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LOT C1 - IVANHOE ESTATE

BASIX SUMMARY REPORT

SEPTEMBER 2019

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LOT C1 - IVANHOE ESTATE

BASIX SUMMARY REPORT

FRASERS PROPERTY

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REV	DATE	DETAILS
0	23/02/2018	Draft Issue
1	14/03/2018	Amended Draft Report
2	27/03/2018	Amended rainwater capacity
3	08/05/2018	Updated apartment appliances and fixtures
4	27/09/2019	Report for DA Submission
5	22/10/2019	Updated shower WELS Rating

	NAME	DATE	SIGNATURE
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Approved by:	Chris Mann	22/10/2019	

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OCTOBER 2019

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EXECUTIVE SUMMARY

An ESD strategy has been developed for the proposed development at Lot C1 - Ivanhoe Estate in Macquarie Park. Building C1 consists of two towers, each with a social housing and market component and ground floor town houses, resulting in the following break up for the apartments

BUILDING	APARTMENT USE	NAME
Tower 1	Social	C1.1
	Market	C1.2
Tower 2	Social	C1.3
	Market	C1.4
Town Houses	Market	C1.5

This report demonstrates how the development meets the statutory requirements for single occupancy dwellings under Section J and BASIX.

BASIX requires the following benchmarks to be met:

- Water—Minimum target of 40% potable water use reduction compared to the NSW average
- Thermal comfort—Meeting a set of NatHERS modelled maximum heating and cooling loads determined by the BASIX tool according to the development type and climate zone. For this development, the thresholds are as follows:
    - Heating maximum 40 MJ/m² average across all units, maximum 45.4 MJ/m² for any individual unit
    - Cooling maximum 26 MJ/m² average across all units, maximum 29.5 MJ/m² for any individual unit
- Energy—Minimum energy consumption reduction, compared to the NSW average, of:
    - 25% for buildings C1.1, C1.2, C1.3 and C1.4
    - 45% for building C1.5

The proposed development achieves a BASIX Water score of 40 for C1.1, C1.2, C1.3 and C1.4 and 40 for C1.5

Water efficiency in the building has been achieved through the following:

- Water efficient fittings
- 30kL rainwater tank used for irrigation

The proposed development achieves a BASIX Energy score of 36 for C1.1, C1.2, C1.3 and C1.4 and 46 for C1.5

The energy requirements set out under BASIX are different for buildings of different heights. As such buildings C1.1, C1.2, C1.3 and C1.4 which are 12 and 19 storey buildings have been calculated on a separate BASIX certificate to C1.5, a 3 storey building.

Energy consumption in multi-unit residential buildings is heavily influenced by the utilisation and servicing of the common areas. HVAC and artificial lighting systems in the basement and lobbies has been carefully designed to reduce energy demands.

Simple energy efficiency measures, such as the provision of efficient fittings and fixtures will deliver energy consumption reductions in the dwellings. These include:

- Efficient central DHW heating systems
- Lighting will consist of dedicated low energy light fittings with efficient controls to limit unnecessary usage
- Clothes drying lines will be installed in each apartment
- Solar PV panels installed on both towers, totaling 117kW

1 INTRODUCTION

An ESD strategy has been developed for the proposed development at Lot C1 - Ivanhoe Estate in Macquarie Park. This report demonstrates how the development meets the statutory requirements for single occupancy dwellings under Section J and BASIX.

1.1 BASIX

BASIX is an online tool that is used to rate the energy and water efficiency and thermal comfort performance of residential dwellings in NSW. The tool sets minimum energy and water reduction targets which must be met through the design of the building and the selection of fixtures and fittings.

BASIX applies to all new dwellings including single dwellings, townhouses and low-rise, mid-rise and high-rise developments in NSW.

Design inputs including location, size, construction and glazing materials, water sources, equipment and fittings are used to determine the potential energy and water consumption of a new home or dwelling.

BASIX assesses three main categories:

1. Water;
2. Thermal Comfort;
3. Energy.

Thermal comfort is assessed by simulation in accordance with the Nationwide House Energy Rating Scheme (NatHERS) modelling protocol. This requires the modelling of each assessable dwelling by an accredited assessor, working with NatHERS accredited software.

NatHERS modelling assesses the potential of the dwelling to provide thermal comfort passively, thereby reducing energy requirements for heating and cooling. The annual heating and cooling loads calculated are entered into the BASIX tool to determine if the dwelling satisfies the maximum heating and cooling loads set for the dwelling in its climate zone.

The heating and cooling loads also effect the 'Energy' score, with more efficient dwellings contributing to an improved score in the 'Energy' section. The 'Energy' score is also effected by other inputs such as efficiency of appliances, heating and cooling system selection, hot water systems and factors such as use of renewable energy systems.

1.1.1 SOURCES OF INFORMATION

This BASIX assessment has relied on the following documentation for inputs and methodology

→ Architectural plan drawings from Candalepas Associates

Drawing	Date	Revision
DA 1000 Cover Sheet	26.11.18	A
DA 1050 Site Plan	Sep 2019	B
DA 1102 Basement 3 floor plan	Sep 2019	B
DA 1103 Basement 2 floor plan	Sep 2019	B
DA 1004 Basement 1 floor plan	Sep 2019	B

Drawing	Date	Revision
DA 1005 Lower Ground Floor Plan	Sep 2019	B
DA 1106 Upper Ground Floor Plan	Sep 2019	B
DA 1107 Level 1 Floor Plan	Sep 2019	B
DA 1108 Level 2 Floor Plan	Sep 2019	B
DA 1109 Level 3 – 4 Floor Plan	Sep 2019	B
DA 1110 Level 5 – 12 Floor Plan	Sep 2019	B
DA 1111 Level 13 Floor Plan	Sep 2019	B
DA 1112 Level 14 – 19 Floor Plan	Sep 2019	B
DA 1113 Roof Plan	Sep 2019	B

→ Architectural elevation and section drawings from Candalepas Associates

Drawing	Date	Revision
DA 1200 Section A	Nov 2018	A
DA 1201 Section B	Sep 2019	B
DA 1202 Section C	Sep 2019	B
DA 1300 North East Elevation	Nov 2018	A
DA 1301 North West Elevation	Sep 2019	B
DA 1302 North West Internal Elevation	Sep 2019	B
DA 1303 South East Elevation	Sep 2019	B
DA 1304 South East Internal Elevation	Sep 2019	B
DA 1305 South West Elevation	Nov 2018	A

→ NatHERS Technical Note – Nationwide House Energy Rating Scheme (NatHERS), Requirements for NatHERS assessments – version June 2019

→ BASIX Thermal Comfort Protocol 01 July 2017

1.1.2 ACCREDITED NATHERS SIMULATION SOFTWARE

FirstRate5 is provided by Sustainability Victoria and is accredited for simulating the thermal performance of dwellings in Australian climates under the NatHERS software accreditation protocol.

FirstRate5 version 5.2.10(3.13) has been used in the assessment of this project, in accordance with the NatHERS Technical Note and the BASIX Thermal Comfort Protocol.

Inputs including dwelling geometry, space uses, orientation, climate zone, building materials and shading from adjacencies and obstructions are used to calculate heating and cooling loads for the dwelling. Resulting loads that are within the heating and cooling thresholds set under the BASIX protocol will satisfy the thermal comfort targets of BASIX.

1.2 LIMITATIONS

The results from the NatHERS modelling shown within this report are limited in accuracy by factors including the following:

- Actual energy consumption will be affected by variations in the climate, installed equipment, occupants and their behaviour which modelling does not account for;
- Construction details being consistent with the design documentation provided;
- Orientation and apartment layout being as shown on the drawings.

They should not be interpreted for any purpose other than for assessing the thermal comfort section of BASIX.

2 BASIX

The purpose of the BASIX analysis is to benchmark the proposed development against average NSW residential performance parameters, including:

- Water
- Thermal comfort
- Energy

BASIX requires the following benchmarks to be met:

- Water—Minimum target of 40% potable water use reduction compared to the NSW average
- Thermal comfort—Meeting a set of NatHERS modelled maximum heating and cooling loads determined by the BASIX tool. For this development, they are as follows:
    - Heating maximum 40 MJ/m² average across all units, maximum 45.4 MJ/m2 for any individual unit
    - Cooling maximum 26 MJ/m² average across all units, maximum 29.5 MJ/m2 for any individual unit
- Energy—Minimum required target of 20% and 45% energy consumption reduction compared to the NSW average, according to building type and number of storeys

The BASIX certificate(s) for the development are included in Appendix A.

2.1 WATER

Water efficiency in the building has been achieved through the following:

- Water efficient fittings as shown in Table 2.1 below

Table 2.1 Water Fixtures Performance

Fitting	WELS rating	Flow rate
Toilet	4 Star	3.2/4L dual flush
Bathroom taps	5 Star	6L/min
Kitchen taps	5 Star	6L/min
Showers	4 Star	>6 but <= 7.5L/min
Dishwashers (Buildings C1.2, C1.4 and C1.5)	3.5 Star	<1L/place setting
Washing machines (Buildings C1.5)	Not specified	-

- Rainwater harvesting and reuse. A 30kL rainwater tank is included in the building which will collect water from 2000m² of roof area. The water will be used to irrigate 1300m² of landscaped area.

2.2 THERMAL COMFORT

Thermal comfort (NatHERS) modelling is employed in accordance with the BASIX protocol, to determine heating and cooling loads attributed to achieving acceptable thermal comfort in each dwelling. The results of NatHERS modelling demonstrate that the architectural design can manage thermal loads within the apartments to meet and exceed the minimum benchmark for this location.

The maximum allowable thermal loads for a development in this location are shown in Table 2.2. The predicted average thermal loads achieved in this development are shown in the same table for comparison.

Table 2.2 NatHERS Thermal Comfort Performance

	Heating	Cooling
Maximum individual dwelling load (set by BASIX)	45.4 MJ / m²	29.5 MJ / m²
Average maximum load across project (set by BASIX)	40 MJ / m²	26 MJ / m²
Average load achieved in Lot C1 - Ivanhoe Estate	**30.9 MJ / m²**	**16.2 MJ / m²**

2.2.1 MODELLING INPUTS

This section identifies the inputs for windows, shading and constructions used for the NatHERS modelling on all the dwellings.

GLAZING

Table 2.3 identifies the glazing properties (window total values only) used in the NatHERS models.

Table 2.3 Glazing properties

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4 **All C1.5 town houses**	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

SHADING

Shading of the external building fabric alters the impact of solar loads on the internal conditions of each dwelling. NatHERS modelling accounts for sources of fixed shading that can impact each dwelling.

Note that models have accounted for the following:

- The overhang of any balconies above each dwelling;
- Overshadowing from adjacent buildings; and
- Projecting balcony separator walls and other 'wing-wall'-type geometry between dwellings.

Holland blinds have been modelled as required by the NatHERS protocol, but are not required to be installed as part of the development.

CONSTRUCTIONS

Table 2.4 identifies the wall, floor, ceiling and roof construction properties used as part of the NatHERS models.

Table 2.4 Construction Properties

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

2.2.2 MODELLING RESULTS

This section describes the results from NatHERS modeling. In summary, the dwelling design identified in the stamped drawings can achieve the minimum thermal comfort requirements of BASIX without amendments.

Area adjusted heating and cooling loads and preliminary star ratings for the development are identified in Table 2.5.

Table 2.5 Area adjusted heating and cooling average loads for the development

Building / Block	Heating Load (MJ/m²)	Cooling Load (MJ/m²)	Total Load (MJ/m²)	Star Rating
C1	30.9	18.0	48.9	6.2
C2	29.2	14.7	44.0	6.6
C3	33.4	16.2	49.6	6.1
C4	30.2	17.3	47.4	6.3
C5	21.7	20.0	41.6	6.8
Total	**30.9**	**16.2**	**47.1**	**6.3**

For individual apartment loads refer to Appendix B.

2.2.3 MODELLING CONCLUSION

The results of NatHERS modelling demonstrate the apartments can meet the minimum requirements of the Thermal Comfort section of BASIX.

The NatHERS group Universal Certificate(s) are included in Appendix B.

Stamped plans for submission in conjunction with the BASIX certificate are included in Appendix C.

2.3 ENERGY

2.3.1 COMMON AREAS

Energy consumption in multi-unit residential buildings is heavily influenced by the utilisation and servicing of the common areas. HVAC and artificial lighting systems in car parks, and lobbies need to be carefully designed to reduce energy demands.

The common areas will use:

- Efficient mechanical ventilation systems with appropriate controls to avoid overuse
- Natural ventilation where possible
- High efficacy light fittings
- Lighting control systems in all spaces such as motion sensors where appropriate, or timeclock and BMS control
- Car park mechanical ventilation controlled by carbon monoxide sensors and VSD fans

Further details of the proposed energy strategy for the common areas of the residential portion of the building are summarised in Table 2.6.

Table 2.6 Energy strategies for the common areas

Energy Item	Strategy
Lift motors	Gearless traction with VVVF motors
Lighting	Basement carpark — fluorescent; Zoned switching with motion sensor Lifts — light emitting diode; Connected to lift call button Garbage rooms — fluorescent; Motion sensors Plant areas and switch rooms — fluorescent; Manual on/manual off Bike storage — fluorescent; Motion sensors Ground floor lobby — fluorescent; Daylight sensor and motion sensors Hallways—compact fluorescent; Zoned switching with motion sensor
Ventilation	Basement carpark —ventilation (exhaust only); carbon monoxide monitor + VSD fan Garbage rooms—ventilation exhaust only Plant areas and switch rooms—ventilation exhaust only; thermostatically controlled Bike storage — ventilation exhaust only Ground floor lobby — no mechanical ventilation Hallways— no mechanical ventilation

2.3.2 DWELLINGS

Domestic hot water (DHW), space heating and comfort cooling account for up to 60% of the energy use of an average residential dwelling. Targeting these systems as a priority will support the greatest energy consumption reductions.

Simple energy efficiency measures, such as the provision of efficient fittings and fixtures can deliver energy consumption reductions.

The dwellings will include the following initiatives:

- Efficient DHW heating systems
- Lighting will consist of dedicated low energy light fittings with efficient controls to limit unnecessary usage
- Clothes drying lines will be installed in each apartment
- High Energy Star-rated appliances will be installed in each apartment (see Table 2.7).

Table 2.7 Energy strategies for the dwellings

ENERGY ITEM	SOCIAL (C1.1 AND C1.3)	MARKET (C1.2, C1.4 AND C1.5)
Central DHW heating system	Air sourced electric heat pump	
Lift motors	Gearless traction with VVVF motors	
Appliances	→ Cooktop - Electric → Oven – Electric → Refrigerator – not specified → Dishwashers - not specified → Washing Machines – not specified → Clothes dryers - not specified	→ Cooktop - Induction → Oven – Electric → Refrigerator – not specified → Dishwashers – 3.5 star → Washing Machines – not specified → Clothes dryers - 2 star
Heating and cooling	Radiant bar heaters* Ceiling fans	Air conditioning plant with an EER >3.5
Lighting	Dedicated low energy light fittings to limit unnecessary usage	
Ventilation	→ Bathroom ventilation – ducted to façade or roof → Laundry ventilation - ducted to façade or roof → Kitchen ventilation - ducted to façade or roof	

*BASIX does not have an input for Radiant bar heaters, as such a 1 phase air conditions with an EER between 2.5 and 3 has been inputted

APPENDIX A

BASIX CERTIFICATES

APPENDIX A-1
C1.1-C1.4 BASIX CERTIFICATE

APPENDIX A-2
C1.5 BASIX CERTIFICATE

APPENDIX B

NATHERS CERTIFICATES

APPENDIX B-1
C1.1-C1.4 NATHERS CERTIFICATES

Nationwide House Energy Rating Scheme* — Class 2 summary

Certificate Number: **0TYV0H3GAU** Date of Certificate: **27 Sep 2019** ★ Average star rating: **6.3**

Assessor details

Accreditation number:	**101142**
Name:	**Christopher Mann**
Organisation:	**WSP**
Email:	**chris.mann@wsp.com**
Phone:	**0411644164**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5 v5.2.10b**
AAO:	**ABSA**

Dwelling details

Address:	**Building C1.1-C1.4 - Ivanhoe Estate**
Suburb:	**Macquarie Park**
State:	**NSW**
Postcode:	**2113**

6.3
Average rating

NATIONWIDE HOUSE ENERGY RATING SCHEME

The rating listed above is the average of all units in this building.

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

Summary of all dwellings

Certification details

		Annual thermal performance loads (MJ/m2)			
Certificate number	**Unit number**	**Heating load**	**Cooling load**	**Total load**	**Star rating**
3B2ILDELW3	C1.1-1.01	11.9	22.4	34.3	7.3
IP5CTDZYE2	C1.1-1.01	10.1	23.4	33.5	7.4
XPSKXGW5XS	C1.1-1.02	10.1	21.1	31.2	7.6
HZZ12247L2	C1.1-1.03	30.2	23.6	53.8	5.8
RL8ODQJ2LR	C1.1-1.04	36.3	11.7	48	6.3
337B712TAE	C1.1-1.05	28.8	13	41.8	6.8
5PEO5T0EJ1	C1.1-1.06	36.6	22.4	59	5.4
I1NMKMREGH	C1.1-1.07	9.3	29.1	38.4	7
74TGYO2Y3B	C1.1-1.08	17.1	17.4	34.5	7.3
9L7G6CHUTU	C1.1-1.09	28.2	21.2	49.4	6.1
NVIJBXNWTR	C1.1-10.01	38.3	16.9	55.2	5.7
OF53GES42V	C1.1-10.02	28.7	25.4	54.1	5.8
IZGELBJCTJ	C1.1-10.03	42.6	16.7	59.3	5.4
R1C1OBABA3	C1.1-10.04	34.4	19.3	53.7	5.8
YB4FDKFZHB	C1.1-10.05	45	9.7	54.7	5.7
9Y10TPTJ51	C1.1-10.06	35.1	11.3	46.4	6.4

continued

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
S77PGORXZZ	C1.1-10.07	35.7	13.7	49.4	6.1
UGR8E895KM	C1.1-10.08	16.2	22.8	39	6.9
0LDT8BEO4I	C1.1-10.09	27.4	14.5	41.9	6.8
280DB0DO9Y	C1.1-10.10	39.6	17.7	57.3	5.5
FMIY2S4AAT	C1.1-11.01	38.6	17.1	55.7	5.7
P5QOAJOJSF	C1.1-11.02	28.8	26.2	55	5.7
2RO8P27FNS	C1.1-11.03	32.4	21.2	53.6	5.8
U8Q6C1S32T	C1.1-11.04	33.3	20.6	53.9	5.8
ZL6F3O8T27	C1.1-11.05	43.6	9.7	53.3	5.8
2VPTCY8JJA	C1.1-11.06	44.5	11.2	55.7	5.7
UYWS9QOTLJ	C1.1-11.07	43.8	15.1	58.9	5.4
0UQ8PQUIEA	C1.1-11.08	16.3	22	38.3	7
3T9TP7FON9	C1.1-11.09	27.5	14.2	41.7	6.8
WFJN33YMRD	C1.1-11.10	38.2	17.3	55.5	5.7
ZS6PWI4Q7A	C1.1-12.01	45	18.3	63.3	5.2
BB0293P512	C1.1-12.02	35.9	25.6	61.5	5.3
ENSZ2SH7VO	C1.1-12.03	38.7	26.2	64.9	5.1
L6WXUKWU7H	C1.1-12.04	35.9	28	63.9	5.1
DZRN8UOQO9	C1.1-12.05	42	13.2	55.2	5.7
N2VZ8LAHWE	C1.1-12.06	44.2	11.3	55.5	5.7
A74TYEPCIZ	C1.1-12.07	44.1	15.5	59.6	5.4
H58UYP6F0I	C1.1-12.08	23.5	22.7	46.2	6.4
D1SVBTL7YJ	C1.1-12.09	36.7	15.4	52.1	5.9
JO73GG47Y4	C1.1-12.10	44.3	18.7	63	5.2
LVBH3WUEKU	C1.1-2.01	10.7	21.9	32.6	7.4
ZESUJBQU0V	C1.1-2.01	10.1	23.4	33.5	7.4
KYN3HB670R	C1.1-2.02	11.2	22.3	33.5	7.4
0BLI174GPI	C1.1-2.03	30.9	23.6	54.5	5.7
F6UVR3L87W	C1.1-2.04	35.6	11.5	47.1	6.3
7H7H1K7D94	C1.1-2.05	35.5	12	47.5	6.3
FJ3C4X2K3M	C1.1-2.06	32.3	27.6	59.9	5.4

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
HJFSQND1LO	C1.1-2.07	9.7	28.8	38.5	7
07AETTEEQQ	C1.1-2.08	22	21.2	43.2	6.7
90HUC6DS13	C1.1-2.09	33.1	23	56.1	5.6
DRQQHRI6BH	C1.1-3.01	13.4	19.3	32.7	7.4
ABFUPYCP1O	C1.1-3.01	9.1	23.2	32.3	7.4
HF2UEIIZTL	C1.1-3.02	9.9	22.1	32	7.5
TX3MMQBUPU	C1.1-3.03	34.8	19.4	54.2	5.8
ABA83A9ICX	C1.1-3.04	37.3	11.4	48.7	6.2
2MMQV0LAWT	C1.1-3.05	39.5	10.8	50.3	6.1
LS0IB01TM9	C1.1-3.06	38.2	20.3	58.5	5.4
DZWXL2C5RM	C1.1-3.07	10	28.5	38.5	7
6E55UTSC3V	C1.1-3.08	21.7	14.8	36.5	7.2
HL4YLSL16D	C1.1-3.09	43.2	21.1	64.3	5.1
FE2P54AEGB	C1.1-4.01	12	20.5	32.5	7.4
B6YSZR6T8G	C1.1-4.01	13.6	19.6	33.2	7.4
UJ817AISIB	C1.1-4.02	12.8	19.7	32.5	7.4
XK60WCUHB7	C1.1-4.03	35.2	19.3	54.5	5.7
JB51J8YK3X	C1.1-4.04	42.2	10	52.2	5.9
GHIIX1XLJ8	C1.1-4.05	32.3	10.7	43	6.7
ICCOH5IC33	C1.1-4.06	28.8	16.5	45.3	6.4
J2CJ1TNGS9	C1.1-4.07	13.2	24.3	37.5	7.1
L8ZV4PBXC4	C1.1-4.08	24	14.9	38.9	7
OI8DYH8RTO	C1.1-4.09	26	16.1	42.1	6.7
0WR9NOE9QE	C1.1-5.01	34.8	18.5	53.3	5.8
NQ3JWKMQU2	C1.1-5.02	26.1	28	54.1	5.8
4U98PA39UU	C1.1-5.03	35	17.1	52.1	5.9
U6WEJZQZIP	C1.1-5.04	35.2	19.4	54.6	5.7
KCH8R7PZQN	C1.1-5.05	42.7	9.9	52.6	5.9
4S61TFWSUM	C1.1-5.06	40.5	10.9	51.4	5.9
UFO6UR4Z97	C1.1-5.07	31.8	15.1	46.9	6.3

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
3XIES1NBRR	C1.1-5.08	13.5	24.7	38.2	7.1
VETGZC95UE	C1.1-5.09	22.4	14.8	37.2	7.1
C8E64EXLO9	C1.1-5.10	43	19.1	62.1	5.2
D0ZSUHJ2J2	C1.1-6.01	34.8	18.6	53.4	5.8
QYNCJ38WP4	C1.1-6.02	26.5	27.4	53.9	5.8
XN9QKMH3I8	C1.1-6.03	38.6	18.3	56.9	5.6
WR9GEWFKHP	C1.1-6.04	36.2	18.8	55	5.7
Q2AY44K0CT	C1.1-6.05	41.9	10.1	52	5.9
RPEU66VUHA	C1.1-6.06	33.1	10.4	43.5	6.6
R8HZI9YG8X	C1.1-6.07	32.4	14.9	47.3	6.3
XXPAO4MLWP	C1.1-6.08	13.9	24.5	38.4	7
CR0YRHMOKH	C1.1-6.09	24.9	15.3	40.2	6.9
BVDH8RVLP4	C1.1-6.10	35.8	17.1	52.9	5.9
2HJJ1I1YBA	C1.1-7.01	35.2	17.3	52.5	5.9
3HTPVOJX35	C1.1-7.02	26.9	28.4	55.3	5.7
WWJ86TD6Q8	C1.1-7.03	39	17.7	56.7	5.6
1PU1QCMDFV	C1.1-7.04	34.8	19.3	54.1	5.8
C9YC2K46Y9	C1.1-7.05	43	10.4	53.4	5.8
E5HCJNW29T	C1.1-7.06	33.2	10.5	43.7	6.6
CGRI2W7GFW	C1.1-7.07	32.7	14.6	47.3	6.3
YHHRMT1KFK	C1.1-7.08	14.1	25	39.1	6.9
DB17QG2V3P	C1.1-7.09	24.9	15	39.9	6.9
XB7E7P1PR9	C1.1-7.10	36.3	17.3	53.6	5.8
J1FZT7X00Z	C1.1-8.01	35.5	17.3	52.8	5.9
VMXZPAPT1W	C1.1-8.02	27.2	27.7	54.9	5.7
4LM08WJDT6	C1.1-8.03	39.5	18.1	57.6	5.5
2HW1LQ7BFO	C1.1-8.04	34.8	19.4	54.2	5.8
SQE5SEV3XZ	C1.1-8.05	42.2	10.3	52.5	5.9
Y8T6Y08TZ5	C1.1-8.06	33.4	10.7	44.1	6.6
AWUXZKMNTO	C1.1-8.07	33.2	14.3	47.5	6.3

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
7QG44X719J	C1.1-8.08	14.4	24.6	39	7
JWM734Y0DV	C1.1-8.09	25.3	14.9	40.2	6.9
ROMJO65RGI	C1.1-8.10	35.8	16.7	52.5	5.9
2S9SQ3H2WV	C1.1-9.01	38.2	16.9	55.1	5.7
QX9TAG4ORE	C1.1-9.02	28.3	25.6	53.9	5.8
JC2Q6WPN7N	C1.1-9.03	42.5	17.5	60	5.4
4U6VUHLVCF	C1.1-9.04	36.3	19.1	55.4	5.7
4M2I2E9HC5	C1.1-9.05	44.3	10	54.3	5.8
6Z74PZZTV3	C1.1-9.06	35.1	11.3	46.4	6.4
N35J151N93	C1.1-9.07	35.4	14.1	49.5	6.1
4JLLK7KUY1	C1.1-9.08	16	23.1	39.1	6.9
XIKBQFXCG4	C1.1-9.09	27.1	14.4	41.5	6.8
R29I2AQSR6	C1.1-9.10	39	18	57	5.6
SW05XYOD89	C1.1-B1.01	27.7	17.9	45.6	6.4
1BSZPM7FCX	C1.1-B1.02	29.6	13.4	43	6.7
VAKXHUESJU	C1.1-LG.01	29.6	15.5	45.1	6.4
6I30DM1MP1	C1.1-LG.02	35.2	13.2	48.4	6.2
YLWKIQFJYO	C1.1-LG.03	26.9	14.9	41.8	6.8
QKVBFB8RQY	C1.1-LG.04	14	11.8	25.8	8
NLCJAWDDOE	C1.1-LG.05	19.4	19.4	38.8	7
ER384HGRY8	C1.1-UG.01	30.1	23.6	53.7	5.8
EEA614BGD0	C1.1-UG.02	41.8	17.2	59	5.4
X7CBQQ8JY3	C1.1-UG.03	29	24.6	53.6	5.8
R7O94JKGRF	C1.1-UG.04	34.4	12	46.4	6.4
V69YRHO2SO	C1.1-UG.05	45.1	10	55.1	5.7
BIFXJ0SDGH	C1.1-UG.06	28.4	13.3	41.7	6.8
F21THL3CQL	C1.1-UG.07	29.9	26.1	56	5.6
KXE6YYSQ2I	C1.2-1.01	25.1	21.2	46.3	6.4
3IGBZIK2JI	C1.2-10.01	27	13.7	40.7	6.9
MGM3CV783S	C1.2-10.02	30.4	15.6	46	6.4

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
X9WMOY34O3	C1.2-10.03	42.7	9.9	52.6	5.9
RA1WOQPZUF	C1.2-10.04	27.8	10.4	38.2	7.1
8EVTOHG3GX	C1.2-10.05	24.6	13.9	38.5	7
B6KU23W4WA	C1.2-11.01	27.3	13.1	40.4	6.9
PPNP0LO0OV	C1.2-11.02	30.5	15.5	46	6.4
FIOXTSOC7H	C1.2-11.03	42.8	10	52.8	5.9
SAX11UZH3U	C1.2-11.04	28	10.2	38.2	7.1
4UCT0S1F2C	C1.2-11.05	24.7	13.8	38.5	7
7PA99OX1JW	C1.2-12.01	27.4	13.7	41.1	6.8
2J058OMH2B	C1.2-12.02	30.5	15.5	46	6.4
P42V2G139F	C1.2-12.03	42.8	10	52.8	5.9
AAFUKZ307G	C1.2-12.04	28.1	10.3	38.4	7
ZM04XSSHJY	C1.2-12.05	24.9	13.7	38.6	7
M3F2FCWOG2	C1.2-13.01	13.4	28.6	42	6.7
W31DV1DFUJ	C1.2-13.02	25.3	27.4	52.7	5.9
VVKWLCD77K	C1.2-13.03	28.7	25.9	54.6	5.7
0VEC089028	C1.2-13.04	28.3	8.2	36.5	7.2
YTUL3G5NPH	C1.2-13.04	30	7.5	37.5	7.1
COTFT6VWJ6	C1.2-13.05	30.8	9.2	40	6.9
OMXAD0TTQC	C1.2-13.06	22.8	11.2	34	7.4
WH731VF46B	C1.2-14.01	14.9	14.2	29.1	7.7
1IJ4OCWCJ9	C1.2-14.02	25.5	27.5	53	5.9
CCGUFKXXBL	C1.2-14.03	31.1	20.2	51.3	5.9
0FRXQVSU46	C1.2-14.04	28.2	7.9	36.1	7.2
3POVR2SXAJ	C1.2-14.05	31	9.3	40.3	6.9
PT7PSO2WXF	C1.2-14.06	25.4	13.6	39	6.9
9PRX5ZX0GI	C1.2-15.01	15	14.9	29.9	7.7
8ADEO4IEE8	C1.2-15.02	25.8	27.1	52.9	5.9
3IOB465J2L	C1.2-15.03	31	20.3	51.3	5.9
XHZABLFXPQ	C1.2-15.04	28.3	7.6	35.9	7.2

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
HQDT0TV6MH	C1.2-15.05	31.1	9.3	40.4	6.9
PD0TI0BQ38	C1.2-15.06	25.4	13.5	38.9	7
3N75V0LCCC	C1.2-16.01	15.1	14.2	29.3	7.7
YVYX1MF4KK	C1.2-16.02	25.7	26.7	52.4	5.9
L87V5TRF2L	C1.2-16.03	30.9	20.6	51.5	5.9
KZ3QX3SH8A	C1.2-16.04	28.4	7.6	36	7.2
IS4JS3OC25	C1.2-16.05	31.3	9.3	40.6	6.9
VGFSX4QM9B	C1.2-16.06	25.6	13.4	39	6.9
IFK1292HA8	C1.2-17.01	15	14.3	29.3	7.7
476KC2EXCC	C1.2-17.02	25.7	26.6	52.3	5.9
EON6ZEUK33	C1.2-17.03	30.6	20.5	51.1	5.9
MGI61CHCQT	C1.2-17.04	28.5	7.6	36.1	7.2
BGC3BYJ5Q4	C1.2-17.05	31.5	9.3	40.8	6.9
Z2J7731NCY	C1.2-17.06	25.8	13.5	39.3	6.9
OROHVXYAS9	C1.2-18.01	15.3	14.4	29.7	7.7
XX08SGKCBP	C1.2-18.02	25.8	26.7	52.5	5.9
20MYDTAMYR	C1.2-18.03	30.3	20.4	50.7	6
8S2ULV0WN2	C1.2-18.04	28.6	7.6	36.2	7.2
UBIMLOMHB8	C1.2-18.05	31.6	9.3	40.9	6.8
9UVWT922U7	C1.2-18.06	25.9	13.6	39.5	6.9
VF6M8E4FX6	C1.2-19.01	23.9	15.9	39.8	6.9
PXYJ51S9NY	C1.2-19.02	30.9	28.5	59.4	5.4
H2LZRN6GBL	C1.2-19.03	38.1	20.6	58.7	5.4
38CQGPE5OH	C1.2-19.04	36	9.3	45.3	6.4
TGUFTM5M11	C1.2-19.05	39.3	10.1	49.4	6.1
R2P6024H5U	C1.2-19.06	34.6	14.7	49.3	6.1
8XR1I6L0XK	C1.2-2.01	18	14.8	32.8	7.4
EQGFD0J23U	C1.2-2.02	27	12.5	39.5	6.9
ZJ86FBGBF3	C1.2-2.03	39.1	13.3	52.4	5.9
L49AIMJXVV	C1.2-2.03	34.7	12.9	47.6	6.3

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
0JYHKO09MW	C1.2-2.04	22.6	14.2	36.8	7.2
SWCH24R927	C1.2-2.05	15.2	14.5	29.7	7.7
OZWHSZYUWG	C1.2-3.01	22.6	15.1	37.7	7.1
0JU3U4184Z	C1.2-3.02	27.9	17.8	45.7	6.4
AJPHBCH0EL	C1.2-3.03	38.4	11.2	49.6	6.1
UHJIPAWRYV	C1.2-3.04	25.5	11.1	36.6	7.2
ZGNG6JBIX7	C1.2-3.05	20.9	14.5	35.4	7.3
CSEC7EKPFQ	C1.2-4.01	23.1	15.1	38.2	7.1
R7QLWSAMOT	C1.2-4.02	27.9	17.5	45.4	6.4
IKJJ936JK2	C1.2-4.03	39.1	10.7	49.8	6.1
B8DGIBDGLL	C1.2-4.04	23.7	10.4	34.1	7.4
ZGLID1ZCTO	C1.2-4.05	21.3	14.4	35.7	7.2
IY4DY1J5DD	C1.2-5.01	19.4	15.1	34.5	7.3
HBENOT4KCU	C1.2-5.02	28.1	17.4	45.5	6.4
O4BD4C9AFH	C1.2-5.03	39.4	11.3	50.7	6
E3Z6UME9RQ	C1.2-5.04	26.7	11.1	37.8	7.1
1IDHDYB84U	C1.2-5.05	21.8	14.4	36.2	7.2
1Z465DKBMX	C1.2-6.01	24.1	14.9	39	7
MXMWOSB7ET	C1.2-6.02	28.3	17.4	45.7	6.4
93UTY84AQH	C1.2-6.03	40.1	10.3	50.4	6
ESZ0HHT9T1	C1.2-6.04	24.7	10.2	34.9	7.3
E74C0IJTCX	C1.2-6.05	22.2	14.3	36.5	7.2
Z52HK7FKH7	C1.2-7.01	24.4	14.2	38.6	7
IJUET37WPG	C1.2-7.02	28.5	17.1	45.6	6.4
9BNMPB9R3Q	C1.2-7.03	40.1	10.4	50.5	6
YL83RIZRQJ	C1.2-7.04	25	10.1	35.1	7.3
CI1VT4MZS6	C1.2-7.05	22.4	14.4	36.8	7.2
8YQ6DDIQKO	C1.2-8.01	24.7	14.3	39	7
600MGGCFDP	C1.2-8.02	28.8	17.2	46	6.4
RRYB5M6UHC	C1.2-8.03	40.4	10.3	50.7	6

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
XM6MJN8WBP	C1.2-8.04	25.3	10.2	35.5	7.2
XEM49XWK37	C1.2-8.05	22.6	14.1	36.7	7.2
YOPBVRAOA1	C1.2-9.01	26.8	13.9	40.7	6.9
GYIH1U4ND2	C1.2-9.02	30.4	15.6	46	6.4
IPDX2NE4BH	C1.2-9.03	42.5	9.9	52.4	5.9
ZV0KOJ6411	C1.2-9.04	27.5	10.5	38	7.1
NTWJI85ECP	C1.2-9.05	24.6	13.9	38.5	7
VCHTB7MT5A	C1.2-UG.01	10.9	9.6	20.5	8.4
K3A2ET25IN	C1.2-UG.02	31.6	11.5	43.1	6.7
4Y48DT6L87	C1.2-UG.03	31.9	20.1	52	5.9
9IMQJWV059	C1.2-UG.04	35.7	12.3	48	6.3
0NBUY1COOR	C1.2-UG.05	13.3	12.7	26	8
RHSB30XPDB	C1.2-UG.06	7.1	13.8	20.9	8.4
YTVFPRYJDZ	C1.3-1.02	11.7	22.1	33.8	7.4
IRQY46WNH0	C1.3-1.03	22.2	28.8	51	5.9
7S6LH6ZQWL	C1.3-1.04	32.7	11.9	44.6	6.5
3IU28AZOFN	C1.3-1.05	31	13.9	44.9	6.5
RVI6PCW82R	C1.3-1.05	32.2	14.3	46.5	6.4
9OHTGIFQDV	C1.3-1.06	26.8	14.7	41.5	6.8
DZEIGFLF2A	C1.3-1.07	25.1	27.8	52.9	5.9
7SZ7PR9XAP	C1.3-1.08	38.8	18.5	57.3	5.6
1GD1APH3JR	C1.3-1.09	33.6	19.4	53	5.9
4TP82OMJ5N	C1.3-10.01	40.7	16.2	56.9	5.6
QAI9XW419O	C1.3-10.02	28.7	22.7	51.4	5.9
CM6UZYYS9S	C1.3-10.03	37.8	18	55.8	5.7
CIYX8N428S	C1.3-10.04	29.1	20	49.1	6.2
U283U4M702	C1.3-10.05	38.5	10.7	49.2	6.2
9KQVGVBJ0A	C1.3-10.06	38.4	12.6	51	6
3WEZY1UTW9	C1.3-10.07	23.9	11.3	35.2	7.3
2BHYP4ATSD	C1.3-10.08	25	22.9	47.9	6.3

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
KKQ8QCKB9F	C1.3-10.09	32.6	12.7	45.3	6.4
PM3658YIF3	C1.3-10.10	39.4	19.2	58.6	5.4
VRDMJERNQ2	C1.3-11.02	28.9	22.5	51.4	5.9
9C9NNCE3GF	C1.3-11.03	38.1	18.4	56.5	5.6
GUG0TVAVMQ	C1.3-11.04	29.2	19.8	49	6.2
O7UWPTOYTA	C1.3-11.05	42.7	11.7	54.4	5.8
PIW6EAYTKH	C1.3-11.06	44.8	13.3	58.1	5.4
K4OI0LMK6Q	C1.3-11.06	44.4	13.4	57.8	5.5
6NMVQNHFZ0	C1.3-11.07	23.8	11.6	35.4	7.3
F1F4SBLM3Y	C1.3-11.08	23.5	22.9	46.4	6.4
D6AANBSN74	C1.3-11.09	31.1	12.7	43.8	6.6
YPJG4MF89H	C1.3-11.10	37.8	18.7	56.5	5.6
IZY5KX2ZDN	C1.3-12.01	40.1	17.3	57.4	5.5
HB557N3N4Z	C1.3-12.02	36	23.7	59.7	5.4
39NC2ZR89G	C1.3-12.03	43.5	18.8	62.3	5.2
I6PQCZALB7	C1.3-12.04	33.8	24.2	58	5.5
DRB38BYCXD	C1.3-12.05	44.3	16.8	61.1	5.3
2LJG2JWLON	C1.3-12.07	31.8	11.7	43.5	6.6
UFXL6OPGQ8	C1.3-12.08	24.1	21.5	45.6	6.4
7Y46ZAJTMB	C1.3-12.09	40.4	14.5	54.9	5.7
ARB3E1I5AZ	C1.3-12.10	42.9	19.2	62.1	5.2
VL920SK7JZ	C1.3-2.02	10.2	22	32.2	7.4
4KG3E30O76	C1.3-2.03	24.8	23.6	48.4	6.2
NLICIHGQ8Z	C1.3-2.04	36.5	13.5	50	6.1
NYAG0IV7MS	C1.3-2.05	32	13.8	45.8	6.4
18ZUJLUEOO	C1.3-2.06	27.8	14.6	42.4	6.7
R1D65GWK8T	C1.3-2.07	29.2	26.2	55.4	5.7
2IX2LURK7V	C1.3-2.08	28.2	17	45.2	6.4
KYAZ992LB5	C1.3-2.09	34.1	19	53.1	5.8
28N724FVH0	C1.3-3.02	13	19.5	32.5	7.4

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
72XPE46SWT	C1.3-3.03	26.7	23.3	50	6.1
ZWP86OZ0HY	C1.3-3.04	33.7	12.2	45.9	6.4
BF5M0NQB15	C1.3-3.05	36	12.1	48.1	6.2
9M9NA9ZI8Q	C1.3-3.06	31.9	11.8	43.7	6.6
Z5CMBAOIDA	C1.3-3.07	33.1	22.6	55.7	5.7
6FHOGKC6UT	C1.3-3.08	37.5	14.1	51.6	5.9
L49UZRK22E	C1.3-3.09	34.4	19	53.4	5.8
LC9WDG95N5	C1.3-4.02	10.4	18.6	29	7.8
EKU3C7D745	C1.3-4.03	26	22.7	48.7	6.2
EPOSY17KY1	C1.3-4.04	34.4	12	46.4	6.4
O401HAAN2V	C1.3-4.05	34.2	14	48.2	6.2
UYO4DL5N5T	C1.3-4.06	32.6	11.4	44	6.6
5CBM07KCNP	C1.3-4.07	33.2	22.5	55.7	5.7
NTLU809SKQ	C1.3-4.08	37.9	13.5	51.4	5.9
FEWO4QATPN	C1.3-4.09	38.9	16.2	55.1	5.7
5TPF6L3OAK	C1.3-5.01	38.1	18.2	56.3	5.6
Z89MIAM36M	C1.3-5.02	19.3	21.3	40.6	6.9
LNDON0QWSK	C1.3-5.03	25.2	25.3	50.5	6
61WAT3EGYW	C1.3-5.04	27.5	23	50.5	6
7VRA0HEJG3	C1.3-5.05	34.6	12	46.6	6.4
DHWDBSQA1F	C1.3-5.06	37	11.9	48.9	6.2
G2KXCJ1JK2	C1.3-5.07	31.5	10.2	41.7	6.8
5H50N8L93O	C1.3-5.08	32.9	22	54.9	5.7
6GFKP05DXG	C1.3-5.09	45	14.5	59.5	5.4
VGQYGYET8B	C1.3-5.10	40.5	17.3	57.8	5.5
NDPS00Z1W1	C1.3-6.01	38.2	17.8	56	5.6
5FQ177CMYL	C1.3-6.02	26.2	25.1	51.3	5.9
WMMUUZ0GTY	C1.3-6.03	34	18.8	52.8	5.9
42A1B20WUY	C1.3-6.04	27.1	22.9	50	6.1
AER5KQ0Z1J	C1.3-6.05	35.2	12.3	47.5	6.3

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
W15XOA047B	C1.3-6.06	35.3	13.4	48.7	6.2
WMSD36C3G5	C1.3-6.07	31.5	11.2	42.7	6.7
9TH77DEYZE	C1.3-6.08	31.8	22.3	54.1	5.8
753SOXXOCK	C1.3-6.09	37.6	13.6	51.2	5.9
8BPJCC7MNB	C1.3-6.10	39	16.6	55.6	5.7
NK9M0E3T85	C1.3-7.01	38.4	17.1	55.5	5.7
HXPIFYBTXP	C1.3-7.02	26.5	24.7	51.2	5.9
OCE7I45KK4	C1.3-7.03	34.5	19.3	53.8	5.8
M0JZLM58FC	C1.3-7.04	27.4	22.8	50.2	6.1
4IIGAA04RX	C1.3-7.05	35.6	12.1	47.7	6.3
BP0EQKFCD6	C1.3-7.06	35.5	13.6	49.1	6.2
ITIDTROZ73	C1.3-7.07	28.6	11	39.6	6.9
3DNVVF387I	C1.3-7.08	29.7	22.4	52.1	5.9
DA2W269EJA	C1.3-7.09	36.6	13.7	50.3	6.1
945K5EHZL5	C1.3-7.10	41	19.4	60.4	5.3
09VI5U6CFU	C1.3-8.01	38.5	16.9	55.4	5.7
ENOZBFAOTO	C1.3-8.02	26.9	24.6	51.5	5.9
YNSVLDATWK	C1.3-8.03	34.9	19.7	54.6	5.7
Q8DHUFFBQ6	C1.3-8.04	27.7	22.6	50.3	6.1
QNJYAWQFI0	C1.3-8.05	35.9	11.9	47.8	6.3
D2G6GMR972	C1.3-8.06	35.8	13.4	49.2	6.1
TMP4EGJGF6	C1.3-8.07	24.6	11.3	35.9	7.2
998W8KE3UY	C1.3-8.08	27.6	22.4	50	6.1
W5K6HY2HBH	C1.3-8.09	35.1	13.6	48.7	6.2
XFDXMD8OU4	C1.3-8.10	41.3	19.9	61.2	5.3
J2K0A8D1FM	C1.3-9.01	40.7	16.4	57.1	5.6
VR1W0TFFIW	C1.3-9.02	28.4	22.7	51.1	5.9
RTTRUPIK2R	C1.3-9.03	37.5	18.2	55.7	5.7
G1OZ4R908S	C1.3-9.04	29.9	20.7	50.6	6
8S5XU7UHGM	C1.3-9.05	38.2	10.8	49	6.2

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
2T9TLZI3GU	C1.3-9.06	38.1	13.2	51.3	5.9
Z39XF4DB1I	C1.3-9.07	24.6	11.2	35.8	7.2
TOG0X8X66W	C1.3-9.08	27.3	23	50.3	6.1
4BEQYX14NE	C1.3-9.09	34.8	12.6	47.4	6.3
JGUO2FTIR0	C1.3-9.10	41.9	19.3	61.2	5.3
DBUZ2MB3XM	C1.3-LG.01	39.4	22	61.4	5.3
FMPQTTFJPP	C1.3-LG.02	37.3	19.4	56.7	5.6
JO6UV61ZG5	C1.3-LG.03	40.6	24.1	64.7	5.1
N3K1I5T2SL	C1.3-LG.04	40.2	25.2	65.4	5
TQ796YW6LZ	C1.3-UG.01	37.5	12	49.5	6.1
PFI3OIJ3BF	C1.3-UG.02	37.1	11.9	49	6.2
GRR1EX9GM4	C1.3-UG.03	20	29.3	49.3	6.1
ALH8KCKGM0	C1.3-UG.04	32.9	13.6	46.5	6.4
WWUD9T8IVX	C1.3-UG.06	26	16.9	42.9	6.7
7EUOJD7JSM	C1.3-UG.07	45.1	22.7	67.8	4.9
7DRLXUJULB	C1.3-UG.08	26.1	17.8	43.9	6.6
BBN5IN0E81	C1.3-UG.09	44.8	20.5	65.3	5
8K6MYF6I6I	C1.4-1.01	24.1	20.3	44.4	6.5
Y7J45BSAFD	C1.4-1.02	28.9	12.3	41.2	6.8
YSZZJ0KGLC	C1.4-1.03	43.9	22.5	66.4	4.9
Y0TY30B61M	C1.4-10.01	31.2	11.2	42.4	6.7
MQCTIMXWRJ	C1.4-10.02	36.4	8.8	45.2	6.4
AE08RXOTK2	C1.4-10.03	43.8	9.5	53.3	5.8
C3FWYLUH14	C1.4-10.04	40.8	9.7	50.5	6
XC6CX878RG	C1.4-10.05	30.7	13.6	44.3	6.6
OMXJTJVL9Z	C1.4-11.01	31	11.5	42.5	6.7
FV62KN4QON	C1.4-11.01	31	11.5	42.5	6.7
CAHR852WGU	C1.4-11.02	36.6	8.7	45.3	6.4
QLILP8IXLT	C1.4-11.03	44	9.5	53.5	5.8
0QCDWR6NMK	C1.4-11.04	40.5	9.7	50.2	6.1

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
QD2N1W4OE2	C1.4-11.05	30.7	13.7	44.4	6.5
FL16Z4MVMM	C1.4-12.01	30.9	11.6	42.5	6.7
FHF5XW8D5Q	C1.4-12.02	36.8	8.7	45.5	6.4
8PJ5ENS5T2	C1.4-12.03	43.6	9.6	53.2	5.8
E3TSNOYGO1	C1.4-12.04	40.2	9.7	49.9	6.1
FKAAFJ870F	C1.4-12.05	31.1	14	45.1	6.4
RO210NKKW3	C1.4-13.01	18.4	23.3	41.7	6.8
UXTGSKLOSM	C1.4-13.02	25.3	27.4	52.7	5.9
S6R8I64UER	C1.4-13.03	26.1	26.3	52.4	5.9
KL5MDZA6PQ	C1.4-13.05	37.7	9.2	46.9	6.3
R9CIUV63S4	C1.4-13.06	29.8	11.1	40.9	6.8
SZFFD9SQPU	C1.4-14.01	30.2	13	43.2	6.6
KUWUBHBF5T	C1.4-14.02	26.5	27.1	53.6	5.8
68FY90S6RF	C1.4-14.03	23	18.6	41.6	6.8
BGI8PUFZJE	C1.4-14.04	28.7	7.4	36.1	7.2
PVFNENJ5ZX	C1.4-14.05	38.4	9.8	48.2	6.2
M2OCPYIR23	C1.4-14.06	34.6	14.9	49.5	6.1
VLPQI5BQNG	C1.4-15.01	29.6	13.1	42.7	6.7
L1G660LYO4	C1.4-15.02	26.3	26.8	53.1	5.9
C2746EOXXW	C1.4-15.03	22.9	18.5	41.4	6.8
P7R5JDFYFI	C1.4-15.04	28.6	7.3	35.9	7.2
M2RTMUWRFY	C1.4-15.05	37.2	9.7	46.9	6.3
NTC702NUUD	C1.4-15.06	33.6	14.9	48.5	6.2
NAZDULHIA5	C1.4-16.01	28.4	13	41.4	6.8
9YT6XUTGNC	C1.4-16.02	26.1	26.5	52.6	5.9
HTQ5G6NSGN	C1.4-16.03	23	18.5	41.5	6.8
U0898UURFM	C1.4-16.04	28.5	7.6	36.1	7.2
QW9KSEMXER	C1.4-16.05	35.8	9.5	45.3	6.4
BL60MMRJRC	C1.4-16.06	32.2	14.9	47.1	6.3
N062OQ5VM5	C1.4-17.01	27	13	40	6.9

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
46OOVNEB49	C1.4-17.02	26.2	26.4	52.6	5.9
VYPZ5J7O96	C1.4-17.03	23.2	18.2	41.4	6.8
KOED08L34Z	C1.4-17.04	28.4	7.5	35.9	7.2
JW5C56CL7X	C1.4-17.05	34.4	9.6	44	6.6
CLAC8Q65ZH	C1.4-17.06	31	14.9	45.9	6.4
6DXJRM19D1	C1.4-18.01	26.7	14.1	40.8	6.8
3L6OSYXA1M	C1.4-18.02	26.3	26.5	52.8	5.9
Q9VO2YYR8H	C1.4-18.03	23.3	18.4	41.7	6.8
YYRGFQBDI9	C1.4-18.04	28.2	7.3	35.5	7.2
Q5E511OVTK	C1.4-18.05	33.9	9.7	43.6	6.6
35EN07SIQ2	C1.4-18.06	30.3	15	45.3	6.4
YKA6DF40IC	C1.4-19.01	36.5	15	51.5	5.9
WT215V4ZXB	C1.4-19.02	32.1	27.8	59.9	5.4
KD7XO2TDPI	C1.4-19.03	30.4	18.5	48.9	6.2
73XPLG4H2W	C1.4-19.04	35.2	8.7	43.9	6.6
7XMRYJDMRF	C1.4-19.05	40.6	9.8	50.4	6.1
C2VPSVMNSK	C1.4-19.06	37.7	15.7	53.4	5.8
X6J5X40SZY	C1.4-2.01	30.4	15.6	46	6.4
633XZV5HQS	C1.4-2.02	29.1	11.5	40.6	6.9
FX4N43BZ5B	C1.4-2.04	34.5	15.5	50	6.1
YVU2YGYMN0	C1.4-2.05	31.8	17.2	49	6.2
5CZ3W0X52H	C1.4-3.01	32.7	11.6	44.3	6.6
JTP13G7ACJ	C1.4-3.02	32.6	9.5	42.1	6.7
P6IOCPVHC7	C1.4-3.03	38	10.6	48.6	6.2
5063VP34ZR	C1.4-3.04	33.8	12.4	46.2	6.4
PICPC5ZB9Y	C1.4-3.05	34.5	13.7	48.2	6.2
7Y9074V01P	C1.4-4.01	33	11.9	44.9	6.5
64TVRZMBYB	C1.4-4.02	33.3	9.4	42.7	6.7
1AR8CG33LH	C1.4-4.03	38.6	10.3	48.9	6.2
0THOC2ACH4	C1.4-4.04	34.3	12.2	46.5	6.4

continued

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	**Unit number**	**Heating load**	**Cooling load**	**Total load**	**Star rating**
28BRI63LV6	C1.4-4.05	34.8	13.5	48.3	6.2
T2WU0C62JE	C1.4-5.01	31.3	12	43.3	6.6
6VAUCOVDMQ	C1.4-5.02	32.9	9.3	42.2	6.7
F52HR2890G	C1.4-5.03	37.4	11.4	48.8	6.2
NSIPJBTQRH	C1.4-5.04	33.9	10.9	44.8	6.5
HJL178PQAT	C1.4-5.05	27.5	14.1	41.6	6.8
MOSG52P0K6	C1.4-6.01	32.1	12.2	44.3	6.6
YR90ZU8HA2	C1.4-6.02	33.4	9.2	42.6	6.7
BX3QLUK3LN	C1.4-6.03	40.7	10.2	50.9	6
5H6RRY5A8G	C1.4-6.04	37.4	10.5	47.9	6.3
69E3LITGDM	C1.4-6.05	27.8	14.2	42	6.8
6H2NHYVC5L	C1.4-7.01	31.5	11.9	43.4	6.6
RVP6BRURJA	C1.4-7.02	33.7	9.3	43	6.7
MS9GWV5XZH	C1.4-7.03	41.1	10.3	51.4	5.9
F1HMLVI0ZT	C1.4-7.04	37.7	10.5	48.2	6.2
MMETNYIF03	C1.4-7.05	28	13.9	41.9	6.8
S5R02NV37Q	C1.4-8.01	30.8	11.6	42.4	6.7
S8OELOYGFI	C1.4-8.02	34	9	43	6.7
X3L1GAOP38	C1.4-8.03	41.4	10.3	51.7	5.9
M065YJJQU7	C1.4-8.04	38	10.4	48.4	6.2
AO2JAN79I9	C1.4-8.05	28.3	14	42.3	6.7
AB9SFZT0T1	C1.4-9.01	31.4	11.1	42.5	6.7
9FA9D1BSQB	C1.4-9.02	36.1	8.9	45	6.5
EHWIIJAC03	C1.4-9.03	43.5	9.6	53.1	5.8
COH38L0OZ9	C1.4-9.04	40.6	9.8	50.4	6
ZT6274O3FI	C1.4-9.05	30.5	13.6	44.1	6.6
SRWPUQ2KXW	C1.4-UG.01	41.8	18.2	60	5.4
CLGF083N48	C1.4-UG.02	37.6	15.3	52.9	5.9
YF5ZG1APRP	C1.4-UG.03	34.9	13.8	48.7	6.2
GVRL39612B	C1.4-UG.04	37.3	17.1	54.4	5.8

This building achieves an average star rating of: **6.3**

APPENDIX B-2
C1.5 NATHERS CERTIFICATES

Nationwide House Energy Rating Scheme* — Class 2 summary

Certificate Number: **X2VQQ188WY** Date of Certificate: **27 Sep 2019** ★ Average star rating: **6.7**

Assessor details

Accreditation number:	**101142**
Name:	**Christopher Mann**
Organisation:	**WSP**
Email:	**chris.mann@wsp.com**
Phone:	**0411644164**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5 v5.2.10b**
AAO:	**ABSA**

Dwelling details

Address:	**Building C1.5 - Ivanhoe Estate**
Suburb:	**Macquarie Park**
State:	**NSW**
Postcode:	**2113**

6.7

Average rating

NATIONWIDE HOUSE ENERGY RATING SCHEME

The rating listed above is the average of all units in this building.

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

Summary of all dwellings

Certification details

		Annual thermal performance loads (MJ/m2)			
Certificate number	**Unit number**	**Heating load**	**Cooling load**	**Total load**	**Star rating**
7N6O4O8G0C	C1.5-01	24.8	24.3	49.1	6.2
E2XKV1ELVM	C1.5-02	13.3	24.7	38	7.1
57M887AKVU	C1.5-03	13.6	24.1	37.7	7.1
TARW87PQ99	C1.5-04	23.5	23.8	47.3	6.3
				This building achieves an average star rating of:	**6.7**

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

APPENDIX C

STAMPED DRAWINGS

DEVELOPMENT APPLICATION

PROJECT:
IVANHOE ESTATE (LOT C1)
EPPING ROAD, MACQUARIE PARK

CLIENT:
FRASERS PROPERTY IVANHOE

PROJECT No:
5800

DATE:
26 NOVEMBER 2018

ISSUE:
A

ARCHITECT:

CANDALEPAS ASSOCIATES
309 SUSSEX STREET
SYDNEY NSW 2000
T: 9283 7755 F: 9283 7477

6.3
Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.h5.com.au/QRCodeLanding?PublicId=0TYV0H3GAU&GrpCert=

6.7
Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

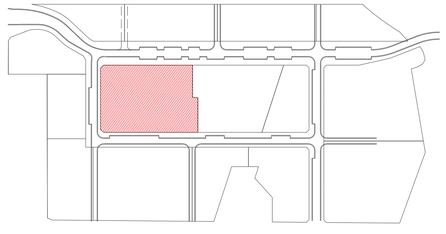
https://www.h5.com.au/QRCodeLanding?PublicId=X2VQQ188WY&GrpCert=

ABSA
Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is qualified to use NatHERS Accredited Software and has agreed to abide by the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4 **All C1.5 town houses**	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

LOCATION PLAN:



DRAWING SCHEDULE

DA 1000 COVER SHEET

DA 1050 SITE PLAN

DA 1102 BASEMENT 3 FLOOR PLAN
DA 1103 BASEMENT 2 FLOOR PLAN
DA 1104 BASEMENT 1 FLOOR PLAN

DA 1105 LOWER GROUND FLOOR PLAN
DA 1106 UPPER GROUND FLOOR PLAN
DA 1107 LEVEL 1 FLOOR PLAN
DA 1108 LEVEL 2 FLOOR PLAN
DA 1109 LEVEL 3 – 4 FLOOR PLAN
DA 1110 LEVEL 5 – 12 FLOOR PLAN
DA 1111 LEVEL 13 FLOOR PLAN
DA 1112 LEVEL 14 – 19 FLOOR PLAN
DA 1113 ROOF PLAN

DA 1150 ADAPTABLE UNIT FLOOR PLANS

DA 1200 SECTION A
DA 1201 SECTION B
DA 1202 SECTION C

DA 1300 NORTH EAST ELEVATION
DA 1301 NORTH WEST ELEVATION
DA 1302 NORTH WEST INTERNAL ELEVATION
DA 1303 SOUTH EAST ELEVATION
DA 1304 SOUTH EAST INTERNAL ELEVATION
DA 1305 SOUTH WEST ELEVATION

DA 1600 SOLAR & VENTILATION DIAGRAMS – SHEET 1
DA 1601 SOLAR & VENTILATION DIAGRAMS – SHEET 2
DA 1602 SOLAR & VENTILATION DIAGRAMS – SHEET 3

DA 1850 AREA CALCULATIONS

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Public&id=0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

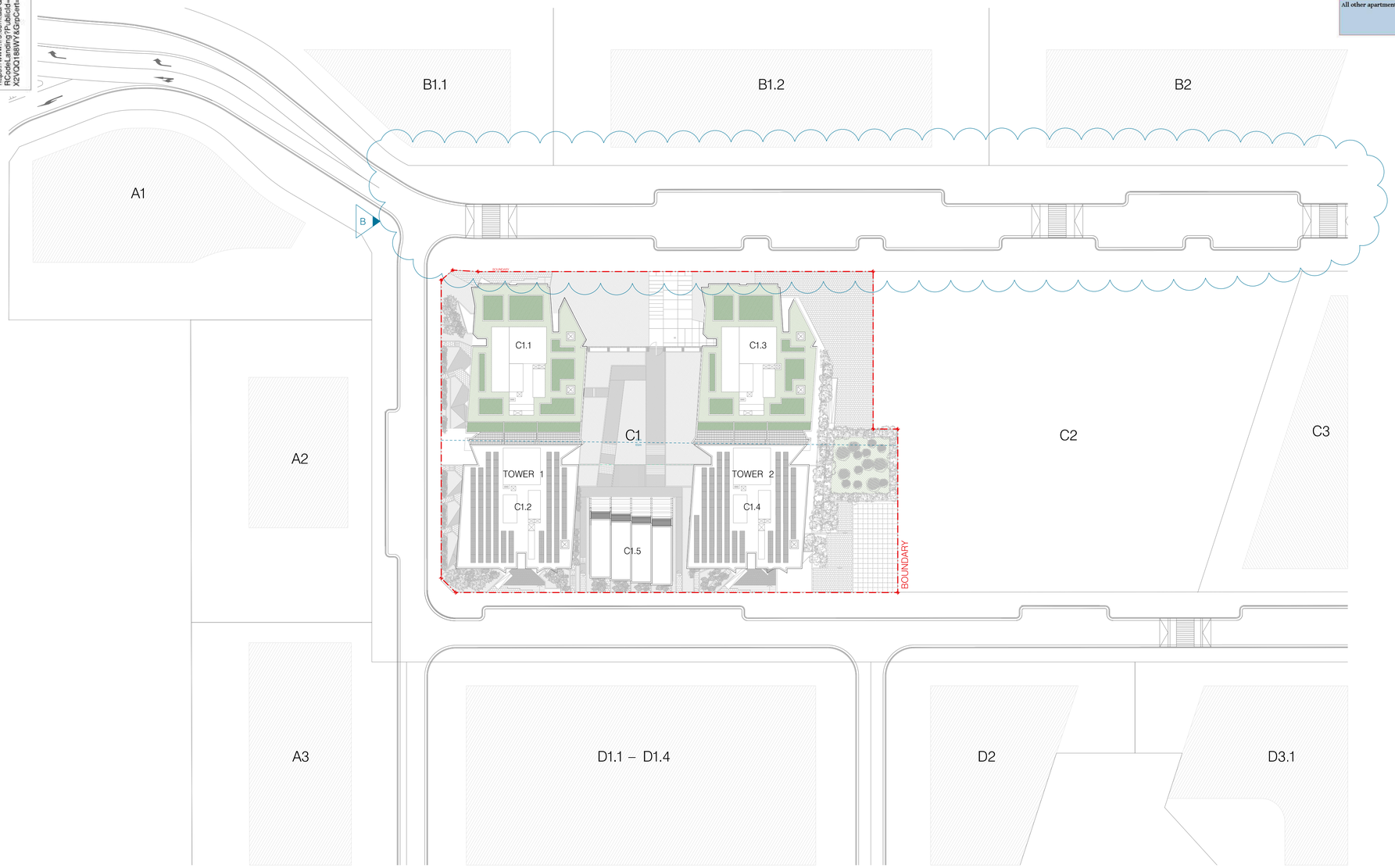
www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Public&id=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using the Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 – SITE PLAN
1:500

Issue	Date	Description
B.	02.09.19	FOR SSDA TO JAHC
A.	26.11.18	FOR SSDA TO JAHC

Drawing Original Size: A1

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309 SUSSEX ST
SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:500@A1 / 1:1000@A3
0 50 100 200m

NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: SITE PLAN
DRAWING No. DA – 1050
JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au

6.3 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

https://www.i5.com.au/QRCode/Landing?PublicId=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au

6.7 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

https://www.i5.com.au/QRCode/Landing?PublicId=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using Certified Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

01 — BASEMENT 3 FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO JAHC
A.	26.11.18	FOR SSDA TO JAHC

Drawing Original Size A1

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T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG. No. – 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m
NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: BASEMENT 3 FLOOR PLAN
DRAWING No. DA – 1102
JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

6.3 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?PublicId=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

6.7 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?PublicId=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

01 — BASEMENT 2 FLOOR PLAN
1:200

Issue	Date	Description	Drawing Original Size
B.	02.09.19	FOR SSDA TO UHC	A1
A.	26.11.18	FOR SSDA TO UHC	

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E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m
NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING:
BASEMENT 2 FLOOR PLAN
DRAWING No.
DA – 1103

JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address: Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

6.3 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCodeLanding?PublicId=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address: Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

6.7 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

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https://www.i25.com.au/QRCodeLanding?PublicId=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association

HERS Assessments completed within the accreditation period are part of the ABSA quality audit system

Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature

This Accredited Assessor is using Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

A 1200

B 1201

C 1202

01 — BASEMENT 1 FLOOR PLAN
1:200

Issue	Date	Description	Drawing Original Size
B.	02.09.19	FOR SSDA TO LANC	A1
A.	26.11.18	FOR SSDA TO LANC	

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309 SUSSEX ST
SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK

CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: BASEMENT 1 FLOOR PLAN

DRAWING No. DA – 1104

JOB No. 5800

ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au
https://www.i25.com.au/QRCode/Landing?Pubicid=0TYV0H3GAU&GrpCert=

6.3 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

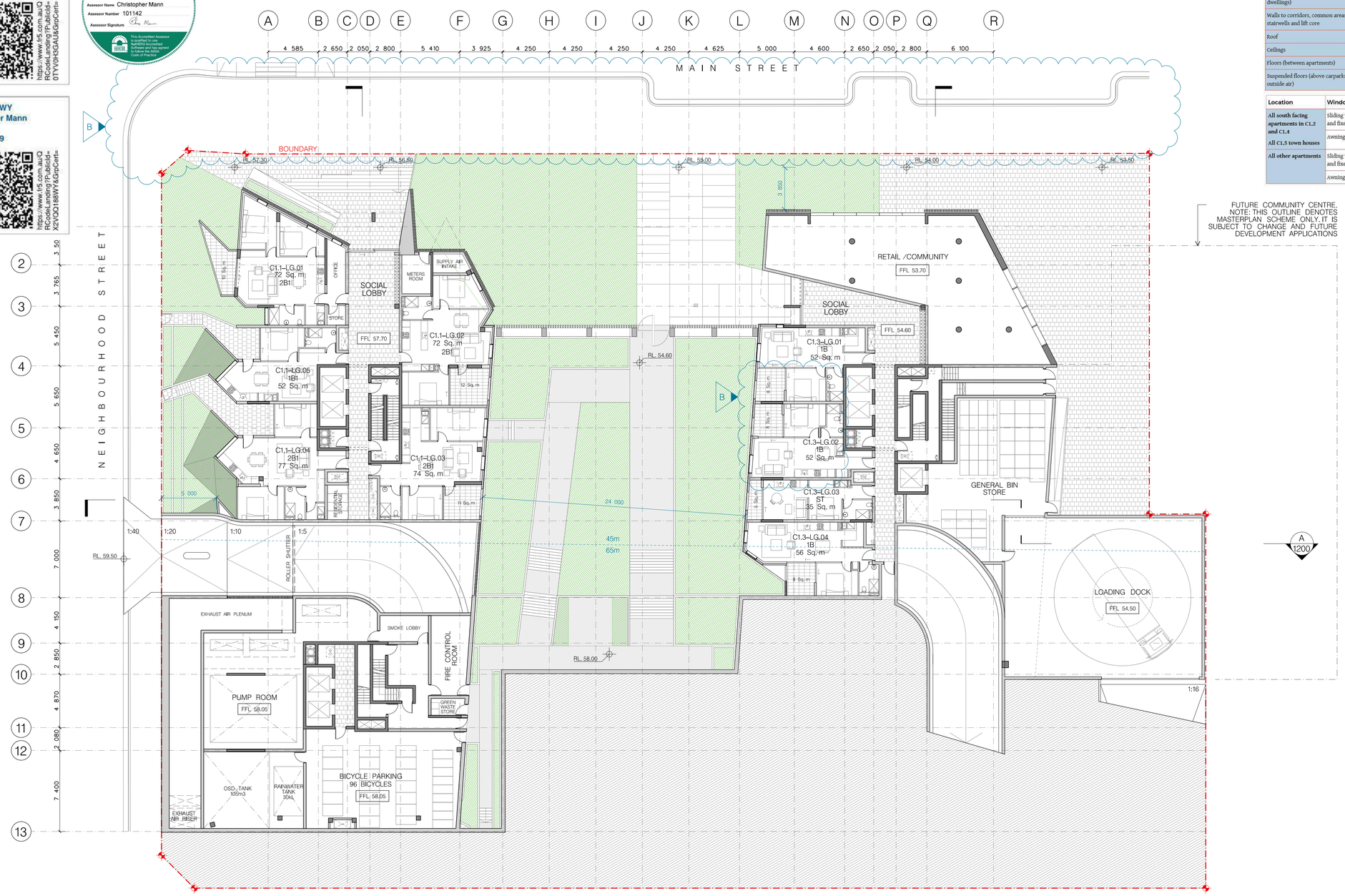
Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au
https://www.i25.com.au/QRCode/Landing?Pubicid=X2VQQ188WY&GrpCert=

6.7 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using a Nationwide House Energy Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 — LOWER GROUND FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO JAHC
A.	26.07.19	FOR SSDA TO JAHC

Drawing Original Size A1

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ARCHITECT:
CANDALEPAS ASSOCIATES
309 SUSSEX ST
SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m
NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING:
LOWER GROUND FLOOR PLAN
DRAWING No.
DA – 1105

JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

6.3 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?Pubicid=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

6.7 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?Pubicid=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised to use Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

SOCIAL ILU

LEVEL UG PLAN

01 — UPPER GROUND FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO LAHC
A.	26.10.18	FOR SSDA TO LAHC

Drawing Original Size: A1

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SYDNEY NSW 2000
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F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m
NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING:
UPPER GROUND FLOOR PLAN
DRAWING No. DA – 1106
ISSUE B.
JOB No. 5800

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au
https://www.i5.com.au/QRCode/Landing?Public id=0TYV0H3GAU&GrpCert=

6.3 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au
https://www.i5.com.au/QRCode/Landing?Public id=X2VQQ188WY&GrpCert=

6.7 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

ABSA Australian Building Sustainability Association
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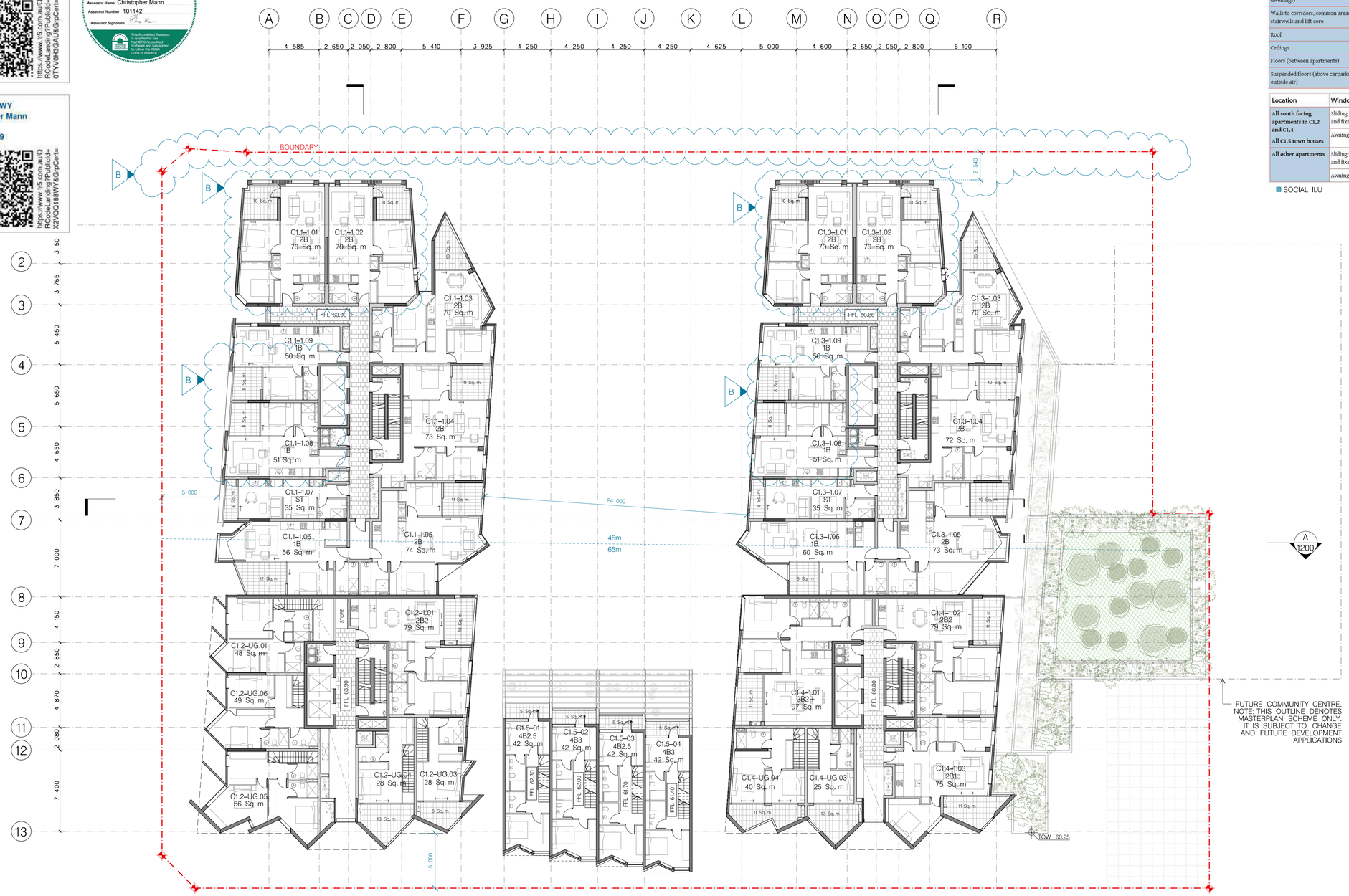
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised to use Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

SOCIAL ILU

LEVELS 3–4 PLAN



FUTURE COMMUNITY CENTRE. NOTE: THIS OUTLINE DENOTES MASTERPLAN SCHEME ONLY. IT IS SUBJECT TO CHANGE AND FUTURE DEVELOPMENT APPLICATIONS

01 — LEVEL 1 FLOOR PLAN
1:200

Issue	Date	Description	Drawing Original Size
B.	02.09.19	FOR SSDA TO JAHC	A1
A.	26.08.19	FOR SSDA TO JAHC	

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PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: LEVEL 1 FLOOR PLAN
DRAWING No. DA – 1107
ISSUE B.
JOB No. 5800

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i5.com.au/QRCode/Landing?Public=0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i5.com.au/QRCode/Landing?Public=X2VQQ188WY&GrpCert=

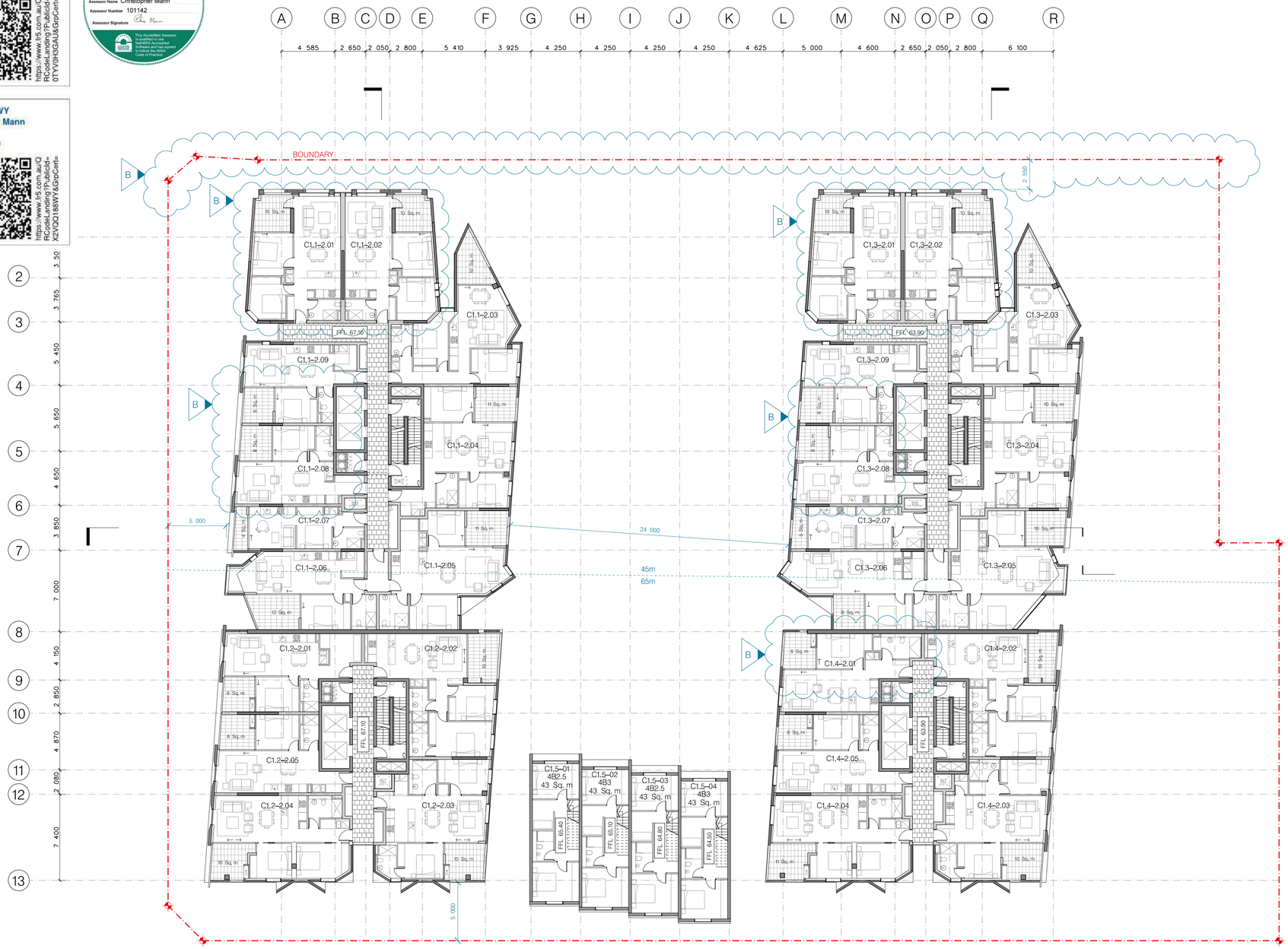
ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system.
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised to use Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

SOCIAL ILU

LEVEL 2 PLAN



A 1200

B 1201

C 1202

01 – LEVEL 2 FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO JAHC
A.	26.11.18	FOR SSDA TO JAHC

Drawing Original Size A1

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ARCHITECT:
CANDALEPAS ASSOCIATES
309 SUSSEX ST
SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING:
LEVEL 2 FLOOR PLAN

DRAWING No.
DA – 1108

JOB No. 5800

ISSUE B.

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?Public=0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?Public=X2VQQ188WY&GrpCert=

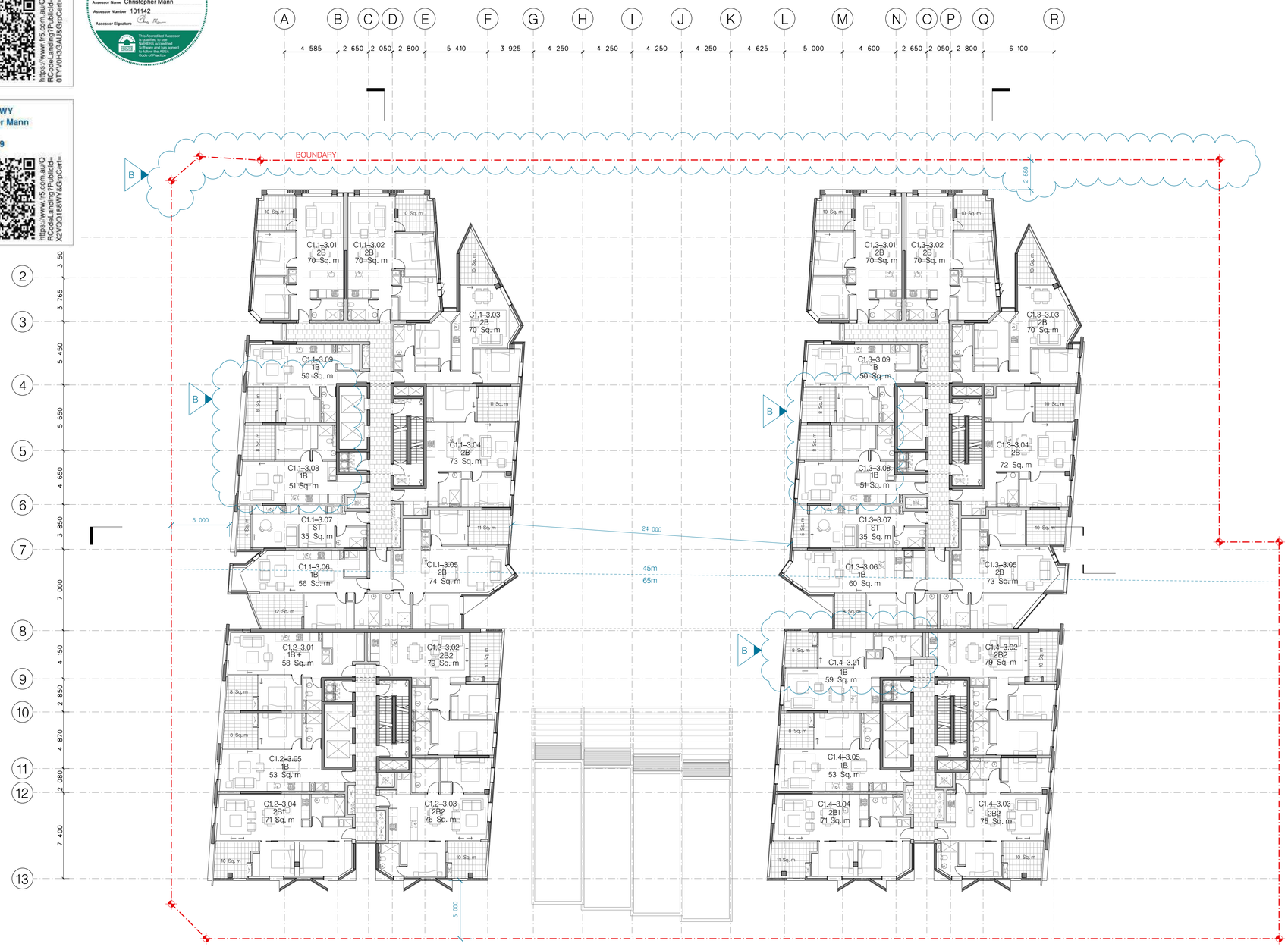
ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system.
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised by Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

SOCIAL ILU

LEVELS 3–4 PLAN



01 – LEVEL 3 – 4 FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO JAHC
A.	26.08.19	FOR SSDA TO JAHC

Drawing Original Size A1

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SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING:
LEVEL 3 – 4 FLOOR PLAN

DRAWING No.
DA – 1109

JOB No. 5800

ISSUE B.

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?Pubicid=0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

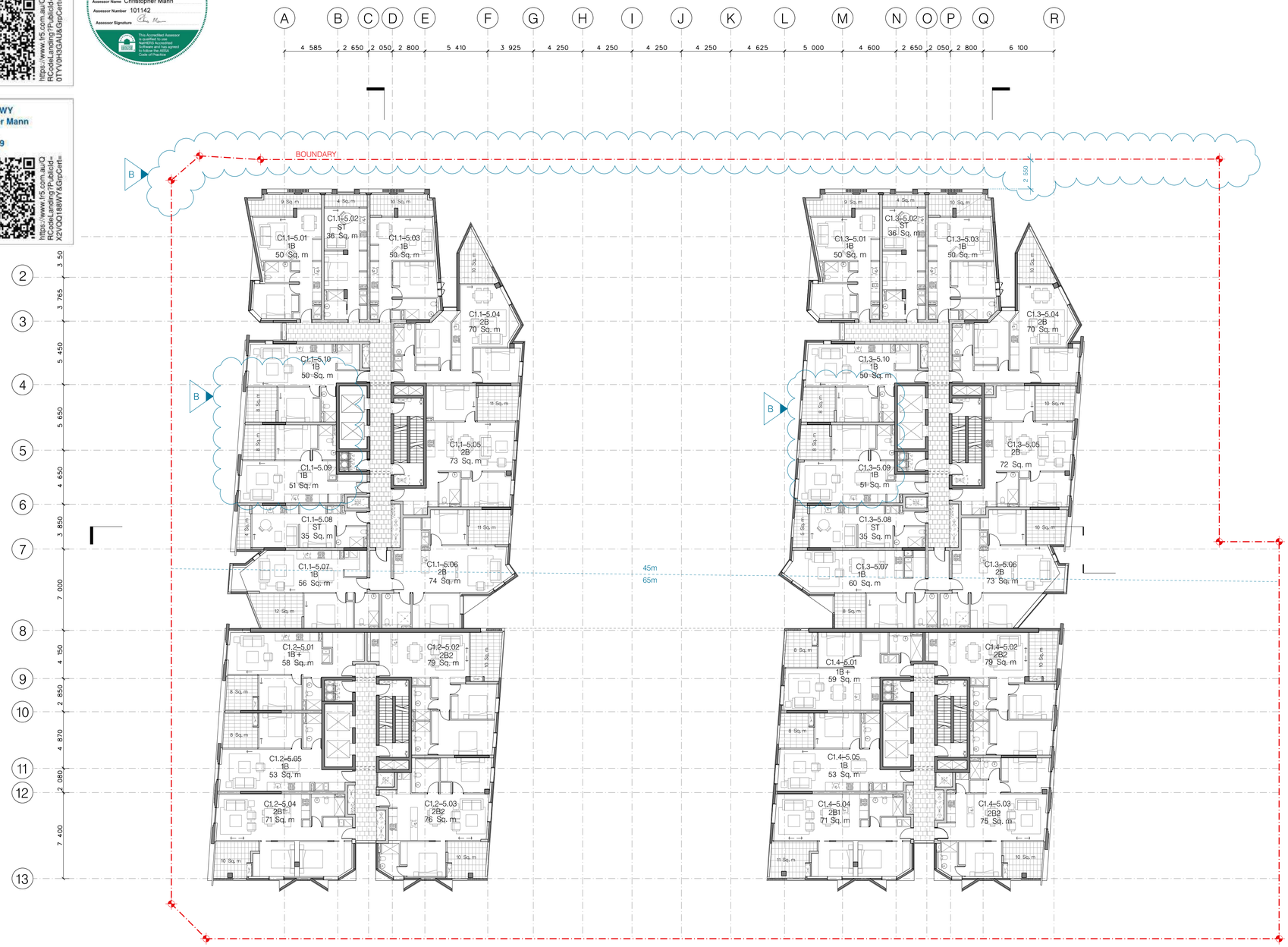
www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?Pubicid=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system.
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised to use Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 – LEVEL 5 – 12 FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO JAHC
A.	26.11.18	FOR SSDA TO JAHC

Drawing Original Size A1

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SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m
NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING:
LEVEL 5 – 12 FLOOR PLAN
DRAWING No.
DA – 1110

JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address: Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

6.3 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?PublicId=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address: Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

6.7 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCode/Landing?PublicId=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association

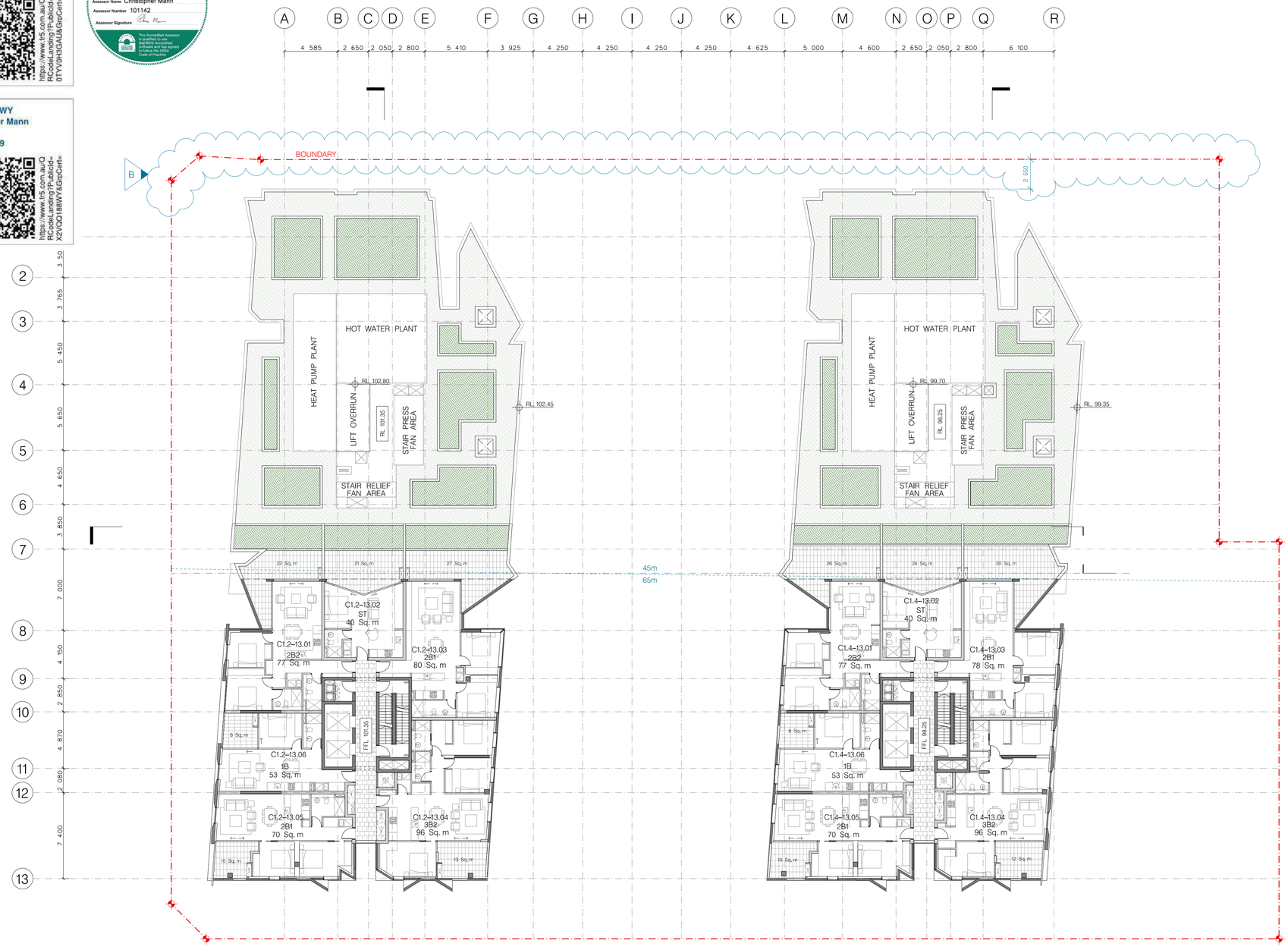
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system

Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature

This Accredited Assessor is using the Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 — LEVEL 13 FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO LARC
A.	26.11.18	FOR SSDA TO LARC

Drawing Original Size: A1

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309 SUSSEX ST
SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK

CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: LEVEL 13 FLOOR PLAN

DRAWING No. DA – 1111

JOB No. 5800

ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

6.3 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

www.nathers.gov.au

https://www.i25.com.au/QRCodeLanding?PublicId=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

6.7 Average star rating — NATIONWIDE HOUSE ENERGY RATING SCHEME — www.nathers.gov.au

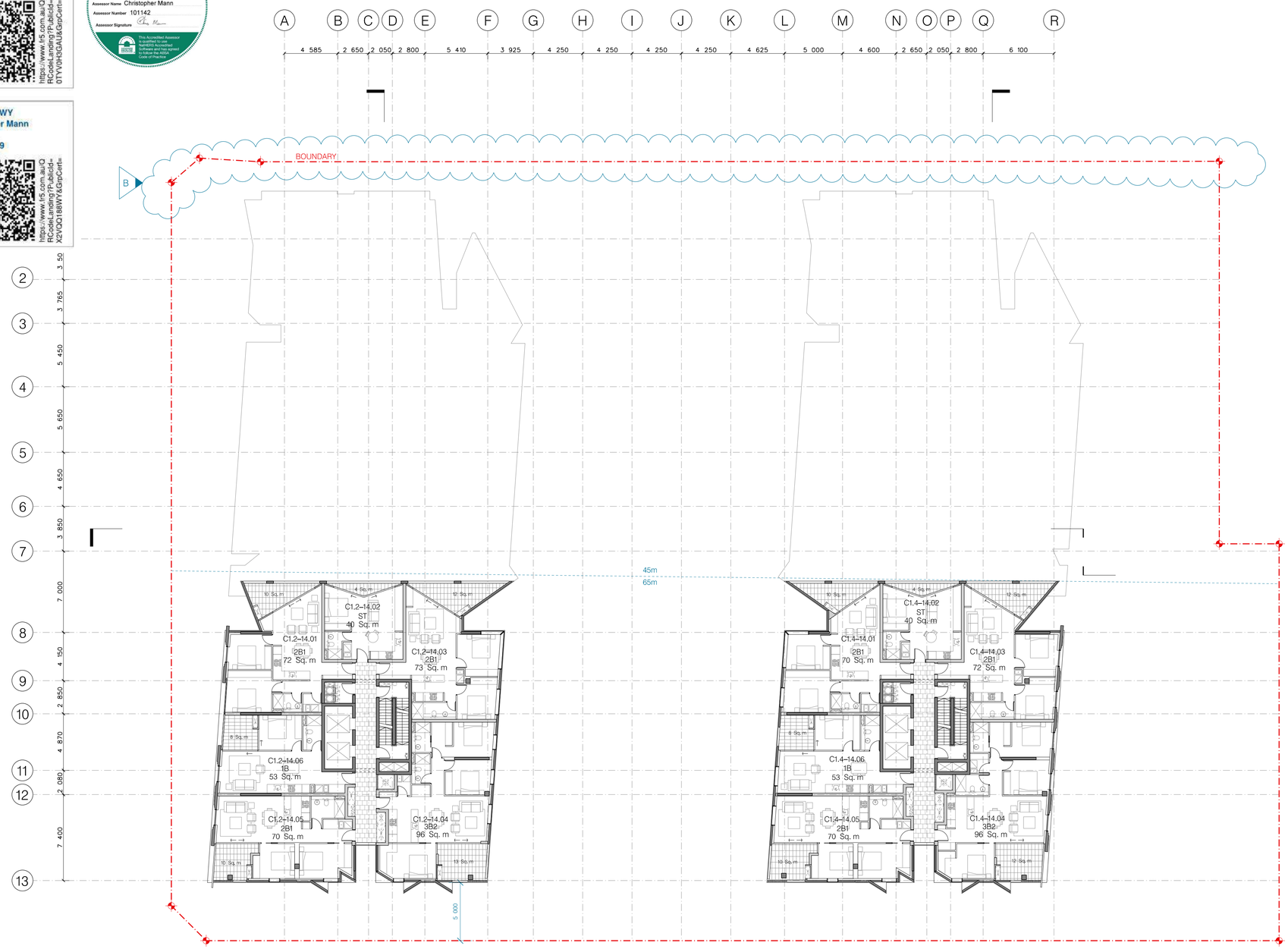
www.nathers.gov.au

https://www.i25.com.au/QRCodeLanding?PublicId=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using Certified Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 — LEVEL 14 – 19 FLOOR PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDR TO LAHC
A.	26.08.19	FOR SSDR TO LAHC

Drawing Original Size: A1

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F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: LEVEL 14 – 19 FLOOR PLAN
DRAWING No. DA – 1112

JOB No. 5800
ISSUE B.

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i5.com.au/QRCode/Landing?Pulsid=0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
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www.nathers.gov.au

https://www.i5.com.au/QRCode/Landing?Pulsid=X2VQQ188WY&GrpCert=

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Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
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	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
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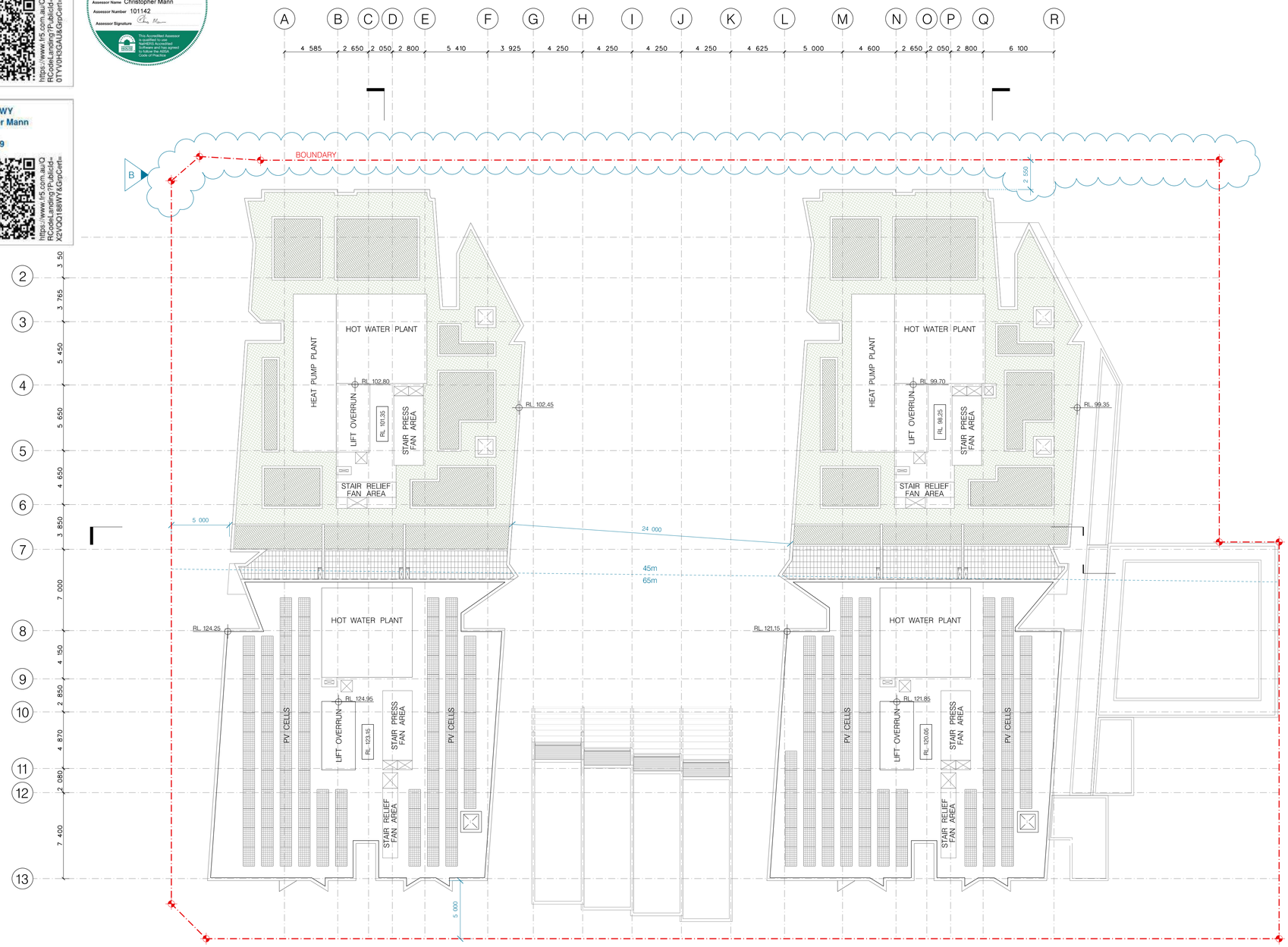
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



A 1200

B 1201

C 1202

01 – ROOF PLAN
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO LANC
A.	26.11.18	FOR SSDA TO LANC

Drawing Original Size: A1

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NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m
NORTH

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: ROOF PLAN
DRAWING No. DA – 1113
JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au

6.3 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Public&0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
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www.nathers.gov.au

6.7 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Public&X2VQQ188WY&GrpCert=

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Assessor Name Christopher Mann
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Assessor Signature
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External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
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Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

01 SECTION A
1:200

Issue	Date	Description	Original Size
A	26.11.18	FOR SSDA TO LANC	A1

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309 SUSSEX ST
SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: NOV 2018
CHECKED 1: LM
CHKD2/APPD: –
DRAWN BY: LM

DRAWING: SECTION A
DRAWING No. DA – 1200
JOB No. 5800
ISSUE A

6.3 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?PublicId=0TYV0H3GAU&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using Accredited Software and has agreed to follow the ABSA Code of Practice

6.7 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

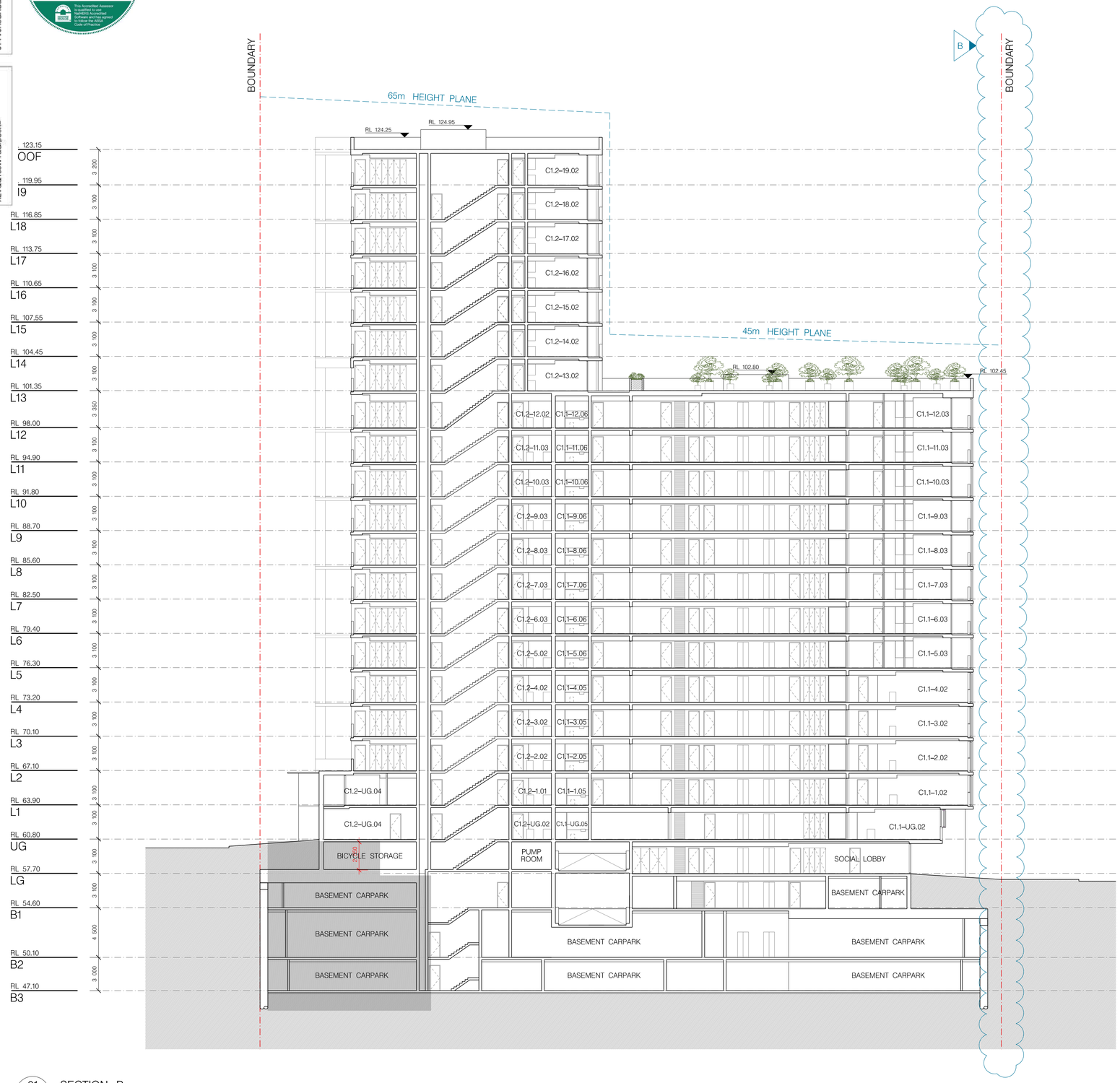
Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?PublicId=X2VQQ188WY&GrpCert=

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 SECTION B
1:200

Issue	Date	Drawing	Description
B.	02.09.19	A1	FOR SSDA TO JAHC
A.	26.11.18		FOR SSDA TO JAHC

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NSW ARCHITECTS REG No.- 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: SECTION B
DRAWING No. DA – 1201

JOB No. 5800
ISSUE B.

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Public&0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Public&X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised to use Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All C1.5 town houses						
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

01 SECTION C
1:200

Issue	Date	Description
B.	02.09.19	FOR SSDA TO JAHC
A.	26.7.18	FOR SSDA TO JAHC

Drawing Original Size A1

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F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG. No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: SECTION C
DRAWING No. DA – 1202
JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au
https://www.i-5.com.au/QRCode/Landing?PublicId=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au
https://www.i-5.com.au/QRCode/Landing?PublicId=X2VQQ188WY&GrpCert=

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HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

01 NORTH EAST ELEVATION
1:200

A OFF-FORM CONCRETE ALL SAINTS PRIMARY SCHOOL – CANDALEPAS ASSOCIATES

B COLOURED PRECAST CONCRETE PELICAN STREET APARTMENTS – CANDALEPAS ASSOCIATES

C COLOURED CONCRETE WEST TYROL FIRE STATION – PEDEVILLA ARCHITECTS

D TIMBER LOUVRES PUNCHBOWL MOSQUE – CANDALEPAS ASSOCIATES

E STEEL WINDOW BOXES QT MELBOURNE – CANDALEPAS ASSOCIATES

F COLOURED CONCRETE THE POINT APARTMENTS – CANDALEPAS ASSOCIATES

G ALUMINIUM LOUVRES REVOLUTION APARTMENTS – CANDALEPAS ASSOCIATES

H ALUMINIUM FRAMED GLAZING FRANCIS STREET APARTMENTS – CANDALEPAS ASSOCIATES

I PAINTED CONCRETE BALUSTRADE PRESIDENT AVENUE APARTMENTS – CANDALEPAS ASSOCIATES

J FIBRE CEMENT SHEET QT PERTH – CANDALEPAS ASSOCIATES

Issue	Date	Description
A	26.11.18	FOR SSDA TO UAHC

Drawing Original Size: A1

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SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No. – 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK

CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: NOV 2018
CHECKED 1: LM
CHKD2/APPD: –
DRAWN BY: LM

DRAWING: NORTH EAST ELEVATION

DRAWING No. DA – 1300

JOB No. 5800

ISSUE A

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/Q RCode=Landing?Publicid=0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

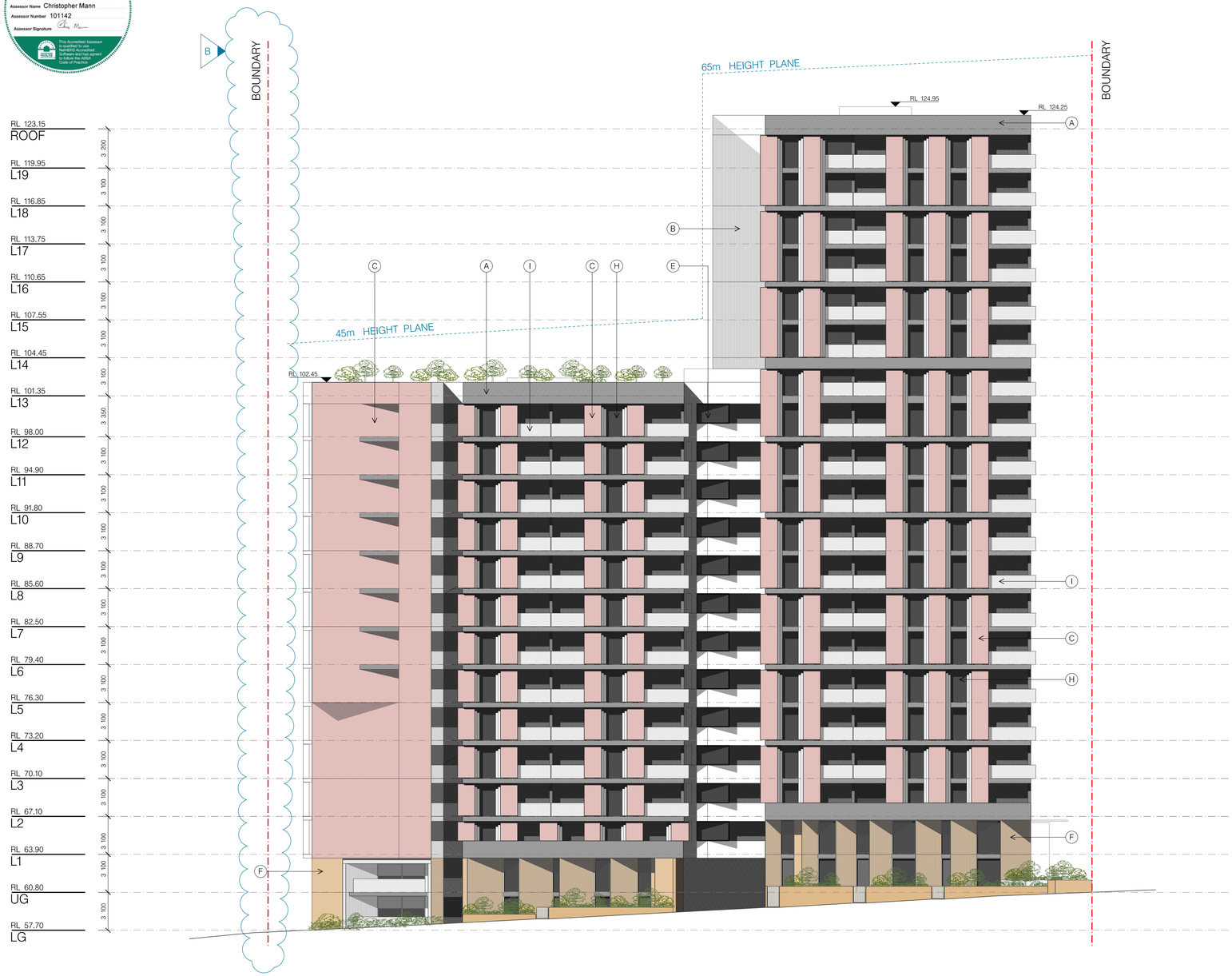
www.nathers.gov.au

https://www.i-5.com.au/Q RCode=Landing?Publicid=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised to use Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 — NORTH WEST ELEVATION
1:200

Ⓐ OFF-FORM CONCRETE ALL SAINTS PRIMARY SCHOOL – CANDALEPAS ASSOCIATES
Ⓑ COLOURED PRECAST CONCRETE PELICAN STREET APARTMENTS – CANDALEPAS ASSOCIATES
Ⓒ COLOURED CONCRETE WEST TYROL FIRE STATION – PEDEVILLA ARCHITECTS
Ⓓ TIMBER LOUVRES PUNCHBOWL MOSQUE – CANDALEPAS ASSOCIATES
Ⓔ STEEL WINDOW BOXES QT MELBOURNE – CANDALEPAS ASSOCIATES
Ⓕ COLOURED CONCRETE THE POINT APARTMENTS – CANDALEPAS ASSOCIATES
Ⓖ ALUMINIUM LOUVRES REVOLUTION APARTMENTS – CANDALEPAS ASSOCIATES
Ⓗ ALUMINIUM FRAMED GLAZING FRANCIS STREET APARTMENTS – CANDALEPAS ASSOCIATES
Ⓘ PAINTED CONCRETE BALUSTRADE PRESIDENT AVENUE APARTMENTS – CANDALEPAS ASSOCIATES
Ⓙ FIBRE CEMENT SHEET QT PERTH – CANDALEPAS ASSOCIATES

Issue	Date	Description
B.	02.09.19	FOR SSDA TO UHC
A.	28.11.18	FOR SSDA TO UHC

Drawing Original Size: A1

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SYDNEY NSW 2000
T: 02 9283 7755
F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: NORTH WEST ELEVATION
DRAWING No. DA – 1301

JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

6.3 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

www.nathers.gov.au

https://www.i-5.com.au/Q RCode=Landing?PublicId=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

6.7 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

www.nathers.gov.au

https://www.i-5.com.au/Q RCode=Landing?PublicId=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
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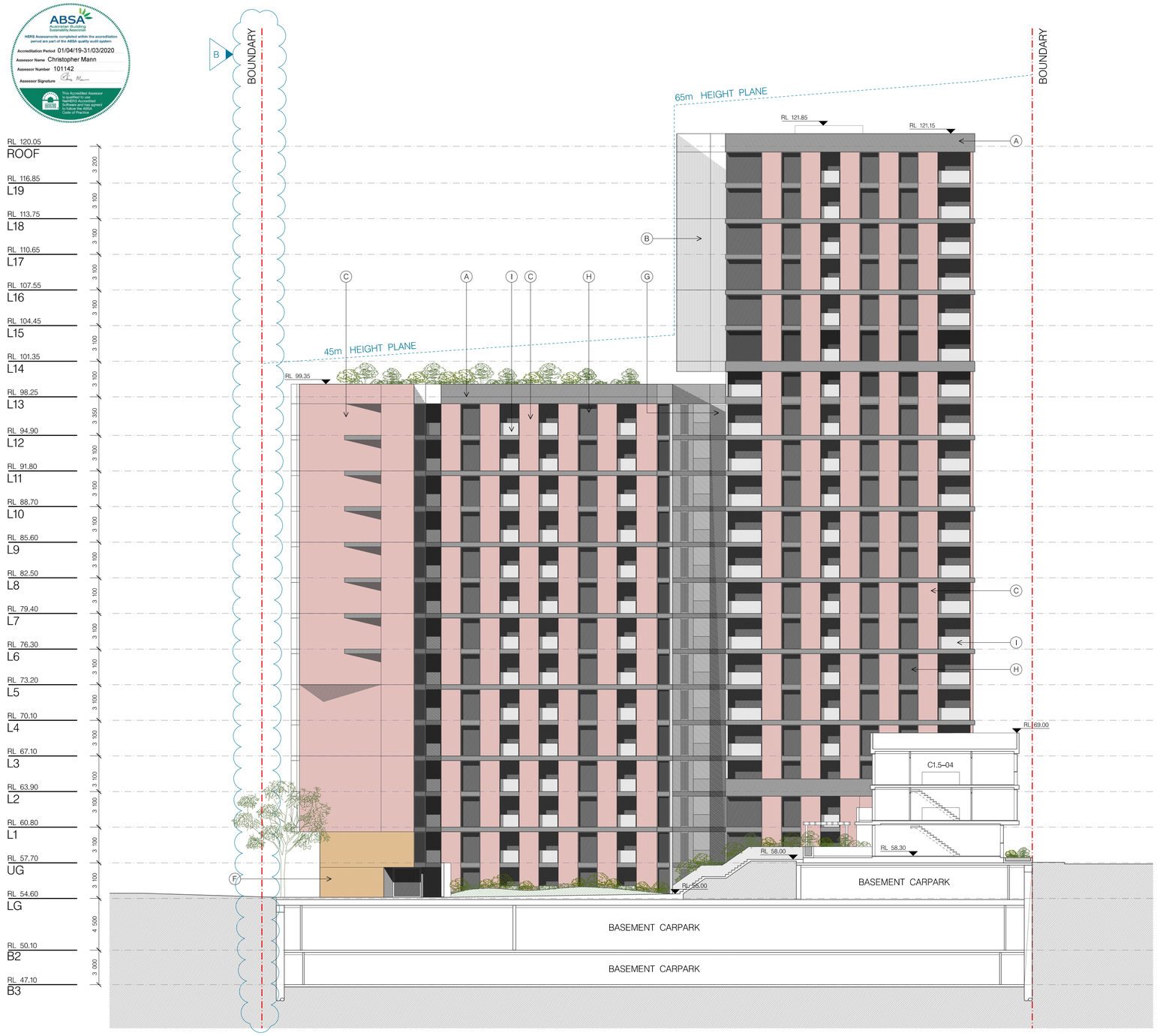

01 — NORTH WEST INTERNAL ELEVATION
1:200

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49

Ⓐ OFF-FORM CONCRETE ALL SAINTS PRIMARY SCHOOL – CANDALEPAS ASSOCIATES
Ⓑ COLOURED PRECAST CONCRETE PELICAN STREET APARTMENTS – CANDALEPAS ASSOCIATES
Ⓒ COLOURED CONCRETE WEST TYROL FIRE STATION – PEDEVILLA ARCHITECTS
Ⓓ TIMBER LOUVRES PUNCHBOWL MOSQUE – CANDALEPAS ASSOCIATES
Ⓔ STEEL WINDOW BOXES QT MELBOURNE – CANDALEPAS ASSOCIATES
Ⓕ COLOURED CONCRETE THE POINT APARTMENTS – CANDALEPAS ASSOCIATES
Ⓖ ALUMINIUM LOUVRES REVOLUTION APARTMENTS – CANDALEPAS ASSOCIATES
Ⓗ ALUMINIUM FRAMED GLAZING FRANCIS STREET APARTMENTS – CANDALEPAS ASSOCIATES
Ⓘ PAINTED CONCRETE BALUSTRADE PRESIDENT AVENUE APARTMENTS – CANDALEPAS ASSOCIATES
Ⓙ FIBRE CEMENT SHEET QT PERTH – CANDALEPAS ASSOCIATES

Issue	Date	Description
B.	02.09.19	FOR ISSUE TO JAWC
A.	26.11.18	FOR ISSUE TO JAWC

Drawing Original Size A1

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NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: SEP 2019
CHECKED 1: SS
CHKD2'APPD: EP
DRAWN BY: SS

DRAWING:
NORTH WEST INTERNAL ELEVATION

DRAWING No.
DA – 1302

JOB No.
5800

ISSUE
B.

6.3 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?PublicId=0TYV0H3GAU&GrpCert=

6.7 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?PublicId=X2VQQ188WY&GrpCert=

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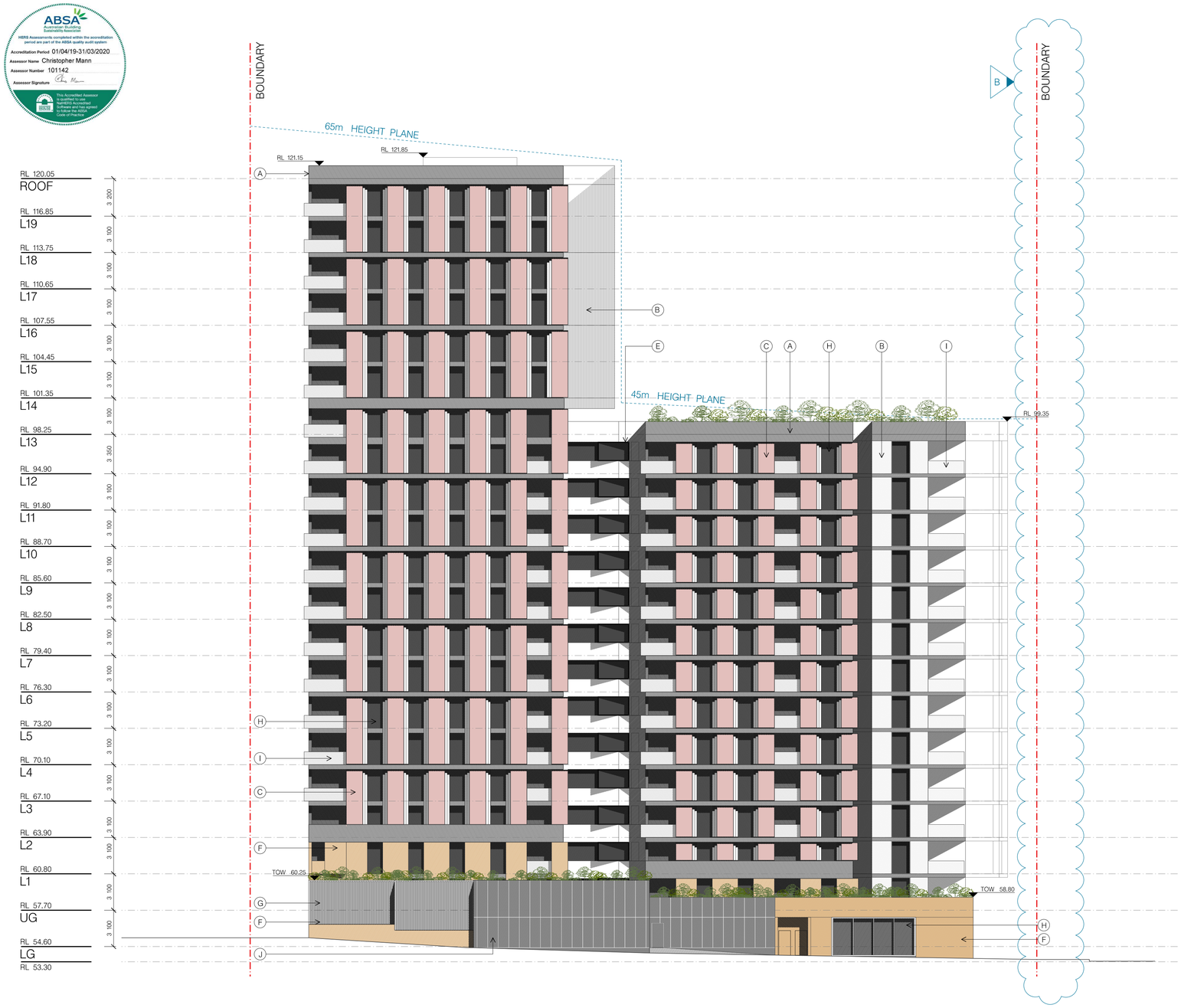
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is authorised to use Accredited Software and has agreed to follow the ABSA Code of Practice

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
	Awning windows	Single glazed aluminium frame	Clear low-e	Aluminium	5.4	0.49



01 — SOUTH EAST ELEVATION
1:200

Ⓐ OFF-FORM CONCRETE ALL SAINTS PRIMARY SCHOOL – CANDALEPAS ASSOCIATES
Ⓑ COLOURED PRECAST CONCRETE PELICAN STREET APARTMENTS – CANDALEPAS ASSOCIATES
Ⓒ COLOURED CONCRETE WEST TYROL FIRE STATION – PEDEVILLA ARCHITECTS
Ⓓ TIMBER LOUVRES PUNCHBOWL MOSQUE – CANDALEPAS ASSOCIATES
Ⓔ STEEL WINDOW BOXES QT MELBOURNE – CANDALEPAS ASSOCIATES
Ⓕ COLOURED CONCRETE THE POINT APARTMENTS – CANDALEPAS ASSOCIATES
Ⓖ ALUMINIUM LOUVRES REVOLUTION APARTMENTS – CANDALEPAS ASSOCIATES
Ⓗ ALUMINIUM FRAMED GLAZING FRANCIS STREET APARTMENTS – CANDALEPAS ASSOCIATES
Ⓘ PAINTED CONCRETE BALUSTRADE PRESIDENT AVENUE APARTMENTS – CANDALEPAS ASSOCIATES
Ⓙ FIBRE CEMENT SHEET QT PERTH – CANDALEPAS ASSOCIATES

Issue	Date	Description
B.	02.09.19	FOR SSDA TO LAHC
A.	30.08.19	FOR SSDA TO LAHC

Drawing Original Size: A1

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SYDNEY NSW 2000
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F: 02 9283 7477
E: architects@candalepas.com.au
NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING: SOUTH EAST ELEVATION
DRAWING No. DA – 1303

JOB No. 5800
ISSUE B.

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au

6.3 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

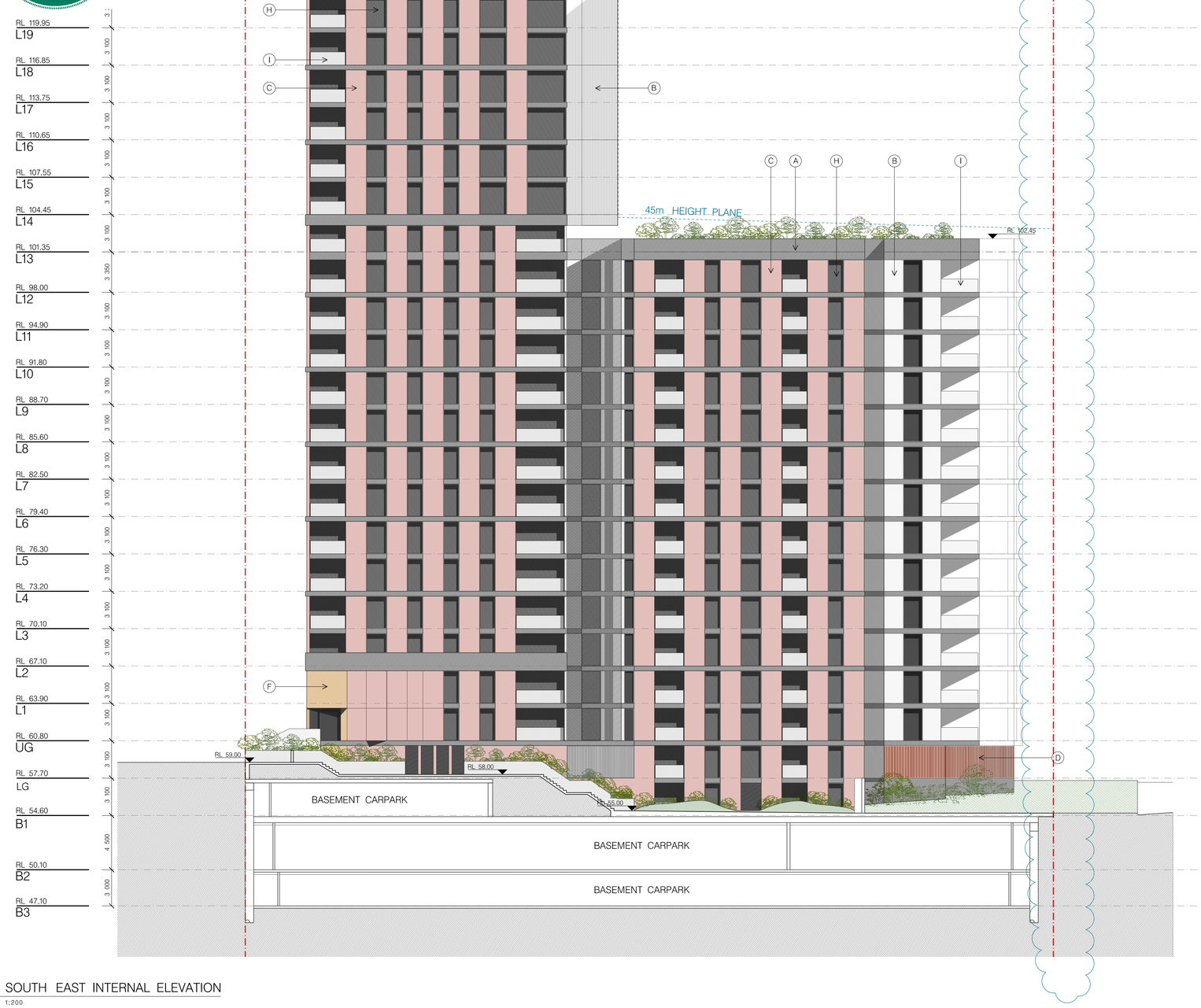
https://www.i-5.com.au/QRCode-Landing?Public=0TYV0H3GAU&GrpCert=

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113
www.nathers.gov.au

6.7 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Public=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association
HERS Assessments completed within the accreditation period are part of the ABSA quality audit system
Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature
This Accredited Assessor is using Accredited Software and has agreed to follow the ABSA Code of Practice



01 SOUTH EAST INTERNAL ELEVATION
1:200

	Construction	Insulation
External walls	Precast concrete panels with plasterboard lining on studs	R2.5 bulk added insulation
Party walls (walls between dwellings)	Precast concrete, plasterboard lining	No added insulation
Internal walls (Walls within dwellings)	Lightweight plasterboard stud walls	No added insulation
Walls to corridors, common areas, stairwells and lift core	Precast concrete, plasterboard lining	R1.0 added insulation
Roof	Concrete slab	R4.0 added insulation
Ceilings	Plasterboard lined	No added insulation
Floors (between apartments)	Concrete slab	No added insulation
Suspended floors (above carparks or outside air)	Suspended concrete slab	R2.0 added insulation

Location	Window type	Type	Glass	Frame	U-value	SHGC
All south facing apartments in C1.2 and C1.4	Sliding window/doors and fixed windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.59
All C1.5 town houses	Awning windows	Double glazed aluminium frame	Clear float	Aluminium	4.8	0.51
All other apartments	Sliding window/doors and fixed windows	Single glazed aluminium frame	Clear Low-e	Aluminium	5.4	0.58
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Ⓐ OFF-FORM CONCRETE ALL SAINTS PRIMARY SCHOOL – CANDALEPAS ASSOCIATES
Ⓑ COLOURED PRECAST CONCRETE PELICAN STREET APARTMENTS – CANDALEPAS ASSOCIATES
Ⓒ COLOURED CONCRETE WEST TYROL FIRE STATION – PEDEVILLA ARCHITECTS
Ⓓ TIMBER LOUVRES PUNCHBOWL MOSQUE – CANDALEPAS ASSOCIATES
Ⓔ STEEL WINDOW BOXES QT MELBOURNE – CANDALEPAS ASSOCIATES
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Ⓘ PAINTED CONCRETE BALUSTRADE PRESIDENT AVENUE APARTMENTS – CANDALEPAS ASSOCIATES
Ⓙ FIBRE CEMENT SHEET QT PERTH – CANDALEPAS ASSOCIATES

Issue	Date	Description
B.	02.09.19	FOR SDCA TO LAHC
A.	26.11.18	FOR SDCA TO LAHC

Drawing Original Size A1

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NSW ARCHITECTS REG No.– 5773

PROJECT:
IVANHOE ESTATE
EPPING ROAD, MACQUARIE PARK
CLIENT:
FRASERS PROPERTY IVANHOE
SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: SEP 2019
CHECKED 1: SS
CHKD2/APPD: EP
DRAWN BY: SS

DRAWING:
SOUTH EAST INTERNAL ELEVATION
DRAWING No.
DA – 1304

JOB No. 5800
ISSUE B.

6.3 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

Certificate Number: 0TYV0H3GAU
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.1-C1.4 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Publicid=0TYV0H3GAU&GrpCert=

6.7 Average star rating NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

Certificate Number: X2VQQ188WY
Assessor Name: Christopher Mann
Accreditation number: 101142
Certificate date: 27 Sep 2019
Dwelling address:
Building C1.5 - Ivanhoe Estate, Macquarie Park NSW 2113

www.nathers.gov.au

https://www.i-5.com.au/QRCode-Landing?Publicid=X2VQQ188WY&GrpCert=

ABSA Australian Building Sustainability Association

HERS Assessments completed within the accreditation period are part of the ABSA quality audit system

Accreditation Period 01/04/19-31/03/2020
Assessor Name Christopher Mann
Assessor Number 101142
Assessor Signature

This Accredited Assessor is using Certified Software and has agreed to follow the ABSA Code of Practice

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01 — SOUTH WEST ELEVATION
1:200

A OFF-FORM CONCRETE ALL SAINTS PRIMARY SCHOOL – CANDALEPAS ASSOCIATES

B COLOURED PRECAST CONCRETE PELICAN STREET APARTMENTS – CANDALEPAS ASSOCIATES

C COLOURED CONCRETE WEST TYROL FIRE STATION – PEDEVILLA ARCHITECTS

D TIMBER LOUVRES PUNCHBOWL MOSQUE – CANDALEPAS ASSOCIATES

E STEEL WINDOW BOXES QT MELBOURNE – CANDALEPAS ASSOCIATES

F COLOURED CONCRETE THE POINT APARTMENTS – CANDALEPAS ASSOCIATES

G ALUMINIUM LOUVRES REVOLUTION APARTMENTS – CANDALEPAS ASSOCIATES

H ALUMINIUM FRAMED GLAZING FRANCIS STREET APARTMENTS – CANDALEPAS ASSOCIATES

I PAINTED CONCRETE BALUSTRADE PRESIDENT AVENUE APARTMENTS – CANDALEPAS ASSOCIATES

J FIBRE CEMENT SHEET QT PERTH – CANDALEPAS ASSOCIATES

Issue	Date	Description
A	26.11.18	FOR SSDA TO UAHC

Drawing Original Size: A1

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EPPING ROAD, MACQUARIE PARK

CLIENT:
FRASERS PROPERTY IVANHOE

SCALE: 1:200@A1 / 1:400@A3
0 5m 10m

DATE: NOV 2018
CHECKED 1: LM
CHKD2/APPD: –
DRAWN BY: LM

DRAWING: SOUTH WEST ELEVATION
DRAWING No. DA – 1305

JOB No. 5800
ISSUE A