven. If a pool is to be included in the proposal then the efficiency measure of the pool heater and the pool pump is also required. The development is given a rating, with BASIX requiring a minimum rating of 63% to pass this section.

RESULTS OF THE BASIX ASSESSMENT

3.1 Water

The minimum target score in BASIX to achieve water usage compliance is 40%. The minimum score is achieved through the inclusion of the following;

3.1.1 Central Systems & Common Areas

- A rainwater tank with a volume capacity of least 20,000L capacity is to be included. Water is to be provided from at least 150m² of the roof area. Water from the tank is to be used for all public landscaping (total area of 2760m²) within the development site.
- The fire sprinkler test water for the car park and building fire sprinkler systems are not to be contained in a closed system.
- The common area toilets are to have a water efficiency rating of at least 4.0 Stars.
- The common area taps are to have a water efficiency rating of at least 4.0 Stars.

3.1.2 Dwellings

- All showerheads within each residential dwelling is to have a water efficiency rating of at least 4.0 Stars (>6but <=7.5L/min).
- All toilets within each residential dwelling is to have a water efficiency rating of at least 4.0 Stars.
- All kitchen taps within each residential dwelling is to have a water efficiency rating of at least 5.0 Stars.
- All bathroom taps within each residential dwelling is to have a water efficiency rating of at least 5.0 Stars.
- Clothes washer units are to be installed within each residential dwelling. The Clothes washer units are to have a water efficiency rating of at least 3.0 stars.
- Dishwasher units are to be installed within each residential dwelling. The dishwasher units are to have a water efficiency rating of at least 4.0 stars.

3.2 Thermal Comfort

The BERS Pro assessments take into account the following fundamental aspects of energy efficient design:

- The orientation and size of the walls.
- The location, proportion and type of windows and doors, and any internal or external coverings to them.
- The materials and colours of the exterior of the building.
- Internal floor, wall and ceiling materials.
- Cross ventilation.
- Provision of any insulation in walls, roof or ceiling.
- Overshadowing to walls and windows from eaves, other parts of the development and neighbours.
- The topography and climate of the area around the proposed development.

The climate zone selected for analysis was Climate Zone 56. In BASIX, the required weighted averaged maximum heating and cooling loads of the entire proposed development are 28.1 MJ/m²/year for heating and 20.0 MJ/m²/year for cooling and for each individual dwelling a maximum heating and cooling load of 34.4 MJ/m²/year for heating and 21.4 MJ/m²/year for cooling. The required heating and cooling loads for the individual residential dwelling are indicated in Table 3. Note that the overall weighted average heating and cooling loads are significantly harder to achieve than the individual unit requirements.

3.2.1 Dwelling Construction Materials and Initial Results

The following construction materials were initially selected for the assessment. Note that the materials described are not prescriptive. The construction materials used on the subject development should be selected to have similar performance characteristics as the ones detailed below so as not to affect the overall thermal performance rating of each apartment. The U-value and Solar Heat Gain Coefficient (SHGC) for the glazed systems is also indicated.

The wall construction of each residential dwelling is indicated in Table 1a below:

Table 1a - Wall Systems for each Residential Dwelling

Dwelling Envelope Wall	Wall Construction
External (the wall between outdoor environment and the dwelling)	Brick Veneer and Metal Cladding
Party (the wall between dwelling and the dwelling)	Hebel Panel
Enclosed Lobby (the wall between enclosed lobby and the dwelling)	Hebel Panel
Outdoor Lobby (the wall between outdoor lobby and the dwelling)	Hebel Panel

Dwelling Envelope Wall	Wall Construction
Staircore/Lift/Shafts (the wall between staircore/lift/shafts and the dwelling)	Concrete
Carpark (between carpark and the dwelling)	Concrete
To unconditioned spaces such as plant, garbage, service rooms etc. (the wall between the unconditioned space and the dwelling)	Concrete
Internal (the wall internal walls within the dwelling)	Plasterboard on Stud

- The floor coverings will be following:
 - o Timber to the living areas
 - o Carpets to the bedrooms
 - o Tiles to the kitchen
 - o Tiles to the wet areas
 - o Timber to the hallways
 - o Timber to the study rooms
 - o Carpets to the home office
 - o Tiles to the other internal areas (walk in pantries etc.)
- The floors will be concrete slabs.
- The ceilings will be concrete.
- The roof will be waterproof membrane.
- Draught seals are to be installed to the windows and doors.
- Sealed exhaust fans are assumed in the kitchen and wet areas.
- Ceiling penetrations due to recessed luminaries has been assumed at a rate of 1 per 2.5m² as the lighting/ceiling plan is yet to be determined and is not indicated on the drawing set. A reassessment may be undertaken at a later stage once the lighting/ceiling plan is finalised.
- Skylights are to be single glazed set within an aluminium or timber frame.
- The glazing systems within the residential dwellings are split into two groups; Group A and Group B based on the system type indicated in Table 1b below.

- o Note that for thermal modelling purposes, glazed systems that have a combination of Group A and Group B system types, the group system type that accounts for the majority of the glazed system area will be selected. If they are equal in area then the Group A system type will be selected. However, for specification they are based on the Group type.

Table 1b - Glazed System Grouping

Group A	Group B
Awning Window	Double Hung Window
Bifold Door	Fixed Window
Bifold Window	Louvre Window
Entry Door	Sliding Window
Casement Window	Sliding door
French Door	Stacker door
Tilt'n'Turn Window	
Hinged Door	

The result of the analysis, indicated in Table 3, indicate that several of the residential dwellings within the proposed development will not satisfy the individual thermal requirements of BASIX. Hence treatment is required to some of the residential dwellings of the development.

3.2.2 Results with Treatments

Further analysis of the proposed development resulted in some required treatments to achieve the BASIX requirements for thermal performance. The required treatments are listed in Table 2 below:

Table 2 - Required Treatments

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
301	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
302	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
303	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	-
304	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
401	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	2.5	Inclusion of 1200mm ceiling fan to Kitchen/Living area
402	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	3	-
403	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	3	Inclusion of 1200mm ceiling fan to Kitchen/Living area
404	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	-	3	Inclusion of 1200mm ceiling fan to Kitchen/Living area
405	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	-
406	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	-
407	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	-
408	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	-
409	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
410	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
411	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
412	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
501	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
502	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
503	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
504	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
505	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
506	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
507	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
508	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
509	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
510	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
511	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
512	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
601	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	2.5	-	-
602	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	2.5	-	-
603	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
604	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
605	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
606	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
607	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
608	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
609	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
610	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
611	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
612	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
701	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	2	-
702	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	2	Inclusion of 1200mm ceiling fan to Kitchen/Living area
703	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
704	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
705	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
706	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
707	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
708	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
709	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
710	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
711	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
712	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
801	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
802	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
803	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
804	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
805	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	2.5	-	-
806	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
807	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
808	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
809	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
810	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
811	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
812	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
901	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
902	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
903	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
904	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2.5	-
905	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
906	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
907	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
908	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
909	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
910	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
911	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1001	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1002	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1003	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1004	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1005	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1006	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1007	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1008	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1009	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1010	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1011	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1101	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1102	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1103	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1104	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1105	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1106	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
1107	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1108	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1109	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1110	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1111	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1201	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1202	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1203	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1204	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1205	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1206	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1207	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1208	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1209	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1210	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1211	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1301	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1302	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1303	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
1304	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1305	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1306	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1307	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1308	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	2.5	-	-
1309	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1310	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	2.5	-	-
1311	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1401	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1402	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1403	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1404	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1405	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1406	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1407	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1408	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1409	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1501	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	2	-
1502	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	2	-

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
1503	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1504	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1505	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1506	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1507	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1508	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1509	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1601	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1602	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1603	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1604	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1605	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1606	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1607	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1608	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1609	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1701	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1702	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1703	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
1704	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1705	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1706	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1707	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1708	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1709	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1801	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1802	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1803	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1804	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1805	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1806	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1807	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1808	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1809	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1901	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1902	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
1903	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
1904	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
1905	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1906	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1907	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1908	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
1909	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2001	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
2002	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	-
2003	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
2004	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	-	-	-
2005	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2006	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2007	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2008	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2009	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	-	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2101	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	3	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2102	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	3	-	-
2103	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	2.5	-	-
2104	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	3	3	2	Inclusion of 1200mm ceiling fan to Kitchen/Living area

Unit Number	Glazing Thermal Specification (See Table 1b for group information)	Additional Wall Insulation in the dwelling envelope wall (to outdoor air, lobby, stair/ liftcore, enclosed unconditioned spaces (plant, shafts etc.). (R-value)	Additional Ceiling Insulation to areas with outdoor air or enclosed unconditioned spaces above. (R-value)	Additional Floor Insulation to areas above outdoor air/ carpark/ or enclosed unconditioned spaces. (R-value)	Additional Treatments
2105	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2106	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2107	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2108	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2	2.5	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area
2109	Group A: U-value = 2.00, SHGC = 0.25 Group B: U-value = 2.00, SHGC = 0.31	2.5	3	-	Inclusion of 1200mm ceiling fan to Kitchen/Living area

A number of glazed system selections were used in the analysis due to certain residential dwellings requiring better thermal performing glazed systems due to the design, orientation, shading and glaze to wall façade ratios. These are summarised as follows:

Glazed System Selection No. 1

- Group A: U-value = 4.3, SHGC = 0.47 (please refer to Table 1b above)
- Group B: U-value = 4.3 SHGC = 0.53 (please refer to Table 1b above)

Glazed System Selection No. 2

- Group A: U-value = 2.0, SHGC = 0.25 (please refer to Table 1b above)
- Group B: U-value = 2.0, SHGC = 0.31 (please refer to Table 1b above)

With these treatments in place the weighted average maximum heating and cooling loads are 33.8 MJ/m²/year for heating and 16.6 MJ/m²/year for cooling.

The BASIX requirements for the weighted averaged maximum heating and cooling loads of the entire proposed development are 28.1 MJ/m²/year for heating and 20.0 MJ/m²/year for cooling. Hence, with the required treatments listed above, the proposed development will satisfy the thermal performance requirements of BASIX.

Note the required additional insulation requirements in Table 2 above are valid for the current design as indicated in the architectural drawings and the envelope wall construction types of the residential dwellings as indicated in Table 1a (i.e. dwelling wall to outdoor air, lobby, unconditioned spaces such as stair/liftcore, neighbour etc.).

If there are changes to the dwelling envelope wall construction; e.g. the wall type is changed to another material or a wall is comprised of more than one wall types, then the required additional wall insulation requirement in Table 2 above may also vary. This is due to different wall construction types having different inherent R-values. The thermal modelling software combines the inherent R-value of the wall construction type for each wall (as indicated in Table 1a) and the associated wall insulation (as indicated in Table 2) to form an overall "Envelope Wall Total R-value" for each wall. Thus, if a different wall construction type that has a lower inherent R-value is used in lieu of those in Table 1a, then the wall insulation requirement would be increased to achieve a similar "Envelope Wall Total R-value". Note the opposite is also true for wall constructions with "higher" inherent wall construction R-values can result in a decrease in the wall insulation requirement.

The glazing types selected for the windows of the proposed development should at least satisfy the required performance data listed in this report. Reducing the amount of glazing in each unit is expected to significantly increase the thermal performance of each unit. Higher performing glass types than those listed in this report are also acceptable. That is, alternative glazing systems or specifications may be used if their U value is equivalent or lower, and the SHGC value is less than +/-10% than the U and SHGC values of the product specified in the table above as per the BASIX Thermal Comfort Protocol.

Table 3 - BERS Thermal Performance Results

Unit Number	BASIX Requirements (MJ/m2/year)			Final Results (MJ/m2/year) (with treatments)		
	Heating	Cooling	Total	Heating	Cooling	Total
301	34.4	21.4	38.0	10.0	8.4	18.4
302	34.4	21.4	38.0	7.6	12.3	19.9
303	34.4	21.4	38.0	17.1	10.1	27.2
304	34.4	21.4	38.0	13.1	12.0	25.1
401	34.4	21.4	38.0	32.0	5.4	37.4
402	34.4	21.4	38.0	32.3	5.0	37.3
403	34.4	21.4	38.0	32.6	5.3	37.9
404	34.4	21.4	38.0	28.4	6.8	35.2
405	34.4	21.4	38.0	19.0	4.3	23.3
406	34.4	21.4	38.0	8.8	5.5	14.3
407	34.4	21.4	38.0	8.6	5.6	14.2
408	34.4	21.4	38.0	6.7	5.8	12.5
409	34.4	21.4	38.0	16.6	8.3	24.9
410	34.4	21.4	38.0	20.5	8.5	29.0
411	34.4	21.4	38.0	22.4	7.1	29.5
412	34.4	21.4	38.0	20.2	9.9	30.1
501	34.4	21.4	38.0	30.3	5.7	36.0
502	34.4	21.4	38.0	28.5	5.6	34.1
503	34.4	21.4	38.0	30.5	5.1	35.6
504	34.4	21.4	38.0	28.7	6.7	35.4
505	34.4	21.4	38.0	15.0	4.7	19.7
506	34.4	21.4	38.0	8.2	4.4	12.6
507	34.4	21.4	38.0	7.7	4.3	12.0
508	34.4	21.4	38.0	6.8	5.0	11.8
509	34.4	21.4	38.0	18.2	8.0	26.2
510	34.4	21.4	38.0	22.0	8.1	30.1
511	34.4	21.4	38.0	24.0	8.6	32.6
512	34.4	21.4	38.0	22.6	9.3	31.9
601	34.4	21.4	38.0	30.7	5.5	36.2
602	34.4	21.4	38.0	28.9	5.3	34.2
603	34.4	21.4	38.0	30.8	5.2	36.0
604	34.4	21.4	38.0	28.2	6.7	34.9

Unit Number	BASIX Requirements (MJ/m2/year)			Final Results (MJ/m2/year) (with treatments)		
	Heating	Cooling	Total	Heating	Cooling	Total
605	34.4	21.4	38.0	15.4	4.5	19.9
606	34.4	21.4	38.0	8.4	4.3	12.7
607	34.4	21.4	38.0	7.9	4.3	12.2
608	34.4	21.4	38.0	6.5	4.9	11.4
609	34.4	21.4	38.0	18.6	7.9	26.5
610	34.4	21.4	38.0	22.4	8.0	30.4
611	34.4	21.4	38.0	24.4	8.9	33.3
612	34.4	21.4	38.0	22.9	9.3	32.2
701	34.4	21.4	38.0	27.6	8.4	36.0
702	34.4	21.4	38.0	31.1	4.2	35.3
703	34.4	21.4	38.0	30.9	5.2	36.1
704	34.4	21.4	38.0	28.5	6.9	35.4
705	34.4	21.4	38.0	15.7	4.4	20.1
706	34.4	21.4	38.0	8.6	4.3	12.9
707	34.4	21.4	38.0	8.0	4.2	12.2
708	34.4	21.4	38.0	6.6	4.9	11.5
709	34.4	21.4	38.0	18.9	8.0	26.9
710	34.4	21.4	38.0	22.7	8.0	30.7
711	34.4	21.4	38.0	24.7	8.8	33.5
712	34.4	21.4	38.0	23.2	9.2	32.4
801	34.4	21.4	38.0	27.6	8.4	36.0
802	34.4	21.4	38.0	31.0	4.1	35.1
803	34.4	21.4	38.0	31.2	5.4	36.6
804	34.4	21.4	38.0	30.9	6.9	37.8
805	34.4	21.4	38.0	15.4	4.3	19.7
806	34.4	21.4	38.0	8.8	4.3	13.1
807	34.4	21.4	38.0	8.3	4.2	12.5
808	34.4	21.4	38.0	6.8	5.3	12.1
809	34.4	21.4	38.0	19.1	7.9	27.0
810	34.4	21.4	38.0	23.0	7.8	30.8
811	34.4	21.4	38.0	25.0	8.9	33.9
812	34.4	21.4	38.0	23.5	9.1	32.6
901	34.4	21.4	38.0	27.8	8.6	36.4
902	34.4	21.4	38.0	31.2	4.1	35.3

Unit Number	BASIX Requirements (MJ/m2/year)			Final Results (MJ/m2/year) (with treatments)		
	Heating	Cooling	Total	Heating	Cooling	Total
903	34.4	21.4	38.0	30.2	5.2	35.4
904	34.4	21.4	38.0	31.1	6.8	37.9
905	34.4	21.4	38.0	11.5	3.7	15.2
906	34.4	21.4	38.0	11.0	3.8	14.8
907	34.4	21.4	38.0	8.7	4.6	13.3
908	34.4	21.4	38.0	19.2	7.9	27.1
909	34.4	21.4	38.0	23.2	7.8	31.0
910	34.4	21.4	38.0	25.2	8.9	34.1
911	34.4	21.4	38.0	23.6	8.9	32.5
1001	34.4	21.4	38.0	28.0	8.8	36.8
1002	34.4	21.4	38.0	31.5	4.3	35.8
1003	34.4	21.4	38.0	30.5	5.4	35.9
1004	34.4	21.4	38.0	30.2	6.6	36.8
1005	34.4	21.4	38.0	11.7	3.8	15.5
1006	34.4	21.4	38.0	15.4	8.6	24.0
1007	34.4	21.4	38.0	11.8	9.9	21.7
1008	34.4	21.4	38.0	19.5	7.9	27.4
1009	34.4	21.4	38.0	23.4	7.8	31.2
1010	34.4	21.4	38.0	25.5	8.9	34.4
1011	34.4	21.4	38.0	23.9	9.1	33.0
1101	34.4	21.4	38.0	28.1	8.7	36.8
1102	34.4	21.4	38.0	31.6	4.4	36.0
1103	34.4	21.4	38.0	30.6	5.4	36.0
1104	34.4	21.4	38.0	30.4	6.6	37.0
1105	34.4	21.4	38.0	16.3	9.0	25.3
1106	34.4	21.4	38.0	15.6	8.9	24.5
1107	34.4	21.4	38.0	11.9	10.0	21.9
1108	34.4	21.4	38.0	19.6	7.9	27.5
1109	34.4	21.4	38.0	23.6	7.8	31.4
1110	34.4	21.4	38.0	25.6	8.9	34.5
1111	34.4	21.4	38.0	24.1	9.2	33.3
1201	34.4	21.4	38.0	28.4	8.6	37.0
1202	34.4	21.4	38.0	31.8	4.3	36.1
1203	34.4	21.4	38.0	30.9	5.4	36.3

Unit Number	BASIX Requirements (MJ/m2/year)			Final Results (MJ/m2/year) (with treatments)		
	Heating	Cooling	Total	Heating	Cooling	Total
1204	34.4	21.4	38.0	30.6	6.8	37.4
1205	34.4	21.4	38.0	16.6	9.1	25.7
1206	34.4	21.4	38.0	15.9	8.7	24.6
1207	34.4	21.4	38.0	12.0	10.1	22.1
1208	34.4	21.4	38.0	19.9	7.8	27.7
1209	34.4	21.4	38.0	23.8	7.8	31.6
1210	34.4	21.4	38.0	25.9	8.9	34.8
1211	34.4	21.4	38.0	24.4	9.0	33.4
1301	34.4	21.4	38.0	28.5	8.6	37.1
1302	34.4	21.4	38.0	32.0	4.7	36.7
1303	34.4	21.4	38.0	31.0	5.4	36.4
1304	34.4	21.4	38.0	30.8	6.5	37.3
1305	34.4	21.4	38.0	16.7	9.2	25.9
1306	34.4	21.4	38.0	16.0	8.8	24.8
1307	34.4	21.4	38.0	12.1	10.1	22.2
1308	34.4	21.4	38.0	20.4	7.3	27.7
1309	34.4	21.4	38.0	24.0	7.8	31.8
1310	34.4	21.4	38.0	26.0	8.2	34.2
1311	34.4	21.4	38.0	23.6	8.7	32.3
1401	34.4	21.4	38.0	28.6	8.6	37.2
1402	34.4	21.4	38.0	31.9	4.2	36.1
1403	34.4	21.4	38.0	31.1	5.4	36.5
1404	34.4	21.4	38.0	30.9	6.8	37.7
1405	34.4	21.4	38.0	16.8	9.4	26.2
1406	34.4	21.4	38.0	16.2	8.8	25.0
1407	34.4	21.4	38.0	12.2	10.1	22.3
1408	34.4	21.4	38.0	21.1	8.1	29.2
1409	34.4	21.4	38.0	23.8	7.7	31.5
1501	34.4	21.4	38.0	30.7	5.5	36.2
1502	34.4	21.4	38.0	31.2	4.9	36.1
1503	34.4	21.4	38.0	31.2	5.4	36.6
1504	34.4	21.4	38.0	31.0	6.8	37.8
1505	34.4	21.4	38.0	16.8	9.2	26.0
1506	34.4	21.4	38.0	16.3	8.8	25.1

Unit Number	BASIX Requirements (MJ/m2/year)			Final Results (MJ/m2/year) (with treatments)		
	Heating	Cooling	Total	Heating	Cooling	Total
1507	34.4	21.4	38.0	12.4	10.0	22.4
1508	34.4	21.4	38.0	20.3	8.0	28.3
1509	34.4	21.4	38.0	22.9	7.8	30.7
1601	34.4	21.4	38.0	30.0	5.5	35.5
1602	34.4	21.4	38.0	29.9	5.2	35.1
1603	34.4	21.4	38.0	31.3	5.4	36.7
1604	34.4	21.4	38.0	31.2	6.8	38.0
1605	34.4	21.4	38.0	17.0	9.3	26.3
1606	34.4	21.4	38.0	16.4	8.9	25.3
1607	34.4	21.4	38.0	12.5	10.0	22.5
1608	34.4	21.4	38.0	20.4	8.1	28.5
1609	34.4	21.4	38.0	23.0	8.2	31.2
1701	34.4	21.4	38.0	30.2	5.4	35.6
1702	34.4	21.4	38.0	30.1	5.2	35.3
1703	34.4	21.4	38.0	31.5	5.6	37.1
1704	34.4	21.4	38.0	31.4	6.5	37.9
1705	34.4	21.4	38.0	17.3	9.3	26.6
1706	34.4	21.4	38.0	16.6	8.8	25.4
1707	34.4	21.4	38.0	12.7	10.0	22.7
1708	34.4	21.4	38.0	20.6	8.0	28.6
1709	34.4	21.4	38.0	23.3	7.9	31.2
1801	34.4	21.4	38.0	30.2	5.6	35.8
1802	34.4	21.4	38.0	30.2	5.1	35.3
1803	34.4	21.4	38.0	31.5	5.8	37.3
1804	34.4	21.4	38.0	30.3	6.5	36.8
1805	34.4	21.4	38.0	17.3	9.4	26.7
1806	34.4	21.4	38.0	16.7	8.8	25.5
1807	34.4	21.4	38.0	12.8	10.0	22.8
1808	34.4	21.4	38.0	20.6	8.0	28.6
1809	34.4	21.4	38.0	23.4	7.9	31.3
1901	34.4	21.4	38.0	30.2	5.5	35.7
1902	34.4	21.4	38.0	30.2	5.1	35.3
1903	34.4	21.4	38.0	31.2	5.9	37.1
1904	34.4	21.4	38.0	30.4	6.6	37.0

Unit Number	BASIX Requirements (MJ/m2/year)			Final Results (MJ/m2/year) (with treatments)		
	Heating	Cooling	Total	Heating	Cooling	Total
1905	34.4	21.4	38.0	17.4	9.5	26.9
1906	34.4	21.4	38.0	16.8	9.0	25.8
1907	34.4	21.4	38.0	13.0	9.9	22.9
1908	34.4	21.4	38.0	20.6	8.0	28.6
1909	34.4	21.4	38.0	23.4	7.8	31.2
2001	34.4	21.4	38.0	30.0	5.8	35.8
2002	34.4	21.4	38.0	29.8	5.2	35.0
2003	34.4	21.4	38.0	29.0	6.5	35.5
2004	34.4	21.4	38.0	30.3	6.8	37.1
2005	34.4	21.4	38.0	17.3	9.6	26.9
2006	34.4	21.4	38.0	16.8	8.8	25.6
2007	34.4	21.4	38.0	12.9	10.0	22.9
2008	34.4	21.4	38.0	20.2	8.1	28.3
2009	34.4	21.4	38.0	24.0	7.7	31.7
2101	34.4	21.4	38.0	31.4	5.6	37.0
2102	34.4	21.4	38.0	30.1	6.5	36.6
2103	34.4	21.4	38.0	24.7	8.0	32.7
2104	34.4	21.4	38.0	31.5	4.4	35.9
2105	34.4	21.4	38.0	17.5	7.7	25.2
2106	34.4	21.4	38.0	17.7	7.5	25.2
2107	34.4	21.4	38.0	15.2	8.0	23.2
2108	34.4	21.4	38.0	29.0	6.0	35.0
2109	34.4	21.4	38.0	30.3	6.2	36.5

3.3 Energy

The minimum target score in BASIX to achieve energy usage compliance is 63%. The minimum score is achieved through the inclusion of the following;

3.3.1 Central Systems

- The central hot water systems are to be gas fired storage (manifolded) systems. All piping (internal and external to ringmain and supply riser) for the hot water systems are to include R1.0 (~38mm) insulation.
- The lift system in the development is to be gearless traction with VVVF motor.
- A photovoltaic system with a peak kW rated electrical output of 70kW is to be installed.

3.3.2 Common Areas

The BASIX requirements for the ventilation and lighting systems within the various common areas are listed in Tables 4 and 5 below:

Table 4 - Ventilation Systems

Common Area	Ventilation System Type	Efficiency Measure
Basement car park area (B7-B4)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan
B1 Coms/Telco Rooms	ventilation supply only	thermostatically controlled
B1 MSR	ventilation supply only	thermostatically controlled
B1 Substation	ventilation supply only	thermostatically controlled
B1 Residential Garbage Holding/Storage Room	ventilation exhaust only	n/a
B1 Bulky Goods Room	ventilation exhaust only	n/a
GL GHR	ventilation exhaust only	n/a
B3 EOT Hot Water Plant	ventilation supply only	none i.e., continuous
B2 Resi Pump Station	ventilation supply only	none i.e., continuous
B1 Grease Arrestors	ventilation exhaust only	none i.e., continuous
B1 Reused Rainwater Plant	ventilation supply only	none i.e., continuous
B1 Gas Plantroom	ventilation supply only	none i.e., continuous
B1 Cold Water Plantroom	ventilation supply only	none i.e., continuous
GL FCR	ventilation supply only	none i.e., continuous
B1 Stair Press Fan Room	ventilation exhaust only	none i.e., continuous
Mezz Water Cooled Chiller Plantroom	ventilation exhaust only	thermostatically controlled
Mezz Hot Water Plant	ventilation supply only	none i.e., continuous
L3 Stair Press Fan Room	ventilation exhaust only	none i.e., continuous
B1 Bulky Goods Room	ventilation exhaust only	none i.e., continuous
B1 Fire Hydrant/Sprinkler Pump Room	ventilation supply only	none i.e., continuous
L3 Communal Amenities	ventilation exhaust only	Time clock or BMC Controlled
Garden Store	no mechanical ventilation	n/a
GL Cleaner	no mechanical ventilation	n/a
B1 Car Park Exhaust Fan Room	ventilation exhaust only	none i.e., continuous
B1 Supply Air Plenum	ventilation supply only	none i.e., continuous
B1 Fire Hydrant/Sprinkler Pump Room	ventilation supply only	none i.e., continuous
GL F/M/ACC WC	ventilation exhaust only	Time clock or BMC Controlled
Resi Lobby (GL)	ventilation supply only	Time clock or BMC Controlled
Basement Resi Lobbies (B7-B4, B1)	ventilation supply only	Time clock or BMC Controlled
Open Resi Lobbies (L3-L21)	no mechanical ventilation	n/a

Table 5 - Lighting Systems

Common Area	Ventilation System Type	Efficiency Measure
Lift bank (No. 1)	light-emitting diode	connected to lift call button
Basement car park area (B7-B4)	light-emitting diode	time clock and motion sensors
B1 Coms/Telco Rooms	light-emitting diode	manual on / manual off
B1 MSR	light-emitting diode	manual on / manual off
B1 Substation	light-emitting diode	manual on / manual off
B1 Residential Garbage Holding/Storage Room	light-emitting diode	manual on / manual off
B1 Bulky Goods Room	light-emitting diode	manual on / manual off
GL GHR	light-emitting diode	manual on / manual off
B3 EOT Hot Water Plant	light-emitting diode	manual on / manual off
B2 Resi Pump Station	light-emitting diode	manual on / manual off
B1 Grease Arrestors	light-emitting diode	manual on / manual off
B1 Reused Rainwater Plant	light-emitting diode	manual on / manual off
B1 Gas Plantroom	light-emitting diode	manual on / manual off
B1 Cold Water Plantroom	light-emitting diode	manual on / manual off
GL FCR	light-emitting diode	manual on / manual off
B1 Stair Press Fan Room	light-emitting diode	manual on / manual off
Mezz Water Cooled Chiller Plantroom	light-emitting diode	manual on / manual off
Mezz Hot Water Plant	light-emitting diode	manual on / manual off
L3 Stair Press Fan Room	light-emitting diode	manual on / manual off
B1 Bulky Goods Room	light-emitting diode	manual on / manual off
B1 Fire Hydrant/Sprinkler Pump Room	light-emitting diode	manual on / manual off
L3 Communal Amenities	light-emitting diode	manual on / manual off
Garden Store	light-emitting diode	manual on / manual off
GL Cleaner	light-emitting diode	manual on / manual off
B1 Car Park Exhaust Fan Room	light-emitting diode	manual on / manual off
B1 Supply Air Plenum	light-emitting diode	manual on / manual off
B1 Fire Hydrant/Sprinkler Pump Room	light-emitting diode	manual on / manual off
GL F/M/ACC WC	light-emitting diode	manual on / manual off
Resi Lobby (GL)	light-emitting diode	time clock and motion sensors
Basement Resi Lobbies (B7-B4, B1)	light-emitting diode	time clock and motion sensors
Open Resi Lobbies (L3-L21)	light-emitting diode	time clock and motion sensors

3.3.3 Dwellings

- The bathroom exhaust fans within each residential dwelling are individual fans, ducted to façade/roof and controlled by manual on/off switches.
- The exhaust fans within each residential dwelling are individual fans, ducted to façade/roof and controlled by manual on/off switches.
- The laundry exhaust fans within each residential dwelling are individual fans, ducted to façade/roof and controlled by manual on/off switches.
- Single-phase air conditioning systems are to be installed within each residential dwelling in the living and bedroom areas. The system is to have a minimum Energy Efficiency Ratio of at least 3.0 – 3.5 for cooling and heating.
- The bedrooms, living room, kitchen, bathroom, laundry and hallways within each residential dwelling of the proposed development will be primarily lit by fluorescent or LED lamps.
- A gas cooktop and electric oven to be installed within each residential dwelling.
- Dishwasher units to be installed within each residential dwelling. The dishwasher units are to have an energy efficiency rating of at least 4.0 stars.

Note that if any of the above systems are to be substituted by less efficient systems, an update to the BASIX certificate would also be required.

CONCLUSION

A BASIX assessment of the proposed development Fiveways, located at Crows Nest has been carried out. The results of the assessment indicate that the development will satisfy the requirements of BASIX if all of the items outlined in this report are incorporated into the design of the development. If there are changes to the building design and construction a reassessment would be required.

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 1738270M_02

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

Secretary

Date of issue: Monday, 25 March 2024

To be valid, this certificate must be lodged within 3 months of the date of issue.



Project summary		
Project name	Fiveways, Crows Nest_02	
Street address	391/423 PACIFIC HIGHWAY CROWS NEST 2065	
Local Government Area	NORTH SYDNEY	
Plan type and plan number	Deposited Plan DP29672	
Lot no.	4	
Section no.	--	
No. of residential flat buildings	1	
Residential flat buildings: no. of dwellings	191	
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	 67	Target 63
Materials	 -12	Target n/a

Certificate Prepared by

Name / Company Name: Windtech Consultants

ABN (if applicable): 72050574037

Description of project

Project address	
Project name	Fiveways, Crows Nest_02
Street address	391/423 PACIFIC HIGHWAY CROWS NEST 2065
Local Government Area	NORTH SYDNEY
Plan type and plan number	Deposited Plan DP29672
Lot no.	4
Section no.	--
Project type	
No. of residential flat buildings	1
Residential flat buildings: no. of dwellings	191
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0
Site details	
Site area (m ²)	3200.9
Roof area (m ²)	1212
Non-residential floor area (m ²)	14594
Residential car spaces	190
Non-residential car spaces	134

Common area landscape		
Common area lawn (m²)	2760	
Common area garden (m²)	0	
Area of indigenous or low water use species (m²)	0	
Assessor details and thermal loads		
Assessor number	20887	
Certificate number	0009276110	
Climate zone	56	
Project score		
Water	 43	Target 40
Thermal Performance	 Pass	Target Pass
Energy	 67	Target 63
Materials	 -12	Target n/a

Description of project

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

Residential flat buildings - Building1, 191 dwellings, 22 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1001	3	104.20	3.6	0	0
1005	2	80.90	0	0	0
1009	1	52.50	0	0	0
1102	1	54.60	0	0	0
1106	2	84.30	0	0	0
1110	1	53.50	0	0	0
1203	2	83.80	0	0	0
1207	2	81.60	0	0	0
1211	2	87.40	0	0	0
1304	3	113.6	0	0	0
1308	2	81.20	0	0	0
1401	3	104.20	3.6	0	0
1405	2	80.90	0	0	0
1409	3	120.40	0	0	0
1504	3	113.60	0	0	0
1508	3	134.00	0	0	0
1603	2	83.90	0	0	0
1607	2	81.60	0	0	0
1702	2	88.10	0	0	0
1706	2	84.30	0	0	0
1801	2	81.30	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1002	1	54.60	0	0	0
1006	2	84.30	0	0	0
1010	1	53.50	0	0	0
1103	2	83.80	0	0	0
1107	2	81.60	0	0	0
1111	2	87.40	0	0	0
1204	3	113.6	0	0	0
1208	2	81.20	0	0	0
1301	1	104.20	3.6	0	0
1305	2	80.90	0	0	0
1309	1	52.50	0	0	0
1402	1	54.60	0	0	0
1406	2	84.30	0	0	0
1501	2	81.30	0	0	0
1505	2	80.90	0	0	0
1509	3	120.40	0	0	0
1604	3	113.60	0	0	0
1608	3	134.00	0	0	0
1703	2	83.90	0	0	0
1707	2	81.60	0	0	0
1802	2	88.10	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1003	2	83.80	0	0	0
1007	2	81.60	0	0	0
1011	2	87.40	0	0	0
1104	3	113.6	0	0	0
1108	2	81.20	0	0	0
1201	3	104.20	3.6	0	0
1205	2	80.90	0	0	0
1209	1	52.50	0	0	0
1302	1	54.60	0	0	0
1306	2	84.30	0	0	0
1310	1	53.50	0	0	0
1403	2	83.80	0	0	0
1407	2	81.60	0	0	0
1502	2	88.10	0	0	0
1506	2	84.30	0	0	0
1601	2	81.30	0	0	0
1605	2	80.90	0	0	0
1609	3	120.40	0	0	0
1704	3	113.60	0	0	0
1708	3	134.00	0	0	0
1803	2	83.90	0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1004	3	113.6	0	0	0
1008	2	81.20	0	0	0
1101	3	104.20	3.6	0	0
1105	2	80.90	0	0	0
1109	1	52.50	0	0	0
1202	1	54.60	0	0	0
1206	2	84.30	0	0	0
1210	1	53.50	0	0	0
1303	2	83.80	0	0	0
1307	2	81.60	0	0	0
1311	2	87.40	0	0	0
1404	3	113.6	0	0	0
1408	3	134.00	0	0	0
1503	2	83.90	0	0	0
1507	2	81.60	0	0	0
1602	2	88.10	0	0	0
1606	2	84.30	0	0	0
1701	2	81.30	0	0	0
1705	2	80.90	0	0	0
1709	3	120.40	0	0	0
1804	3	113.60	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)
1805	2	80.90	0	0	0
1809	3	120.40	0	0	0
1904	3	113.60	0	0	0
1908	3	134.00	0	0	0
2003	2	83.90	0	0	0
2007	2	81.60	0	0	0
2102	2	88.10	0	0	0
2106	2	84.30	0	0	0
301	2	81.20	0	0	0
401	2	81.30	0	0	0
405	1	59.00	0	0	0
409	2	81.20	0	0	0
501	2	81.30	0	0	0
505	1	59.00	0	0	0
509	2	81.20	0	0	0
601	2	81.30	0	0	0
605	1	59.00	0	0	0
609	2	81.20	0	0	0
701	3	104.20	3.6	0	0
705	1	59.00	0	0	0
709	2	81.20	0	0	0
801	3	104.20	3.6	0	0
805	1	59.00	0	0	0
809	2	81.20	0	0	0
901	3	104.20	3.6	0	0
905	2	80.90	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)
1806	2	84.30	0	0	0
1901	2	81.30	0	0	0
1905	2	80.90	0	0	0
1909	3	120.40	0	0	0
2004	3	113.60	0	0	0
2008	3	134.00	0	0	0
2103	2	83.90	0	0	0
2107	2	81.60	0	0	0
302	1	52.60	0	0	0
402	2	87.90	0	0	0
406	2	80.90	0	0	0
410	1	52.50	0	0	0
502	2	87.90	0	0	0
506	2	80.90	0	0	0
510	1	52.50	0	0	0
602	2	87.90	0	0	0
606	2	80.90	0	0	0
610	1	52.50	0	0	0
702	1	54.60	0	0	0
706	2	80.90	0	0	0
710	1	52.50	0	0	0
802	1	54.60	0	0	0
806	2	80.90	0	0	0
810	1	52.50	0	0	0
902	1	54.60	0	0	0
906	2	84.30	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)
1807	1	81.60	0	0	0
1902	2	88.10	0	0	0
1906	2	84.30	0	0	0
2001	2	81.30	0	0	0
2005	2	80.90	0	0	0
2009	3	120.40	0	0	0
2104	3	113.60	0	0	0
2108	3	134.00	0	0	0
303	1	53.50	0	0	0
403	2	83.80	0	0	0
407	2	84.30	0	0	0
411	1	53.50	0	0	0
503	2	83.80	0	0	0
507	2	84.30	0	0	0
511	1	53.50	0	0	0
603	2	83.80	0	0	0
607	2	84.30	0	0	0
611	1	53.50	0	0	0
703	2	83.80	0	0	0
707	2	84.30	0	0	0
711	1	53.50	0	0	0
803	2	83.80	0	0	0
807	2	84.30	0	0	0
811	1	53.50	0	0	0
903	2	83.80	0	0	0
907	2	81.60	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)
1808	3	134.00	0	0	0
1903	2	83.90	0	0	0
1907	2	81.60	0	0	0
2002	2	88.10	0	0	0
2006	2	84.30	0	0	0
2101	2	81.30	0	0	0
2105	2	80.90	0	0	0
2109	3	120.40	0	0	0
304	2	87.20	0	0	0
404	1	52.30	5.1	0	0
408	2	81.60	0	0	0
412	2	87.40	0	0	0
504	1	52.30	5.1	0	0
508	2	81.60	0	0	0
512	2	87.40	0	0	0
604	1	52.30	5.1	0	0
608	2	81.60	0	0	0
612	2	87.40	0	0	0
704	1	52.30	5.1	0	0
708	2	81.60	0	0	0
712	2	87.40	0	0	0
804	1	52.30	5.1	0	0
808	2	81.60	0	0	0
812	2	87.40	0	0	0
904	3	113.6	0	0	0
908	2	81.20	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)
909	1	52.50	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)
910	1	53.50	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)
911	2	87.40	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)
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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)	Common area	Floor area (m²)	Common area	Floor area (m²)
Lift bank (No. 1)	-	Basement car park area (B7-B4)	10586	B1 Coms/Telco Rooms	40
B1 MSR	73	B1 Substation	201	B1 Residential Garbage Holding/ Storage Room	64
B1 Bulky Goods Room	47	GL GHR	76	B3 EOT Hot Water Plant	9
B2 Resi Pump Station	9	B1 Grease Arrestors	70	B1 Reused Rainwater Plant	13
B1 Gas Plantroom	25	B1 Cold Water Plantroom	25	GL FCR	23
B1 Stair Press Fan Room	87	Mezz Water Cooled Chiller Plantroom	113	Mezz Hot Water Plant	34
L3 Stair Press Fan Room	8	B1 Fire Hydrant/Sprinkler Pump Room	40	L3 Communal Amenities	8
Garden Store	4	GL Cleaner	5	B1 Car Park Exhaust Fan Room	72
B1 Supply Air Plenum	92	B1 Fire Hydrant/Sprinkler Pump Room	40	GL F/M/ACC WC	113
Resi Lobby (GL)	114	Basement Resi Lobbies (B7-B4, B1)	225	Open Resi Lobbies (L3-L21)	4655

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building1

(a) Buildings

(i) Materials

(b) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance

(c) Common areas and central systems/facilities

(i) Water

(ii) Energy

2. Commitments for multi-dwelling housing

(a) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance

3. Commitments for single dwelling houses

(a) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance

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

(b) Common areas and central systems/facilities

(i) Water

(ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Building1

(a) Buildings

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

Floor types

Floor type	Area (m2)	Insulation	Low emissions option
floors above habitable rooms, frame: suspended concrete slab	16059	-	none

External wall types

External wall type	Construction type	Area (m2)	Low emissions option	Insulation
External wall type 1	framed (metal clad), frame: timber - untreated softwood	1200	none	-
External wall type 2	brick veneer, frame: timber - untreated softwood	2500	none	-
External wall type 3	concrete block/ plasterboard, frame: timber - untreated softwood	1000	none	-

Internal wall types			
Internal wall type	Construction type	Area (m2)	Insulation
Internal wall type 1	plasterboard, frame:timber - untreated softwood	3500	-

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

Ceiling and roof types			
Ceiling and roof type	Area (m²)	Roof Insulation	Ceiling Insulation
concrete - plasterboard internal, frame: no frame	16059	foil/sarking	polyester

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	1000	0	1000	0	0	0	0

(b) Dwellings

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

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 6 but ≤ 7.5 L/min)	4 star	5 star	5 star	-	3 star	4 star	-	-	-	-	-	-	-

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

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

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

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
404, 504, 604, 704, 804	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	yes
1004, 1011, 1104, 1111, 1204, 1211, 1304, 1311, 1404, 1409, 1504, 1509, 1604, 1609, 1704, 1709, 1804, 1809, 1904, 1909, 2004, 2009, 2104, 2109, 304, 405, 412, 505, 512, 605, 612, 705, 712, 805, 812, 904, 911	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
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	-	-	-	-	-	gas cooktop & electric oven	4 star	not specified	no	no

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

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.			

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
1001	28.0	8.8	36.800
1002	31.5	4.3	35.800
1003	30.5	5.4	35.900
1004	30.2	6.6	36.800
1005	11.7	3.8	15.500
1006	15.4	8.6	24.000
1007	11.8	9.9	21.700
1008	19.5	7.9	27.400
1010	25.5	8.9	34.400
1011	23.9	9.1	33.000
1101	28.1	8.7	36.800
1102	31.6	4.4	36.000
1103	30.6	5.4	36.000
1105	16.3	9.0	25.300
1106	15.6	8.9	24.500
1107	11.9	10.0	21.900
1108	19.6	7.9	27.500
1109	23.6	7.8	31.400
1110	25.6	8.9	34.500
1111	24.1	9.2	33.300
1201	28.4	8.6	37.000
1202	31.8	4.3	36.100
1203	30.9	5.4	36.300
1204	30.6	6.8	37.400
1205	16.6	9.1	25.700
1206	15.9	8.7	24.600

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
1207	12.0	10.1	22.100
1208	19.9	7.8	27.700
1209	23.8	7.8	31.600
1210	25.9	8.9	34.800
1211	24.4	9.0	33.400
1301	28.5	8.6	37.100
1302	32.0	4.7	36.700
1303	31.0	5.4	36.400
1304	30.8	6.5	37.300
1305	16.7	9.2	25.900
1306	16.0	8.8	24.800
1307	12.1	10.1	22.200
1308	20.4	7.3	27.700
1309	24.0	7.8	31.800
1310	26.0	8.2	34.200
1311	23.6	8.7	32.300
1401	28.6	8.6	37.200
1402	31.9	4.2	36.100
1403	31.1	5.4	36.500
1404	30.9	6.8	37.700
1405	16.8	9.4	26.200
1406	16.2	8.8	25.000
1407	12.2	10.1	22.300
1408	21.1	8.1	29.200
1409	23.8	7.7	31.500
1502	31.2	4.9	36.100
1504	31.0	6.8	37.800
1505	16.8	9.2	26.000
1506	16.3	8.8	25.100
1507	12.4	10.0	22.400
1508	20.3	8.0	28.300

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
1509	22.9	7.8	30.700
1601	30.0	5.5	35.500
1602	29.9	5.2	35.100
1603	31.3	5.4	36.700
1604	31.2	6.8	38.000
1605	17.0	9.3	26.300
1606	16.4	8.9	25.300
1607	12.5	10.0	22.500
1608	20.4	8.1	28.500
1609	23.0	8.2	31.200
1701	30.2	5.4	35.600
1702	30.1	5.2	35.300
1703	31.5	5.6	37.100
1704	31.4	6.5	37.900
1705	17.3	9.3	26.600
1706	16.6	8.8	25.400
1707	12.7	10.0	22.700
1709	23.3	7.9	31.200
1801	30.2	5.6	35.800
1803	31.5	5.8	37.300
1804	30.3	6.5	36.800
1805	17.3	9.4	26.700
1806	16.7	8.8	25.500
1807	12.8	10.0	22.800
1808	20.6	8	28.600
1809	23.4	7.9	31.300
1901	30.2	5.5	35.700
1903	31.2	5.9	37.100
1905	17.4	9.5	26.900
1906	16.8	9.0	25.800
1907	13.0	9.9	22.900

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
2001	30.0	5.8	35.800
2002	29.8	5.2	35.000
2003	29.0	6.5	35.500
2004	30.3	6.8	37.100
2005	17.3	9.6	26.900
2006	16.8	8.8	25.600
2007	12.9	10.0	22.900
2008	20.2	8.1	28.300
2009	24.0	7.7	31.700
2101	31.4	5.6	37.000
2102	30.1	6.5	36.600
2103	24.7	8.0	32.700
2104	31.5	4.4	35.900
2105	17.5	7.7	25.200
2106	17.7	7.5	25.200
2107	15.2	8.0	23.200
2108	29.0	6.0	35.000
2109	30.3	6.2	36.500
301	10	8.4	18.400
302	7.6	12.3	19.900
303	17.1	10.1	27.200
304	13.1	12.0	25.100
401	32.0	5.4	37.400
402	32.3	5.0	37.300
403	32.6	5.3	37.900
404	28.4	6.8	35.200
405	19.0	4.3	23.300
406	8.8	5.5	14.300
407	8.6	5.6	14.200
408	6.7	5.8	12.500
409	16.6	8.3	24.900

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
410	20.5	8.5	29.000
411	22.4	7.1	29.500
412	20.2	9.9	30.100
501	30.3	5.7	36.000
502	28.5	5.6	34.100
503	30.5	5.1	35.600
504	28.7	6.7	35.400
505	15.0	4.7	19.700
506	8.2	4.4	12.600
507	7.7	4.3	12.000
508	6.8	5	11.800
509	18.2	8.0	26.200
510	22.0	8.1	30.100
511	24.0	8.6	32.600
512	22.6	9.3	31.900
602	28.9	5.3	34.200
603	30.8	5.2	36.000
604	28.2	6.7	34.900
605	15.4	4.5	19.900
606	8.4	4.3	12.700
607	7.9	4.3	12.200
608	6.5	4.9	11.400
609	18.6	7.9	26.500
610	22.4	8.0	30.400
611	24.4	8.9	33.300
612	22.9	9.3	32.200
702	31.1	4.2	35.300
703	30.9	5.2	36.100
704	28.5	6.9	35.400
705	15.7	4.4	20.100
706	8.6	4.3	12.900

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
707	8.0	4.2	12.200
708	6.6	4.9	11.500
709	18.9	8.0	26.900
710	22.7	8.0	30.700
711	24.7	8.8	33.500
712	23.2	9.2	32.400
802	31.0	4.1	35.100
804	30.9	6.9	37.800
805	15.4	4.3	19.700
806	8.8	4.3	13.100
807	8.3	4.2	12.500
808	6.8	5.3	12.100
809	19.1	7.9	27.000
810	23.0	7.8	30.800
811	25.0	8.9	33.900
812	23.5	9.1	32.600
901	27.8	8.6	36.400
902	31.2	4.1	35.300
903	30.2	5.2	35.400
904	31.1	6.8	37.900
905	11.5	3.7	15.200
906	11.0	3.8	14.800
907	8.7	4.6	13.300
908	19.2	7.9	27.100
909	23.2	7.8	31.000
910	25.2	8.9	34.100
911	23.6	8.9	32.500
1009, 1909	23.4	7.8	31.200
1104, 1904	30.4	6.6	37.000
1501, 601	30.7	5.5	36.200
1503, 803	31.2	5.4	36.600

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)	Area adjusted total load (in MJ/m ² /yr)
1708, 1908	20.6	8.0	28.600
1802, 1902	30.2	5.1	35.300
All other dwellings	27.6	8.4	36.000

(c) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	20000	To collect run-off from at least: - 150 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 2760 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Fire sprinkler system (No. 1)	-	-	-
Fire sprinkler system (No. 2)	-	-	-

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

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/ BMS
Lift bank (No. 1)	-	-	light-emitting diode	connected to lift call button	no
Basement car park area (B7-B4)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	time clock and motion sensors	no
B1 Coms/Telco Rooms	ventilation supply only	thermostatically controlled	light-emitting diode	manual on / manual off	no
B1 MSR	ventilation supply only	thermostatically controlled	light-emitting diode	manual on / manual off	no
B1 Substation	ventilation supply only	thermostatically controlled	light-emitting diode	manual on / manual off	no
B1 Residential Garbage Holding/Storage Room	ventilation exhaust only	-	light-emitting diode	manual on / manual off	no
B1 Bulky Goods Room	ventilation exhaust only	-	light-emitting diode	manual on / manual off	no
GL GHR	ventilation exhaust only	-	light-emitting diode	manual on / manual off	no
B3 EOT Hot Water Plant	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B2 Resi Pump Station	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Grease Arrestors	ventilation exhaust only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Reused Rainwater Plant	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Gas Plantroom	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Cold Water Plantroom	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
GL FCR	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Stair Press Fan Room	ventilation exhaust only	none i.e., continuous	light-emitting diode	manual on / manual off	no
Mezz Water Cooled Chiller Plantroom	ventilation supply only	thermostatically controlled	light-emitting diode	manual on / manual off	no
Mezz Hot Water Plant	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/ BMS
L3 Stair Press Fan Room	ventilation exhaust only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Fire Hydrant/Sprinkler Pump Room	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
L3 Communal Amenities	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	manual on / manual off	no
Garden Store	no mechanical ventilation	time clock or BMS controlled	light-emitting diode	manual on / manual off	no
GL Cleaner	no mechanical ventilation	-	light-emitting diode	manual on / manual off	no
B1 Car Park Exhaust Fan Room	ventilation exhaust only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Supply Air Plenum	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
B1 Fire Hydrant/Sprinkler Pump Room	ventilation supply only	none i.e., continuous	light-emitting diode	manual on / manual off	no
GL F/M/ACC WC	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	manual on / manual off	no
Resi Lobby (GL)	ventilation supply only	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	no
Basement Resi Lobbies (B7-B4, B1)	ventilation supply only	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	no
Open Resi Lobbies (L3-L21)	no mechanical ventilation	-	light-emitting diode	time clock and motion sensors	no

Central energy systems	Type	Specification
Lift bank (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 25 number of levels from the bottom of the lift shaft to the top of the lift shaft: 30 number of lifts: 3 lift load capacity: >= 1001 kg but <= 1500kg
Central hot water system (No. 1)	gas-fired storage (manifolded)	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)

2. Commitments for multi-dwelling housing

(a) Dwellings

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

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

3. Commitments for single dwelling houses

(a) Dwellings

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

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

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	4 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): 70.00 peak kW
Other	-	-

Notes

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

Legend

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

Nationwide House Energy Rating Scheme®

Class 2 Summary

NatHERS® Certificate No. 0009276110

Generated on 25 Mar 2024 using BERS Pro v5.1.6 (3.22)

Property

Address 391-423 Pacific Hwy ,
CROWS NEST , NSW , 2065
Lot/DP Lot DP 29672
NatHERS Climate Zone 56 Mascot (Sydney Airport)



Accredited assessor

Name Thien Huynh
Business name Windtech Consultants PTY LTD
Email Thien@windtechglobal.com
Phone (02) 9503 0307
Accreditation No. 20887
Assessor Accrediting Organisation
ABSA

Verification

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

Thermal performance Star rating



Average Rating

**NATIONWIDE
HOUSE**
ENERGY RATING SCHEME®

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

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

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

Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled block average	22.3	7.2
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/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
0009274192-02	301	10.0 (N/A)	8.4 (N/A)	18.4	8.3	0
0009274226-01	302	7.6 (N/A)	12.3 (N/A)	19.9	8.1	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
0009274242-01	303	17.1 (N/A)	10.1 (N/A)	27.2	7.3	0
0009274283-01	304	13.1 (N/A)	12.0 (N/A)	25.1	7.4	0
0009274317-01	401	32.0 (N/A)	5.4 (N/A)	37.4	6.1	0
0009274184-01	402	32.3 (N/A)	5.0 (N/A)	37.4	6.1	0
0009274218-01	403	32.6 (N/A)	5.3 (N/A)	37.9	6	0
0009274259-01	404	28.4 (N/A)	6.8 (N/A)	35.2	6.4	0
0009274275-01	405	19.0 (N/A)	4.3 (N/A)	23.2	7.7	0
0009274309-01	406	8.8 (N/A)	5.5 (N/A)	14.3	8.7	0
0009274200-01	407	8.6 (N/A)	5.6 (N/A)	14.2	8.7	0
0009274234-01	408	6.7 (N/A)	5.8 (N/A)	12.4	8.9	0
0009274267-01	409	16.6 (N/A)	8.3 (N/A)	25.0	7.5	0
0009274291-01	410	20.5 (N/A)	8.5 (N/A)	28.9	7.1	0
0009274325-01	411	22.4 (N/A)	7.1 (N/A)	29.5	7.1	0
0009274358-01	412	20.2 (N/A)	9.9 (N/A)	30.2	6.9	0
0009274390-01	501	30.3 (N/A)	5.7 (N/A)	36.0	6.3	0
0009274424-01	502	28.5 (N/A)	5.6 (N/A)	34.0	6.5	0
0009274457-01	503	30.5 (N/A)	5.1 (N/A)	35.6	6.3	0
0009274481-01	504	28.7 (N/A)	6.7 (N/A)	35.5	6.3	0
0009274515-01	505	15.0 (N/A)	4.7 (N/A)	19.6	8.1	0
0009274549-01	506	8.2 (N/A)	4.4 (N/A)	12.6	8.9	0
0009274572-01	507	7.7 (N/A)	4.3 (N/A)	12.0	9	0
0009274606-01	508	6.8 (N/A)	5.0 (N/A)	11.8	9	0
0009274648-01	509	18.2 (N/A)	8.0 (N/A)	26.2	7.4	0
0009274671-01	510	22.0 (N/A)	8.1 (N/A)	30.1	6.9	0
0009274713-01	511	24.0 (N/A)	8.6 (N/A)	32.5	6.7	0
0009274747-01	512	22.6 (N/A)	9.3 (N/A)	31.9	6.8	0
0009274770-01	601	30.7 (N/A)	5.5 (N/A)	36.1	6.2	0
0009274804-01	602	28.9 (N/A)	5.3 (N/A)	34.2	6.4	0
0009274838-01	603	30.8 (N/A)	5.2 (N/A)	35.9	6.3	0
0009274861-01	604	28.2 (N/A)	6.7 (N/A)	34.9	6.4	0
0009274903-01	605	15.4 (N/A)	4.5 (N/A)	19.9	8.1	0
0009274937-01	606	8.4 (N/A)	4.3 (N/A)	12.8	8.9	0
0009274960-01	607	7.9 (N/A)	4.3 (N/A)	12.1	8.9	0
0009274994-01	608	6.5 (N/A)	4.9 (N/A)	11.4	9.1	0



<u>0009275033-01</u>	609	18.6 (N/A)	7.9 (N/A)	26.5	7.4	0
<u>0009275066-01</u>	610	22.4 (N/A)	8.0 (N/A)	30.4	6.9	0
<u>0009275116-01</u>	611	24.4 (N/A)	8.9 (N/A)	33.3	6.6	0
<u>0009275140-01</u>	612	22.9 (N/A)	9.3 (N/A)	32.2	6.7	0
<u>0009275181-01</u>	701	27.6 (N/A)	8.4 (N/A)	36.0	6.3	0
<u>0009275215-01</u>	702	31.1 (N/A)	4.2 (N/A)	35.2	6.4	0
<u>0009275231-01</u>	703	30.9 (N/A)	5.2 (N/A)	36.0	6.3	0
<u>0009275272-01</u>	704	28.5 (N/A)	6.9 (N/A)	35.4	6.3	0
<u>0009275298-01</u>	705	15.7 (N/A)	4.4 (N/A)	20.1	8.1	0
<u>0009275322-01</u>	706	8.6 (N/A)	4.3 (N/A)	12.9	8.9	0
<u>0009275363-01</u>	707	8.0 (N/A)	4.2 (N/A)	12.3	8.9	0
<u>0009275397-01</u>	708	6.6 (N/A)	4.9 (N/A)	11.6	9.1	0
<u>0009275439-01</u>	709	18.9 (N/A)	8.0 (N/A)	26.8	7.3	0
<u>0009275462-01</u>	710	22.7 (N/A)	8.0 (N/A)	30.7	6.9	0
<u>0009275496-01</u>	711	24.7 (N/A)	8.8 (N/A)	33.6	6.6	0
<u>0009275520-01</u>	712	23.2 (N/A)	9.2 (N/A)	32.4	6.7	0
<u>0009275561-01</u>	801	27.6 (N/A)	8.4 (N/A)	36.0	6.3	0
<u>0009275595-01</u>	802	31.0 (N/A)	4.1 (N/A)	35.1	6.4	0
<u>0009275629-01</u>	803	31.2 (N/A)	5.4 (N/A)	36.5	6.2	0
<u>0009275652-01</u>	804	30.9 (N/A)	6.9 (N/A)	37.8	6	0
<u>0009275686-01</u>	805	15.3 (N/A)	4.3 (N/A)	19.6	8.1	0
<u>0009275710-01</u>	806	8.8 (N/A)	4.3 (N/A)	13.1	8.9	0
<u>0009275751-01</u>	807	8.3 (N/A)	4.2 (N/A)	12.5	8.9	0
<u>0009275785-01</u>	808	6.8 (N/A)	5.3 (N/A)	12.0	9	0
<u>0009275827-01</u>	809	19.1 (N/A)	7.9 (N/A)	27.0	7.3	0
<u>0009275868-01</u>	810	23.0 (N/A)	7.8 (N/A)	30.8	6.9	0
<u>0009275892-01</u>	811	25.0 (N/A)	8.9 (N/A)	33.9	6.5	0
<u>0009275926-01</u>	812	23.5 (N/A)	9.1 (N/A)	32.6	6.7	0
<u>0009275942-01</u>	901	27.8 (N/A)	8.6 (N/A)	36.4	6.2	0
<u>0009275967-01</u>	902	31.2 (N/A)	4.1 (N/A)	35.3	6.3	0
<u>0009275983-01</u>	903	30.2 (N/A)	5.2 (N/A)	35.4	6.3	0
<u>0009278375-01</u>	904	31.1 (N/A)	6.8 (N/A)	37.9	6	0
<u>0009276023-01</u>	905	11.5 (N/A)	3.7 (N/A)	15.3	8.6	0
<u>0009276049-01</u>	906	11.0 (N/A)	3.8 (N/A)	14.9	8.6	0
<u>0009276064-01</u>	907	8.7 (N/A)	4.6 (N/A)	13.4	8.8	0
<u>0009276072-01</u>	908	19.2 (N/A)	7.9 (N/A)	27.1	7.3	0
<u>0009276080-01</u>	909	23.2 (N/A)	7.8 (N/A)	31.0	6.9	0
<u>0009276098-01</u>	910	25.2 (N/A)	8.9 (N/A)	34.0	6.5	0



<u>0009274341-01</u>	911	23.6 (N/A)	8.9 (N/A)	32.6	6.7	0
<u>0009274374-01</u>	1001	28.0 (N/A)	8.8 (N/A)	36.8	6.2	0
<u>0009274408-01</u>	1002	31.5 (N/A)	4.3 (N/A)	35.8	6.3	0
<u>0009274432-01</u>	1003	30.5 (N/A)	5.4 (N/A)	35.9	6.3	0
<u>0009278383-01</u>	1004	30.2 (N/A)	6.6 (N/A)	36.8	6.2	0
<u>0009274499-01</u>	1005	11.7 (N/A)	3.8 (N/A)	15.6	8.6	0
<u>0009274531-01</u>	1006	15.4 (N/A)	8.6 (N/A)	24.0	7.6	0
<u>0009274564-01</u>	1007	11.8 (N/A)	9.9 (N/A)	21.7	7.9	0
<u>0009274598-01</u>	1008	19.5 (N/A)	7.9 (N/A)	27.4	7.3	0
<u>0009274630-01</u>	1009	23.4 (N/A)	7.8 (N/A)	31.3	6.8	0
<u>0009274663-01</u>	1010	25.5 (N/A)	8.9 (N/A)	34.3	6.4	0
<u>0009274697-01</u>	1011	23.9 (N/A)	9.1 (N/A)	33.0	6.6	0
<u>0009274721-01</u>	1101	28.1 (N/A)	8.7 (N/A)	36.9	6.1	0
<u>0009274754-01</u>	1102	31.6 (N/A)	4.4 (N/A)	35.9	6.3	0
<u>0009274788-01</u>	1103	30.6 (N/A)	5.4 (N/A)	36.0	6.3	0
<u>0009278417-01</u>	1104	30.4 (N/A)	6.6 (N/A)	37.0	6.1	0
<u>0009274846-01</u>	1105	16.3 (N/A)	9.0 (N/A)	25.4	7.4	0
<u>0009274887-01</u>	1106	15.6 (N/A)	8.9 (N/A)	24.5	7.6	0
<u>0009274911-01</u>	1107	11.9 (N/A)	10.0 (N/A)	21.9	7.9	0
<u>0009274945-01</u>	1108	19.6 (N/A)	7.9 (N/A)	27.5	7.3	0
<u>0009274986-01</u>	1109	23.6 (N/A)	7.8 (N/A)	31.4	6.8	0
<u>0009275017-01</u>	1110	25.6 (N/A)	8.9 (N/A)	34.5	6.4	0
<u>0009275041-01</u>	1111	24.1 (N/A)	9.2 (N/A)	33.2	6.6	0
<u>0009275074-01</u>	1201	28.4 (N/A)	8.6 (N/A)	37.0	6.1	0
<u>0009275090-01</u>	1202	31.8 (N/A)	4.3 (N/A)	36.2	6.2	0
<u>0009275124-01</u>	1203	30.9 (N/A)	5.4 (N/A)	36.3	6.2	0
<u>0009278441-01</u>	1204	30.6 (N/A)	6.8 (N/A)	37.4	6.1	0
<u>0009275173-01</u>	1205	16.6 (N/A)	9.1 (N/A)	25.7	7.4	0
<u>0009275207-01</u>	1206	15.9 (N/A)	8.7 (N/A)	24.6	7.6	0
<u>0009275249-01</u>	1207	12.0 (N/A)	10.1 (N/A)	22.1	7.9	0
<u>0009275264-01</u>	1208	19.9 (N/A)	7.8 (N/A)	27.7	7.2	0
<u>0009275306-01</u>	1209	23.8 (N/A)	7.8 (N/A)	31.6	6.8	0
<u>0009275330-01</u>	1210	25.9 (N/A)	8.9 (N/A)	34.8	6.4	0
<u>0009275371-01</u>	1211	24.4 (N/A)	9.0 (N/A)	33.4	6.6	0
<u>0009275405-01</u>	1301	28.5 (N/A)	8.6 (N/A)	37.1	6.1	0
<u>0009275421-01</u>	1302	32.0 (N/A)	4.7 (N/A)	36.7	6.2	0
<u>0009275454-01</u>	1303	31.0 (N/A)	5.4 (N/A)	36.4	6.2	0
<u>0009278474-01</u>	1304	30.8 (N/A)	6.5 (N/A)	37.3	6.1	0



<u>0009275512-01</u>	1305	16.7 (N/A)	9.2 (N/A)	25.9	7.4	0
<u>0009275546-01</u>	1306	16.0 (N/A)	8.8 (N/A)	24.8	7.5	0
<u>0009275579-01</u>	1307	12.1 (N/A)	10.1 (N/A)	22.2	7.9	0
<u>0009275603-01</u>	1308	20.4 (N/A)	7.3 (N/A)	27.8	7.2	0
<u>0009275645-01</u>	1309	24.0 (N/A)	7.8 (N/A)	31.8	6.8	0
<u>0009275678-01</u>	1310	26.0 (N/A)	8.2 (N/A)	34.2	6.4	0
<u>0009275702-01</u>	1311	23.6 (N/A)	8.7 (N/A)	32.4	6.7	0
<u>0009275736-01</u>	1401	28.6 (N/A)	8.6 (N/A)	37.2	6.1	0
<u>0009275769-01</u>	1402	31.9 (N/A)	4.2 (N/A)	36.1	6.2	0
<u>0009275793-01</u>	1403	31.1 (N/A)	5.4 (N/A)	36.5	6.2	0
<u>0009278359-01</u>	1404	30.9 (N/A)	6.8 (N/A)	37.7	6	0
<u>0009275850-01</u>	1405	16.8 (N/A)	9.4 (N/A)	26.2	7.4	0
<u>0009275884-01</u>	1406	16.2 (N/A)	8.8 (N/A)	25.0	7.5	0
<u>0009275918-01</u>	1407	12.2 (N/A)	10.1 (N/A)	22.3	7.8	0
<u>0009275934-01</u>	1408	21.1 (N/A)	8.1 (N/A)	29.2	7.1	0
<u>0009275959-01</u>	1409	23.8 (N/A)	7.7 (N/A)	31.6	6.8	0
<u>0009275975-01</u>	1501	30.7 (N/A)	5.5 (N/A)	36.2	6.2	0
<u>0009275991-01</u>	1502	31.2 (N/A)	4.9 (N/A)	36.2	6.2	0
<u>0009276015-01</u>	1503	31.2 (N/A)	5.4 (N/A)	36.6	6.2	0
<u>0009278391-01</u>	1504	31.0 (N/A)	6.8 (N/A)	37.8	6	0
<u>0009276056-01</u>	1505	16.8 (N/A)	9.2 (N/A)	26.1	7.4	0
<u>0009274333-01</u>	1506	16.3 (N/A)	8.8 (N/A)	25.1	7.4	0
<u>0009274366-01</u>	1507	12.4 (N/A)	10.0 (N/A)	22.3	7.8	0
<u>0009274382-01</u>	1508	20.3 (N/A)	8.0 (N/A)	28.4	7.2	0
<u>0009274416-01</u>	1509	22.9 (N/A)	7.8 (N/A)	30.7	6.9	0
<u>0009274440-01</u>	1601	30.0 (N/A)	5.5 (N/A)	35.6	6.3	0
<u>0009274473-01</u>	1602	29.9 (N/A)	5.2 (N/A)	35.1	6.4	0
<u>0009274507-01</u>	1603	31.3 (N/A)	5.4 (N/A)	36.8	6.2	0
<u>0009278425-01</u>	1604	31.2 (N/A)	6.8 (N/A)	38.0	6	0
<u>0009274556-01</u>	1605	17.0 (N/A)	9.3 (N/A)	26.3	7.4	0
<u>0009274580-01</u>	1606	16.4 (N/A)	8.9 (N/A)	25.4	7.4	0
<u>0009274614-01</u>	1607	12.5 (N/A)	10.0 (N/A)	22.5	7.8	0
<u>0009274622-01</u>	1608	20.4 (N/A)	8.1 (N/A)	28.4	7.2	0
<u>0009274655-01</u>	1609	23.0 (N/A)	8.2 (N/A)	31.2	6.9	0
<u>0009274689-01</u>	1701	30.2 (N/A)	5.4 (N/A)	35.7	6.3	0
<u>0009274705-01</u>	1702	30.1 (N/A)	5.2 (N/A)	35.3	6.3	0
<u>0009274739-01</u>	1703	31.5 (N/A)	5.6 (N/A)	37.1	6.1	0
<u>0009278458-01</u>	1704	31.4 (N/A)	6.5 (N/A)	37.9	6	0



<u>0009274796-01</u>	1705	17.3 (N/A)	9.3 (N/A)	26.5	7.4	0
<u>0009274820-01</u>	1706	16.6 (N/A)	8.8 (N/A)	25.4	7.4	0
<u>0009274853-01</u>	1707	12.7 (N/A)	10.0 (N/A)	22.7	7.8	0
<u>0009274879-01</u>	1708	20.6 (N/A)	8.0 (N/A)	28.6	7.1	0
<u>0009274895-01</u>	1709	23.3 (N/A)	7.9 (N/A)	31.1	6.9	0
<u>0009274929-01</u>	1801	30.2 (N/A)	5.6 (N/A)	35.8	6.3	0
<u>0009274952-01</u>	1802	30.2 (N/A)	5.1 (N/A)	35.3	6.3	0
<u>0009274978-01</u>	1803	31.5 (N/A)	5.8 (N/A)	37.3	6.1	0
<u>0009278482-01</u>	1804	30.3 (N/A)	6.5 (N/A)	36.8	6.2	0
<u>0009275025-01</u>	1805	17.3 (N/A)	9.4 (N/A)	26.7	7.3	0
<u>0009275058-01</u>	1806	16.7 (N/A)	8.8 (N/A)	25.5	7.4	0
<u>0009275082-01</u>	1807	12.8 (N/A)	10.0 (N/A)	22.8	7.8	0
<u>0009275108-01</u>	1808	20.6 (N/A)	8.0 (N/A)	28.6	7.1	0
<u>0009275132-01</u>	1809	23.4 (N/A)	7.9 (N/A)	31.2	6.9	0
<u>0009275165-01</u>	1901	30.2 (N/A)	5.5 (N/A)	35.7	6.3	0
<u>0009275199-01</u>	1902	30.2 (N/A)	5.1 (N/A)	35.3	6.3	0
<u>0009275223-01</u>	1903	31.2 (N/A)	5.9 (N/A)	37.1	6.1	0
<u>0009278367-01</u>	1904	30.4 (N/A)	6.6 (N/A)	37.0	6.1	0
<u>0009275280-01</u>	1905	17.4 (N/A)	9.5 (N/A)	26.9	7.3	0
<u>0009275314-01</u>	1906	16.8 (N/A)	9.0 (N/A)	25.8	7.4	0
<u>0009275348-01</u>	1907	13.0 (N/A)	9.9 (N/A)	22.9	7.8	0
<u>0009275355-01</u>	1908	20.6 (N/A)	8.0 (N/A)	28.6	7.1	0
<u>0009275389-01</u>	1909	23.4 (N/A)	7.8 (N/A)	31.2	6.9	0
<u>0009275413-01</u>	2001	30.0 (N/A)	5.8 (N/A)	35.8	6.3	0
<u>0009275447-01</u>	2002	29.8 (N/A)	5.2 (N/A)	35.0	6.4	0
<u>0009275470-01</u>	2003	29.0 (N/A)	6.5 (N/A)	35.5	6.3	0
<u>0009278433-01</u>	2004	30.3 (N/A)	6.8 (N/A)	37.1	6.1	0
<u>0009275538-01</u>	2005	17.3 (N/A)	9.6 (N/A)	26.9	7.3	0
<u>0009275553-01</u>	2006	16.8 (N/A)	8.8 (N/A)	25.6	7.4	0
<u>0009275587-01</u>	2007	12.9 (N/A)	10.0 (N/A)	22.9	7.8	0
<u>0009275611-01</u>	2008	20.2 (N/A)	8.1 (N/A)	28.3	7.2	0
<u>0009275637-01</u>	2009	23.2 (N/A)	7.9 (N/A)	31.1	6.9	0
<u>0009275660-01</u>	2101	31.4 (N/A)	5.6 (N/A)	37.0	6.1	0
<u>0009275694-01</u>	2102	30.1 (N/A)	6.5 (N/A)	36.6	6.2	0
<u>0009275728-01</u>	2103	24.7 (N/A)	8.0 (N/A)	32.7	6.7	0
<u>0009278466-01</u>	2104	31.5 (N/A)	4.4 (N/A)	35.9	6.3	0
<u>0009275777-01</u>	2105	17.5 (N/A)	7.7 (N/A)	25.2	7.4	0
<u>0009275801-01</u>	2106	17.7 (N/A)	7.5 (N/A)	25.2	7.4	0



<u>0009275835-01</u>	2107	15.2 (N/A)	8.0 (N/A)	23.2	7.7	0
<u>0009275843-01</u>	2108	29.0 (N/A)	6.0 (N/A)	35.0	6.4	0
<u>0009275876-01</u>	2109	30.3 (N/A)	6.2 (N/A)	36.4	6.2	0

Explanatory notes

About this ratings

The thermal performance star rating in this Certificate is the average rating of all NCC Class 2 dwellings in an apartment block. Individual unit ratings are listed in the 'Summary of all dwellings' section of this Certificate.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the energy loads and societal cost. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads.

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

Accredited Assessors

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

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

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

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

Disclaimer

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

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

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

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