BASIX REPORT

2 MANDALA PARADE. CASTLE HILL

WF350-02F03(REV2)- BASIX REPORT

APRIL 22, 2022

Prepared for:

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DOCUMENT CONTROL

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March 29, 2022	Updated results.	1	TH/CT/BM	SWR	TH
April 22, 2022	Updated results.	2	TH/CT/BM	SWR	TH

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1 INTRODUCTION

This report presents the results of a detailed BASIX assessment of the various residential dwellings within the proposed development located at 2 Mandala Parade, Castle Hill. 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 July 2021.

2 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 25% to pass this section.

3 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 10,000L capacity is to be included. Water is to be provided from at least 500m2 of the non-trafficable roof area. Water from the tank is to be used for all public landscaping (total area of 3,710m^2) within the development site.
- At least 1,000m^2 of the public landscaping is to be of an indigenous or low water use species.
- The common area showerheads are to have a water efficiency rating of at least 4.0 Stars (>6.0 but <=7.5L/min).
- 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 (>6.0 but <=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.
- Dishwasher units are to be installed within each residential dwelling. The dishwasher units are 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 6.0 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.

In BASIX, the required weighted averaged maximum heating and cooling loads of the entire proposed development are 39.9 MJ/m2/year for heating and 25.9 MJ/m2/year for cooling and for each individual dwelling a maximum heating and cooling load of 45.4 MJ/m2/year for heating and 29.5 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/Concrete System
Party (the wall between dwelling and the dwelling)	Hebel Panel System
Enclosed Lobby (the wall between enclosed lobby and the dwelling)	Hebel Panel System
Outdoor Lobby (the wall between outdoor lobby and the dwelling)	Hebel Panel System

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

- The floor coverings will be following:
    - Parquetry to the living areas
    - Carpets to the bedrooms
    - Tiles to the kitchen
    - Tiles to the wet areas
    - Parquetry to the hallways
    - Carpet to the study rooms
- The floors will be concrete slabs.
- The ceilings will be plasterboard (or concrete above plasterboard etc.).
- The roof will be concrete (or waterproof membrane).
- Draught seals are to be installed to the windows and doors.
- Sealed exhaust fans are assumed in the kitchen and wet areas.
- No ceiling penetration due to recessed luminaries has been assumed as the lighting/ceiling plan is yet to be determined and is not indicated on the drawing set. A reassessment should be undertaken at a later stage once the lighting/ceiling plan is finalised.
- 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.
    - Note that for 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.

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 climate zone selected for analysis was Climate Zone 56. The result of the analysis, indicated in Tables 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 Tables 2 below:

Table 2a Required Treatments – Building A

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)
208	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
209	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1.5
210	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1.5
211	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
212	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	1
213	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	1.5
214	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
215	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
216	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
308	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	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)
309	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
310	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
311	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
312	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
313	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
314	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	1
315	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
316	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
317	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
408	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
409	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
410	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
411	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
412	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
413	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
414	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
415	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
416	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
417	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
508	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
509	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
510	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
511	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
512	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
513	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	2.5	-
514	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	2	2.5	-
515	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
516	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
517	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
608	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
609	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
610	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
611	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
612	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
613	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
614	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
615	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
708	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
709	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
710	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
711	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
712	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
713	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
714	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
715	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
807	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	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)
808	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
809	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
810	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
811	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
812	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
813	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
907	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
908	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
909	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
910	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
911	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
912	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
913	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1007	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1008	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1009	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1010	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1011	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1012	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1013	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1107	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1108	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1109	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-

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1110	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1111	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1112	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1113	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1207	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1208	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1209	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1210	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1211	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1212	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1213	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1307	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1308	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1309	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1310	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1311	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1312	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1313	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	2	-	-
1407	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1408	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1409	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1410	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1411	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-

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1412	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1413	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1507	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1508	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1509	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1510	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1511	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
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1513	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1607	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
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1609	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1610	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1611	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-
1612	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1613	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1707	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1708	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1709	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1710	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1711	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
1806	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	-	-
1807	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
1808	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1809	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1810	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1901	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	2	2.5	-
1902	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1903	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1904	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-
1905	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-

Table 2b Required Treatments – Building B

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)
201	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
202	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
203	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
204	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
205	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
206	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	1
207	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	1
301	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
302	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
303	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
304	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
305	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
306	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	1
307	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
401	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
402	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
403	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
404	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
405	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
406	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
407	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
501	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
502	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
503	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
504	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
505	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
506	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
507	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
601	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
602	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
603	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
604	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
605	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
606	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
607	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
701	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
702	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
703	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
704	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
705	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
706	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
707	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
801	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
802	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
803	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
804	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
805	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
806	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
901	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
902	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
903	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
904	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
905	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
906	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1001	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1002	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1003	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1004	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1005	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1006	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1101	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1102	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1103	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1104	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1105	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1106	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1201	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1202	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
1203	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1204	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1205	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1206	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1301	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1302	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1303	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1304	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1305	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1306	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1401	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1402	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1403	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1404	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1405	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1406	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1501	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1502	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1503	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1504	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1505	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1506	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1601	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
1602	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1603	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1604	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1605	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1606	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1701	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1702	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1703	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1704	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1705	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1706	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1801	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1802	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-
1803	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1804	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-
1805	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-

Table 2c Required Treatments – Building C

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)
318	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	1
319	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
320	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
321	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	1
322	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	1
323	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	1.5
324	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	2.5	1.5
325	**East-facing Bedroom 1 Window is to be 10% Operable** Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	1.5
326	**East-facing Bedroom 1 Window is to be 10% Operable** Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	1.5
327	**East-facing Bedroom 1 Window is to be 10% Operable** Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	1.5
328	**East-facing Bedroom 1 Window is to be 10% Operable** Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	1.5
418	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
419	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
420	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
421	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
422	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	2.5	-
423	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
518	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	1
519	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-

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)
520	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
521	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
522	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	1
523	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
616	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
617	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
618	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
619	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
620	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
621	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
716	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
717	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
718	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
719	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
720	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
721	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
814	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
815	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	2.5	-
816	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
817	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	2.5	-
818	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
819	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
914	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-

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)
915	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	1.5
916	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
917	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
918	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1014	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1015	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1016	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1017	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1018	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1114	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1115	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1116	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1117	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1118	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1214	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1215	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1216	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1217	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1218	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1314	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1315	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1316	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1317	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-

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)
1318	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1414	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1415	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1416	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1417	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1418	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1514	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1515	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1516	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1517	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1518	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1614	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1615	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1616	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1617	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1618	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1712	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1713	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1714	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1715	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1716	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1811	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1812	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-

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)
1813	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1814	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1815	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
1906	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	1	-	-
1907	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1908	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	-	-
1909	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	-	-
1910	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	-	-
2001	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	1	2.5	-
2002	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	2.5	-
2003	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	1	2.5	-
2004	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	1	2.5	-
2005	Group A: U-value = 3.10, SHGC = 0.27 Group B: U-value = 3.10, SHGC = 0.27	1	2.5	-

Table 2d Required Treatments – Building D

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)
329	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	1
330	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-
331	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
332	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
333	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
424	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	2	2.5	-
425	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	2	-	-
426	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
427	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
428	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	2	-	-
524	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
525	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	2	-	-
526	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
527	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
528	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	2	-	-
529	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	1
622	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
623	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	2	-	-
624	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
625	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
626	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
627	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	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)
722	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
723	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	2	-	-
724	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
725	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
726	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
727	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
820	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
821	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	2	2.5	-
822	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
823	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
824	Group A: U-value = 4.90, SHGC = 0.33 Group B: U-value = 4.90, SHGC = 0.33	2	2.5	-
825	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
919	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
920	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	1
921	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
922	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	1
923	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1019	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1020	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1021	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1022	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1023	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1119	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
1120	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1121	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1122	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1123	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1219	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1220	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1221	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1222	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1223	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1319	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1320	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1321	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1322	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1323	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1419	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1420	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1421	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1422	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1423	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1519	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1520	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1521	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1522	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	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)
1523	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1619	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1620	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1621	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1622	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1623	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1717	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1718	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1719	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1720	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1721	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1816	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1817	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1818	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1819	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	-	-
1820	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	-	-
1911	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1912	Group A: U-value = 2.90, SHGC = 0.44 Group B: U-value = 2.90, SHGC = 0.51	2	2.5	-
1913	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-
1914	Group A: U-value = 5.40, SHGC = 0.49 Group B: U-value = 5.40, SHGC = 0.58	2	2.5	-
1915	Group A: U-value = 4.30, SHGC = 0.47 Group B: U-value = 4.30, SHGC = 0.53	2	2.5	-

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. The glazed system selections are summarised as follows:

Glazed System Selection No. 1

- Group A: U-value = 5.4, SHGC = 0.49 (please refer to Table 1b above)
- Group B: U-value = 5.4, SHGC = 0.58 (please refer to Table 1b above)

Glazed System Selection No. 2

- 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. 3

- Group A: U-value = 4.9, SHGC = 0.33 (please refer to Table 1b above)
- Group B: U-value = 4.9, SHGC = 0.33 (please refer to Table 1b above)

Glazed System Selection No. 4

- Group A: U-value = 3.1, SHGC = 0.39 (please refer to Table 1b above)
- Group B: U-value = 3.1, SHGC = 0.49 (please refer to Table 1b above)

Glazed System Selection No. 5

- Group A: U-value = 2.9, SHGC = 0.44 (please refer to Table 1b above)
- Group B: U-value = 2.9, SHGC = 0.51 (please refer to Table 1b above)

With these treatments in place the weighted average maximum heating and cooling loads are 30.9 MJ/m2/year for heating and 19.5 MJ/m2/year for cooling.

The BASIX requirements for the weighted averaged maximum heating and cooling loads of the entire proposed development are 39.9 MJ/m2/year for heating and 25.9 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 Tables 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 Tables 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 Tables 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 potential wall insulation requirement can be calculated by the "Envelope Wall Total R-value" subtracting the inherent wall construction type R-value and verified through a thermal reassessment of the affected residential dwelling.

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.

Table 3a BERS Thermal Performance Results – Building A

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
208	45.4	29.5	35.6	28.9
209	45.4	29.5	29.0	28.4
210	45.4	29.5	22.1	11.0
211	45.4	29.5	20.4	10.8
212	45.4	29.5	28.9	12.4
213	45.4	29.5	40.5	18.7
214	45.4	29.5	41.5	20.8
215	45.4	29.5	21.5	21.1
216	45.4	29.5	25.8	18.2
308	45.4	29.5	22.3	29.3
309	45.4	29.5	23.5	25.7
310	45.4	29.5	21.1	13.6
311	45.4	29.5	11.9	9.5
312	45.4	29.5	23.8	21.6
313	45.4	29.5	25.4	29.4
314	45.4	29.5	25.9	27.4
315	45.4	29.5	32.1	23.0
316	45.4	29.5	16.8	17.8
317	45.4	29.5	23.7	28.0
408	45.4	29.5	22.8	28.3
409	45.4	29.5	24.0	24.7
410	45.4	29.5	21.7	13.6
411	45.4	29.5	12.2	9.7
412	45.4	29.5	22.6	21.4
413	45.4	29.5	25.7	28.3
414	45.4	29.5	29.6	29.5
415	45.4	29.5	28.7	22.9
416	45.4	29.5	17.1	17.8
417	45.4	29.5	24.1	27.5
508	45.4	29.5	23.2	28.0
509	45.4	29.5	24.1	25.6
510	45.4	29.5	24.3	13.3

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
511	45.4	29.5	15.2	9.9
512	45.4	29.5	29.5	19.5
513	45.4	29.5	34.9	27.2
514	45.4	29.5	28.3	29.1
515	45.4	29.5	28.5	24.5
516	45.4	29.5	20.3	17.5
517	45.4	29.5	24.5	27.4
608	45.4	29.5	23.6	26.5
609	45.4	29.5	22.7	17.5
610	45.4	29.5	25.9	11.6
611	45.4	29.5	26.6	22.2
612	45.4	29.5	28.3	19.4
613	45.4	29.5	16.1	21.0
614	45.4	29.5	17.2	18.4
615	45.4	29.5	24.9	27.4
708	45.4	29.5	23.9	25.9
709	45.4	29.5	25.1	19.6
710	45.4	29.5	30.1	11.6
711	45.4	29.5	20.2	20.3
712	45.4	29.5	29.3	20.1
713	45.4	29.5	20.7	21.5
714	45.4	29.5	30.7	17.3
715	45.4	29.5	25.1	27.0
807	45.4	29.5	24.7	25.7
808	45.4	29.5	23.6	17.5
809	45.4	29.5	24.3	18.6
810	45.4	29.5	32.3	12.8
811	45.4	29.5	29.6	20.2
812	45.4	29.5	24.9	18.8
813	45.4	29.5	29.5	25.9
907	45.4	29.5	25.1	25.7
908	45.4	29.5	22.6	17.4
909	45.4	29.5	27.0	11.4

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
910	45.4	29.5	32.6	12.8
911	45.4	29.5	27.9	20.5
912	45.4	29.5	23.2	18.9
913	45.4	29.5	29.8	25.7
1007	45.4	29.5	25.4	26.1
1008	45.4	29.5	23.4	15.4
1009	45.4	29.5	28.6	11.8
1010	45.4	29.5	32.9	12.8
1011	45.4	29.5	28.0	21.7
1012	45.4	29.5	23.4	18.8
1013	45.4	29.5	30.0	25.6
1107	45.4	29.5	25.5	26.5
1108	45.4	29.5	23.3	14.6
1109	45.4	29.5	26.3	10.8
1110	45.4	29.5	33.1	12.9
1111	45.4	29.5	28.0	21.1
1112	45.4	29.5	22.8	18.4
1113	45.4	29.5	30.3	24.9
1207	45.4	29.5	25.8	26.3
1208	45.4	29.5	23.5	14.4
1209	45.4	29.5	27.7	11.2
1210	45.4	29.5	33.1	12.9
1211	45.4	29.5	28.1	22.5
1212	45.4	29.5	20.6	18.3
1213	45.4	29.5	30.4	25.0
1307	45.4	29.5	26.1	26.9
1308	45.4	29.5	23.8	14.5
1309	45.4	29.5	28.0	11.2
1310	45.4	29.5	33.3	13.2
1311	45.4	29.5	28.2	23.7
1312	45.4	29.5	20.9	18.4
1313	45.4	29.5	30.6	24.5
1407	45.4	29.5	26.2	26.5

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
1408	45.4	29.5	24.0	14.4
1409	45.4	29.5	28.1	11.2
1410	45.4	29.5	32.7	13.0
1411	45.4	29.5	28.3	24.5
1412	45.4	29.5	21.1	17.9
1413	45.4	29.5	30.7	23.7
1507	45.4	29.5	26.3	25.8
1508	45.4	29.5	24.3	14.4
1509	45.4	29.5	28.4	11.2
1510	45.4	29.5	32.8	13.1
1511	45.4	29.5	28.2	25.9
1512	45.4	29.5	20.9	17.5
1513	45.4	29.5	30.7	24.3
1607	45.4	29.5	35.7	29.5
1608	45.4	29.5	30.2	21.5
1609	45.4	29.5	27.0	17.7
1610	45.4	29.5	33.2	13.6
1611	45.4	29.5	29.3	28.8
1612	45.4	29.5	21.8	17.9
1613	45.4	29.5	34.8	24.3
1707	45.4	29.5	32.8	20.9
1708	45.4	29.5	21.1	14.2
1709	45.4	29.5	25.7	15.4
1710	45.4	29.5	22.0	25.6
1711	45.4	29.5	34.2	22.7
1806	45.4	29.5	27.6	21.2
1807	45.4	29.5	20.4	14.7
1808	45.4	29.5	21.0	15.3
1809	45.4	29.5	21.7	26.6
1810	45.4	29.5	35.9	12.5
1901	45.4	29.5	39.7	19.6
1902	45.4	29.5	26.9	15.0
1903	45.4	29.5	24.2	15.3

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
1904	45.4	29.5	33.3	26.9
1905	45.4	29.5	40.1	11.5

Table 3b BERS Thermal Performance Results – Building B

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
201	45.4	29.5	37.0	26.0
202	45.4	29.5	32.9	15.9
203	45.4	29.5	17.8	14.4
204	45.4	29.5	26.9	20.3
205	45.4	29.5	26.4	11.5
206	45.4	29.5	41.2	21.9
207	45.4	29.5	25.2	28.7
301	45.4	29.5	35.6	25.8
302	45.4	29.5	27.6	15.3
303	45.4	29.5	22.2	15.4
304	45.4	29.5	37.3	14.6
305	45.4	29.5	38.7	11.9
306	45.4	29.5	39.7	24.0
307	45.4	29.5	27.8	25.9
401	45.4	29.5	36.2	25.9
402	45.4	29.5	28.1	14.8
403	45.4	29.5	22.7	14.8
404	45.4	29.5	30.5	14.0
405	45.4	29.5	39.2	13.1
406	45.4	29.5	38.3	23.8
407	45.4	29.5	28.2	24.7
501	45.4	29.5	36.8	25.6
502	45.4	29.5	30.3	15.4
503	45.4	29.5	23.1	14.8
504	45.4	29.5	31.0	13.6
505	45.4	29.5	41.2	13.1
506	45.4	29.5	38.8	23.7
507	45.4	29.5	28.6	23.7
601	45.4	29.5	37.3	24.3
602	45.4	29.5	29.1	14.4
603	45.4	29.5	23.5	14.8
604	45.4	29.5	31.5	13.9

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
605	45.4	29.5	40.3	12.8
606	45.4	29.5	39.2	23.8
607	45.4	29.5	36.8	25.6
701	45.4	29.5	37.7	23.1
702	45.4	29.5	29.8	20.4
703	45.4	29.5	35.3	13.7
704	45.4	29.5	31.8	13.8
705	45.4	29.5	42.0	12.6
706	45.4	29.5	39.5	23.7
707	45.4	29.5	29.3	22.7
801	45.4	29.5	38.1	22.4
802	45.4	29.5	37.5	17.5
803	45.4	29.5	34.5	11.4
804	45.4	29.5	41.4	12.6
805	45.4	29.5	39.7	23.7
806	45.4	29.5	29.6	23.1
901	45.4	29.5	38.5	22.7
902	45.4	29.5	37.9	17.5
903	45.4	29.5	34.7	11.5
904	45.4	29.5	41.6	12.7
905	45.4	29.5	39.9	23.9
906	45.4	29.5	29.9	23.3
1001	45.4	29.5	38.8	22.7
1002	45.4	29.5	38.2	18.0
1003	45.4	29.5	34.8	12.1
1004	45.4	29.5	41.7	13.0
1005	45.4	29.5	40.1	24.3
1006	45.4	29.5	30.2	22.7
1101	45.4	29.5	39.2	22.2
1102	45.4	29.5	38.6	17.5
1103	45.4	29.5	34.9	12.6
1104	45.4	29.5	41.7	13.5
1105	45.4	29.5	40.0	24.6

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
1106	45.4	29.5	30.5	22.5
1201	45.4	29.5	38.8	22.5
1202	45.4	29.5	38.7	18.0
1203	45.4	29.5	34.9	13.1
1204	45.4	29.5	41.2	13.6
1205	45.4	29.5	39.6	24.7
1206	45.4	29.5	30.6	22.7
1301	45.4	29.5	39.6	22.5
1302	45.4	29.5	39.0	17.8
1303	45.4	29.5	34.7	13.4
1304	45.4	29.5	40.0	13.9
1305	45.4	29.5	38.7	24.9
1306	45.4	29.5	30.9	22.5
1401	45.4	29.5	39.6	21.8
1402	45.4	29.5	39.1	18.0
1403	45.4	29.5	34.3	13.9
1404	45.4	29.5	39.0	14.3
1405	45.4	29.5	35.9	25.7
1406	45.4	29.5	31.0	22.1
1501	45.4	29.5	39.7	22.3
1502	45.4	29.5	39.3	18.3
1503	45.4	29.5	33.6	15.0
1504	45.4	29.5	38.1	15.6
1505	45.4	29.5	34.7	25.9
1506	45.4	29.5	31.2	21.8
1601	45.4	29.5	39.7	21.5
1602	45.4	29.5	39.4	18.5
1603	45.4	29.5	32.2	16.5
1604	45.4	29.5	36.9	17.5
1605	45.4	29.5	32.7	26.0
1606	45.4	29.5	31.4	21.6
1701	45.4	29.5	39.2	20.7
1702	45.4	29.5	43.2	17.3

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
1703	45.4	29.5	35.6	16.6
1704	45.4	29.5	29.5	18.2
1705	45.4	29.5	28.8	26.4
1706	45.4	29.5	31.5	21.3
1801	45.4	29.5	42.4	19.1
1802	45.4	29.5	36.6	18.7
1803	45.4	29.5	38.5	15.4
1804	45.4	29.5	42.1	23.0
1805	45.4	29.5	39.6	20.7

Table 3c BERS Thermal Performance Results – Building C

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
318	45.4	29.5	45.2	22.6
319	45.4	29.5	23.3	22.4
320	45.4	29.5	28.9	12.8
321	45.4	29.5	40.9	16.6
322	45.4	29.5	31.6	27.1
323	45.4	29.5	31.6	23.2
324	45.4	29.5	35.2	24.1
325	45.4	29.5	42.7	24.9
326	45.4	29.5	40.3	28.7
327	45.4	29.5	40.7	29.3
328	45.4	29.5	37.6	27.6
418	45.4	29.5	44.6	22.6
419	45.4	29.5	23.5	22.3
420	45.4	29.5	24.0	21.7
421	45.4	29.5	33.1	16.8
422	45.4	29.5	17.0	20.5
423	45.4	29.5	23.8	17.8
518	45.4	29.5	43.7	20.5
519	45.4	29.5	38.1	22.5
520	45.4	29.5	21.1	22.4
521	45.4	29.5	23.3	18.8
522	45.4	29.5	30.3	15.8
523	45.4	29.5	19.7	22.8
616	45.4	29.5	33.3	20.8
617	45.4	29.5	38.4	22.4
618	45.4	29.5	21.7	22.2
619	45.4	29.5	23.8	18.6
620	45.4	29.5	29.9	15.9
621	45.4	29.5	19.6	22.4
716	45.4	29.5	33.5	20.9
717	45.4	29.5	39.1	22.3
718	45.4	29.5	22.0	22.1

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
719	45.4	29.5	24.2	18.4
720	45.4	29.5	29.5	15.9
721	45.4	29.5	19.8	22.6
814	45.4	29.5	35.4	22.9
815	45.4	29.5	31.0	19.3
816	45.4	29.5	24.0	22.0
817	45.4	29.5	21.2	26.4
818	45.4	29.5	28.6	16.5
819	45.4	29.5	21.2	23.1
914	45.4	29.5	37.4	21.5
915	45.4	29.5	37.3	20.1
916	45.4	29.5	22.8	27.5
917	45.4	29.5	26.0	26.8
918	45.4	29.5	20.8	22.3
1014	45.4	29.5	34.9	21.3
1015	45.4	29.5	35.5	20.2
1016	45.4	29.5	22.7	27.3
1017	45.4	29.5	26.3	26.5
1018	45.4	29.5	20.9	22.4
1114	45.4	29.5	35.2	21.3
1115	45.4	29.5	35.8	20.1
1116	45.4	29.5	22.9	26.9
1117	45.4	29.5	26.6	26.3
1118	45.4	29.5	21.2	22.0
1214	45.4	29.5	35.2	21.5
1215	45.4	29.5	36.0	19.5
1216	45.4	29.5	23.1	26.6
1217	45.4	29.5	26.7	26.3
1218	45.4	29.5	21.4	22.1
1314	45.4	29.5	35.7	20.9
1315	45.4	29.5	36.3	19.7
1316	45.4	29.5	23.3	26.2
1317	45.4	29.5	27.1	25.9

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
1318	45.4	29.5	21.6	22.0
1414	45.4	29.5	35.9	20.7
1415	45.4	29.5	36.5	19.9
1416	45.4	29.5	23.5	26.0
1417	45.4	29.5	27.2	26.1
1418	45.4	29.5	21.8	21.8
1514	45.4	29.5	36.2	20.9
1515	45.4	29.5	36.8	19.4
1516	45.4	29.5	23.8	25.7
1517	45.4	29.5	27.5	25.5
1518	45.4	29.5	21.9	21.9
1614	45.4	29.5	36.4	21.3
1615	45.4	29.5	37.0	19.3
1616	45.4	29.5	23.9	25.9
1617	45.4	29.5	27.5	26.0
1618	45.4	29.5	22.0	21.6
1712	45.4	29.5	36.7	21.2
1713	45.4	29.5	37.1	19.1
1714	45.4	29.5	24.0	25.5
1715	45.4	29.5	27.7	25.5
1716	45.4	29.5	22.1	21.4
1811	45.4	29.5	36.9	20.4
1812	45.4	29.5	37.3	19.2
1813	45.4	29.5	24.1	25.2
1814	45.4	29.5	27.8	25.7
1815	45.4	29.5	22.2	21.3
1906	45.4	29.5	37.0	20.6
1907	45.4	29.5	37.6	18.4
1908	45.4	29.5	24.2	25.3
1909	45.4	29.5	28.0	25.4
1910	45.4	29.5	22.3	21.3
2001	45.4	29.5	42.9	16.7
2002	45.4	29.5	44.0	18.8

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
2003	45.4	29.5	34.0	24.0
2004	45.4	29.5	30.8	23.6
2005	45.4	29.5	33.4	20.1

Table 3d BERS Thermal Performance Results – Building D

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
329	45.4	29.5	37.2	20.9
330	45.4	29.5	32.0	13.5
331	45.4	29.5	32.7	12.1
332	45.4	29.5	38.5	14.4
333	45.4	29.5	28.2	28.8
424	45.4	29.5	35.1	16.4
425	45.4	29.5	30.0	24.3
426	45.4	29.5	36.6	9.6
427	45.4	29.5	27.7	18.0
428	45.4	29.5	32.9	23.0
524	45.4	29.5	29.7	26.6
525	45.4	29.5	27.7	17.0
526	45.4	29.5	31.1	9.0
527	45.4	29.5	30.8	14.4
528	45.4	29.5	30.8	21.3
529	45.4	29.5	30.8	26.4
622	45.4	29.5	28.0	26.1
623	45.4	29.5	28.0	17.0
624	45.4	29.5	31.3	9.5
625	45.4	29.5	31.1	14.3
626	45.4	29.5	28.1	26.4
627	45.4	29.5	15.0	27.6
722	45.4	29.5	28.3	25.6
723	45.4	29.5	28.0	17.0
724	45.4	29.5	31.5	9.6
725	45.4	29.5	31.4	14.2
726	45.4	29.5	26.7	27.8
727	45.4	29.5	15.2	27.2
820	45.4	29.5	32.6	24.8
821	45.4	29.5	29.4	17.4
822	45.4	29.5	32.2	9.7
823	45.4	29.5	30.8	15.9

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
824	45.4	29.5	32.3	22.9
825	45.4	29.5	15.8	28.5
919	45.4	29.5	27.7	26.9
920	45.4	29.5	37.6	11.2
921	45.4	29.5	31.6	9.4
922	45.4	29.5	35.1	14.9
923	45.4	29.5	15.5	27.4
1019	45.4	29.5	28.0	26.6
1020	45.4	29.5	36.0	11.5
1021	45.4	29.5	44.2	10.7
1022	45.4	29.5	35.4	15.1
1023	45.4	29.5	15.7	27.1
1119	45.4	29.5	28.2	26.7
1120	45.4	29.5	36.6	11.1
1121	45.4	29.5	44.2	10.8
1122	45.4	29.5	35.3	15.0
1123	45.4	29.5	15.9	26.9
1219	45.4	29.5	28.2	26.7
1220	45.4	29.5	36.6	11.1
1221	45.4	29.5	44.0	11.2
1222	45.4	29.5	35.3	15.1
1223	45.4	29.5	16.0	27.3
1319	45.4	29.5	28.6	26.2
1320	45.4	29.5	36.6	11.4
1321	45.4	29.5	44.0	11.1
1322	45.4	29.5	35.4	15.3
1323	45.4	29.5	16.2	26.9
1419	45.4	29.5	28.6	26.2
1420	45.4	29.5	36.3	11.7
1421	45.4	29.5	43.4	11.3
1422	45.4	29.5	35.3	15.5
1423	45.4	29.5	16.3	26.8
1519	45.4	29.5	29.1	25.9

Unit Number	BASIX Requirements (MJ/m2/year)		Final Results (MJ/m2/year) (with treatments)	
	Heating	Cooling	Heating	Cooling
1520	45.4	29.5	36.1	12.4
1521	45.4	29.5	43.0	12.1
1522	45.4	29.5	35.2	15.7
1523	45.4	29.5	16.5	26.2
1619	45.4	29.5	29.2	25.8
1620	45.4	29.5	35.6	12.8
1621	45.4	29.5	42.1	12.6
1622	45.4	29.5	34.8	15.2
1623	45.4	29.5	16.6	26.0
1717	45.4	29.5	29.3	25.7
1718	45.4	29.5	34.9	13.3
1719	45.4	29.5	41.2	12.9
1720	45.4	29.5	34.3	16.2
1721	45.4	29.5	16.7	25.7
1816	45.4	29.5	29.3	25.7
1817	45.4	29.5	35.0	13.4
1818	45.4	29.5	41.2	12.7
1819	45.4	29.5	33.0	16.6
1820	45.4	29.5	16.7	25.9
1911	45.4	29.5	38.9	25.1
1912	45.4	29.5	33.3	11.5
1913	45.4	29.5	31.7	11.6
1914	45.4	29.5	37.1	16.4
1915	45.4	29.5	23.8	22.6

3.3 Energy

The minimum target score in BASIX to achieve energy usage compliance is 25%. The minimum score is achieved through the inclusion of the following;

3.3.1 Central Systems

- The central hot water system is to be a gas-fired boiler system. 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 120kW 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 Carparks	Ventilation (supply + exhaust)	Carbon monoxide monitor + VSD fan
UL Carpark Ramp	Ventilation (supply + exhaust)	Carbon monoxide monitor + VSD fan
B2 Main Comms	Ventilation supply only	Interlocked to light
B1 Switch Rooms	Ventilation supply only	Interlocked to light
B1 Comms Room 2	Ventilation supply only	Interlocked to light
B4 Garbage Rooms	Ventilation exhaust only	-
L1 Bulky Goods	Ventilation exhaust only	-
L1 Residential Waste	Ventilation exhaust only	-
L2 Community Space	Air-conditioning system	Time Clocks or BMS controlled
L1 Community Space	Air-conditioning system	Time Clocks or BMS controlled
UL Master Gas Meter Rooms	No mechanical ventilation	-
UL Mech Supply Plant	Ventilation supply only	Interlocked to light
UL Remote Water Master Meters	No mechanical ventilation	-
UL FCR	Ventilation supply only	Thermostatically controlled
UL Master Gas Meter Rooms	No mechanical ventilation	-
L1 Substation	Ventilation (supply + exhaust)	Thermostatically controlled
L1 SP Fan Room	Ventilation supply only	Interlocked to light
L1 Hot Water Plant	Ventilation (supply + exhaust)	Interlocked to light
L1 Cold Water	No mechanical ventilation	-
GL Combined Fire Hyd & Sprinkler Pump	Ventilation (supply + exhaust)	Interlocked to light

Common Area	Ventilation System Type	Efficiency Measure
GL Mech Supply Plant	Ventilation supply only	Interlocked to light
GL SP Plant	Ventilation supply only	Interlocked to light
B2 DAS Room	Ventilation supply only	Interlocked to light
B3-B1 Grease Trap Rooms	Ventilation exhaust only	Interlocked to light
B1 Art Work Plant Room	No mechanical ventilation	-
B6 to B1 Mech Intake Plant Rooms	Ventilation supply only	Interlocked to light
L2 SP Plant	Ventilation supply only	Interlocked to light
B6 to B1 Mech Exhaust Plant Rooms	Ventilation exhaust only	Interlocked to light
B1 SP Plant	Ventilation supply only	Interlocked to light
B1 Rainwater Reuse & Pump	Ventilation supply only	Interlocked to light
L2 Lobby A Cleaner's Store	No mechanical ventilation	-
L2 Strata Manager Office	Air-conditioning system	Time Clocks or BMS controlled
L2 Community WC	Ventilation exhaust only	Time Clocks or BMS controlled
B1 EOT Facilities inc. ACC	Ventilation exhaust only	Time Clocks or BMS controlled
B3 Storage Room	No mechanical ventilation	-
B3 Carwash Station Kiosk	Air-conditioning system	Time Clocks or BMS controlled
UL Residential Lobby A	Ventilation supply only	Time Clocks or BMS controlled
GL Residential Lobby B	No mechanical ventilation	-
L1 Residential Lobby C	No mechanical ventilation	-
UL Residential Lobby D	Ventilation supply only	Time Clocks or BMS controlled
L2 - L19 Residential Lobby A	No mechanical ventilation	-
L2 - L18 Residential Lobby B	No mechanical ventilation	-
L2 - L20 Residential Lobby C	No mechanical ventilation	-
L2 - L19 Residential Lobby D	No mechanical ventilation	-

Table 5 Lighting Systems

Common Area	Ventilation System Type	Efficiency Measure
Lift Cars	L.E.D.	Connected to lift call button
Basement Carparks	L.E.D.	Time Clocks & Motion Sensors
UL Carpark Ramp	L.E.D.	Time Clocks & Motion Sensors
B2 Main Comms	L.E.D.	Manual switch on/off
B1 Switch Rooms	L.E.D.	Manual switch on/off
B1 Comms Room 2	L.E.D.	Manual switch on/off
B4 Garbage Rooms	L.E.D.	Manual switch on/off
L1 Bulky Goods	L.E.D.	Manual switch on/off
L1 Residential Waste	L.E.D.	Manual switch on/off
L2 Community Space	L.E.D.	Manual switch on/off
L1 Community Space	L.E.D.	Manual switch on/off
UL Master Gas Meter Rooms	L.E.D.	Manual switch on/off
UL Mech Supply Plant	L.E.D.	Manual switch on/off
UL Remote Water Master Meters	L.E.D.	Manual switch on/off
UL FCR	L.E.D.	Manual switch on/off
UL Master Gas Meter Rooms	L.E.D.	Manual switch on/off
L1 Substation	L.E.D.	Manual switch on/off
L1 SP Fan Room	L.E.D.	Manual switch on/off
L1 Hot Water Plant	L.E.D.	Manual switch on/off
L1 Cold Water	L.E.D.	Manual switch on/off
GL Combined Fire Hyd & Sprinkler Pump	L.E.D.	Manual switch on/off
GL Mech Supply Plant	L.E.D.	Manual switch on/off
GL SP Plant	L.E.D.	Manual switch on/off
B2 DAS Room	L.E.D.	Manual switch on/off
B3-B1 Grease Trap Rooms	L.E.D.	Manual switch on/off
B1 Art Work Plant Room	L.E.D.	Manual switch on/off
B6 to B1 Mech Intake Plant Rooms	L.E.D.	Manual switch on/off
L2 SP Plant	L.E.D.	Manual switch on/off
B6 to B1 Mech Exhaust Plant Rooms	L.E.D.	Manual switch on/off
B1 SP Plant	L.E.D.	Manual switch on/off
B1 Rainwater Reuse & Pump	L.E.D.	Manual switch on/off
L2 Lobby A Cleaner's Store	L.E.D.	Manual switch on/off
L2 Strata Manager Office	L.E.D.	Manual switch on/off

Common Area	Ventilation System Type	Efficiency Measure
L2 Community WC	L.E.D.	Manual switch on/off
B1 EOT Facilities inc. ACC	L.E.D.	Manual switch on/off
B3 Storage Room	L.E.D.	Manual switch on/off
B3 Carwash Station Kiosk	L.E.D.	Manual switch on/off
UL Residential Lobby A	L.E.D.	Time Clocks & Motion Sensors
GL Residential Lobby B	L.E.D.	Time Clocks & Motion Sensors
L1 Residential Lobby C	L.E.D.	Time Clocks & Motion Sensors
UL Residential Lobby D	L.E.D.	Time Clocks & Motion Sensors
L2 - L19 Residential Lobby A	L.E.D.	Time Clocks & Motion Sensors
L2 - L18 Residential Lobby B	L.E.D.	Time Clocks & Motion Sensors
L2 - L20 Residential Lobby C	L.E.D.	Time Clocks & Motion Sensors
L2 - L19 Residential Lobby D	L.E.D.	Time Clocks & Motion Sensors

3.3.3 Dwellings

- The bathroom exhaust fans within each residential dwelling are individual fans, ducted to façade/roof and are to be interlocked to light.
- The kitchen 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/timer 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 an EER rating of between 3.5 and 4.0 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 (i.e. at least 80% of the light fittings in the room). Dedicated fluorescent or LED fittings are to be installed.
- 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 3.0 stars.
- Clothes washer units to be installed within each residential dwelling. The clothes dryer units are to have an energy efficiency rating of at least 3.0 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.

4 CONCLUSION

A BASIX assessment of the proposed development located at 2 Mandala Parade, Castle Hill 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.

Due to BASIX security protocols, the BASIX certificate will be provided as a separate document.
Note the numbering system within the Multi-dwelings certificate varies with the numbering system indicated in the architectural drawings. Please refer to the Appendix for the corresponding numbering system between the Multi-dwelings certificate and the architectural drawings.

APPENDIX A ARCHITECTURAL DRAWINGS & MULTI-DWELLINGS CERTIFICATE UNIT NUMBERING SCHEME

Table A1 Unit Numbering System – Building A

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
208	A0202
209	A0203
210	A0204
211	A0205
212	A0206
213	A0207
214	A0208
215	A0209
216	A0201
308	A0302
309	A0303
310	A0304
311	A0305
312	A0306
313	A0307
314	A0308
315	A0309
316	A0310
317	A0301
408	A0402
409	A0403
410	A0404
411	A0405
412	A0406
413	A0407
414	A0408
415	A0409
416	A0410
417	A0401
508	A0502
509	A0503
510	A0504
511	A0505
512	A0506

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
513	A0507
514	A0508
515	A0509
516	A0510
517	A0501
608	A0602
609	A0603
610	A0604
611	A0605
612	A0608
613	A0609
614	A0610
615	A0601
708	A0702
709	A0703
710	A0704
711	A0705
712	A0708
713	A0709
714	A0710
715	A0701
807	A0802
808	A0803
809	A0804
810	A0805
811	A0806
812	A0807
813	A0801
907	A0902
908	A0903
909	909
910	A0904
911	A0905
912	A0906
913	A0901

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
1007	A1002
1008	A1003
1009	1009
1010	A1004
1011	A1005
1012	A1006
1013	A1001
1107	A1102
1108	A1103
1109	1109
1110	A1104
1111	A1105
1112	A1106
1113	A1101
1207	A1202
1208	A1203
1209	1209
1210	A1204
1211	A1205
1212	A1206
1213	A1201
1307	A1302
1308	A1303
1309	1309
1310	A1304
1311	A1305
1312	A1306
1313	A1301
1407	A1402
1408	A1403
1409	1409
1410	A1404
1411	A1405
1412	A1406
1413	A1401

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
1507	A1502
1508	A1503
1509	1509
1510	A1504
1511	A1505
1512	A1506
1513	A1501
1607	A1602
1608	1608
1609	1609
1610	A1603
1611	A1604
1612	A1605
1613	A1601
1707	A1701
1708	A1702
1709	A1703
1710	A1704
1711	A1705
1806	A1801
1807	A1802
1808	A1803
1809	A1804
1810	A1805
1901	A1901
1902	A1902
1903	A1903
1904	A1904
1905	A1905

Table A2 Unit Numbering System – Building B

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
201	B0201
202	B0202
203	B0203
204	B0204
205	B0205
206	B0206
207	B0207
301	B0301
302	B0302
303	B0303
304	B0304
305	B0305
306	B0306
307	B0307
401	B0401
402	B0402
403	B0403
404	B0404
405	B0405
406	B0406
407	B0407
501	B0501
502	B0502
503	B0503
504	B0504
505	B0505
506	B0506
507	B0507
601	B0601
602	B0602
603	B0603
604	B0604
605	B0605
606	B0606

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
607	B0607
701	B0701
702	B0702
703	B0703
704	B0704
705	B0705
706	B0706
707	B0707
801	B0801
802	B0802
803	B0803
804	B0804
805	B0805
806	B0806
901	B0901
902	B0902
903	B0903
904	B0904
905	B0905
906	B0906
1001	B1001
1002	B1002
1003	B1003
1004	B1004
1005	B1005
1006	B1006
1101	B1101
1102	B1102
1103	B1103
1104	B1104
1105	B1105
1106	B1106
1201	B1201
1202	B1202
1203	B1203

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
1204	B1204
1205	B1205
1206	B1206
1301	B1301
1302	B1302
1303	B1303
1304	B1304
1305	B1305
1306	B1306
1401	B1401
1402	B1402
1403	B1403
1404	B1404
1405	B1405
1406	B1406
1501	B1501
1502	B1502
1503	B1503
1504	B1504
1505	B1505
1506	B1506
1601	B1601
1602	B1602
1603	B1603
1604	B1604
1605	B1605
1606	B1606
1701	B1701
1702	B1702
1703	B1703
1704	B1704
1705	B1705
1706	B1706
1801	B1801
1802	B1802

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
1803	B1803
1804	B1804
1805	B1805

Table A3 Unit Numbering System – Building C

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
318	C0301
319	C0302
320	C0303
321	C0304
322	C0305
323	C0306
324	C0307
325	C0308
326	C0309
327	C0310
328	C0311
418	C0401
419	C0402
420	C0403
421	C0404
422	C0405
423	C0406
518	C0501
519	C0502
520	C0503
521	C0504
522	C0505
523	C0506
616	C0601
617	C0602
618	C0603
619	C0604
620	C0605
621	C0606
716	C0701
717	C0702
718	C0703
719	C0704
720	C0705

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
721	C0706
814	C0801
815	C0802
816	C0803
817	C0804
818	C0805
819	C0806
914	C0901
915	C0903
916	C0904
917	C0905
918	C0906
1014	C1001
1015	C1003
1016	C1004
1017	C1005
1018	C1006
1114	C1101
1115	C1103
1116	C1104
1117	C1105
1118	C1106
1214	C1201
1215	C1203
1216	C1204
1217	C1205
1218	C1206
1314	C1301
1315	C1303
1316	C1304
1317	C1305
1318	C1306
1414	C1401
1415	C1403
1416	C1404

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
1417	C1405
1418	C1406
1514	C1501
1515	C1503
1516	C1504
1517	C1505
1518	C1506
1614	C1601
1615	C1602
1616	C1603
1617	C1604
1618	C1605
1712	C1701
1713	C1702
1714	C1703
1715	C1704
1716	C1705
1811	C1801
1812	C1802
1813	C1803
1814	C1804
1815	C1805
1906	C1901
1907	C1902
1908	C1903
1909	C1904
1910	C1905
2001	C2001
2002	C2002
2003	C2003
2004	C2004
2005	C2005

Table A4 Unit Numbering System – Building D

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
329	D0301
330	D0302
331	D0303
332	D0304
333	D0305
424	D0401
425	D0402
426	D0403
427	D0404
428	D0405
524	D0501
525	D0502
526	D0503
527	D0504
528	D0505
529	D0506
622	D0601
623	D0602
624	D0603
625	D0604
626	D0605
627	D0606
722	D0701
723	D0702
724	D0703
725	D0704
726	D0705
727	D0706
820	D0801
821	D0802
822	D0803
823	D0804
824	D0805
825	D0806

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
919	D0901
920	D0902
921	D0903
922	D0904
923	D0905
1019	D1001
1020	D1002
1021	D1003
1022	D1004
1023	D1005
1119	D1101
1120	D1102
1121	D1103
1122	D1104
1123	D1105
1219	D1201
1220	D1202
1221	D1203
1222	D1204
1223	D1205
1319	D1301
1320	D1302
1321	D1303
1322	D1304
1323	D1305
1419	D1401
1420	D1402
1421	D1403
1422	D1404
1423	D1405
1519	D1501
1520	D1502
1521	D1503
1522	D1504
1523	D1505

Architectural Drawing Numbering System	Multi-Dwellings Numbering System
1619	D1601
1620	D1602
1621	D1603
1622	D1604
1623	D1605
1717	D1701
1718	D1702
1719	D1703
1720	D1704
1721	D1705
1816	D1801
1817	D1802
1818	D1803
1819	D1804
1820	D1805
1911	D1901
1912	D1902
1913	D1903
1914	D1904
1915	D1905