



Waterloo Integrated
Station Development

A Joint Venture Project

**JOHN
HOLLAND**



WATERLOO METRO QUARTER OVER STATION DEVELOPMENT

Appendix QQ –BASIX Statement Part 2: Building 4

SSD-10437 Southern Precinct

Detailed State Significant Development
Development Application

Prepared for **Waterloo Developer Pty Ltd**




30 September 2020

Reference	Description
Applicable SSD Applications	SSD-10437 Southern Precinct
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Executive Summary

This report has been prepared by Cundall Johnston and Partners Pty Ltd (Cundall) to accompany a detailed State Significant Development (SSD) development application (DA) for the Southern Precinct over station development (OSD) at the Waterloo Metro Quarter site.

This report has been prepared in response to the following conditions of consent issued for the concept SSD DA (SSD 9393) for the OSD:

- BASIX Energy 30
- More than BASIX 40

Energy

The key initiatives to deliver the BASIX energy score of **35** are:

- Double glazing and external shading
- Naturally ventilated apartments with ceiling fans
- Naturally ventilated corridors
- LED lighting

Water

The following strategy is proposed to achieve the BASIX water score of **41**:

- Water efficient fixtures and appliances
- Rainwater harvesting
- Low irrigation demand landscaping
- 4 star washing machines to 3 and 4 bedroom apartments only

Thermal Comfort

NatHERS modelling of all apartments has been undertaken and certified. The individual and average heating and cooling limits for apartments stated in BASIX have not been exceeded.

An average star rating exceeding **6.5 stars** has been achieved. The minimum average requirement for BASIX compliance is approximately 5 stars.

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1.0 Introduction

1.1 The Site

The site is located within the City of Sydney Local Government Area (LGA). The site is situated about 3.3 kilometres south of Sydney CBD and eight kilometres northeast of Sydney International Airport within the suburb of Waterloo.

The Waterloo Metro Quarter site comprises land to the west of Cope Street, east of Botany Road, south of Raglan Street and north of Wellington Street (refer to Figure 1). The heritage-listed Waterloo Congregational Church at 103–105 Botany Road is within this street block but does not form a part of the Waterloo Metro Quarter site boundaries.

The Waterloo Metro Quarter site is a rectangular shaped allotment with an overall site area of approximately 1.287 hectares. The boundaries of the overall site are identified at Figure 1-1, and the subject site of the detailed SSD DA is identified at Figure 1-2 and Figure 1-3.



Figure 1-1 - Aerial image of the site Source: Urbis

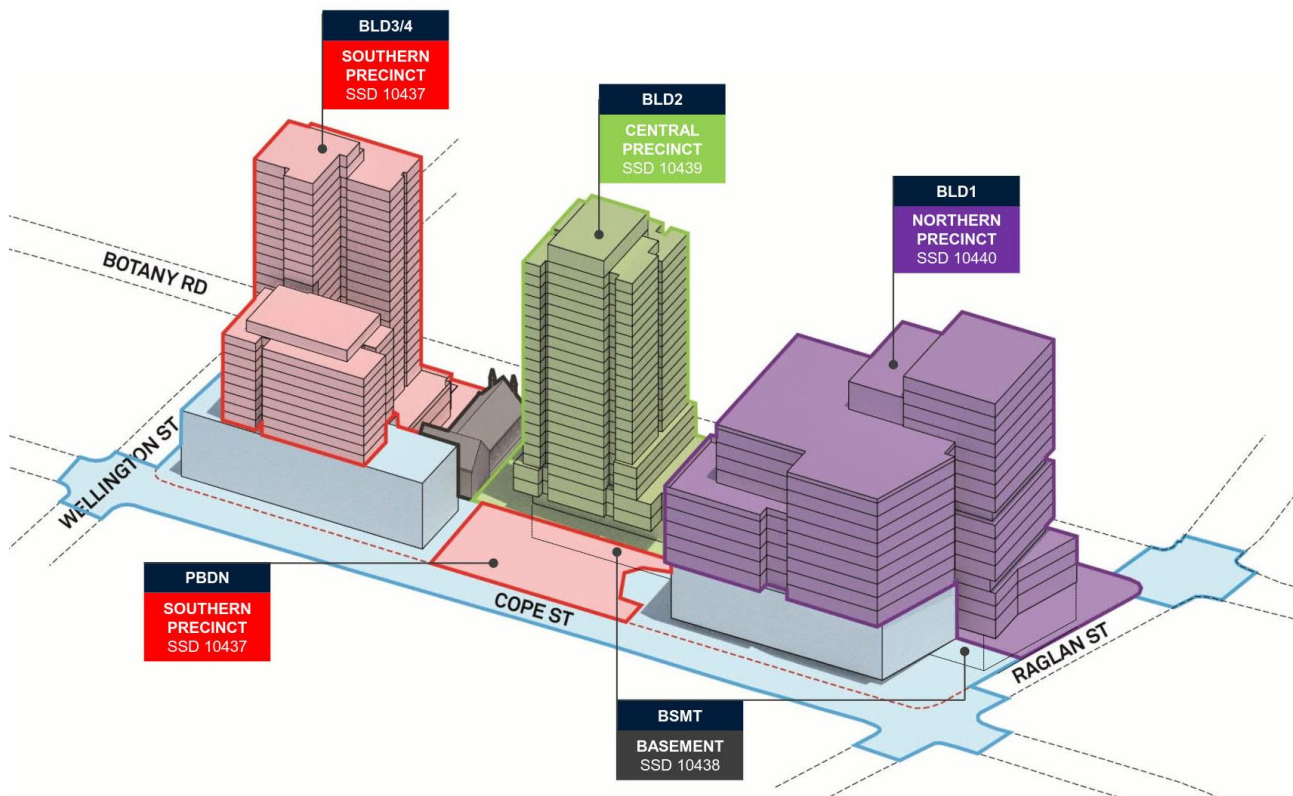


Figure 1-2- Waterloo Metro Quarter site, with sub-precincts identified (Source: HASSELL)

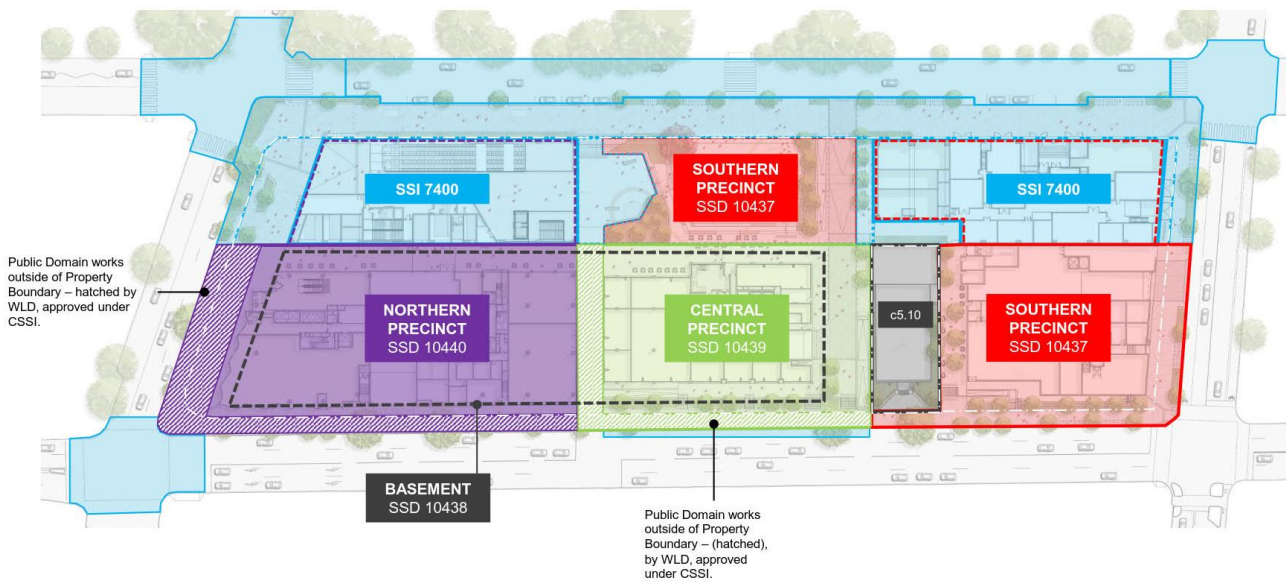


Figure 1-3 - Waterloo Metro Quarter site, with sub-precincts identified (Source: Waterloo Developer Pty Ltd)

1.2 Building 4

Figure 1-4 shows an elevation of the building and floor plans for typical levels.



Figure 1-4: East and North Elevations and typical floor plans

2.0 BASIX Requirements

2.1 SSP Development Consent Requirements

The Development Consent (SSD 9393) dated 10 December 2019 contains the following minimum performance targets for environmental performance for residential uses:

- BASIX Energy 30
- BASIX Water more than 40

2.2 BCA Section J compliance requirements

Building 2 is a Class 2 residential building.

Section J0.2(a) of Volume 1 of the Building Code of Australia (BCA) 2019 requires that sole occupancy units in new Class 2 residential buildings collectively achieve an average of 6 stars NatHERS rating and that no individual unit achieves less than 5 stars. In NSW this requirement is replaced by the state appendix clause NSW J(A)1.2 C which states that *“Compliance is not required with the national BCA provisions of J0.2(a) as those matters are regulated under BASIX.”*

All other requirements of Section J apply, with some modifications as set out in the NSW state appendices. These are summarised as:

- Sole-occupancy units – comply with requirements for general thermal construction (J1.2), thermal breaks in roof and wall (J0.4 & J0.5), floor edge insulation (J1.6(b) and J1.6(c)) and building sealing (J3).
- The common areas of Class 2 buildings need to comply with all of the relevant provisions of Section J1 (Building Fabric) and J3 (Building Sealing).
- All building services need to comply with Sections J5 (Air-conditioning and Ventilation Systems), J6 (Artificial Lighting and Power) and J7 (Heated Water Supply and swimming pool & spa pool plant).
- All energy monitoring systems needs to comply with Section J8 (Facilities for Energy Monitoring).

2.3 Minimum BASIX Compliance

BASIX is the web-based planning tool developed and administered by the NSW Department of Planning and Environment. Provisions to enable the operation of BASIX are contained in the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) and State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (the BASIX SEPP).

Commitments made under BASIX become a condition of the relevant development consent or complying development certificate (reference: NSW Section J appendix of Volume 1 of BCA 2019).

There are three components with minimum compliance targets varying by type of building and location:

- Energy
- Water
- Thermal Comfort

2.3.1 Energy

The Energy section of BASIX aims to reduce the greenhouse gas emissions of all new residential dwellings. The benchmark is 3,292 kgCO₂ per person per year, which was the average for homes prior to the introduction of BASIX in 2004. The energy target ranges from 10% to 50% reductions from the benchmark, depending on the climatic zone and the building type and height.

For Building 4 the following minimum requirements apply:

	BASIX Target Zone	Target	Building Type
Energy	E1A	25	High Rise (6 storey units or higher)

This requirement is superseded by the Development Consent requirement for BASIX Energy 30.

2.3.2 Water

The Water section of BASIX aims to reduce the potable water consumption of all new residential developments. The benchmark is 90,340 litres of water per person per year (or 247 litres per person per day), which was the average potable water consumption of a home prior to the introduction of BASIX in 2004. The water reduction target ranges from 40% to 0% depending on the climatic zone.

For Building 4 the following minimum requirements apply:

	BASIX Target Zone	Target
Water	East Coast	40

This requirement is superseded by the Development Consent requirement for BASIX Water of more than 40.

2.3.3 Thermal Comfort

The Thermal Comfort section of BASIX aims to ensure thermal comfort for a dwelling's occupants, appropriate to the climate and season, reduce greenhouse gas emissions from artificial cooling and heating through passive design, and reduce the demand for new, or upgraded, energy infrastructure by managing peak demand for energy required for cooling and heating. Compliance with BASIX thermal comfort criteria is set out in the BASIX Thermal Comfort Protocol (dated November 2017) and requires all units to be assessed by accredited NatHERS assessors using approved software.

The BASIX climate zone for thermal comfort for Building 4 of Waterloo Metro Quarter is 56 (East Sydney) which gives the following thermal comfort criteria. BASIX does not use NatHERS star ratings, which are based on the combination of the heating and cooling loads. For comparative purposes the table also shows the equivalent star ratings using the BASIX Thermal Comfort thresholds.

	Maximum (MJ/m ²)	Equivalent NatHERS Star Rating
Average heating load in building	39.9	5 stars
Average cooling load in building	25.9	
Individual heating load in an apartment	45.4	4.5 stars
Individual cooling load in an apartment	29.5	

3.0 BASIX Inputs

3.1 Project Details

3.1.1 Site Details

Item	Value	Comments
Postcode	2017	City of Sydney Local Government Area.
Site Area	1424 m ²	
Total Roof Area	944 m ²	
Non-residential floor area	-	Excluded from BASIX
Residential car spaces	0	No car parking in building 4
Non-residential car spaces	-	Excluded from BASIX

3.1.2 Building Details

The building is located on top of the 5 storey Waterloo Sydney Metro Station. The building has 9 storeys (levels 01 to 09) above the metro station box

The building has 70 dwellings with the following mix:

Type	No.
Studio	26
1 bed	2
2 Bed	30
2 Bed Adapt	4
3 Bed Adapt	7
4 Bed Adapt	1
TOTAL	70

The size and areas of each dwelling are shown in the BASIX certificate in Appendix C.

3.1.3 Common Areas

BASIX Common Area Type	Floor Area (m2)	Shared Service	Description
Lift Motor Room	0		
Switch Room	0	Yes	In building 3
Garbage Room	80.9		Waste room and bulky waste on ground level
Community Room (No. 1)	27.1		Community Room on Level 9
Plant or Service Room (No. 1)	4.7		Plant room on Level 1
Plant or Service Room (No. 2)	42.6		Plant room on Level 9
Plant or Service Room (No. 3)	10		Caretaker Store
Other internal common area	91.2		Bike Store on Mezzanine
Ground Floor Lobby	72.4		Social housing lobby and bike store
Hallway/lobby	731		Circulation on Levels 1 to 9
TOTAL	1,091		

* - shared service means the area is also used by non-residential users.

3.1.4 Central Systems

Central System(s) or facility(s)	Location
Lift (No. 1)	Building 4
Lift (No. 2)	Building 4
Central water tank - rainwater or stormwater (No. 1)	Building 4
Fire sprinkler system (No.1)	Building 4
Central hot water system (No. 1)	Building 4

3.2 NatHERS – Thermal comfort

Thermal comfort modelling was undertaken using the NatHERS compliant software FirstRate.

The NatHERS modelling was based on the following construction specifications which apply to all dwellings unless stated otherwise. Where there are any departures to this construction specification in a particular dwelling these are listed in Appendix A.

NatHERS Thermal Comfort Inclusions				
Glazing Doors/Windows	Aluminium framed double glazing to all units, except where noted in Appendix A.			
	Glazing	System U-value	SHGC	VLT
	Fixed Glazing	3.35	0.47	66%
	Operable Glazing	4.36	0.40	43%
	Sliding Doors	3.5	0.43	61%
	Skylight (L9 only)	4.22	0.73	50%
	<p>Notes:</p> <p>Given values are NFRC, total window system values (glass and frame combined).</p> <p>Operability of windows as per drawings.</p> <p>Openability modelled as per NatHERS Technical Note Version June 2019 – 8.9 with regard to restricted openings.</p>			
Ceiling	Plasterboard ceilings, no insulation required to units with units above			
	Plasterboard ceilings, minimum R2.0 insulation (insulation only) required to units with winter garden/unconditioned spaces			
	Minimum R4.0 insulation (insulation only) required to level 08 and 09 roof.			
	Unit 902 minimum R4.5 insulation for the roof.			
	For units where ceiling thermal upgrade is required please refer to assessor certificate			
	All ceiling penetrations: downlights and exhaust fans are sealed to prevent the movement of air between a zone and another zone, neighbour or roof/attic space. Sizes as below:			
	Exhaust fans: 250 x 250mm with 0 clearance			
	Downlights: 100 x 100mm with 50mm clearance			
	<p><i>Exception: For units where ceiling thermal upgrade is required refer to Appendix A and the NatHERS assessor certificate in Appendix C.</i></p> <p>Notes:</p> <p>Loss of ceiling insulation due to penetrations have been accounted for in accordance with BASIX Thermal Protocol 4.13.1 and NatHERS Technical Note Version June 2019.</p> <p>All ceiling penetrations, e.g. downlights, exhaust fans, etc. are assumed to be sealed.</p>			
External Wall	Insulated spandrels – double glazed, minimum R2.0 (insulation only). Unit 902 has a minimum R2.5 insulation only for spandrel.			
	Insulated external wall – brickwork with minimum insulation of R2.0 (insulation only). Unit 902 has a minimum R2.5 insulation only for all brick.			

	<p>Acoustic ventilators – modelled as metal clad wall, with openness factor of 18% (worst case) and added insulation of R1.0</p> <p>Exception: For units where improved wall performance is required refer to assessor certificate</p> <p>All wall heights: 2875mm.</p> <p><i>Exception: For units where improved wall performance is required refer to Appendix A and the NatHERS assessor certificate in Appendix C.</i></p> <p>Notes:</p> <p>Wall colour modelled as per the material specified on the drawings</p>
Inter-tenancy Walls	<p>Dividing wall – 100mm concrete wall with R2.0 (insulation only) and plasterboard - between neighbouring units, all walls to adjacent common areas (including stairs and lifts) including naturally ventilated corridors. Unit 902 has a minimum R2.5 insulation only.</p>
Internal Walls within Dwellings	<p>Plasterboard on studs – no insulation</p>
Floors	<p>225mm concrete suspended floor, no insulation required to units with units above</p> <p>225mm concrete suspended floor, minimum R2.0 insulation (insulation only) required to all units on level 01, and winter garden/unconditioned spaces below</p> <p><i>Exception: For units where floor thermal upgrade is required refer to Appendix A and the NatHERS assessor certificate in Appendix C.</i></p>
Floor Coverings	<p>Bathrooms and Laundry: Tiles</p> <p>Bedrooms (including WIR): Carpet</p> <p>All other areas: Timber</p>
Artificial Lighting within Units	<p>All light fittings within each room are to be sealed LED fixtures. Downlights modelled at a rate of 1 downlight per 2.5m² of floor area as per BASIX Thermal Comfort Protocol.</p> <p>NOTE: modelled as per NatHERS Assessor Handbook Version June 2019 – Section 8.8.1.3</p>
Ventilation within Units	<p>Bathroom – individual ducted fans</p> <p>Laundry – individual ducted fans</p> <p>Kitchen range hood – individual ducted fans</p> <p>NOTE: modelled as per NatHERS Assessor Handbook Version June 2019 – Section 8.8.1.2</p>
Corridors	<p>Natural ventilation assumed in the corridor, so for modelling purposes walls common to the unit and corridor have been modelled as external walls.</p>
Adjacent buildings	<p>No adjacent building have been modelled.</p>
External screens	<p>35% opacity for full height of glazing, as per locations indicated on drawings.</p> <p>30% opacity for glass balustrade and perforated metal balustrade to balconies</p>

The heating and cooling loads from the NatHERS models for each apartment were then entered in to the BASIX software. These are used to confirm compliance with the BASIX Thermal Comfort criteria – refer Section 2.3.3, and also to calculate the heating and cooling energy consumption based on the energy efficiency of the heating and cooling systems.

3.3 Energy Systems

3.3.1 Dwellings

System	Item	Description
Hot Water	Central hot water system	Refer Central Systems for details
Ventilation	Bathroom Exhaust	Individual fan ducted to façade or roof, interlocked to light
	Kitchen Exhaust	Individual fan ducted to façade or roof, manual on/off
	Laundry Exhaust	Individual fan ducted to façade or roof, interlocked to light
Cooling	Living	Ceiling fans
	Bedroom	Ceiling fans
Heating	Living	No individual system
	Bedroom	No individual system
Lighting	All rooms	Primarily lit by LEDs with dedicated LED fittings
Pool & Spa	None	
Whitegoods & Appliances	Cooktop	gas
	Oven	electric
	Fridge	Not specified
	Dishwasher	Not specified
	Clothes Washer	Not specified
	Clothes Dryer	Not specified
	Ventilated fridge space	Yes
Other	Indoor clothes drying line	Yes
	Private outdoor clothes drying line	No
	Day/Night zoning of air con	Yes
Alternative Energy	None – refer common areas	

3.3.2 Central Systems

System	Item	Description
Hot Water	System Type	Gas Boiler
	Piping Insulation (ring main & supply riser)	R1.0 (external)
		R1.0 (internal)
Cooling	System Type	n/a
	Energy Source	n/a
	Heat Rejection Method	n/a
	Unit Efficiency	n/a
Heating	System Type	n/a

	Energy Source	n/a
	Unit Efficiency	n/a
Alternative Energy Supply	Cogeneration System	None
	Photovoltaic System	0 kW
Lifts	System Type	gearless traction with VVVF motor
	No. of storeys including basement *	10
Pool & Spa	None	
Sauna	None	
Other	Building Management System	Yes
	Active Power Factor Correction	Yes
	Common area clothes drying line	No
	Common area electric/gas clothes dryer	No
	Common area clothes washer	No

* - for lifts the number of storeys is equal to the number of levels served, that is, number of residential levels that a lift door can open on to, plus the lobby levels and the basements dedicated to residential parking / services.

3.3.3 Common Area – Ventilation

Area	Mechanical Ventilation System Type	Energy Efficiency Measure
Indoor Swimming Pool or Spa Areas	n/a	n/a
Gym area	n/a	n/a
Car park area	n/a	n/a
Lift Motor Room	n/a	n/a
Switch Room	n/a	n/a
Garbage Room	Ventilation exhaust only	n/a
Community Room (No. 1)	No Mechanical Ventilation	
Plant or Service Room (No. 1) – L1	No Mechanical Ventilation	n/a
Plant or Service Room (No. 2) – L9	No Mechanical Ventilation	n/a
Plant or Service Room (No. 3) - care	No Mechanical Ventilation	
Other internal common area - bike	Ventilation Supply and Exhaust	Time clock or BMS Control
Ground Floor Lobby	Ventilation Supply & Exhaust	Time clock or BMS Control
Hallway/lobby	No Mechanical Ventilation	n/a

3.3.4 Common Area – Lighting

Area	Primary Lighting System Type	Energy Efficiency Measure	Lighting Control System / BMS
Indoor Swimming Pool or Spa Areas	n/a	n/a	
Gym area	n/a	n/a	
Car park area	n/a	n/a	
Lift cars (No. 1 to 2)	LED	Connected to lift call button	Yes
Lift Motor Room (No. 1)	n/a	n/a	
Garbage Room	LED	Manual On / Manual Off	Yes
Community Room (No. 1)	LED	Daylight Sensor & Motion Sensor	Yes
Plant or Service Room (No. 1) – L1	LED	Motion Sensor	Yes
Plant or Service Room (No. 2) – L9	LED	Manual On / Manual Off	Yes
Plant or Service Room (No. 3) - care	LED	Motion Sensor	Yes
Other internal common area - bike	LED	Motion sensors	Yes
Ground Floor Lobby	LED	Time clock and motion sensors	Yes
Hallway/lobby	LED	Motion sensors	Yes

3.4 Water Systems

3.4.1 Dwellings

System	Item	Description
Fixtures	Showerhead	3 star (>7.5 but <= 9 L/min)
	Toilets	4 star
	Kitchen Taps	5 star
	Bathroom Taps	5 star
	Clothes Washer	4 star washing machines to 3 and 4 bedroom apartments (8no.) only.
	Dishwasher	none
Other	On demand hot water recirculation or diversion	No
Alternative Water	None	
Pool & Spa	None	

3.4.2 Central Systems & Common Areas

System	Item	Description
Landscape	Area of common area lawn	0 m2
	Area of common area garden	102 m2
	Area of indigenous or low water use species	102 m2
Alternative Water Supply – Central Water Tank	Areas diverted to tank: Roof area:	944 m2
	Impervious area:	0 m2
	Garden / lawn area:	0 m2
	Planter box area:	0 m2
	Tank Size	5,000 litres
	Divert overflow to	overflow not diverted
Alternative Water Supply	Supply available from utility company	No
Alternative Water Use	Area of common landscape	102 m2
	No. of car washing bays	0
	Central cooling system (cooling tower)	No
Pool & Spa	None	
Common area fixtures & appliances	Shower	None
	Toilets	None
	Taps	None
	Clothes Washer	None
Fire Sprinkler System (no. 1)	Fire sprinkler test water contained in a closed system	Yes
Central Cooling System (No. 1)	Private water meter on make up line connected to BMS	Yes
	Conductivity controller installed	Yes

4.0 Results

4.1 Energy

The BASIX Energy Score is **35** which exceeds the target score of 30.

The key strategies used to achieve the BASIX Energy Score are:

- Double glazing and external shading
- Naturally ventilated apartments with ceiling fans
- Naturally ventilated corridors
- LED lighting

4.2 Water

The BASIX Water Score is **41** which meets the target of exceeding 40.

The key strategies used to achieve the BASIX Water Score are:

- Water efficient fixtures and appliances
- Rainwater harvesting
- Low irrigation demand landscaping
- 4 star washing machines to 3 and 4 bedroom apartments only

4.3 NatHERS and Thermal Comfort

NatHERS modelling has been completed for all units resulting in an average star rating exceeding **6.5 stars**.

The individual and average heating and cooling limits for dwellings stated in BASIX have not been exceeded.

For detailed results refer to Appendix C.

Appendix A NatHERS Schedule of Departures

The table below identifies any non-typical apartments which have different construction specifications to the typical specifications stated in Section 3.2.

Dwelling No.	Level	Difference to standard construction specification
Level 01	01	Minimum R2.0 insulation (insulation only) required to concrete suspended floor for all units on level 01.
Level 08 & 09	08 & 09	Minimum R4.0 insulation (insulation only) required to level 08 and 09 roof.
902	09	Minimum R4.5 insulation (insulation only) required to ceiling.
902	09	Minimum R2.5 for external walls, and walls to corridor.

Appendix B BASIX Certificate

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 1131748M

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 06/10/2017 published by the Department. This document is available at www.basix.nsw.gov.au

Secretary

Date of issue: Tuesday, 01 September 2020

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



Planning,
Industry &
Environment

Project summary

Project name	WMQ - Building 4 - DA
Street address	n.a Botany Road Waterloo 2017
Local Government Area	Sydney City Council
Plan type and plan number	strata 1
Lot no.	4
Section no.	1
No. of residential flat buildings	1
No. of units in residential flat buildings	70
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

Water	✓ 41	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 35	Target 25

Certificate Prepared by

Name / Company Name: Cundall

ABN (if applicable): 16104924370

Description of project

Project address

Project name	WMQ - Building 4 - DA
Street address	n.a Botany Road Waterloo 2017
Local Government Area	Sydney City Council
Plan type and plan number	strata 1
Lot no.	4
Section no.	1

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	70
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	1424
Roof area (m ²)	944
Non-residential floor area (m ²)	0.0
Residential car spaces	0
Non-residential car spaces	0




Common area landscape

Common area lawn (m ²)	0.0
Common area garden (m ²)	102.0
Area of indigenous or low water use species (m ²)	102.0

Assessor details

Assessor number	DMN/19/1934
Certificate number	8OB2466RFC
Climate zone	56

Project score

Water	 41	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 35	Target 25

Description of project

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

Residential flat buildings - Building4, 70 dwellings, 9 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
101	2	69.5	0.0	0.0	0.0
105	2	75.5	0.0	0.0	0.0
203	1	37.0	0.0	0.0	0.0
207	3	90.0	0.0	0.0	0.0
302	2	75.5	0.0	0.0	0.0
306	1	37.0	0.0	0.0	0.0
401	2	70.3	0.0	0.0	0.0
405	1	37.0	0.0	0.0	0.0
409	2	71.0	0.0	0.0	0.0
504	1	37.1	0.0	0.0	0.0
508	2	64.7	5.9	0.0	0.0
603	1	37.2	0.0	0.0	0.0
607	3	89.8	0.0	0.0	0.0
702	2	75.5	0.0	0.0	0.0
706	1	37.0	0.0	0.0	0.0
801	2	70.3	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
102	2	73.8	0.0	0.0	0.0
106	4 or more bedrooms	133.5	0.0	0.0	0.0
204	1	37.0	0.0	0.0	0.0
208	2	64.5	0.0	0.0	0.0
303	1	37.1	0.0	0.0	0.0
307	3	90.0	0.0	0.0	0.0
402	2	75.5	0.0	0.0	0.0
406	1	37.0	0.0	0.0	0.0
501	2	70.2	0.0	0.0	0.0
505	1	37.0	0.0	0.0	0.0
509	2	71.1	0.0	0.0	0.0
604	1	37.3	0.0	0.0	0.0
608	2	64.7	5.9	0.0	0.0
703	1	37.1	0.0	0.0	0.0
707	3	89.8	0.0	0.0	0.0
802	2	75.5	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
103	1	59.3	0.0	0.0	0.0
201	2	70.3	0.0	0.0	0.0
205	1	37.0	0.0	0.0	0.0
209	2	71.6	0.0	0.0	0.0
304	1	37.1	0.0	0.0	0.0
308	2	64.7	5.9	0.0	0.0
403	1	37.1	0.0	0.0	0.0
407	3	90.0	0.0	0.0	0.0
502	2	75.5	0.0	0.0	0.0
506	1	37.0	0.0	0.0	0.0
601	2	70.3	0.0	0.0	0.0
605	1	37.3	0.0	0.0	0.0
609	2	72.1	0.0	0.0	0.0
704	1	37.1	0.0	0.0	0.0
708	2	89.8	0.0	0.0	0.0
803	2	72.7	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
104	1	58.9	0.0	0.0	0.0
202	2	75.5	0.0	0.0	0.0
206	1	36.9	0.0	0.0	0.0
301	2	70.3	0.0	0.0	0.0
305	1	37.1	0.0	0.0	0.0
309	2	71.0	0.0	0.0	0.0
404	1	37.1	0.0	0.0	0.0
408	2	64.7	5.9	0.0	0.0
503	1	37.1	0.0	0.0	0.0
507	3	90.0	0.0	0.0	0.0
602	2	75.5	0.0	0.0	0.0
606	1	37.0	0.0	0.0	0.0
701	2	70.5	0.0	0.0	0.0
705	1	37.0	0.0	0.0	0.0
709	2	72.2	0.0	0.0	0.0
804	1	37.0	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
805	1	37.0	0.0	0.0	0.0
901	2	64.7	5.9	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
806	3	90.0	0.0	0.0	0.0
902	2	71.6	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
807	2	64.7	5.9	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
808	2	71.0	0.0	0.0	0.0

Description of project

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

Common areas of unit building - Building4

Common area	Floor area (m ²)
Lift car (No.1)	-
Community room (No. 1) - L9	27.1
Plant or service room (No. 3) - care	10.0
Hallway/lobby type (No. 1)	731.0

Common area	Floor area (m ²)
Lift car (No.2)	-
Plant or service room (No. 1) - L1	4.7
Other internal common area (No. 1) -bike	91.2

Common area	Floor area (m ²)
Garbage room (No. 1)	80.9
Plant or service room (No. 2) - L9	42.6
Ground floor lobby type (No. 1)	72.4

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building4

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Building4

(a) Dwellings

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

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
106, 207, 307, 407, 507, 607, 707, 806	3 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	4 star	-	-	-	-	-	-	-	-
All other dwellings	3 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	-	-	-	-	-	-	-	-

Alternative water source								
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
None	-	-	-	-	-	-	-	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓ ✓ ✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	

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

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
103	ceiling fans	ceiling fans	-	-	4 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
106	ceiling fans	ceiling fans	-	-	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
101, 102, 104, 105, 201, 202, 203, 204, 205, 206, 303, 304, 305, 306, 403, 404, 405, 406, 503, 504, 505, 506, 603, 604, 605, 606, 703, 704, 705, 706, 804, 805	ceiling fans	ceiling fans	-	-	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
All other dwellings	ceiling fans	ceiling fans	-	-	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no

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

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✓		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✓	

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
101	40.1	8.7
102	35.7	14.0
103	36.3	12.5
104	28.3	12.2
105	26.3	10.3
106	31.4	13.2
201	31.5	8.6
202	26.5	9.9
203	38.0	13.1
204	30.1	16.1
205	27.0	13.2
206	30.7	13.7
207	13.3	14.9
208	15.9	10.8
209	38.9	14.9

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
301	33.8	7.7
302	27.4	9.8
303	37.7	12.7
304	27.1	16.1
305	26.8	13.0
306	28.8	15.8
307	12.3	15.6
308	15.6	10.4
309	40.2	11.2
401	35.2	7.7
402	31.4	8.8
403	38.2	11.9
404	28.9	11.2
406	29.0	13.3
407	12.4	14.5
408	17.0	10.3
409	41.1	11.8
501	35.4	7.8
502	31.5	8.8
503	37.5	11.9
505	26.8	11.3
507	12.4	14.3
508	16.9	9.8
509	43.6	11.9
601	36.7	7.4
602	31.6	8.8
603	40.3	11.8

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
604	30.2	11.7
605	28.9	11.6
606	30.6	11.9
608	16.3	9.8
609	41.9	9.9
701	36.6	7.5
702	31.5	9.1
703	39.5	11.7
704	30.4	11.7
706	30.6	11.8
709	39.9	9.8
801	40.1	7.2
802	38.0	9.9
803	40.9	14.4
804	38.1	14.2
805	39.5	14.5
806	26.0	16.6
807	17.1	9.7
808	44.0	10.7
901	35.8	11.8
902	45.1	24.9
405, 506	26.7	11.6
504, 705	28.9	11.4
All other dwellings	13.0	14.5

(b) Common areas and central systems/facilities

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

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

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	5000.0	To collect run-off from at least: - 944.0 square metres of roof area of buildings in the development - 0.0 square metres of impervious area in the development - 0.0 square metres of garden/lawn area in the development - 102.0 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 102.0 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Lift car (No.1)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.2)	-	-	light-emitting diode	connected to lift call button	Yes
Garbage room (No. 1)	ventilation exhaust only	-	light-emitting diode	manual on / manual off	Yes
Community room (No. 1) - L9	no mechanical ventilation	-	light-emitting diode	daylight sensor and motion sensor	Yes
Plant or service room (No. 1) - L1	no mechanical ventilation	-	light-emitting diode	motion sensors	Yes
Plant or service room (No. 2) - L9	no mechanical ventilation	-	light-emitting diode	manual on / manual off	Yes
Plant or service room (No. 3) - care	no mechanical ventilation	-	light-emitting diode	motion sensors	Yes
Other internal common area (No. 1) -bike	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	motion sensors	Yes
Ground floor lobby type (No. 1)	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	Yes
Hallway/lobby type (No. 1)	no mechanical ventilation	-	light-emitting diode	motion sensors	Yes

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 10
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 10

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

(b) Common areas and central systems/facilities

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

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

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

Central energy systems	Type	Specification
Other	Building management system installed?: yes Active power factor correction installed?: yes	-

Notes

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

Legend

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

Appendix C NatHERS Group Certificate

Nationwide House Energy Rating Scheme — Class 2 summary

Generated on 30 Aug 2020 using FirstRate5 v5.3.0a

Property

Address Botany Road, Waterloo, NSW, 2017

Lot/DP

NatHERS climate zone

Accredited assessor



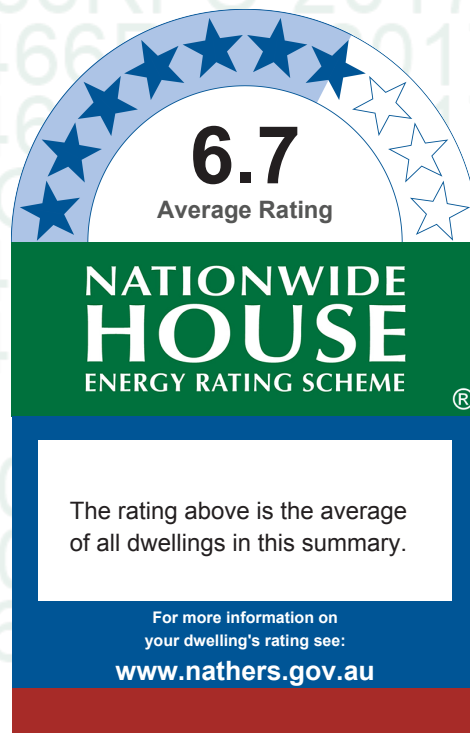
Loreta Brazukas

l.brazukas@cundall.com

0437493649

Accreditation No. DMN/19/1934

Assessor Accrediting Organisation DMN



Verification

To verify this certificate, scan the QR code or visit

<https://www.fr5.com.au/QRCodeLanding?PublicId=8OB2466RFC&GrpCert=1> When using either link, ensure you are visiting www.fr5.com.au.

Summary of all dwellings

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
1N0X5YNVE1	B4.101	40.1	8.7	48.8	6.2
WPG2C854S3	B4.102	35.7	14	49.7	6.1
X5ZBU8TMJI	B4.103	36.3	12.5	48.8	6.2
TFQ8XHQIL8	B4.104	28.3	12.2	40.5	6.9
EZ94S08RX3	B4.105	26.3	10.3	36.6	7.2
P3SCN5JNAR	B4.106	31.4	13.2	44.6	6.5
U3H8WCSCBG	B4.201	31.5	8.6	40.1	6.9

Continued over

National Construction Code (NCC) requirements

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

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

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

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
PTRI90JQKR	B4.202	26.5	9.9	36.4	7.2
NQLG83EYRE	B4.203	38	13.1	51.1	5.9
ABBMS023CL	B4.204	30.1	16.1	46.2	6.4
HZV1KMF DNZ	B4.205	27	13.2	40.2	6.9
8ESZW9JLRS	B4.206	30.7	13.7	44.4	6.6
R8S9KM8DW1	B4.207	13.3	14.9	28.2	7.8
XF3M2ORFZJ	B4.208	15.9	10.8	26.7	7.9
8QN9SI8WU8	B4.209	38.9	14.9	53.8	5.8
143VK5NIDF	B4.301	33.8	7.7	41.5	6.8
2KK8TS2A7P	B4.302	27.4	9.8	37.2	7.1
Y1HK35ES9Z	B4.303	37.7	12.7	50.4	6.1
ODETNMYGPU	B4.305	26.8	13	39.8	6.9
UYUY6VLO3	B4.306	28.8	15.8	44.6	6.5
KT06PIUN5Q	B4.307	12.3	15.6	27.9	7.8
AB5T0II4EE	B4.308	15.6	10.4	26	8
9POI7ZSH30	B4.309	40.2	11.2	51.4	5.9
OY28LDLB10	B4.401	35.2	7.7	42.9	6.7
LYBBYX721X	B4.402	31.4	8.8	40.2	6.9
8BGY6PX38S	B4.403	38.2	11.9	50.1	6.1
LE9DIZVL99	B4.404	28.9	11.2	40.1	6.9
JRQ61ZXW6R	B4.405	26.7	11.6	38.3	7
DXDWITK6SA	B4.406	29	13.3	42.3	6.7
XFGOFBO7W4	B4.407	12.4	14.5	26.9	7.9
2P0K4UVJ04	B4.408	17	10.3	27.3	7.9
EISMPXBN5Y	B4.409	41.1	11.8	52.9	5.9
8NHUMMRU0X	B4.501	35.4	7.8	43.2	6.6
A69JEV09TZ	B4.502	31.5	8.8	40.3	6.9
4VFBEBHUZA	B4.503	37.5	11.9	49.4	6.1
MFGNI0SPZA	B4.504	28.9	11.4	40.3	6.9
7K69YGKCQI	B4.505	26.8	11.3	38.1	7.1
M0C6JJUDRC	B4.506	26.7	11.6	38.3	7
MV2LIBFODH	B4.507	12.4	14.3	26.7	7.9
D09CMT87P	B4.508	16.9	9.8	26.7	7.9
8LOIWHY9HZ	B4.509	43.6	11.9	55.5	5.7
9MSPVBQFHX	B4.601	36.7	7.4	44.1	6.6
FBDE50M5WS	B4.602	31.6	8.8	40.4	6.9
855CY9702M	B4.603	40.3	11.8	52.1	5.9

Continued over

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m ² /p.a.)	Cooling load (MJ/m ² /p.a.)	Total load (MJ/m ² /p.a.)	Star rating
I23V5G4T24	B4.604	30.2	11.7	41.9	6.8
E740K4ZVAO	B4.605	28.9	11.6	40.5	6.9
DLKTX9N5WB	B4.606	30.6	11.9	42.5	6.7
ZCQZTXZYS5	B4.607	13	14.5	27.5	7.9
SN8O6FAR9U	B4.608	16.3	9.8	26.1	7.9
M0EZ6GO746	B4.609	41.9	9.9	51.8	5.9
BQHANU51PB	B4.701	36.6	7.5	44.1	6.6
P6FRMO8B2B	B4.702	31.5	9.1	40.6	6.9
ASI1UY1VPG	B4.703	39.5	11.7	51.2	5.9
UBXG37AAJP	B4.704	30.4	11.7	42.1	6.7
VP2UB5D52C	B4.705	28.9	11.4	40.3	6.9
X9Y2THZ4HN	B4.706	30.6	11.8	42.4	6.7
7F17J3EER4	B4.707	13	14.5	27.5	7.9
OIAX9RHHWQ	B4.708	13	14.5	27.5	7.9
2JNFRDIDRL	B4.709	39.9	9.8	49.7	6.1
GWVLBUXKRM	B4.801	40.1	7.2	47.3	6.3
9Q2BIQ6TDV	B4.802	38	9.9	47.9	6.3
P8129XZJB2	B4.803	40.9	14.4	55.3	5.7
CGK0T3072G	B4.804	38.1	14.2	52.3	5.9
WD2B5OQCYZ	B4.805	39.5	14.5	54	5.8
0RTAIHJUNU	B4.806	25	16.6	41.6	6.8
EW5GT3FBSO	B4.807	17.1	9.7	26.8	7.9
Z8179LGZ6V	B4.808	44	10.7	54.7	5.7
5CK99SA1X5	B4.901	35.8	11.8	47.6	6.3
ZKOLFWLZJ9	B4.902	45.1	24.9	70	4.8
ZMUFZGHKI5	StB4.304	27.1	16.1	43.2	6.7
Average		30.2	11.9	42.1	6.7

Explanatory notes

About this report

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

Accredited Assessors

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

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

Disclaimer

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

Appendix D Stamped Plans

Waterloo Metro Quarter Development

SSD 10437 Architectural Drawings - Building 4

Drawing Number

WMQ-BLD4-BSA-AR-DRG-DA001
WMQ-BLD4-BSA-AR-DRG-DA101
WMQ-BLD4-BSA-AR-DRG-DA102
WMQ-BLD4-BSA-AR-DRG-DA103
WMQ-BLD4-BSA-AR-DRG-DA108
WMQ-BLD4-BSA-AR-DRG-DA109
WMQ-BLD4-BSA-AR-DRG-DA110
WMQ-BLD4-BSA-AR-DRG-DA140
WMQ-BLD4-BSA-AR-DRG-DA141
WMQ-BLD4-BSA-AR-DRG-DA142
WMQ-BLD4-BSA-AR-DRG-DA143
WMQ-BLD4-BSA-AR-DRG-DA150
WMQ-BLD4-BSA-AR-DRG-DA151
WMQ-BLD4-BSA-AR-DRG-DA160
WMQ-BLD4-BSA-AR-DRG-DA161
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WMQ-BLD4-BSA-AR-DRG-DA170

Drawing Name

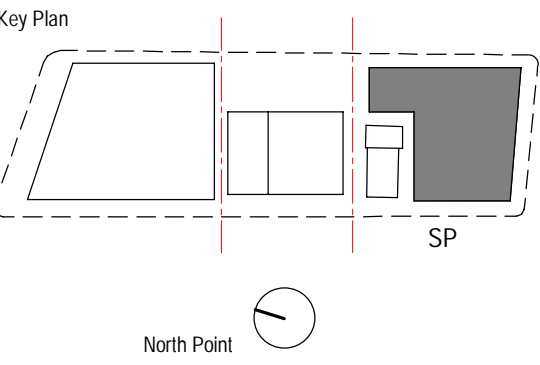
Cover Sheet
Level 01
Level 02
Level 03-07 (Typical)
Level 08
Level 09
Roof Plan
Elevation North
Elevation East
Elevation South
Elevation West
Section A
Section B
Apartment Types - Studios, 1& 2 Bed Adaptable
Apartment Types - 2 Bed
Apartment Types - 2 Bed & 3 Bed Adaptable
Apartment Types - 4 Bed Adaptable
Area Calculations - GFA

WMQ Building 4 NatHERS Thermal Comfort Inclusions			
Glazing Doors/Windows	Aluminium framed double glazing to all units, except where noted:		
	Glazing element	U-value	SHGC
	Fixed vision glazing	3.35	0.47
	Operable vision glazing	4.36	0.40
	Sliding Doors	3.5	0.43
	Skylight (L9 only)	4.22	0.72
	Given values are NFRC, total window system values (glass and frames) Operability of windows as per drawings		
Ceiling	NOTE: operability modelled as per NatHERS Technical Note Version June 2019 – 8.9 with regard to restricted openings Plasterboard ceilings, no insulation required to units with units above Plasterboard ceilings, minimum R2.0 insulation (insulation only) required to units with winter garden/unconditioned spaces Minimum R4.0 insulation (insulation only) required to level 08 and 09 roof. Unit 902 minimum R4.5 insulation for the roof. For units where ceiling thermal upgrade is required please refer to assessor certificate All ceiling penetrations: downlights and exhaust fans are sealed to prevent the movement of air between a zone and another zone, neighbour or roof/attic space. Sizes as below: Exhaust fans: 250 x 250mm with 0 clearance Downlights: 100 x 100mm with 50mm clearance		
External Walls	NOTE: loss of ceiling insulation due to penetrations have been accounted for in accordance with BASIX Thermal Protocol 4.13.1 and NatHERS Technical Note Version June 2019 Insulated spandrels – double glazed, minimum R2.0 (insulation only). Unit 902 has a minimum R2.5 insulation only for spandrel. Insulated external wall – brickwork with minimum insulation of R2.0 (insulation only). Unit 902 has a minimum R2.5 insulation only for all brick. Acoustic ventilators – modelled as metal clad wall, with openness factor of 18% (worst case) and added insulation of R1.0 Exception: For units where improved wall performance is required refer to assessor certificate All wall heights: 2875mm.		
Internal Walls	NOTE: wall colour modelled as per the material specified on the drawings Dividing wall – 100mm concrete wall with R2.0 (insulation only) and plasterboard - between neighbouring units, all walls to adjacent common areas (including stairs and lifts) including naturally ventilated corridors. Unit 902 has a minimum R2.5 insulation only.		
Internal Walls within Dwellings	Plasterboard on studs – no insulation		
Floors	225mm concrete suspended floor, no insulation required to units with units above 225mm concrete suspended floor, minimum R2.0 insulation (insulation only) required to all units on level 01, and winter garden/unconditioned spaces below Exception: For units where improved floor performance is required refer to assessor certificate		
Floor Coverings	Bathrooms and Laundry: Tiles Bedrooms (including WIR): Carpet All other areas: Timber		
Artificial Lighting within Units	All light fittings within each room are to be sealed LED fixtures. Downlights modelled at a rate of 1 downlight per 2.5m² of floor area as per BASIX Thermal Comfort Protocol. NOTE: modelled as per NatHERS Assessor Handbook Version June 2019 – Section 8.8.1.3		
Ventilation within Units	Bathroom – individual ducted fans Laundry – individual ducted fans Kitchen range hood – individual ducted fans NOTE: modelled as per NatHERS Assessor Handbook Version June 2019 – Section 8.8.1.2		
External screens	35% opacity for full height of glazing, as per locations indicated on drawings. 30% opacity for glass balustrade and perforated metal balustrade to balconies		



Recent revision history		
#	Status	Description
A		DRAFT SSDA ISSUE
B		SSDA ISSUE - FOR LANDOWNER'S CONSENT
C		SSDA ISSUE
D		SSDA ISSUE

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BATESSMART

Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number	Size check
WMQ-BLD4-BSA	25mm
Checked	Approved
RT	JC
	Sheet size
	A1
	Scale

Sheet title

Cover Sheet

Status

Sheet number
WMQ-BLD4-BSA-AR-DRG-DA001

Revision
D

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COPE STREET



PRELIMINARY

- Legend:
- Floor Insulation (R.2.0, insulation only)
 - Ceiling Insulation (R.2.0, insulation only)

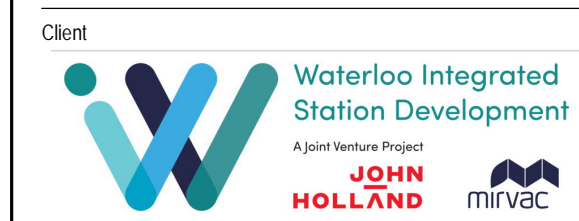
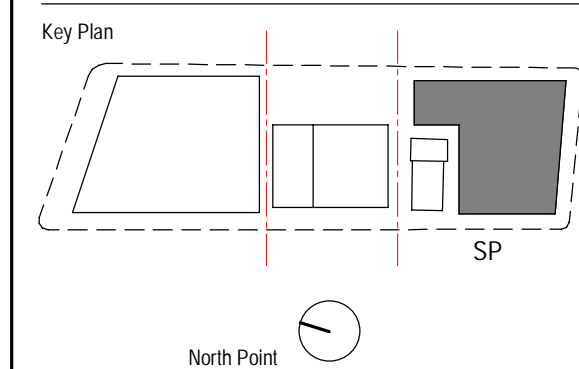
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D	ISSUE FOR INFORMATION	24.04.20
E	ISSUE FOR INFORMATION	15.05.20
F	ISSUE FOR INFORMATION	01.06.20
G	DRAFT SSDA ISSUE	15.06.20
H	ISSUE FOR INFORMATION	14.07.20
I	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
J	SSDA ISSUE - FOR LANDOWNER'S CONSENT	30.07.20
K	SSDA ISSUE	26.08.20

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Sheet title

Level 01

Status

Sheet number
WMQ-BLD4-BSA-AR-DRG-DA101

Revision
K

6.7

Average star rating

NATIONWIDE HOUSE

ENERGY RATING SCHEME

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- Ceiling Insulation (R.2.0, insulation only)

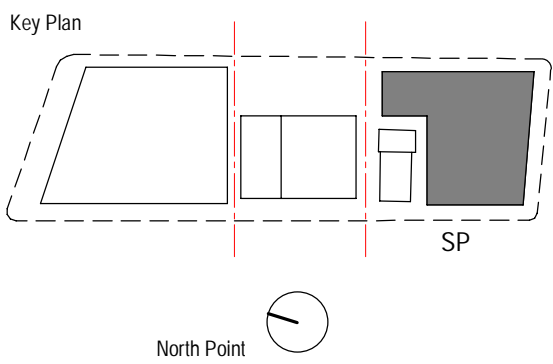
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C	DRAFT SSDA ISSUE	15.06.20
D	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
E	SSDA ISSUE - FOR LANDOWNER'S CONSENT	30.07.20
F	SSDA ISSUE	26.08.20

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Client



Waterloo Integrated Station Development

A Joint Venture Project

JOHN HOLLAND mirvac

Consultant



sydney METRO

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WATERLOO METRO QUARTER DEVELOPMENT

Project number	WMO-BLD4-BSA	Size check	25mm
Checked	RT	Approved	JC
Sheet size	A1	Scale	1: 100

Sheet title

Level 02

Status

Sheet number	WMO-BLD4-BSA-AR-DRG-DA102	Revision	F
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- Floor Insulation (R.2.0, insulation only)
- Ceiling Insulation (R.2.0, insulation only)

Recent revision history		
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B		COST PLAN B
C		ISSUE FOR INFORMATION
D		CONSULTANT ISSUE
E		ISSUE FOR INFORMATION
F		ISSUE FOR INFORMATION
G		ISSUE FOR INFORMATION
H		DRAFT SSDA ISSUE
I		SSDA ISSUE - FOR LANDOWNER'S CONSENT
J		SSDA ISSUE - FOR LANDOWNER'S CONSENT
K		SSDA ISSUE

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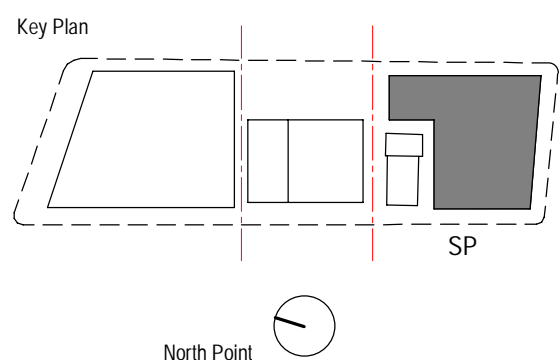
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Checked	RT	Approved	JC
Sheet size	A1	Scale	1: 100

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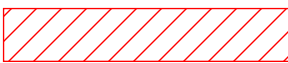
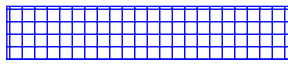

Level 03-07 (Typical)

Status

Sheet number	WMO-BLD4-BSA-AR-DRG-DA103	Revision	K
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6.7
Average
star rating
NATIONWIDE
HOUSE
ENERGY RATING SCHEME
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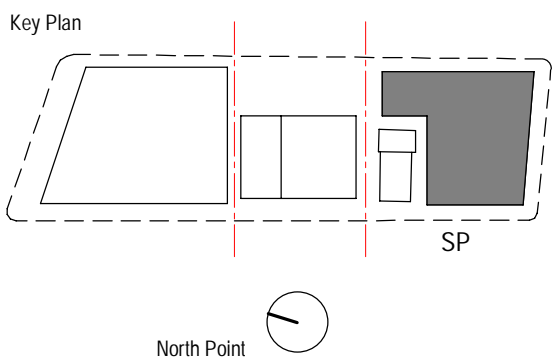
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Recent revision history		
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A		COST PLAN B
B		ISSUE FOR INFORMATION
C		CONSULTANT ISSUE
D		ISSUE FOR INFORMATION
E		ISSUE FOR INFORMATION
F		ISSUE FOR INFORMATION
G		DRAFT SSDA ISSUE
H		SSDA ISSUE - FOR LANDOWNER'S CONSENT
I		SSDA ISSUE - FOR LANDOWNER'S CONSENT
J		SSDA ISSUE

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Project number
WMQ-BLD4-BSA
Checked
RT
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JC
Size check
25mm
Sheet size
A1
Scale
1: 100

Sheet title

Level 08

Status

Sheet number
WMQ-BLD4-BSA-AR-DRG-DA108
Revision
J



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- Floor Insulation (R.2.0, insulation only)
- Ceiling Insulation (R.2.0, insulation only)
- Ceiling Insulation (R.4.0, insulation only)
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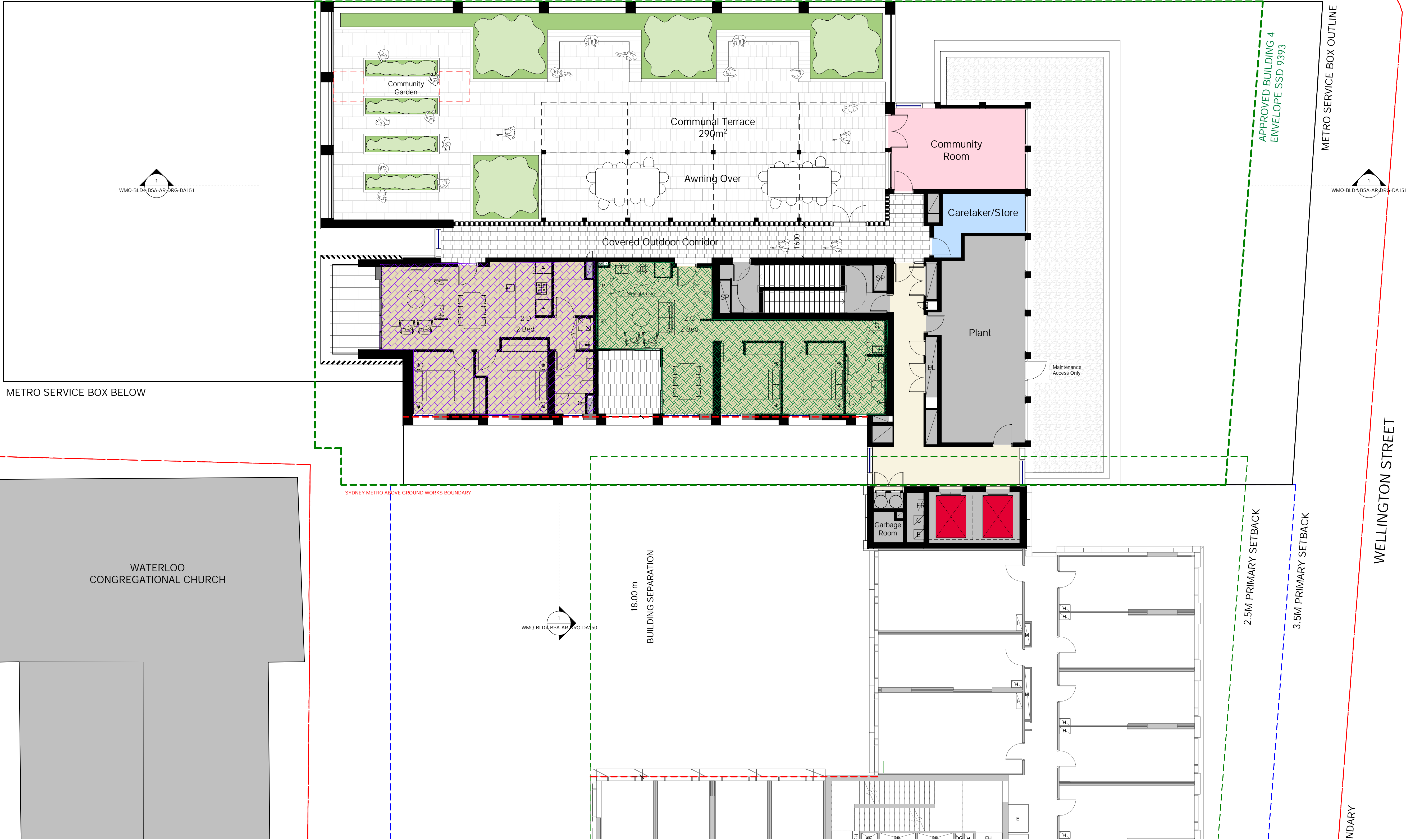
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B		ISSUE FOR INFORMATION
C		CONSULTANT ISSUE
D		ISSUE FOR INFORMATION
E		ISSUE FOR INFORMATION
F		ISSUE FOR INFORMATION
G		DRAFT SSDA ISSUE
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J		SSDA ISSUE

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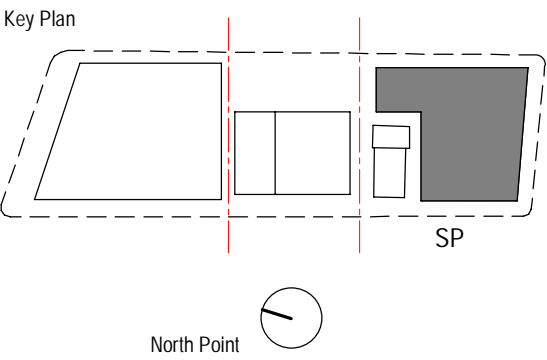
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Project

WATERLOO METRO QUARTER DEVELOPMENT

Project number

WMO-BLD4-BSA

Size check

25mm

Checked

RT

Approved

JC

Sheet size

A1

Scale

1: 100

Sheet title

Level 09

Status

Sheet number

WMO-BLD4-BSA-AR-DRG-DA109

Revision

J

6.7

Average
star rating

NATIONWIDE
HOUSE

ENERGY RATING SCHEME

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Accreditation No.
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#	Status	Description
A	ISSUE FOR INFORMATION	17.04.20
B	CONSULTANT ISSUE	21.04.20
C	ISSUE FOR INFORMATION	24.04.20
D	ISSUE FOR INFORMATION	15.05.20
E	ISSUE FOR INFORMATION	01.06.20
F	DRAFT SSDA ISSUE	15.06.20
G	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
H	SSDA ISSUE - FOR LANDOWNER'S CONSENT	30.07.20
I	SSDA ISSUE	26.08.20

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Client

 Waterloo Integrated
Station Development
A Joint Venture Project

 mirvac

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Project number	Size check
WMO-BLD4-BSA	25mm
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Sheet size A1	Scale 1: 100

Sheet title

Roof Plan

Status

Sheet number	Revision
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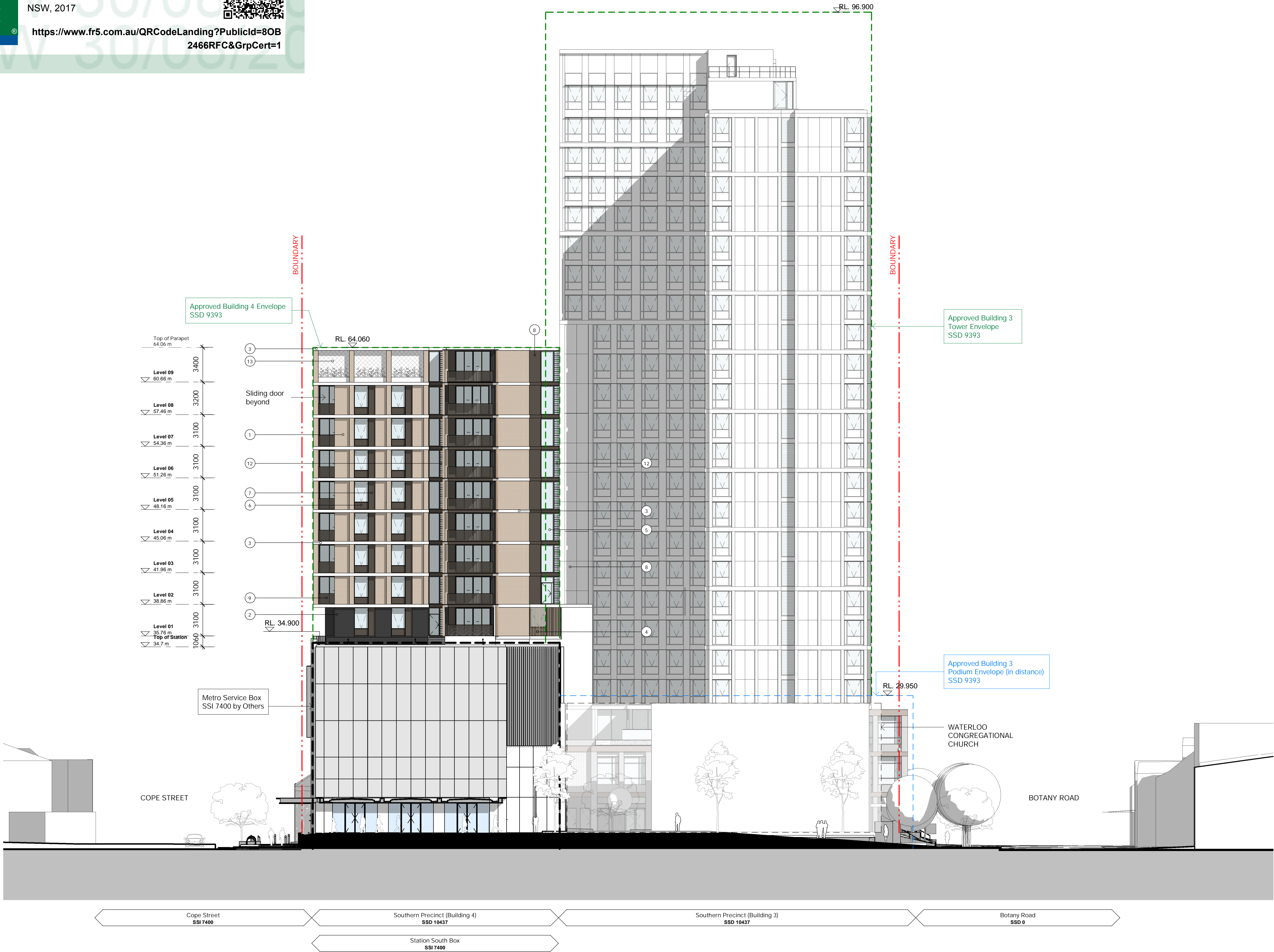
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8OB2466RFC 30/08/2020

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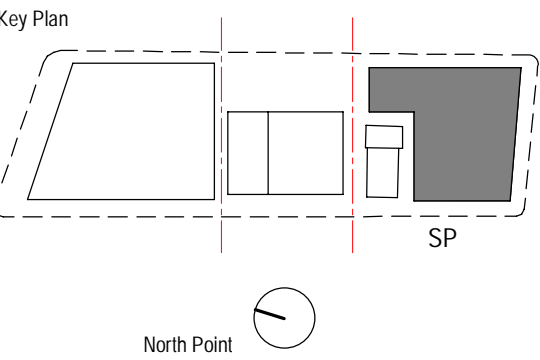
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Recent revision history		
#	Status	Description
A	ISSUE FOR INFORMATION	15.05.20
B	ISSUE FOR INFORMATION	01.06.20
C	DRAFT SSDA ISSUE	15.06.20
D	SSDA ISSUE - FOR LANDOWNER'S CONSENT	29.07.20
E	SSDA ISSUE	26.08.20

Notes
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MATERIALS / FINISHES	
1	Brickwork - Light / Cream
2	Brickwork - Dark grey / Brown
3	Exposed concrete slab edge
4	Aluminium vertical screen - Light Bronze
5	Performance vision glass, aluminium window frame - Dark Bronze
6	Metal spandrel panel - Dark Bronze
7	Perforated aluminium panel - Mid Bronze
8	Profiled metal cladding - Dark Bronze
9	Perforated aluminium balustrade - Dark Bronze
10	Glass balustrade
11	Metal louvres - Dark Bronze
12	Glass louvres
13	Stainless steel tensile wire mesh screen
14	Aluminium vertical sunblades - Light Bronze



Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number		Size check	
WMQ-BLD4-BSA		25mm	
Checked	Approved	Sheet size	Scale
RT	JC	A1	As indicated

Sheet title

Elevation North

Status

Sheet number	Revision
WMQ-BLD4-BSA-AR-DRG-DA140	E

PRELIMINARY



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Recent revision history		
#	Status	Description
A	ISSUE FOR INFORMATION	15.05.20
B	ISSUE FOR INFORMATION	01.06.20
C	DRAFT SSDA ISSUE	15.06.20
D	SSDA ISSUE - FOR LANDOWNER'S CONSENT	29.07.20
E	SSDA ISSUE	26.08.20

Notes

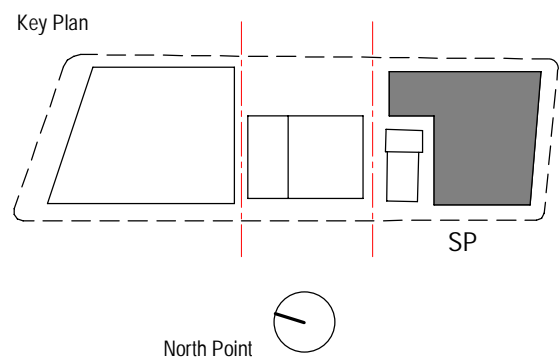
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MATERIALS / FINISHES

- 1 Brickwork - Light / Cream
- 2 Brickwork - Dark grey / Brown
- 3 Exposed concrete slab edge
- 4 Aluminium vertical screen - Light Bronze
- 5 Performance vision glass, aluminium window frame - Dark Bronze
- 6 Metal spandrel panel - Dark Bronze
- 7 Perforated aluminium panel - Mid Bronze
- 8 Profiled metal cladding - Dark Bronze
- 9 Perforated aluminium balustrade - Dark Bronze
- 10 Glass balustrade
- 11 Metal louvres - Dark Bronze
- 12 Glass louvres
- 13 Stainless steel tensile wire mesh screen
- 14 Aluminium vertical sunblades - Light Bronze



Consultant

BATESSMART

Project

WATERLOO METRO QUARTER DEVELOPMENT

Project number		Size check	
WMQ-BLD4-BSA		25mm	
Checked	Approved	Sheet size	Scale
RT	JC	A1	As indicated

Sheet title

Elevation East

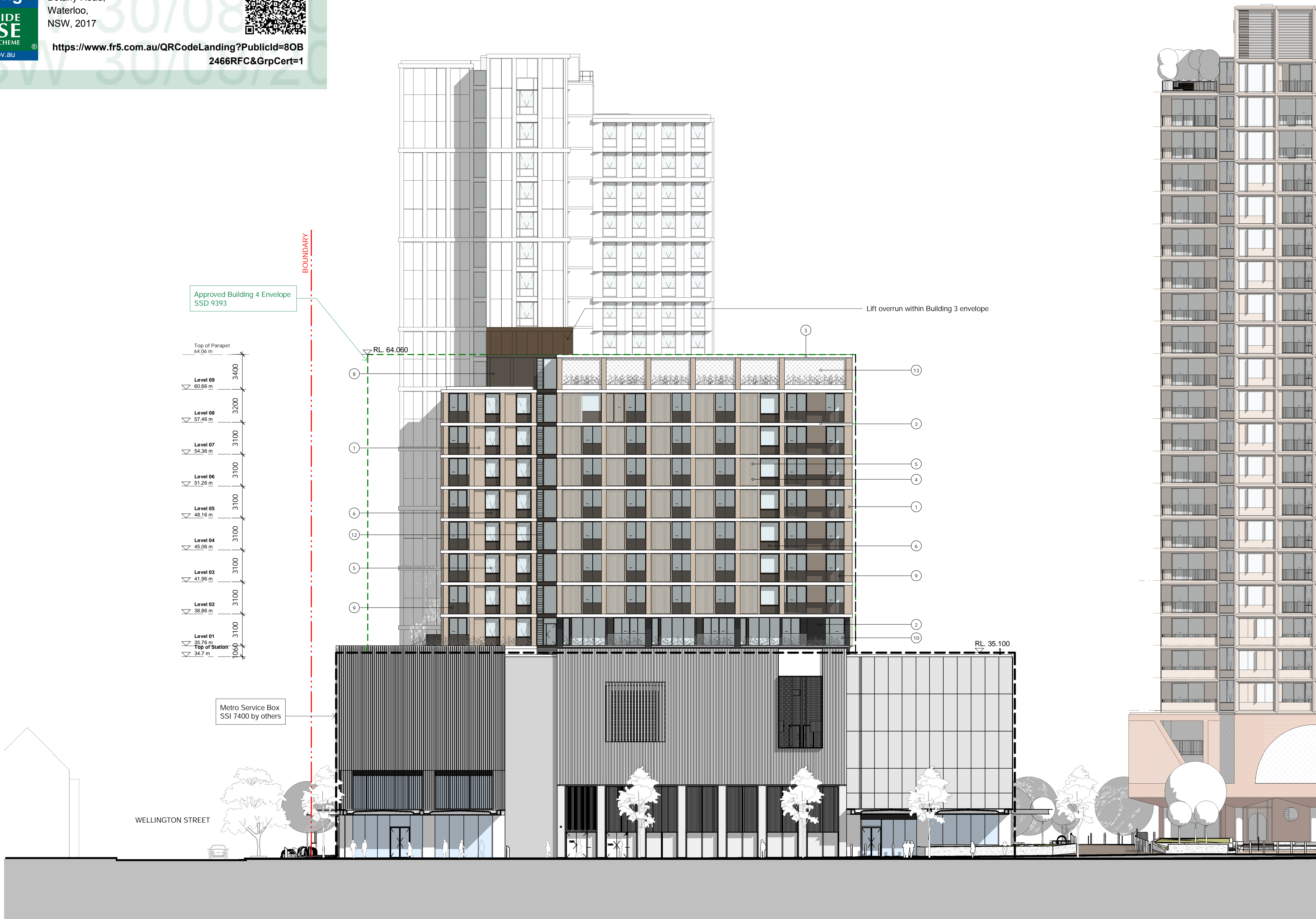
Status

Sheet number

WMQ-BLD4-BSA-AR-DRG-DA141

Revision

E

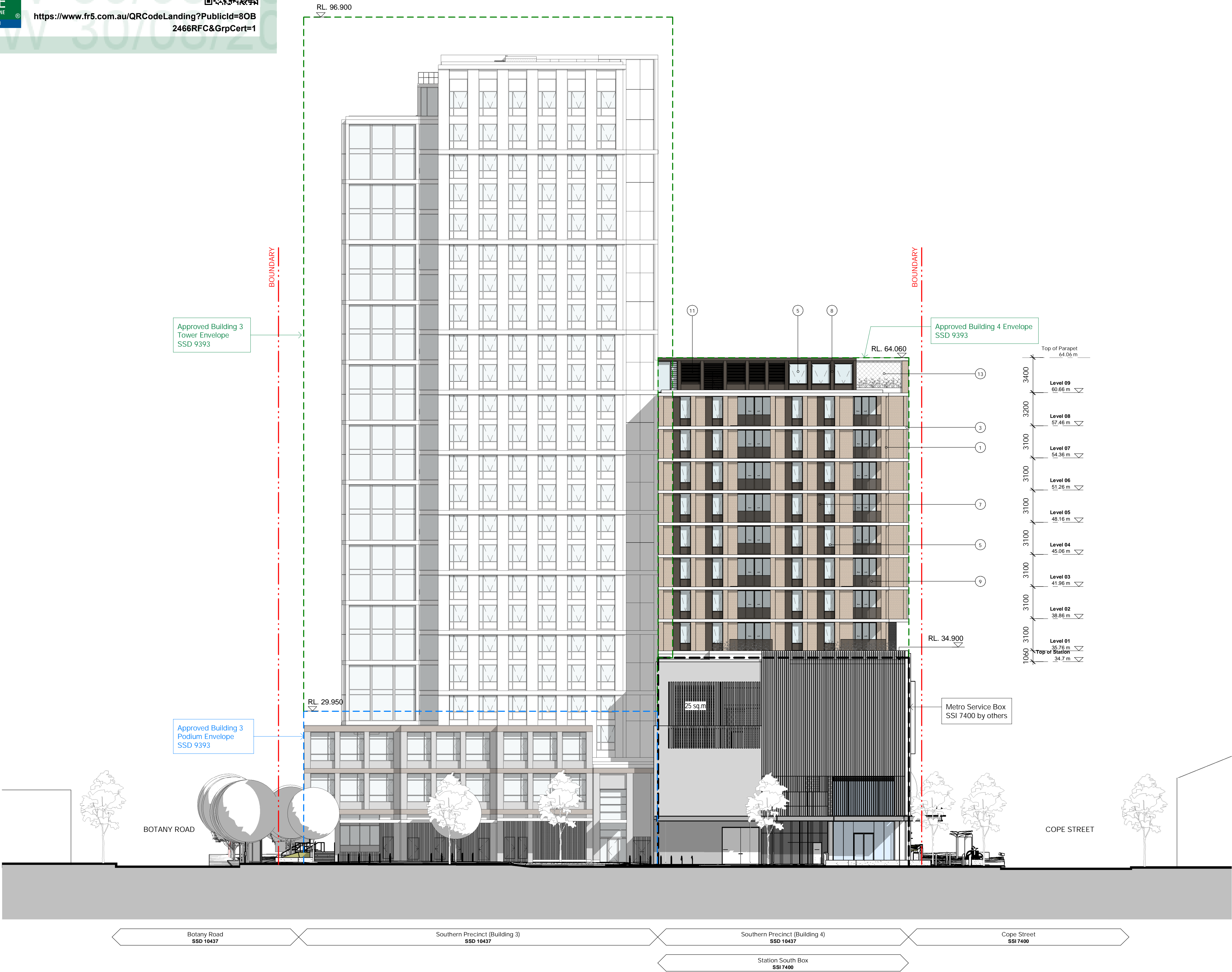


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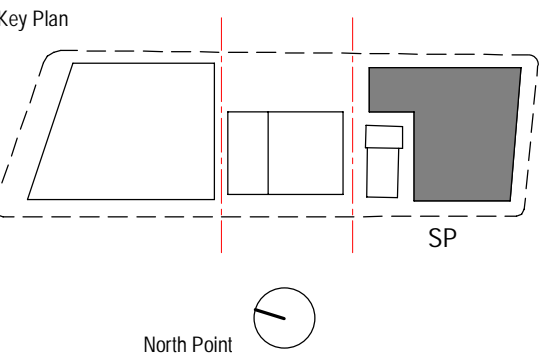


PRELIMINARY

Recent revision history		
#	Status	Description
A	ISSUE FOR INFORMATION	15.05.20
B	ISSUE FOR INFORMATION	01.06.20
C	DRAFT SSDA ISSUE	15.06.20
D	SSDA ISSUE - FOR LANDOWNER'S CONSENT	29.07.20
E	SSDA ISSUE	26.08.20

Notes
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- MATERIALS / FINISHES
- Brickwork - Light / Cream
 - Brickwork - Dark grey / Brown
 - Exposed concrete slab edge
 - Aluminium vertical screen - Light Bronze
 - Performance vision glass, aluminium window frame - Dark Bronze
 - Metal spandrel panel - Dark Bronze
 - Perforated aluminium panel - Mid Bronze
 - Profiled metal cladding - Dark Bronze
 - Perforated aluminium balustrade - Dark Bronze
 - Glass balustrade
 - Metal louvers - Dark Bronze
 - Glass louvers
 - Stainless steel tensile wire mesh screen
 - Aluminium vertical sunblades - Light Bronze



BATESSMART

Project
WATERLOO METRO QUARTER DEVELOPMENT

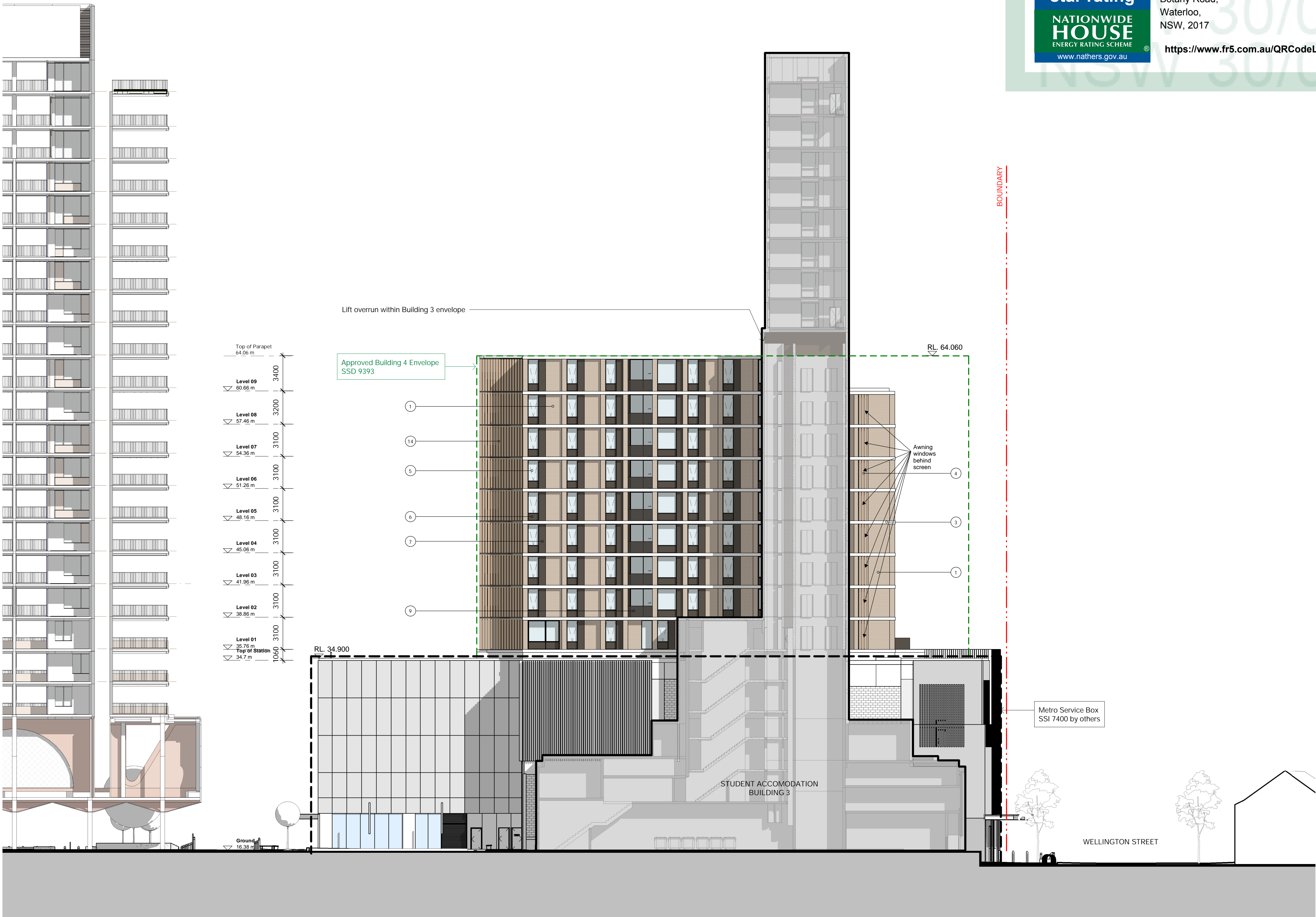
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WMQ-BLD4-BSA		25mm	
Checked	Approved	Sheet size	Scale
RT	JC	A1	As indicated

Sheet title

Elevation South

Status

Sheet number	Revision
WMQ-BLD4-BSA-AR-DRG-DA142	E



6.7

Average star rating

NATIONWIDE HOUSE

ENERGY RATING SCHEME

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#	Status	Description	Date
A	ISSUE FOR INFORMATION	15.05.20	
B	ISSUE FOR INFORMATION	01.06.20	
C	DRAFT SSDA ISSUE	15.06.20	
D	SSDA ISSUE - FOR LANDOWNER'S CONSENT	29.07.20	
E	SSDA ISSUE	26.08.20	

Notes

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Do not scale drawings.

MATERIALS / FINISHES

- Brickwork - Light / Cream
- Brickwork - Dark grey / Brown
- Exposed concrete slab edge
- Aluminium vertical screen - Light Bronze
- Performance vision glass, aluminium window frame - Dark Bronze
- Metal spandrel panel - Dark Bronze
- Perforated aluminium panel - Mid Bronze
- Profiled metal cladding - Dark Bronze
- Perforated aluminium balustrade - Dark Bronze
- Glass balustrade
- Metal louvres - Dark Bronze
- Glass louvres
- Stainless steel tensile wire mesh screen
- Aluminium vertical sunblades - Light Bronze

Key Plan

Client

Consultant

BATESSMART

Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number	Size check		
WMQ-BLD4-BSA	25mm		
Checked	Approved	Sheet size	Scale
RT	JC	A1	As indicated

Sheet title

Elevation West

Status

Sheet number	Revision
WMQ-BLD4-BSA-AR-DRG-DA143	E

Date generated 26/08/2020 6:51:56 PM BIM 360://Sydney Metro - Waterloo Station\WMQ-BLD4-BSA-AR-MDL-0101-RVT-R20.rvt



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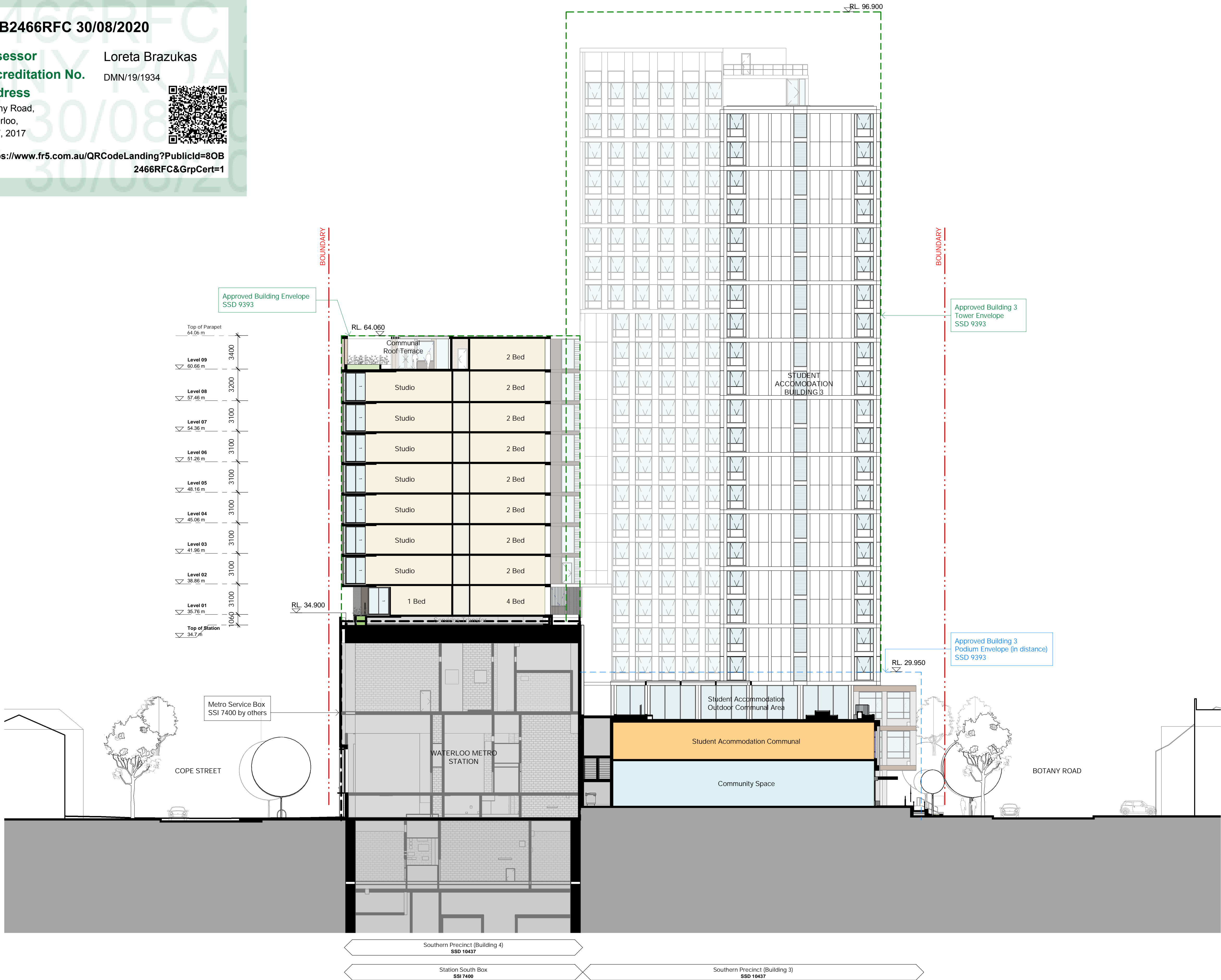
DMN/19/1934

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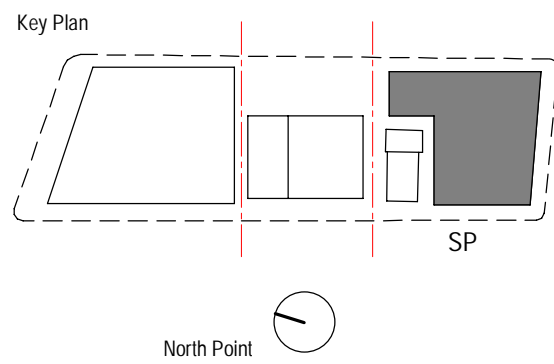
Recent revision history		
#	Status	Description
A		COST PLAN B
B		ISSUE FOR INFORMATION
C		CONSULTANT ISSUE
D		ISSUE FOR INFORMATION
E		ISSUE FOR INFORMATION
F		ISSUE FOR INFORMATION
G		DRAFT SSDA ISSUE
H		SSDA ISSUE - FOR LANDOWNER'S CONSENT
I		SSDA ISSUE

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Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number		Size check	
WMQ-BLD4-BSA		25mm	
Checked	Approved	Sheet size	Scale
RT	JC	A1	1 : 200

Sheet title

Section A

Status

Sheet number	Revision
WMQ-BLD4-BSA-AR-DRG-DA150	I

PRELIMINARY

6.7

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#	Status	Description	Date
A		DRAFT SSDA ISSUE	15.06.20
B		SSDA ISSUE - FOR LANDOWNER'S CONSENT	29.07.20
C		SSDA ISSUE	26.08.20

Notes

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Key Plan

Client

JOHN HOLLAND

mirvac

Consultant

Project

WATERLOO METRO QUARTER DEVELOPMENT

Project number

WMQ-BLD4-BSA

Checked RT

Approved JC

Size check 25mm

Sheet size A1

Scale 1 : 200

Section B

Status

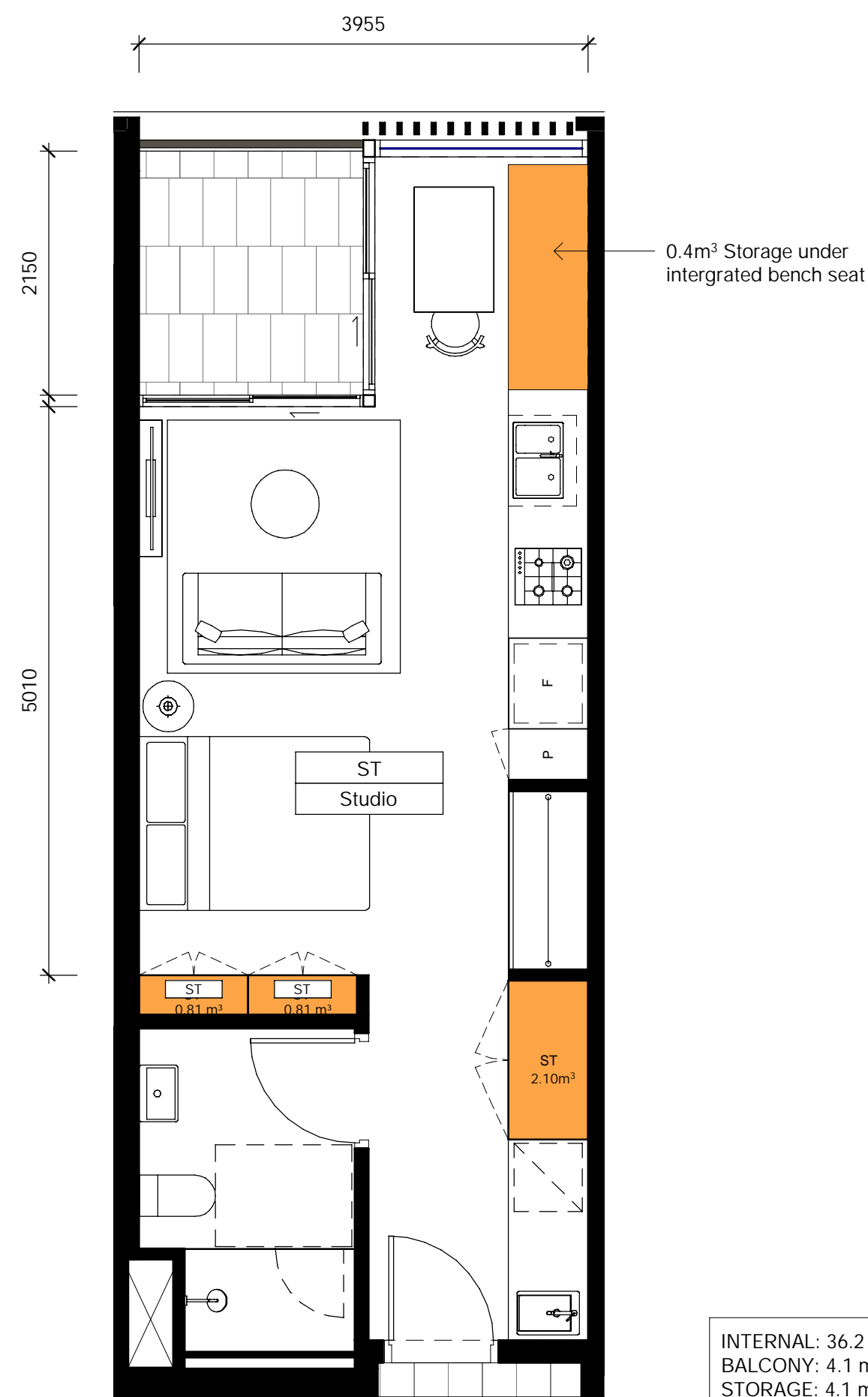
Sheet number

WMQ-BLD4-BSA-AR-DRG-DA151

Revision C

PRELIMINARY

Date generated 26/08/2020 6:52:20 PM BM 360//Sydney Metro - Waterloo StationWMQ-BLD4-BSA-AR-MDL-0101-RVT-R20.rvt



INTERNAL: 36.2 m²
BALCONY: 4.1 m²
STORAGE: 4.1 m³



INTERNAL: 58.6 m²
BALCONY: 8.4 m²
STORAGE: 6.1 m³

80B2466RFC 30/08/2020

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Accreditation No. DMN/19/1934

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6.7
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NATIONWIDE HOUSE
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Recent revision history			
#	Status	Description	Date
A		ISSUE FOR INFORMATION	24.04.20
B		ISSUE FOR INFORMATION	15.05.20
C		ISSUE FOR INFORMATION	01.06.20
D		DRAFT SSDA ISSUE	15.06.20
E		SSDA ISSUE - FOR LANDOWNER'S CONSENT	29.07.20
F		SSDA ISSUE	26.08.20

Notes
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Storage Requirement

Studio	4m ³
1 Bed	6m ³
2 Bed	8m ³
3 Bed+	10m ³

Legend

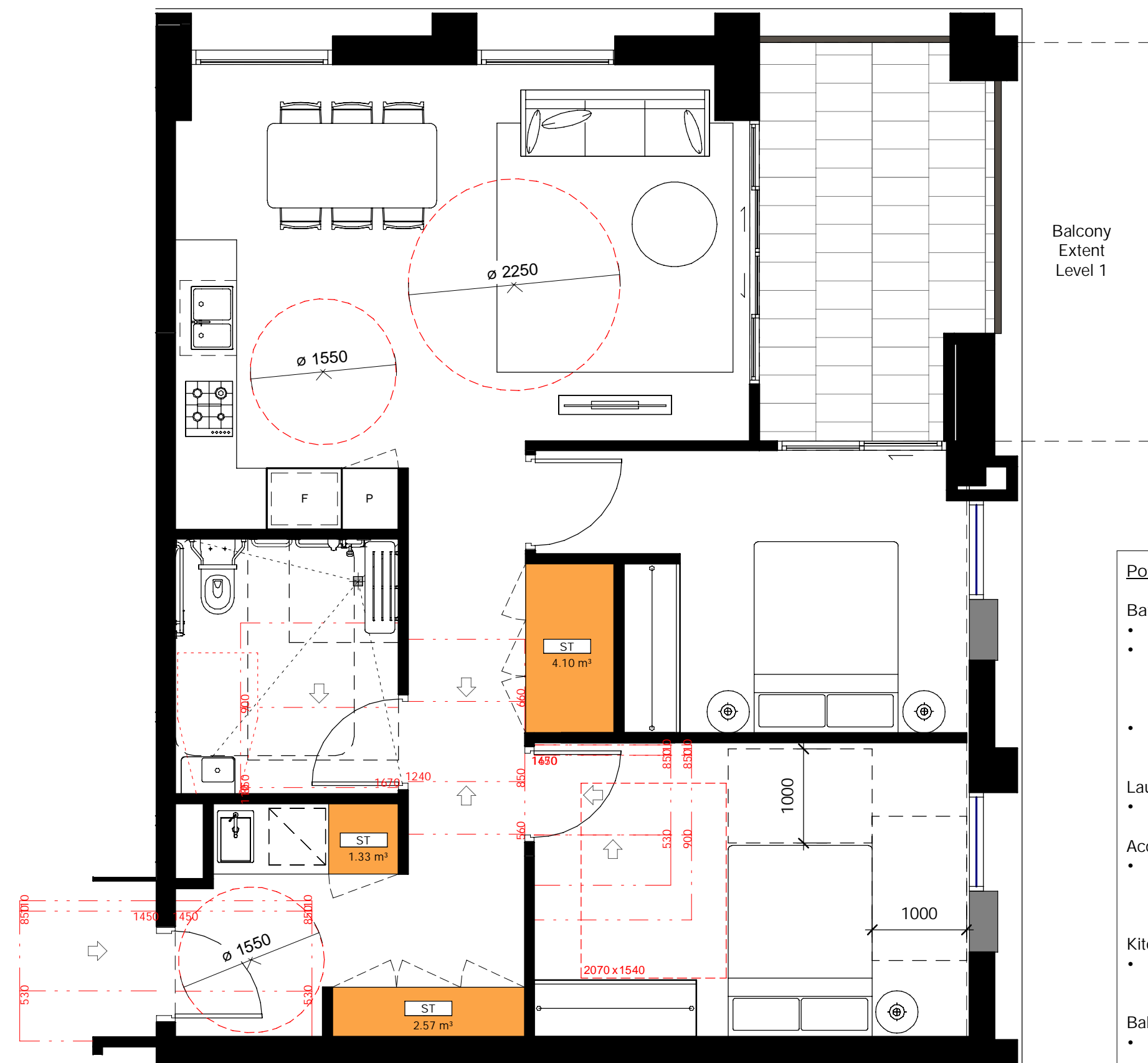
	Storage Cupboard 2700mm (H)
	Storage Cupboard 2400mm (H)

2 Apartment Type - ST
1 : 50



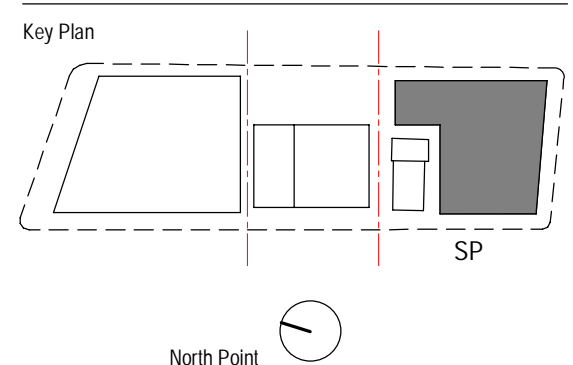
INTERNAL: 76.4 m²
BALCONY: 10.0 m²
17.1 m² (Level 1)
STORAGE: 8.0 m³

- Pre-Adaption Notes:**
- Bathroom**
 - Provide bracing in all walls of bathroom to allow for future installation of grab rails and accessible fixtures & fittings.
 - Provide capped & concealed waste and plumbing points for future installation of DDA fixtures.
 - Kitchen**
 - Provide capped & concealed waste and plumbing points for future relocation of kitchen sink.
 - Provide provision for GPO for future relocation of oven, cooktop rangehood and microwave.
 - Ensure GPO to fridge is accessible
 - Flooring**
 - Flooring to be installed beneath fixtures and joinery to allow for future removal / repositioning without the need to re-floor
 - Doors**
 - Provide 850mm clear opening to entry door and 820mm clear opening to living area, bathroom and accessible bedroom



INTERNAL: 76.4 m²
BALCONY: 10.0 m²
17.1 m² (Level 1)
STORAGE: 8.0 m³

- Post-Adaption Notes:**
- Bathroom**
 - Shower screen removed
 - Conventional fixtures and fittings removed and replaced with accessible fixtures and fittings. Accessible fixtures connected to plumbing and waste points provided.
 - Grab rails and shower seat installed into walls with bracing provided.
 - Laundry/Storage**
 - No change from pre-adaption plan
 - Accessible Bedroom**
 - Wardrobe and nib wall removed and relocated to allow for circulation around bed.
 - Kitchen**
 - Kitchen joinery updated/modified to meet accessible requirements
 - Balcony**
 - Provide stepless access to the balcony. Threshold (to future detail). New flooring on adjustable plinths to allow water to drain to existing wastes.
 - Additional balustrade rail provided to balustrade to achieve minimum barrier height required.
 - Localised threshold ramp at balcony door as required.



Consultant
BATESSMART
Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number		Size check	
WMQ-BLD4-BSA		25mm	
Checked	Approved	Sheet size	Scale
RT	JC	A1	As indicated

Sheet title

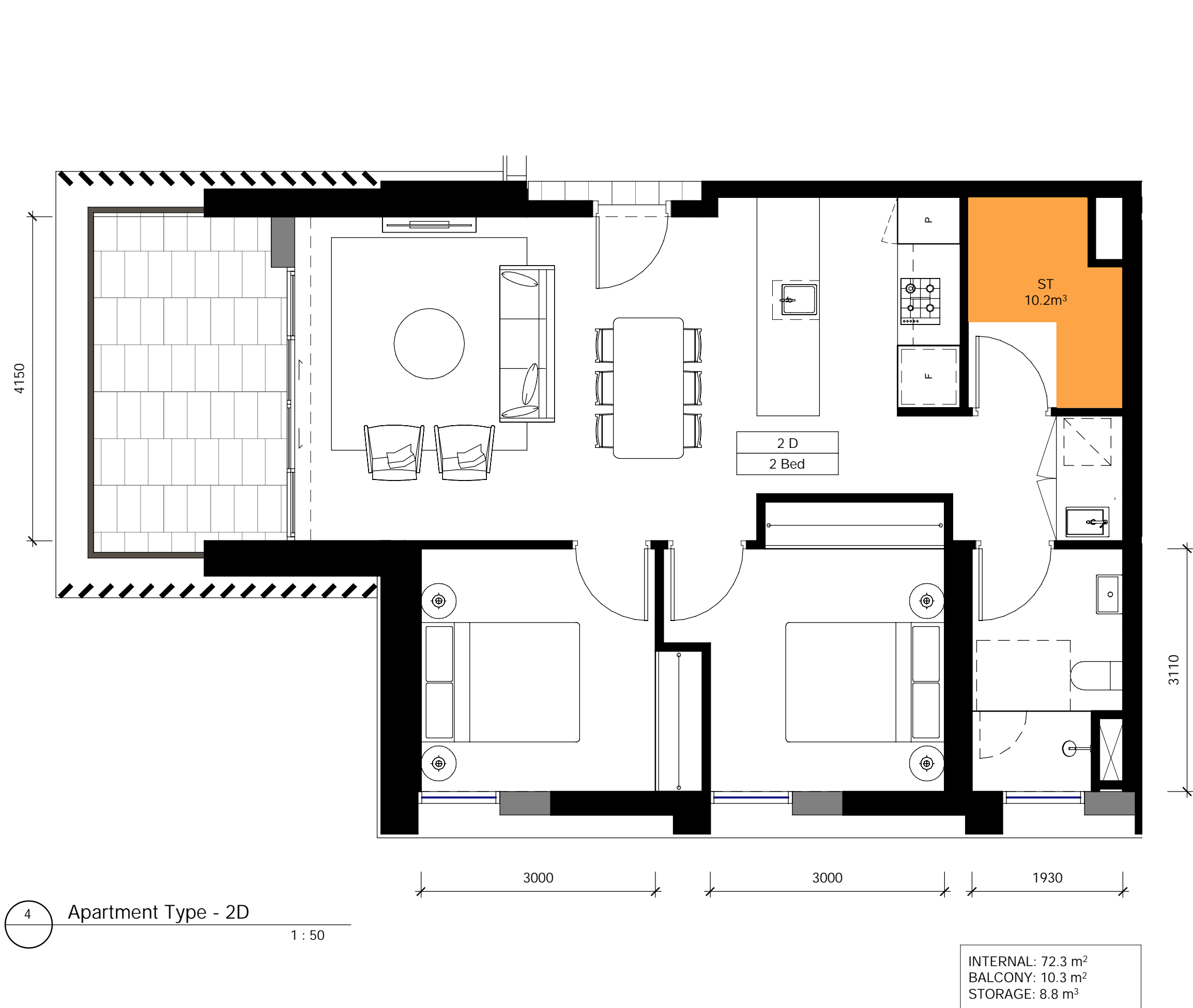
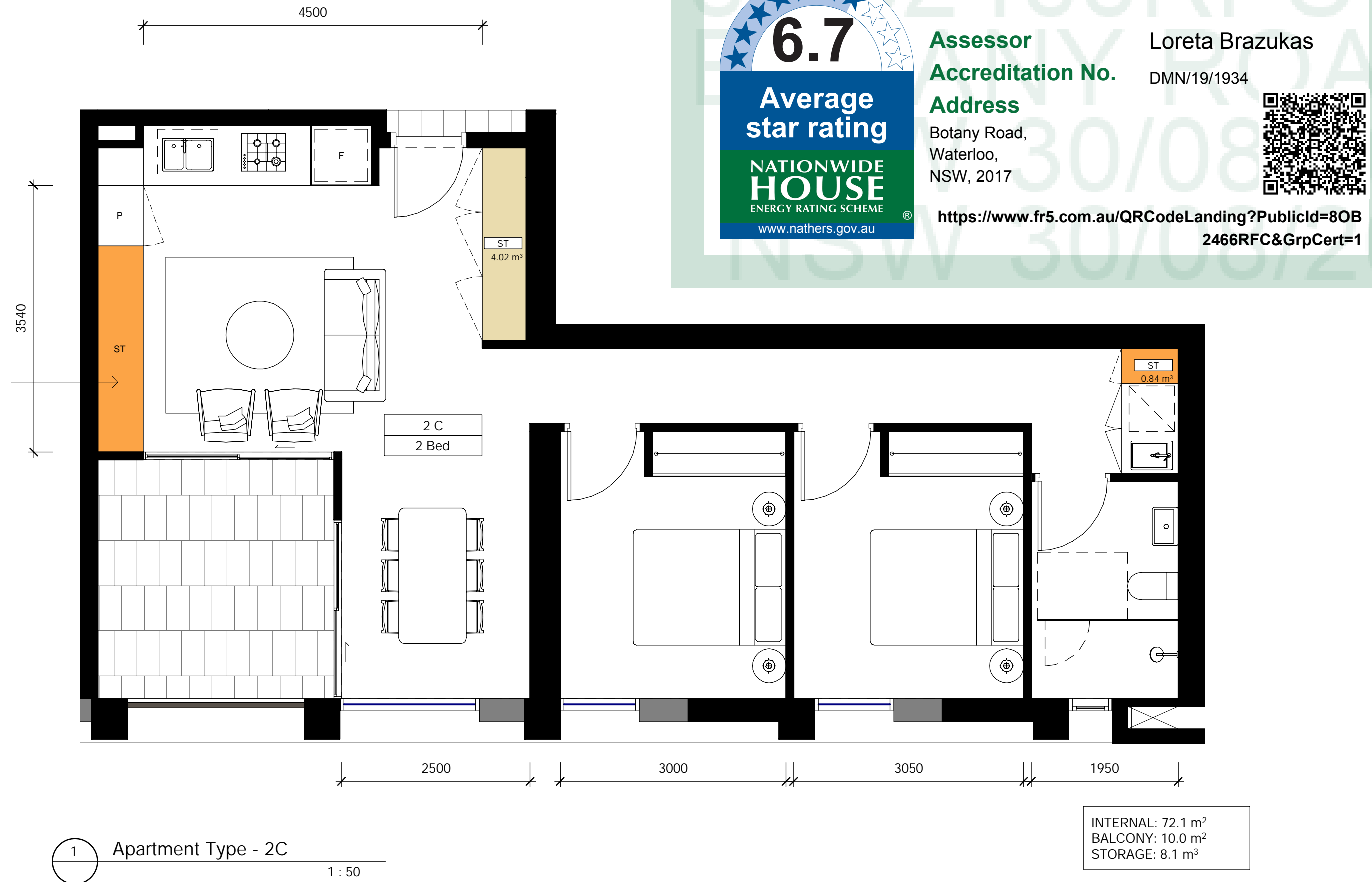
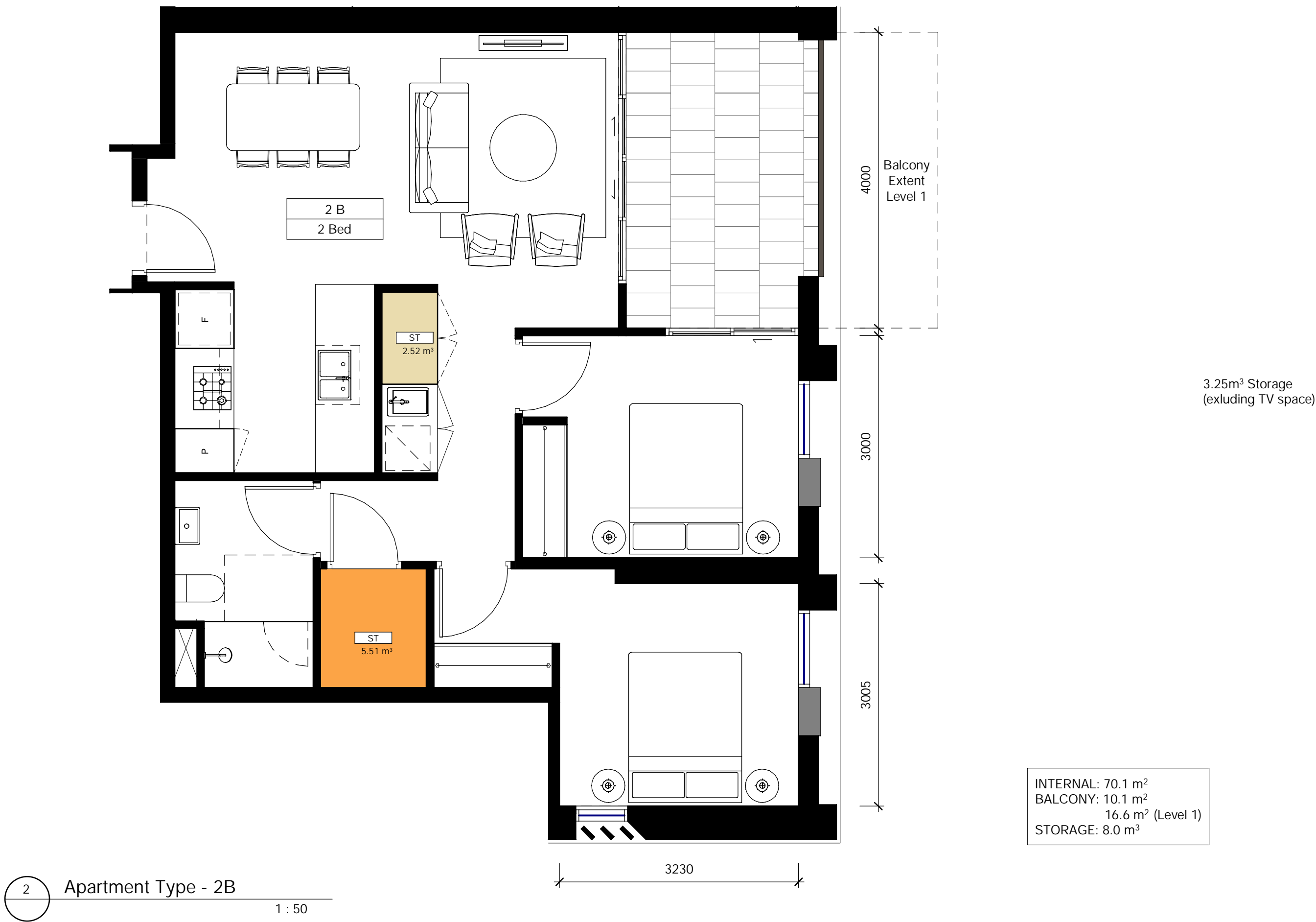
Apartment Types - Studios, 1& 2 Bed Adaptable

Status

Sheet number
WMQ-BLD4-BSA-AR-DRG-DA160

Revision
F

PRELIMINARY



80B2466RFC 30/08/2020

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6.7 Average star rating
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80B2466RFC 30/08/2020

Recent revision history			
#	Status	Description	Date
A		ISSUE FOR INFORMATION	24.04.20
B		ISSUE FOR INFORMATION	15.05.20
C		ISSUE FOR INFORMATION	01.06.20
D		DRAFT SSDA ISSUE	15.06.20
E		SSDA ISSUE - FOR LANDOWNERS' CONSENT	29.07.20
F		SSDA ISSUE	26.08.20

Notes

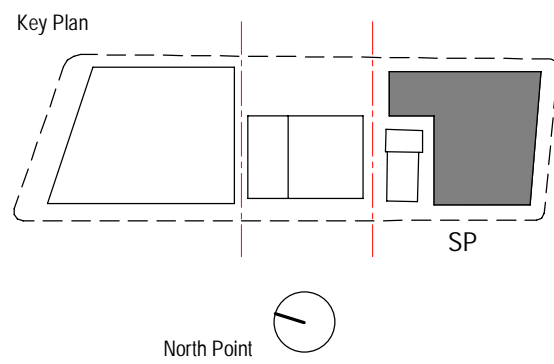
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Storage Requirement	
Studio	4m ³
1 Bed	6m ³
2 Bed	8m ³
3 Bed+	10m ³

Legend	
	Storage Cupboard 2700mm (H)
	Storage Cupboard 2400mm (H)



Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number		Size check	
WMQ-BLD4-BSA		25mm	
Checked	Approved	Sheet size	Scale
RT	JC	A1	As indicated

Sheet title

Apartment Types - 2 Bed

Status

Sheet number
WMQ-BLD4-BSA-AR-DRG-DA161

Revision
F

PRELIMINARY

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HOUSE

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#	Status	Description	Date
A	ISSUE FOR INFORMATION	24.04.20	
B	ISSUE FOR INFORMATION	15.05.20	
C	ISSUE FOR INFORMATION	01.06.20	
D	DRAFT SSDA ISSUE	15.06.20	
E	SSDA ISSUE - FOR LANDOWNERS CONSENT	29.07.20	
F	SSDA ISSUE	26.08.20	

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1 Apartment Type - 2F
1 : 50

Pre-Adaption Notes:

- Bathroom**
 - Provide bracing in all walls of bathroom to allow for future installation of grab rails and accessible fixtures & fittings.
 - Provide capped & concealed waste and plumbing points for future installation of DDA fixtures.
- Flooring**
 - Flooring to be installed beneath fixtures and joinery to allow for future removal / repositioning without the need to re-floor
- Doors**
 - Provide 850mm clear opening to entry door and 820mm clear opening to bathroom and accessible bedroom doors

INTERNAL: 91.7 m²
BALCONY: 14.0 m²
STORAGE: 10.5 m³

2 Apartment Type - 3A
(Pre-Adaption)
1 : 50

Post-Adaption Notes:

- Bathroom**
 - Shower screen removed
 - Conventional fixtures and fittings removed and replaced with accessible fixtures and fittings. Accessible fixtures connected to plumbing and waste points provided.
 - Grab rails and shower seat installed into walls with bracing provided.
- Laundry**
 - No changes to laundry from pre-adaption plan.
- Storage**
 - Storage cupboard adjacent to the laundry is removed and replaced to enable accessible clearances and circulation spaces
- Accessible Bedroom**
 - Wardrobe and nib wall removed and relocated to allow for circulation around bed.
- Kitchen**
 - No changes from pre-adaption plan.
- Balcony**
 - Provide stepless access to the balcony. Threshold (to future detail). New flooring on adjustable plinths to allow water to drain to existing wastes.
 - Additional balustrade rail provided to balustrade to achieve minimum barrier height required.
 - Localised threshold ramp at balcony doors as required.

INTERNAL: 91.7 m²
BALCONY: 14.0 m²
STORAGE: 10.2 m³

4 Apartment Type - 3A
(Post-Adaption)
1 : 50

#	Status	Description	Date
A	ISSUE FOR INFORMATION	24.04.20	
B	ISSUE FOR INFORMATION	15.05.20	
C	ISSUE FOR INFORMATION	01.06.20	
D	DRAFT SSDA ISSUE	15.06.20	
E	SSDA ISSUE - FOR LANDOWNERS CONSENT	29.07.20	
F	SSDA ISSUE	26.08.20	

Notes

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Do not scale drawings.

Storage Requirement

Studio	4m³
1 Bed	6m³
2 Bed	8m³
3 Bed+	10m³

Legend

	Storage Cupboard 2700mm (H)
	Storage Cupboard 2400mm (H)

BATESSMART

Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number	Size check		
WMQ-BLD4-BSA	25mm		
Checked	Approved	Sheet size	Scale
RT	JC	A1	As indicated

Sheet title

Apartment Types - 2 Bed & 3 Bed
Adaptable

Status

Sheet number	Revision
WMQ-BLD4-BSA-AR-DRG-DA162	F

PRELIMINARY

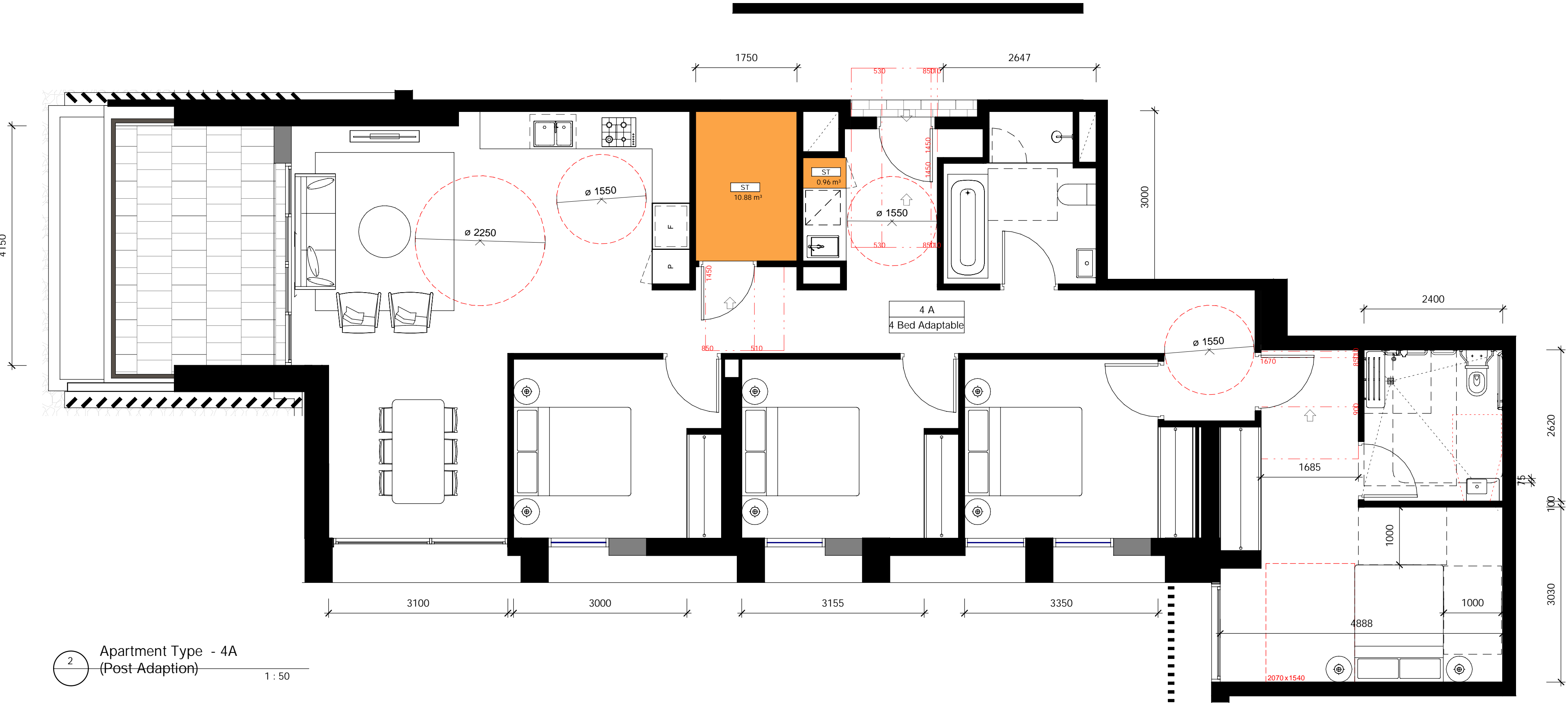
Date generated: 26/08/2020 6:52:43 PM | BM 360//Sydney Metro - Waterloo StationWMQ-BLD4-BSA-AR-MDL-0101-RVT-R20.M



1 Apartment Type - 4A
(Pre-Adaptation)
1 : 50

- Pre-Adaption Notes:**
- Ensuite Bathroom**
- Provide bracing in all walls of bathroom to allow for future installation of grab rails and accessible fixtures & fittings.
 - Provide capped & concealed waste and plumbing points for future installation of DDA fixtures.
- Kitchen**
- Provide capped & concealed waste and plumbing points for future relocation of kitchen sink.
 - Provide provision for GPO for future relocation of oven, cooktop rangehood and microwave.
 - Ensure GPO to fridge is accessible
- Flooring**
- Flooring to be installed beneath kitchen fixtures and joinery to allow for future removal / repositioning without the need to re-floor
- Doors**
- Provide 850mm clear opening to entry door and 820mm clear opening to bathroom and accessible bedroom doors


INTERNAL: 136.3m²
BALCONY: 12.1 m²
STORAGE: 10.1 m³



2 Apartment Type - 4A
(Post-Adaption)
1 : 50

- Post-Adaption Notes:**
- Bathroom**
- Shower screen removed
 - Conventional fixtures and fittings removed and replaced with accessible fixtures and fittings. Accessible fixtures connected to plumbing and waste points provided.
 - Grab rails and shower seat installed into walls with bracing provided.
- Laundry**
- No changes from pre-adaption plan.
- Storage**
- Wall and door to storage room removed and replaced to allow accessible clearances to corridor side of door
- Accessible Bedroom**
- No changes from pre-adaption plan.
- Kitchen**
- Kitchen joinery updated/modified to meet accessible requirements
- Balcony**
- Provide stepless access to the balcony
 - Threshold (to future detail). New flooring on adjustable plinths to allow water to drain to existing wastes.
 - Additional balustrade rail provided to balustrade to achieve minimum barrier height required.
 - Localised threshold ramp at balcony doors as required.

INTERNAL: 136.3 m²
BALCONY: 12.1 m²
STORAGE: 11.8 m³



6.7
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A	ISSUE FOR INFORMATION	24.04.20
B	ISSUE FOR INFORMATION	15.05.20
C	ISSUE FOR INFORMATION	01.06.20
D	DRAFT SSDA ISSUE	15.06.20
E	SSDA ISSUE - FOR LANDOWNERS' CONSENT	29.07.20
F	SSDA ISSUE	26.08.20

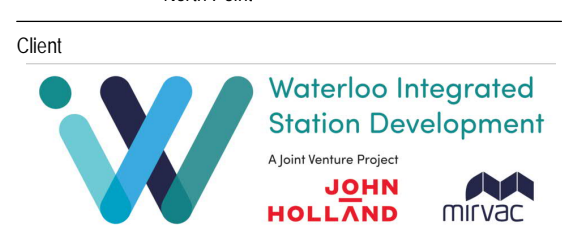
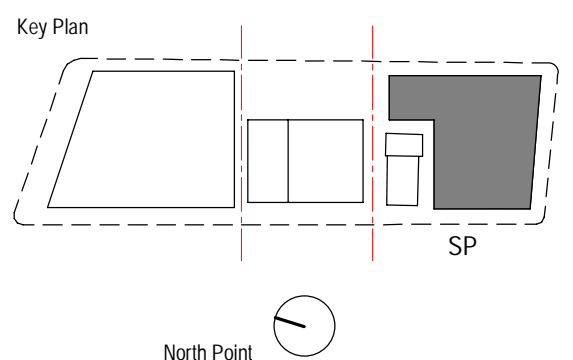
Notes
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Do not scale drawings.

Storage Requirement	
Studio	4m³
1 Bed	6m³
2 Bed	8m³
3 Bed+	10m³

Legend	
	Storage Cupboard 2700mm (H)
	Storage Cupboard 2400mm (H)



BATESSMART

Project
WATERLOO METRO QUARTER DEVELOPMENT

Project number	Size check
WMQ-BLD4-BSA	25mm
Checked RT	Approved JC
Sheet size A1	Scale As indicated

Sheet title

Apartment Types - 4 Bed Adaptable

Status

Sheet number	Revision
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