



Hyecorp Property Group Proposed Residential Development

To be built at **13-19 Canberra Avenue, St Leonards NSW 2065**

Issue	File Ref	Description	Author	Date
A	21-1958	NatHERS and BASIX Assessment	AA/NR	08/10/2021
B	22-3135R	NatHERS and BASIX Assessment update	PV	13/05/2022
C	22-3671R	Change to unit 1106	AA	13/09/2022
D	22-3799R	Update GF,UGF,L1 and Basement	PM	28/11/2022
E	22-4101R	NatHERS and BASIX update (additional units)	MP	01/02/2023

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Hyecorp Property Group. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.



Report Contact: Manoela Place
Email: manoela@efficientliving.com.au

License Holder: Tracey Cools
Accreditation Number: HERA10033

Prepared For:

Client Name: Hyecorp Property Group
Client Contact: Simon Truong
Client Email: simon@hyecorp.com.au

Client Address: 256 Victoria Avenue
Client Address: Chatswood NSW 2067
Client Phone: 0299679910

Introduction

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at 13-19 Canberra Avenue, St Leonards.

Heating and cooling loads for the development have been determined using BERS Pro Plus 4.4 thermal comfort simulation software. The report is based on the architectural drawings provided by Hyecorp Property Group. For further details refer to the individual BASIX Certificate(s) and Efficient Living's inclusions summary respectively.

This report is based on the following plans prepared by Hyecorp Property Group:

SH. No	SH. Name	0503	SOUTH ELEVATION
0000	COVER	0504	WEST ELEVATION
0101	LOCATION PLAN	0601	BUILDING SECTION 1
0102	SITE ANALYSIS	0610	DETAIL SECTION - CARPARK ENTRY
0103	DEMOLITION PLAN	0611	DETAIL SECTION - BASEMENT CARPARK RAMP
0201	FLOOR PLAN B4	0614	DETAIL SECTION - CANBERRA AVE
0202	FLOOR PLAN B3	900	ADAPTABLE APARTMENT TYPE - SHEET 01
0203	FLOOR PLAN B2	901	ADAPTABLE APARTMENT TYPE - SHEET 02
0204	FLOOR PLAN B1	902	ADAPTABLE APARTMENT TYPE - SHEET 03
0205	FLOOR PLAN GROUND	903	ADAPTABLE APARTMENT TYPE - SHEET 04
0206	FLOOR PLAN UPPER GROUND	904	ADAPTABLE APARTMENT TYPE - SHEET 05
0207	FLOOR PLAN L1	2000	SHADOW ANALYSIS
0208	FLOOR PLAN L2	2001	SHADOW ANALYSIS
0209	FLOOR PLAN L3	2101	SOLAR DIAGRAM SHEET 1
0210	FLOOR PLAN L4	2102	SOLAR DIAGRAM SHEET 2
0211	FLOOR PLAN L5	2201	SOLAR POINT PERSPECTIVE SHEET 1
0212	FLOOR PLAN L6-L7	2301	CROSS VENTILATION DIAGRAM SHEET 1
0214	FLOOR PLAN L8-L10	2302	CROSS VENTILATION DIAGRAM SHEET 2
0217	FLOOR PLAN L11	2401	EXTERNAL FINISHES
0218	FLOOR PLAN L12	2402	EAST ELEVATION - MATERIALS AND FINISHES
0218	FLOOR PLAN L12 - DA50	2403	NORTH ELEVATION - MATERIALS AND FINISHES
0218	FLOOR PLAN L13 - DA54	2404	SOUTH ELEVATION - MATERIALS AND FINISHES
0219	FLOOR PLAN L14 - DA54	2405	WEST ELEVATION - MATERIALS AND FINISHES
0221	FLOOR PLAN ROOF	2501	DEEP SOIL/COMMUNAL OPEN SPACE CALCULATION
0501	NORTH ELEVATION	3001	GFA PLAN SHEET 01
0502	EAST ELEVATION	3002	GFA PLAN SHEET 02

Analysis

The BASIX Assessment is divided into three sections; Water, Thermal Comfort and Energy, each independently measuring the efficiency of the development.

BASIX requires a minimum target of 40% for the water section, a pass or fail for the thermal comfort section, and a minimum required target of 25% for the energy section.

Water

The proposed Development has achieved the BASIX Water Target of 40%.

The water usage of the development is calculated based on the number and efficiency of permanent fixtures and appliances such as taps, showerheads and toilet, the dish washer and clothes washing machine.

The size of the rainwater tank and number of connections may have a significant impact on your water score as does the area of gardens and lawns whether or not low water plant species are incorporated.

Thermal Comfort

Thermal Comfort targets are set by the Department of Planning in the form of heating and cooling caps. The buildings thermal physics are measured using BERS Pro Plus V4.4 Thermal Comfort Simulation Software. This calculates the expected level of energy required to heat and cool each dwelling per annum, expressed in megajoules per square metre of floor area (MJ/m²).

Each unit has individual heating and cooling caps applied. Accompanying these individual caps are average heating and cooling caps applied to the whole development. The average caps are lower, or harder to comply with than the individual unit caps.

Energy

The proposed development has achieved the Energy target of 25% to pass this section.

The energy usage of the development is calculated based on the efficiency of fixed appliances that will be used. This includes the air-conditioning system, hot water system, lighting, exhaust fans, cook top, oven, and clothes drying facilities.

Inclusions Summary

The inclusions as outlined below have been incorporated in each unit to allow them to reach their environmental sustainability targets.

Thermal Comfort Scores

Average heating loads are 30% below allowable BASIX targets

Average cooling loads are 22% below allowable BASIX targets

Glazing Doors/Windows

Glazed windows and doors:

Group A – awning + bifold + casement windows + hinged glazed doors

U-value: 4.80 (equal to or lower than) SHGC: 0.51 (±10%)

Group B – sliding doors/windows + fixed glazing + louvred windows

U-value: 4.80 (equal to or lower than) SHGC: 0.59 ($\pm 10\%$)

Upgrade applied as per thermal comfort upgrades table:

Group A – awning + bifold + casement windows + hinged glazed doors

U-value: 3.10 (equal to or lower than) SHGC: 0.39 ($\pm 10\%$)

Group B – sliding doors/windows + fixed glazing + louvred windows

U-value: 3.10 (equal to or lower than) SHGC: 0.49 ($\pm 10\%$)

Given values are AFRC total window system values (glass and frame)

Note: BASIX Thermal Comfort Protocol Table 3 SHGC value of the unit should be within $\pm 10\%$ of the value specified for the default window selection on the certificate.

Skylight

Double glazed, timber / aluminium frame

Roof and ceiling

Concrete roof, no insulation

Plasterboard ceiling with no insulation where balconies are above, upgrade to R1.5 insulation (insulation only value) as specified on the thermal comfort upgrades table

Plasterboard ceiling with R3.0 insulation (insulation only value) where balconies or roof above as specified on the thermal comfort upgrades table

Plasterboard ceiling with R2.0 insulation (insulation only value) to soffit of concrete where roof is over

Plasterboard ceiling, no insulation where neighbouring units are above

External Colour

Medium ($0.475 < SA < 0.7$)

Ceiling Penetrations

Sealed LED downlights at a maximum of one every 2.5m². Once lighting plan has been developed NatHERS certificate can be updated to improve specification.

Ceiling fans (min. 1200mm diameter) to bedrooms and/or living areas as per thermal comfort upgrades table

External Wall

Brick veneer with R2.0 insulation (insulation only value)

External Colour

Medium ($0.475 < SA < 0.7$)

Inter-tenancy walls

75mm Hebel Power Panel to walls adjacent to neighbours, no insulation required

Minimum 150mm concrete with furring channel and plasterboard lining to all walls adjacent to lift shafts and fire stairs. No insulation required

Walls within dwellings

Plasterboard on studs – no insulation

Floors

Concrete with a minimum R1.0 insulation (insulation only value) required to units with garage below

Concrete with no insulation required where part open subfloor is below; upgrade R1.0 insulation (insulation only value) as specified on the thermal comfort upgrade table

Concrete between levels, no insulation required

Floor coverings

Carpet to bedrooms, tiles to bathrooms and laundry, timber elsewhere

External Shading

Shading as per stamped documentation

External retractable fabric shading to windows on Penthouse units as per thermal comfort upgrades table

BASIX water inclusions

Score 40/40

Fixtures within units

Showerheads: Mid flow (>6L but <=7.5L/min)

Toilets: 4.0 star

Kitchen taps: 6.0 star

Bathroom vanity taps: 6.0 star

Fixtures within common areas

Toilets: 4.0 star

Taps: 4.0 star

Appliances within units

Dishwashers: 4 stars

Clothes washers to at least 5x units: 4.5 stars

Central rainwater storage

Tank size: 4,000L

Collecting from 637m² roof area, 121 m² balconies and 91 m² roof gardens

Connected to outdoor taps for irrigation of common landscaping

Fire sprinkler test water

No BASIX restriction

Common area swimming pools and spas

45kL indoor swimming pool

5.5kL indoor spa

BASIX Energy Inclusions

Score 25/26

Hot water system

Central gas-fired boiler with R1.0 (~38mm) insulation to ring main and supply risers

Lift motors

All lifts to have gearless traction with VVVF motor

Appliances and other efficiency measures within units

Gas cooktop & electric oven

Dishwashers: 3.5 star

Clothes dryers: 2 star

Well ventilated fridge space – requires a mechanical vent or ventilation grills installed below the refrigerator and above the refrigerant coils, to allow air flow to pass over the refrigerant coils.

Heating and cooling within units

All units to have individual, single phase, reverse cycle air conditioning to living areas, and at least 1 bedroom

A minimum efficiency of 3.5 stars is required for cooling and

A minimum efficiency of 3.5 stars is required for heating

Artificial lighting within units

All light fittings within each room are to have sealed LED fixtures installed

Ventilation within units

Bathroom: individual fan, ducted to roof or façade – manual on/off switch

Laundry: individual fan, ducted to roof or façade – manual on/off switch

Kitchen range hood: Individual fan, ducted to roof or façade – manual on/off switch

Ventilation to common areas

Car Park area – supply and exhaust air with a carbon monoxide monitor & VSD fan

Garbage rooms – Exhaust air, running continuously
Plant/Storage – Supply only, interlocked to light
Ground floor Lobbies and Hallways – Naturally ventilated

Artificial lighting to common areas

Car Park area – Light emitting diodes (LEDs) with zoned switching and motion sensors
Lifts – Light emitting diodes (LEDs) connected to lift call button
Garbage rooms – Light emitting diodes (LEDs) with motion sensor
Plant/storage – Light emitting diodes (LEDs) with manual on / manual off switch
Ground floor lobby – Light emitting diodes (LEDs) with motion sensors
Hallways – Light emitting diodes (LEDs) with zoned switching and motion sensors

Alternative Energy

25kW PV system

Common area swimming pools and spas

Indoor pool, spa and sauna
Heating system: gas
Pumps controlled by timer
Spa to have cover
Sauna – manual on / timer off

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # 0006657140							Accreditation # HERA10033
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
G01	2	111.9	0	26.1	22.9	6.2	Glazing upgrade
G02	2	129	0	29.4	19.4	6.2	None
G03	2	125	0	33.4	18.5	5.9	None
101	2	91.7	0	27.3	25.1	5.9	None
102	1	48	0	9.9	26.2	7.2	None
103	3	116	0	28.4	19.2	6.3	None
201	3	95	0	26.3	29.4	5.7	None
202	1	59	0	11.2	26.7	7.1	None
203	1	54	0	7.1	26.5	7.4	Glazing upgrade
204	2	78	0	29.9	20.9	6	None
205	1	64	0	23.4	22.7	6.4	Glazing upgrade
206	2	87	0	27.5	19.2	6.4	None
207	2	94	0	33	14.8	6.3	R1.0 insulation where open below
208	3	101	0	39	20	5.5	None
301	3	95	0	13.8	25.2	7	Glazing upgrade
302	1	59	0	11.6	26.1	7.1	None
303	1	54	0	7.1	26.3	7.4	Glazing upgrade
304	2	78	0	30.4	20.2	6	None
305	1	57	0	38.1	24.6	5.2	Glazing upgrade
306	2	87	0	31.4	28.1	5.4	None
307	2	94	0	36.7	11.7	6.2	None
308	3	101	0	38.9	17.1	5.6	R1.5 insulation where balcony above
401	3	95	0	26	22.7	6.2	None
402	1	59	0	14.7	21.5	7.2	None
403	1	54	0	18.5	25.5	6.6	None
404	2	78	0	34.5	15.1	6.1	None
405	1	57	0	38.6	24.4	5.2	Glazing upgrade
406	3	110	0	38.6	24	5.2	None
407	3	110	0	29.3	14.3	6.6	Glazing upgrade
501	3	95	0	26.6	21.9	6.2	None
502	1	59	0	15.1	21.3	7.2	None
503	1	54	0	19.1	25.1	6.6	None

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # 0006657140							Accreditation # HERA10033
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
504	2	78	0	35.8	14.1	6.1	None
505	1	57	0	39	24.1	5.2	Glazing upgrade
506	3	110	0	39	23.8	5.2	None
507	3	110	0	29.7	14	6.6	Glazing upgrade
601	3	95	0	27	20.9	6.3	None
602	1	59	0	15.3	21.1	7.2	None
603	1	54	0	19.5	24.6	6.6	None
604	2	78	0	35.4	14.6	6.1	None
605	1	57	0	39.3	24.6	5.1	Glazing upgrade
606	3	110	0	39.2	23.6	5.2	None
607	3	110	0	30	13.9	6.6	Glazing upgrade
701	3	95	0	27.4	20.6	6.2	None
702	1	59	0	15.6	21.2	7.2	None
703	1	54	0	19.9	24.4	6.6	None
704	2	78	0	35.6	15	6	None
705	1	57	0	41.2	24.3	5	Glazing upgrade, R1.5 insulation where balcony above
706	3	110	0	39.2	23.7	5.2	None
707	3	110	0	30.4	13.5	6.6	Glazing upgrade
801	3	95	0	27.7	20.3	6.2	None
802	1	59	0	15.8	21.1	7.2	None
803	1	54	0	19.8	24.4	6.6	None
804	2	78	0	36	15.4	5.9	None
805	2	87	0	31.9	26.2	5.4	R1.0 where open below; glazing upgrade
806	2	78	0	37.9	11.5	6.1	None
807	3	110	0	30.7	13.2	6.6	Glazing upgrade
901	3	95	0	28	20.1	6.2	None
902	1	59	0	16	20.7	7.2	None
903	1	54	0	19.7	24	6.6	None
904	2	78	0	36	15.7	5.9	None
905	2	87	0	27.2	27.1	5.8	Glazing upgrade
906	2	78	0	38.4	11.6	6.1	None
907	3	110	0	31	13.1	6.6	Glazing upgrade

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # 0006657140							Accreditation # HERA10033
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
1001	3	95	0	30.2	17.5	6.3	None
1002	1	59	0	18.3	19.9	7.1	None
1003	1	54	0	21.6	23.2	6.5	None
1004	2	78	0	37.6	14.8	5.9	None
1005	2	87	0	26	24.5	6	Glazing Upgrade
1006	2	78	0	40	10.8	6	None
1007	3	110	0	32.5	12.5	6.4	Glazing upgrade
1101	3	95	0	33.8	17.4	5.9	R1.5 insulation where balcony above
1102	1	59	0	18.3	20	7.1	None
1103	1	54	0	21.7	23.1	6.5	None
1104	2	78	0	42.1	16.3	5.4	None
1105	2	87	0	22.7	24.7	6.3	R1.5 insulation where balcony above; R1.0 where open below; glazing upgrade
1106	3	194	0	38.1	12.9	6	R1.5 insulation where balcony above; glazing upgrade
1201	3	138	0	16.9	24.1	6.8	Glazing upgrade
1203	3	127	0	19.2	27.1	6.4	Glazing upgrade
1205	3	133	0	20.4	25.7	6.4	Glazing upgrade Ceiling fan to living only
1301	3	134	0	21.6	28.8	6.1	Glazing upgrade
1302	3	95	0	26.4	18.6	6.4	None
1303	3	158	0	45.2	29.4	4.5	R3.0 insulation where balcony and roof above; R1.0 where open below; ceiling fans to bedrooms and living, glazing upgrade
1401	4	214	0	31.9	28.8	5.3	R3.0 insulation where d roof above; ceiling fans to bedrooms and living, glazing upgrade

Nationwide House Energy Rating Scheme — Class 2 summary

NatHERS Certificate No. 0006657140

Generated on 01 Feb 2023 using BERS Pro v4.4.0.6 (3.21)

Property

Address 13-19 Canberra Avenue , St Leonards , NSW , 2065

Lot/DP 7259

NatHERS climate zone 56

Accredited assessor 

Tracey Cools
Efficient Living
admin@efficientliving.com.au
02 9970 6181

Accreditation No. HERA10033

Assessor Accrediting Organisation HERA



Verification

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

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
0008252199	101	27.3	25.1	52.4	5.9
0008252207	102	9.9	26.2	36	7.2
0006655948	103	28.4	19.2	47.6	6.3
0006655955	201	26.3	29.4	55.6	5.7
0006655963	202	11.2	26.7	37.9	7.1

Continued Over

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated buildings are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Summary of all dwellings (continued)

Certificate number and link	Unit Number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
0006655971	203	7.1	26.5	33.6	7.4
0006655989	204	29.9	20.9	50.9	6
0006655997	205	23.4	22.7	46.2	6.4
0006656003	206	27.5	19.2	46.7	6.4
0006656011	207	33	14.8	47.8	6.3
0006656029	208	38	20	58	5.5
0006656037	301	13.8	25.2	38.9	7
0006656045	302	11.6	26.1	37.7	7.1
0006656052	303	7.1	26.3	33.4	7.4
0006656060	304	30.4	20.2	50.6	6
0006656078	305	38.1	24.6	62.7	5.2
0006656086	306	31.4	28.1	59.5	5.4
0006656094	307	36.7	11.7	48.4	6.2
0006656102	308	38.9	17.1	56	5.6
0006656110	401	26	22.7	48.7	6.2
0006656128	402	14.7	21.5	36.2	7.2
0006656136	403	18.5	25.5	44	6.6
0006656144	404	34.5	15.1	49.6	6.1
0006656151	405	38.6	24.4	63.1	5.2
0006656169	406	28.1	27.2	55.3	5.7
0006656177	407	29.3	14.3	43.6	6.6
0006656185	501	26.6	21.9	48.6	6.2
0006656193	502	15.1	21.3	36.3	7.2
0006656201	503	19.1	25.1	44.2	6.6
0006656219	504	35.1	14.8	49.8	6.1
0006656227	505	39	24.1	63.1	5.2
0006656235	506	39	23.8	62.8	5.2
0006656243	507	29.7	14	43.7	6.6
0006656250	601	27	20.9	47.9	6.3
0006656268	602	15.3	21.1	36.4	7.2
0006656276	603	19.5	24.6	44.1	6.6
0006656284	604	35.4	14.6	50	6.1
0006656292	605	39.3	24.6	63.9	5.1
0006657134	606	39.2	23.6	62.8	5.2
0006656300	607	30	13.9	43.9	6.6
0006656318	701	27.4	20.6	48	6.2
0006656326	702	15.6	21.2	36.8	7.2
0006656334	703	19.9	24.4	44.3	6.6
0006656342	704	35.6	15	50.6	6
0006656359	705	39.7	24.6	64.3	5.1

Certificate number and link	Unit Number	Heating load (MJ/m /p.a.)	Cooling load (MJ/m /p.a.)	Total load (MJ/m /p.a.)	Star rating
0006656367	706	39.2	23.7	62.9	5.2
0006656375	707	30.4	13.5	44	6.6
0006656383	801	27.7	20.3	48	6.2
0006656391	802	15.8	21.1	36.9	7.2
0006656409	803	19.8	24.4	44.2	6.6
0006656417	804	36	15.4	51.4	5.9
0006656425-01	805	31.9	26.2	58.1	5.4
0006656433	806	37.9	11.5	49.5	6.1
0006656441	807	30.7	13.2	43.9	6.6
0006656458	901	28	20.1	48.1	6.2
0006656466	902	16	20.7	36.8	7.2
0006656474	903	19.7	24	43.7	6.6
0006656482	904	36	15.7	51.7	5.9
0006656490	905	27.2	27.1	54.3	5.8
0006656508	906	38.4	11.6	50.1	6.1
0006656516	907	31	13.1	44.1	6.6
0006656524	1001	30.2	17.5	47.7	6.3
0006656532	1002	18.3	19.9	38.2	7.1
0006656540	1003	21.6	23.2	44.8	6.5
0006656557	1004	37.6	14.8	52.4	5.9
0006656565	1005	26	24.5	50.5	6
0006656573	1006	40	10.8	50.9	6
0006656581	1007	32.5	12.5	45.1	6.4
0006656599	1101	33.8	17.4	51.2	5.9
0006656607	1102	18.3	20	38.2	7.1
0006656615	1103	21.7	23.1	44.8	6.5
0006656623	1104	42.1	16.3	58.5	5.4
0006656631	1105	22.7	24.7	47.4	6.3
0006656649-02	1106	38.1	12.9	51	6
0008386690	1201	16.9	24.1	41	6.8
0006656672	1202	30.9	18.5	49.4	6.1
0008386674	1203	19.2	27.1	46.2	6.4
0008386666	1205	20.4	25.7	46.2	6.4
0008386732	1301	21.6	28.8	50.4	6.1
0008386724	1302	26.4	18.6	45	6.4
0008386716	1303	45.2	29.4	74.6	4.5
0008386708	1401	31.9	28.8	60.7	5.3
0008252215	G01	26.1	22.9	49	6.2
0008252223	G02	29.4	19.4	48.8	6.2
0008252231	G03	33.4	18.5	51.9	5.9
Average		27.73	20.89	48.63	6.22

Explanatory Notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

BASIX®Certificate

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

Multi Dwelling

Certificate number: 1246915M_08




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

This certificate is a revision of certificate number 1246915M_04 lodged with the consent authority or certifier on 10 November 2021 with application 162/2021.

It is the responsibility of the applicant to verify with the consent authority that the original, or any revised certificate, complies with the requirements of Schedule 1 Clause 2A, 4A or 6A of the Environmental Planning and Assessment Regulation 2000

Secretary
Date of issue: Wednesday, 01 February 2023
To be valid, this certificate must be lodged within 3 months of the date of issue.



Project summary		
Project name	13-19 Canberra Ave, St Leonards_08	
Street address	13-19 Canberra Avenue St Leonards 2065	
Local Government Area	Lane Cove Municipal Council	
Plan type and plan number	deposited 7259	
Lot no.	11-14	
Section no.	-	
No. of residential flat buildings	1	
No. of units in residential flat buildings	84	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	 40	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 26	Target 25

Certificate Prepared by
Name / Company Name: Efficient Living Pty Ltd
ABN (if applicable): 82116346082

Description of project

Project address

Project name	13-19 Canberra Ave, St Leonards_08
Street address	13-19 Canberra Avenue St Leonards 2065
Local Government Area	Lane Cove Municipal Council
Plan type and plan number	deposited 7259
Lot no.	11-14
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	84
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m²)	2629.2
Roof area (m²)	849
Non-residential floor area (m²)	37.0
Residential car spaces	113
Non-residential car spaces	23

Common area landscape

Common area lawn (m²)	123.0
Common area garden (m²)	247.0
Area of indigenous or low water use species (m²)	0.0

Assessor details

Assessor number	HERA10033
Certificate number	0006657140
Climate zone	56
Ceiling fan in at least one bedroom	Yes
Ceiling fan in at least one living room or other conditioned area	Yes

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 26	Target 25

Description of project

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

Residential flat buildings - Building1, 84 dwellings, 15 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
101	2	87.0	0.0	0.0	0.0
203	1	54.0	0.0	0.0	0.0
208	3	101.0	0.0	0.0	0.0
305	1	57.0	0.0	0.0	0.0
402	1	59.0	0.0	0.0	0.0
407	3	110.0	0.0	0.0	0.0
505	1	57.0	0.0	0.0	0.0
603	1	54.0	0.0	0.0	0.0
701	3	95.0	0.0	0.0	0.0
706	3	110.0	0.0	0.0	0.0
804	2	78.0	0.0	0.0	0.0
902	1	59.0	0.0	0.0	0.0
907	3	110.0	0.0	0.0	0.0
1002	1	59.0	0.0	0.0	0.0
1007	3	110.0	0.0	0.0	0.0
1105	2	87.0	0.0	0.0	0.0
1301	3	134.0	0.0	0.0	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)
102	1	51.0	0.0	0.0	0.0
204	2	78.0	0.0	0.0	0.0
301	3	95.0	0.0	0.0	0.0
306	2	87.0	0.0	0.0	0.0
403	1	54.0	0.0	0.0	0.0
501	3	95.0	0.0	0.0	0.0
506	3	110.0	0.0	0.0	0.0
604	2	78.0	0.0	0.0	0.0
702	1	59.0	0.0	0.0	0.0
707	3	110.0	0.0	0.0	0.0
805	2	87.0	0.0	0.0	0.0
903	1	54.0	0.0	0.0	0.0
G01	2	113.0	0.0	0.0	0.0
1003	1	54.0	0.0	0.0	0.0
1101	3	95.0	0.0	0.0	0.0
1106	3	194.0	0.0	0.0	0.0
1302	3	95.0	0.0	0.0	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)
103	3	116.0	0.0	0.0	0.0
205	1	64.0	0.0	0.0	0.0
302	1	59.0	0.0	0.0	0.0
307	2	94.0	0.0	0.0	0.0
404	2	78.0	0.0	0.0	0.0
502	1	59.0	0.0	0.0	0.0
507	3	110.0	0.0	0.0	0.0
605	1	57.0	0.0	0.0	0.0
703	1	54.0	0.0	0.0	0.0
801	3	95.0	0.0	0.0	0.0
806	2	78.0	0.0	0.0	0.0
904	2	78.0	0.0	0.0	0.0
G02	2	136.0	0.0	0.0	0.0
1004	2	78.0	0.0	0.0	0.0
1102	1	59.0	0.0	0.0	0.0
1201	3	138.0	0.0	0.0	0.0
1303	3	158.0	0.0	0.0	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)
201	3	95.0	0.0	0.0	0.0
206	2	87.0	0.0	0.0	0.0
303	1	54.0	0.0	0.0	0.0
308	3	101.0	0.0	0.0	0.0
405	1	57.0	0.0	0.0	0.0
503	1	54.0	0.0	0.0	0.0
601	3	95.0	0.0	0.0	0.0
606	3	110.0	0.0	0.0	0.0
704	2	78.0	0.0	0.0	0.0
802	1	59.0	0.0	0.0	0.0
807	3	110.0	0.0	0.0	0.0
905	2	87.0	0.0	0.0	0.0
G03	2	137.0	0.0	0.0	0.0
1005	2	87.0	0.0	0.0	0.0
1103	1	54.0	0.0	0.0	0.0
1203	3	127.0	0.0	0.0	0.0
1401	3	214.0	0.0	0.0	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)
202	1	59.0	0.0	0.0	0.0
207	2	94.0	0.0	0.0	0.0
304	2	78.0	0.0	0.0	0.0
401	3	95.0	0.0	0.0	0.0
406	3	110.0	0.0	0.0	0.0
504	2	78.0	0.0	0.0	0.0
602	1	59.0	0.0	0.0	0.0
607	3	110.0	0.0	0.0	0.0
705	1	57.0	0.0	0.0	0.0
803	1	54.0	0.0	0.0	0.0
901	3	95.0	0.0	0.0	0.0
906	2	78.0	0.0	0.0	0.0
1001	3	95.0	0.0	0.0	0.0
1006	2	78.0	0.0	0.0	0.0
1104	2	78.0	0.0	0.0	0.0
1205	3	133.0	0.0	0.0	0.0

Description of project

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

Common areas of unit building - Building1

Common area	Floor area (m²)
Lift car (No.1)	-
Ground floor lobby type (No. 1)	57.5

Common area	Floor area (m²)
Lift car (No.2)	-
Hallway/lobby type (No. 1)	767.0

Common area	Floor area (m²)
Community room (No. 2)	115.0

Common areas of the development (non-building specific)

Common area	Floor area (m²)
Indoor pool &/or spa area (No. 1)	197.0
Switch room (No. 1)	11.3
Plant or service room (No. 1)	126.0

Common area	Floor area (m²)
Gym (No. 1)	48.0
Garbage room (No. 1)	48.0

Common area	Floor area (m²)
Car park area (No. 1)	5650.0
Music and Cinema	121.0

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building1

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

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

- (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) 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
1105, 1106, 1201, 1203, 1205	4 star (> 6 but <= 7.5 L/min)	4 star	6 star	6 star	no	4.5 star	4 star	-	-	-	-	-	-	-
All other dwellings	4 star (> 6 but <= 7.5 L/min)	4 star	6 star	6 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
None	-	-	-	-	-	-	-	-

(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.		✓	✓

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

	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 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		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
1106, 1201, 1203, 1205	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
101, 204, 206, 207, 304, 306, 307, 404, 504, 604, 704, 804, 805, 806, 904, 905, 906, G01, G02, G03, 1004, 1005, 1006, 1104, 1105	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	2	1	yes	yes	yes	yes	0	no

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
102, 202, 203, 205, 302, 303, 305, 402, 403, 405, 502, 503, 505, 602, 603, 605, 702, 703, 705, 802, 803, 902, 903, 1002, 1003, 1102, 1103	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1	1	yes	yes	yes	yes	0	no
All other dwellings	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	1-phase airconditioning 3.5 star (average zone)	3	2	yes	yes	yes	yes	0	no

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
1201, 1203, 1205	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	3.5 star	2 star	-	-
All other dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	-	2 star	-	-

(iii) Thermal Comfort	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.	✓	✓	✓

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓
(i) The applicant must show on the plans accompanying the development application for the proposed development, the locations of ceiling fans set out in the Assessor Certificate.	✓		
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.		✓	

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
101	25.4	20.5
102	9.3	22.2
103	28.4	19.2
201	26.3	29.4
202	11.2	26.7
203	7.1	26.5
204	29.9	20.9
205	23.4	22.7
206	27.5	19.2
207	33.0	14.8
208	39.0	20.0
301	13.8	25.2
302	11.6	26.1
303	7.1	26.3
304	30.4	20.2
305	38.1	24.6
306	31.4	28.1
307	36.7	11.7

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
308	38.9	17.1
401	26.0	22.7
402	14.7	21.5
403	18.5	25.5
404	34.5	15.1
405	38.6	24.4
406	38.6	24.0
407	29.3	14.3
501	26.6	21.9
502	15.1	21.3
503	19.1	25.1
504	35.8	14.1
505	39.0	24.1
506	39.0	23.8
507	29.7	14.0
601	27.0	20.9
602	15.3	21.1
603	19.5	24.6
604	35.4	14.6
605	39.3	24.6
606	39.2	23.6
607	30.0	13.9
701	27.4	20.6
702	15.6	21.2
703	19.9	24.4
704	35.6	15.0
705	41.2	24.3

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
706	39.2	23.7
707	30.4	13.5
801	27.7	20.3
802	15.8	21.1
803	19.8	24.4
804	36.0	15.4
805	31.9	26.2
806	37.9	11.5
807	30.7	13.2
901	28.0	20.1
902	16.0	20.7
903	19.7	24.0
904	36.0	15.7
905	27.2	27.1
906	38.4	11.6
907	31.0	13.1
G01	38.1	23.0
G02	26.5	20.1
G03	30.9	15.5
1001	30.2	17.5
1002	18.3	19.9
1003	21.6	23.2
1004	37.6	14.8
1005	26.0	24.5
1006	40.0	10.8
1007	32.5	12.5
1101	33.8	17.4

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
1102	18.3	20.0
1103	21.7	23.1
1104	42.1	16.3
1105	22.7	24.7
1106	38.1	12.9
1201	16.9	24.1
1203	19.2	27.1
1205	20.4	25.7
1301	21.6	28.8
1302	26.4	18.6
1303	45.2	29.4
All other dwellings	31.9	28.8

(b) Common areas and central systems/facilities

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

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

	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 car (No.1)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.2)	-	-	light-emitting diode	connected to lift call button	Yes
Community room (No. 2)	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	Yes
Ground floor lobby type (No. 1)	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	Yes
Hallway/lobby type (No. 1)	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	Yes

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 18
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 18

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	4 star (> 6 but <= 7.5 L/min)	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	4000.0	To collect run-off from at least: - 637.0 square metres of roof area of buildings in the development - 121.0 square metres of impervious area in the development - 0.0 square metres of garden/lawn area in the development - 91.0 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 370.0 square metres of common landscaped area on the site - car washing in 2 car washing bays on the site

Central systems	Size	Configuration	Connection (to allow for...)
Pool (No. 1)	Volume: 45.0 kLs	Location: Indoor pool &/or spa area (No. 1)	-
Spa (No. 1)	Volume: 5.5 kLs	Location: Indoor pool &/or spa area (No. 1) Spa cover: yes	-
Fire sprinkler system (No. 1)	-	-	-

(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
Indoor pool &/or spa area (No. 1)	air conditioning system	time clock or BMS controlled	light-emitting diode	time clocks	Yes
Gym (No. 1)	air conditioning system	time clock or BMS controlled	light-emitting diode	time clocks	Yes
Car park area (No. 1)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	zoned switching with motion sensor	Yes
Switch room (No. 1)	ventilation supply only	interlocked to light	light-emitting diode	manual on / manual off	Yes
Garbage room (No. 1)	ventilation exhaust only	-	light-emitting diode	motion sensors	Yes
Music and Cinema	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	Yes
Plant or service room (No. 1)	ventilation supply only	thermostatically controlled	light-emitting diode	manual on / manual off	Yes

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 25.0 peak kW
Pool (No. 1)	Heating source: gas	Pump controlled by timer: yes
Spa (No. 1)	Heating system: gas	Pump controlled by timer: yes
Sauna (No. 1)	Heating source: gas	Efficiency measure: manual on / timer off

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).