



WATERLOO METRO QUARTER OVER STATION DEVELOPMENT

Environmental Impact Statement Appendix EE – Fire Safety Strategy Report

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
Author	OMNII PTY LTD Alex Kudriavcev, Andrew Martin
Reviewed	Waterloo Developer Pty Ltd Simon Joseph
Document Number	MQD-BLD3-Omnii-FE-RPT-0001
Status	Final
Version	D
Date of Issue	01 September 2020
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2. Glossary and abbreviations

Reference	Description
ACHAR	Aboriginal Cultural Heritage Assessment Report
ADG	Apartment Design Guide
AHD	Australian height datum
AQIA	Air Quality Impact Assessment
BC Act	Biodiversity Conservation Act 2016
BCA	Building Code of Australia
BC Reg	Biodiversity Conservation Regulation 2017
BDAR	Biodiversity Development Assessment Report
CEEC	critically endangered ecological community
CIV	capital investment value
CMP	Construction Management Plan
Concept DA	A concept DA is a staged application often referred to as a 'Stage 1' DA. The subject application constitutes a detailed subsequent stage application to an approved concept DA (SSD 9393) lodged under section 4.22 of the EP&A Act.
Council	City of Sydney Council
CPTED	Crime Prevention Through Environmental Design
CSSI approval	critical State significant infrastructure approval
CTMP	Construction Traffic Management Plan
DA	development application
DPIE	NSW Department of Planning, Industry and Environment
DRP	Design Review Panel
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Authority
EPA Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESD	ecologically sustainable design

Reference	Description
GANSW	NSW Government Architect's Office
GFA	gross floor area
HIA	Heritage Impact Assessment
IAP	Interchange Access Plan
LGA	Local Government Area
NCC	National Construction Code
OSD	over station development
PIR	Preferred Infrastructure Report
POM	Plan of Management
PSI	Preliminary Site Investigation
RMS	Roads and Maritime Services
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SEPP 55	State Environmental Planning Policy No 55—Remediation of Land
SEPP 65	State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2009
SREP Sydney Harbour	State Regional Environmental Plan (Sydney Harbour Catchment) 2005
SSD	State significant development
SSD DA	State significant development application
SLEP	Sydney Local Environmental Plan 2012
Transport for NSW	Transport for New South Wales
TIA	Traffic Impact Assessment
The proposal	The proposed development which is the subject of the detailed SSD DA
The site	The site which is the subject of the detailed SSD DA
VIA	Visual Impact Assessment

Reference	Description
WMQ	Waterloo Metro Quarter
WMP	Waste Management Plan
WSUD	water sensitive urban design

3. Executive summary

This Fire Safety Strategy Report has been prepared by Omnii Pty Ltd 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 to address the relevant conditions of the concept SSD DA (SSD 9393) and the Secretary's Environmental Assessment Requirements (SEARs) issued for the detailed SSD DA (SSD 10437).

This report concludes that the proposed Southern Precinct OSD is suitable and warrants approval subject to the implementation of the following mitigation measures.

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.

4. Introduction

This report has been prepared 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. The detailed SSD DA is consistent with the concept approval (SSD 9393) granted for the maximum building envelope on the site, as proposed to be modified.

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning, Industry and Environment (DPIE) for assessment.

The detailed SSD DA seeks development consent for the design, construction and operation of:

- 25-storey residential building (Building 3) comprising student accommodation, to be delivered as a mixture of studio and twin apartments with approximate capacity of 474 students
- 9-storey residential building (Building 4) above the southern station box to accommodate 70 social housing dwellings
- ground level retail tenancies including Makerspace and gymnasium lobby, and loading facilities
- level 1 and level 2 gymnasium and student accommodation communal facilities
- landscaping and private and communal open space at podium and roof top levels to support the residential accommodation
- new public open space including the delivery of the Cope Street Plaza, including vehicle access to the site via a shared way from Cope Street, expanded footpaths on Botany and Wellington streets and public domain upgrades
- signage zone locations
- utilities and service provision
- stratum subdivision (staged).

5. 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 Waterloo Metro Quarter site comprises the following allotments and legal description at the date of this report. Following consolidation by Sydney Metro (the Principal) the land will be set out in deposited plan DP1257150.

- 1368 Raglan Street (Lot 4 DP 215751)
- 59 Botany Road (Lot 5 DP 215751)
- 65 Botany Road (Lot 1 DP 814205)
- 67 Botany Road (Lot 1 DP 228641)
- 124-128 Cope Street (Lot 2 DP 228641)
- 69-83 Botany Road (Lot 1, DP 1084919)
- 130-134 Cope Street (Lot 12 DP 399757)
- 136-144 Cope Street (Lots A-E DP 108312)
- 85 Botany Road (Lot 1 DP 27454)
- 87 Botany Road (Lot 2 DP 27454)
- 89-91 Botany Road (Lot 1 DP 996765)
- 93-101 Botany Road (Lot 1 DP 433969 and Lot 1 DP 738891)
- 119 Botany Road (Lot 1 DP 205942 and Lot 1 DP 436831)
- 156-160 Cope Street (Lot 31 DP 805384)
- 107-117A Botany Road (Lot 32 DP 805384 and Lot A DP 408116)
- 170-174 Cope Street (Lot 2 DP 205942).

The detailed SSD DA applies to the Southern Precinct (the site) of the Waterloo Metro Quarter site. The site has an area of approximately 4830sqm. The subject site comprises the following allotments and legal description at the date of this report.

- 130–134 Cope Street (Lot 12 DP 399757) (Part)
- 136–144 Cope Street (Lots A-E DP 108312) (Part)
- 93–101 Botany Road (Lot 1 DP 433969 and Lot 1 DP 738891) (Part)
- 156–160 Cope Street (Lot 31 DP 805384)
- 107–117A Botany Road (Lot 32 DP 805384 and Lot A DP 408116)
- 119 Botany Road (Lot 1 DP 205942 and Lot 1 DP 436831)

- 170–174 Cope Street (Lot 2 DP 205942).

The boundaries of the overall site are identified at Figure 1, and the subject site of the detailed SSD DA is identified at Figures 2 and 3. The site is reasonably flat with a slight fall to the south.

The site previously included three to five storey commercial, light industrial and shop top housing buildings. All previous structures except for an office building at the corner of Botany Road and Wellington Street have been demolished to facilitate construction of the new Sydney Metro Waterloo station. As such the existing site is predominately vacant and being used as a construction site. Construction of the Sydney metro is currently underway on site in accordance with critical State significant infrastructure approval (CSSI 7400).



Figure 1 - Aerial image of the site
Source: Urbis

The area surrounding the site consists of commercial premises to the north, light industrial and mixed-use development to the south, residential development to the east and predominantly commercial and light industry uses to the west.

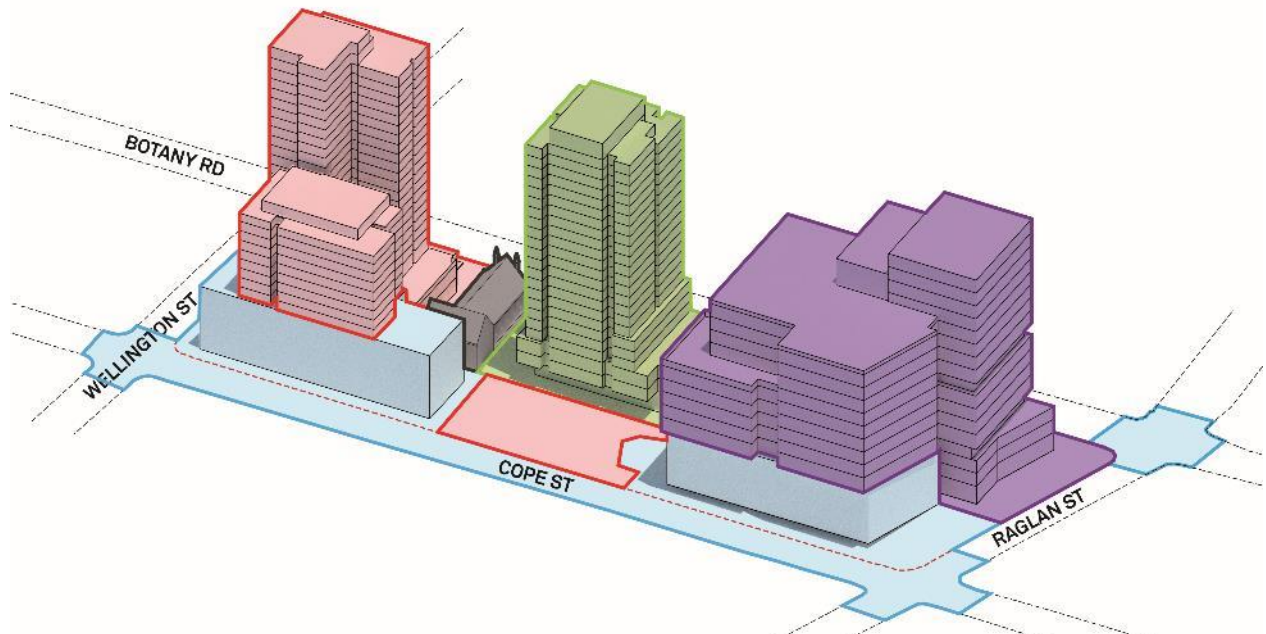


Figure 2 - Waterloo Metro Quarter site, with sub-precincts identified
Source: HASSELL

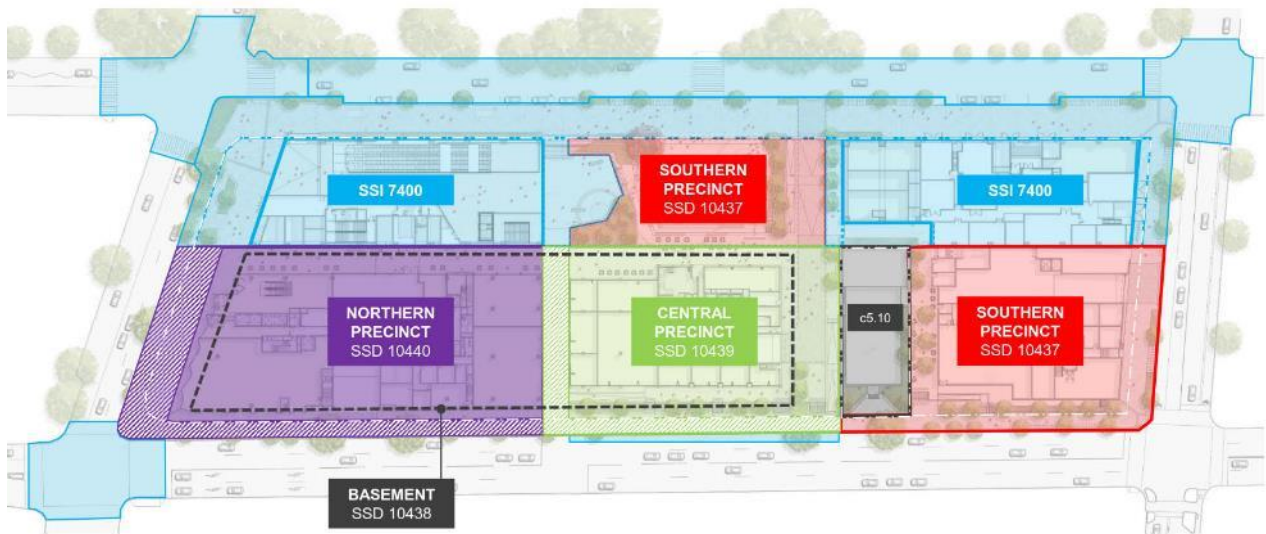


Figure 3 - Waterloo Metro Quarter site, with sub-precincts identified
Source: Waterloo Developer Pty Ltd

6. Background

6.1 About Sydney Metro

Sydney Metro is Australia's biggest public transport project. Services started in May 2019 in the city's North West with a train every four minutes in the peak. A new standalone railway, this 21st century network will revolutionise the way Sydney travels.

There are four core components:

6.1.1 Sydney Metro NorthWest

This project is now complete and passenger services commenced in May 2019 between Rouse Hill and Chatswood, with a metro train every four minutes in the peak. The project was delivered on time and \$1 billion under budget.

6.1.2 Sydney Metro City & Southwest

Sydney Metro City & Southwest project includes a new 30km metro line extending metro rail from the end of Metro Northwest at Chatswood, under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.

Sydney Metro City & Southwest will deliver new metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new underground metro platforms at Central Station. In addition, it will upgrade and convert all 11 stations between Sydenham and Bankstown to metro standards.

6.1.3 Sydney Metro West

Sydney Metro West is a new underground railway connecting Greater Parramatta and the Sydney CBD. This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between these two areas, linking new communities to rail services and supporting employment growth and housing supply between the two CBDs.

The locations of seven proposed metro stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays.

The NSW Government is assessing an optional station at Pyrmont and further planning is underway to determine the location of a new metro station in the Sydney CBD.

6.1.4 Sydney Metro Greater West

Metro rail will also service Greater Western Sydney and the new Western Sydney International (Nancy Bird Walton) Airport. The new railway line will become the transport spine for the Western Parkland City's growth for generations to come, connecting communities and travellers with the rest of Sydney's public transport system with a fast, safe and easy metro service.

The Australian and NSW governments are equal partners in the delivery of this new railway.

The Sydney Metro project is illustrated below.

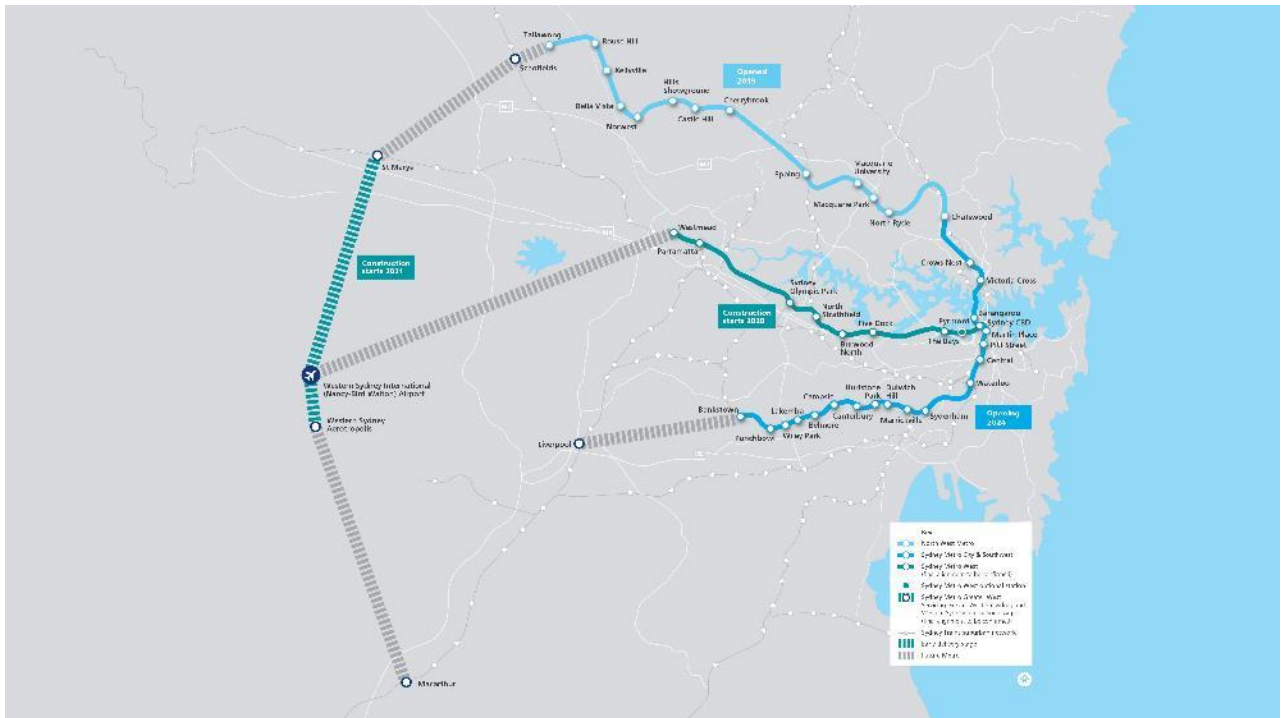


Figure 4 - Sydney Metro alignment map
Source: Sydney Metro

6.2 Sydney Metro CSSI Approval (SSI 7400)

On 9 January 2017, the Minister for Planning approved the Sydney Metro City & Southwest - Chatswood to Sydenham project as a critical State significant infrastructure (CSSI) project (reference SSI 7400) (CSSI approval). The terms of the CSSI approval includes all works required to construct the Sydney Metro Waterloo Station. The CSSI approval also includes the construction of below and above ground works within the metro station structure for appropriate integration with the OSD.

With regards to CSSI related works, any changes to the 'metro station box' envelope and public domain will be pursued in satisfaction of the CSSI conditions of approval and do not form part of the scope of the concept SSD DA or detailed SSD DA for the OSD.

Except to the extent described in the EIS or Preferred Infrastructure Report (PIR) submitted with the CSSI application, any OSD buildings and uses do not form part of the CSSI approval and will be subject to the relevant assessment pathway prescribed by the EP&A Act.

The delineation between the approved Sydney Metro works, generally described as within the two 'metro station boxes' and surrounding public domain works, and the OSD elements are illustrated in Figure 5.

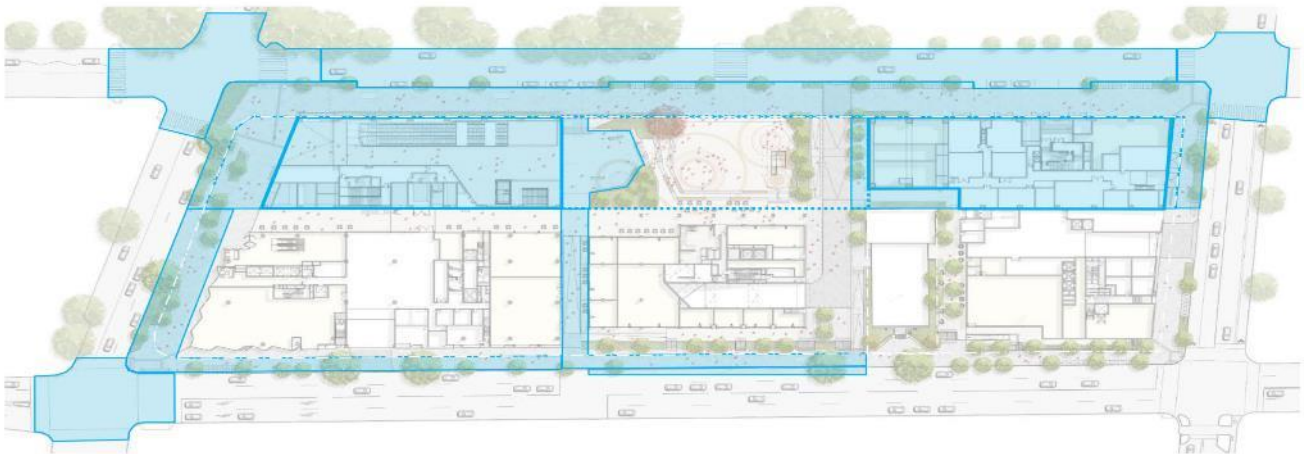


Figure 5 - CSSI Approval scope of works
Source: WL Developer Pty Ltd

6.3 Concept Approval (SSD 9393)

As per the requirements of clause 7.20 of the *Sydney Local Environmental Plan 2012* (SLEP), as the OSD exceeds a height of 25 metres above ground level (among other triggers), development consent is first required to be issued in a concept DA (formerly known as Stage 1 DA).

Development consent was granted on 10 December 2019 for the concept SSD DA (SSD 9393) for the Waterloo Metro Quarter OSD including:

- a maximum building envelope for podium, mid-rise and tower buildings
- a maximum gross floor area of 68,750sqm, excluding station floor space
- conceptual land use for non-residential and residential floor space
- minimum 12,000sqm of non-residential gross floor area including a minimum of 2,000sqm of community facilities
- minimum 5% residential gross floor area as affordable housing dwellings
- 70 social housing dwellings
- basement car parking, motorcycle parking, bicycle parking, and service vehicle spaces.

The detailed SSD DA seeks development consent for the OSD located within the Southern Precinct Basement of the site, consistent with the parameters of this concept approval. Separate SSD DAs have been prepared and will be submitted for the [Central Precinct and Northern Precinct] and [basement] proposed across the Waterloo Metro Quarter site.

A concurrent amending concept SSD DA has been prepared and submitted to the DPIE which proposed to make modifications to the approved building envelopes at the northern precinct and central building. This amending concept SSD DA does not impact the proposed development within the southern precinct.

7. Proposed development

7.1 Waterloo Metro Quarter Development

The Waterloo Metro Quarter OSD comprises four separate buildings, a basement carpark and public domain works adjacent to the Waterloo Metro station.

Separate SSD DAs will be submitted concurrently for the design, construction and operation of each building in the precinct;

- Southern precinct SSD-10437,
- Basement Car Park SSD-10438,
- Central precinct SSD-10439, and
- Northern precinct-SSD-10440.

An overview of the Development is included below for context. This detailed SSD DA seeks development consent for the design, construction and operation of the Southern Precinct:

7.1.1 Southern Precinct

The Southern Precinct comprises:

- 25-storey residential building (Building 3) comprising student accommodation, to be delivered as a mixture of studio and twin apartments with approximate capacity of 474 students
- 9 storey residential building (Building 4) above the southern station box to accommodate 70 social housing dwellings
- ground level retail tenancies including Makerspace and gymnasium lobby, and loading facilities
- level 1 and level 2 gymnasium and student accommodation communal facilities
- landscaping and private and communal open space at podium and roof top levels to support the residential accommodation
- new public open space including the delivery of the Cope Street Plaza, including vehicle access to the site via a shared way from Cope Street, expanded footpaths on Botany and Wellington Streets and public domain upgrades
- signage zone locations
- utilities and service provision
- stratum subdivision (staged).

7.2 Sources of Information

This document is based on the following sources of information:

- Building Code of Australia Assessment Report, Waterloo Buildings 3 & 4 Waterloo Metro Integrated Station Development, reference WMQ-BLD3&4-MCK-BC-RPT-002, Prepared by McKenzie Group 3rd July 2020.
- Bates Smart architectural plans received 1st September 2020 refer to Table 7.1.

Table 7.1 – Architectural Plans

Drawing No.	Revision	Drawing No.	Revision
WMQ-BLD3-BSA-AR-DRG-DA100	I	WMQ-BLD3-BSA-AR-DRG-DA160	D
WMQ-BLD3-BSA-AR-DRG-DA100M	H	WMQ-BLD4-BSA-AR-DRG-DA101	K
WMQ-BLD3-BSA-AR-DRG-DA103	H	WMQ-BLD4-BSA-AR-DRG-DA102	F
WMQ-BLD3-BSA-AR-DRG-DA106	H	WMQ-BLD4-BSA-AR-DRG-DA103	K
WMQ-BLD3-BSA-AR-DRG-DA116	F	WMQ-BLD4-BSA-AR-DRG-DA108	J
WMQ-BLD3-BSA-AR-DRG-DA123	H	WMQ-BLD4-BSA-AR-DRG-DA109	J
WMQ-BLD3-BSA-AR-DRG-DA124	H	WMQ-BLD4-BSA-AR-DRG-DA110	I
WMQ-BLD3-BSA-AR-DRG-DA125	H		

7.3 Building Description

The proposed development is Building 3 and Building 4 of a multi-building construction project at Waterloo, NSW. The buildings primarily consist of a student accommodation building (Building 3), and a social housing building (Building 4). Building 3 is located adjacent a new metro station from Ground Level to Level 5. Building 4 shall be constructed on top of the metro station (which is being constructed by others), and its lowest floor will sit adjacent Level 6 of Building 3, as shown in Figure 7.1 and Figure 7.2.

Although the student accommodation building (Building 3) and social housing building (Building 4) are fire separated in accordance with NCC DTS requirements, the buildings are considered to interact with each other. For instance, access to the lowest floor of the social housing building is provided via the student accommodation tower. Additionally, both buildings will be served by a shared Fire Services Infrastructure.



Figure 7.1 – Building 4 (Egress Route Transferring to Building 3)



7.4 Building Characteristics

Table 7.2 details the general subject building characteristics that are relevant to the NCC.

Table 7.2 – General Building Characteristics

Characteristic	Description	
	Student Accommodation (Building 3)	Social Housing (Building 4)
Effective height	>50m	45.5m
Rise in storeys	24	9 (on top of Metro Station)
Storeys contained	24 (plus plant)	9 (on top of Metro Station)
Classifications	3, 7a and 9b	2
Type of construction	A	A
Relevant Code	NCC 2019 Volume One	NCC 2019 Volume One

8. Expected Performance Requirements

Table 8.1 summarises the relevant NCC DTS Clauses, NCC Performance Requirements determined in accordance with A2.2, for each NCC DTS item, based on our preliminary review.

Table 8.1 - NCC DTS Provision Departures

Item Reference	NCC DTS Clause	NCC Performance Requirements	NCC DTS Provision Departures
Item 1	C1.1, Specification C1.1, Clause 3.1 and Table 3	CP1, CP2	Fire Resistance Levels associated with Class 6 parts (Retail) of Building 3 to be 120 minutes, in lieu of 180 minutes
Item 2	C3.2, C3.4	CP2	Openings in the external walls of a building to be located within 6m of an external wall of another building, without the required protection in accordance with NCC DTS Clause C3.3 and Clause C3.4
Item 3	C3.9, D2.7	CP2, CP8, DP5	Electrical Services room on Level 01 of Building 4 permitted to be accessed from the fire-isolated stairways
Item 4	D1.2	DP4, EP2.2	Bike Storage D on the mezzanine level of Building 3 be provided with a single (1) exit, in lieu of at least two (2) exits
Item 5	D1.4	DP4, EP2.2	<p>The exit travel distance from any point on a floor:</p> <ul style="list-style-type: none"> a. to a point at which travel in different directions where two (2) exits are available is not more than: <ul style="list-style-type: none"> i. 28m within the Communal Terrace on Level 09 of the Building 4, in lieu of 20m ii. 21m within the Building 3 Bike Store D, in lieu of 20m iii. 24m within the Building 3 Gym, in lieu of 20m <p>The exit travel distance from the entrance door of any SOU:</p> <ul style="list-style-type: none"> b. to a point from which travel in different directions where two (2) exits are available is to be not more than 12.8m on the residential levels of both buildings, in lieu of 6m <p>NOTE: Extended travel distance to be reviewed with design team.</p>
Item 6	D1.7	DP4, EP2.2	Discharge from fire isolated exits in Building 4 require occupants to pass within 6.0m of openings in an external wall of Building 3

Item Reference	NCC DTS Clause	NCC Performance Requirements	NCC DTS Provision Departures
Item 7	D2.22	DP4	Fire-isolated stairs to be locked from stair side in normal mode-operation and be provided with a manual break glass device on the stair side at every fourth level, in lieu of a door that is not able to be locked, or an intercom on every level
Item 8	E1.3	EP1.3	Hydrant System to be designed in accordance with AS2419-2017, in lieu of AS2419-2005
Item 9	E1.3	EP1.3	Fire Hydrant Booster assembly need not be provided with a fire-rated freestanding wall as per AS2419-2017
Item 10	E1.5. Specification E1.5	EP1.4	Fire sprinkler protection is to be omitted from the building refuse chutes.
Item 11	E1.5	EP1.3, EP1.4	The vertical ring main is permitted to pass through a fire stair at alternate levels, in lieu of remaining in a single fire-isolate stair shaft
Item 12	E1.8	EP1.6	Fire Control Room wall to be less than 2.5m in length
Item 12	TBC	TBC	Building 3 and Building 4 permitted to share the same water supplies (tanks and pumps), in lieu of individual water supplies to each building.
Item 13	E2.2	EP2.2	Zone pressurisation system not provided to Class 6 (Retail) and Class 9b (Gym) building parts on Ground Level to Level 2
Item14	E3.4	EP3.2	Building 3 Gym need not be provided with access to the emergency lift within the main core

9. Fire Engineering Outcomes

A fire engineering assessment is to be undertaken to show that the proposed Performance Solution, as detailed below, will meet the NCC Performance Requirements. All other items of fire and life safety, where not specifically addressed or reviewed as part of this document, are to be in accordance with the DTS provisions of the NCC.

The proposed Compliance Solution detailed below is subject to the Outcomes of the fire engineering assessment and approval by the relevant Authorities.

Refer to Appendix 1 – Mark up of Drawings for drawings detailing the Fire Engineering Outcomes

The following fire safety measures are proposed to achieve compliance with the relevant Performance Requirements of NCC 2019 for the fire safety assessment:

Fire and Smoke Resistance

- a. The communal areas within Building 3 must be fire-separated from the public corridors by construction achieving an FRL of not less than 60 minutes, except as follows:
 - i. Openings in the fire rated construction are permitted to be non-fire-rated glazed doors contingent on the following:
 - Toughened glass must be provided as per Item 'd.' and must not contain any horizontal transoms (mullions)
 - Fire protection sprinklers must be provided, as per Item 'q.'
 - Doors must be provided with self-closing devices

NOTE: Doors are permitted to be on hold-open devices which automatically disengage and release upon activation of a fire detection system.
- b. Fire rated construction associated with Class 6 (Retail) parts is permitted to achieve an FRL of not less than 120/120/120 for load bearing parts and -/120/120 for non-load bearing parts.

Protection of Openings

- c. Openings located in an external wall that is required to have an FRL and are required to be protected by NCC DTS provisions, must be protected in accordance with Table 9.1, by either of the following protection methods:
 - i. Protection Method 1 – Toughened Glass
 - Glazing must be toughened glass, having minimum thickness of 6mm (or greater if required by the NCC DTS provisions).
 - Where double glazing is proposed, only one (1) glass pane need meet the above item.
 - Framing must be constructed of non-combustible material.
 - Seals to stiles, head and sills or thresholds must be manufactured from materials with a flammability index no greater than 5.
 - The opening must be permanently fixed in the closed position or automatically closing.
 - the opening must be tagged as detailed under Metal Tag Requirements.
 - ii. Protection Method 2 – Non-Combustible Screen (i.e. Metal Flywire Screen):
 - Glazing must be toughened glass, having minimum thickness of 6mm (or greater if required by the NCC DTS provisions).

- Where double glazing is proposed, only one (1) glass pane must meet the above item
- Framing must be constructed of non-combustible material
- Seals to stiles, head and sills or thresholds must be manufactured from materials with a flammability index no greater than 5.
- The opening must be permanently fixed in the closed position or automatically closing
- Any operable part which does not automatically close must be protected with a non-combustible screen (e.g. metal flywire screen) which meets the following requirements:
 - Must have a mesh or perforated sheet with a maximum aperture of 2mm.
 - Be fitted over the operable portion of the opening with a maximum gap between the opening framing and the screen of not more than 3mm.
 - Be fixed securely in position (permanently fixed).
 - Be located on the side which does not interfere with the operation of the opening (eg. located internally if the window is outward awning type).
- i. All openings requiring protection must be tagged with Metal Tags as follows:
 - Consist of metal tag with dimensions not less than 50mm x 25mm.
 - The required information must be etched, embossed or stamped on the metal tags so that it recessed or projected not less than 0.25mm below or above the surface of the tag. Alphabetic or numeric characters must not be less than 5mm high.
 - Located on the inside on the opening frame and securely fixed in position to minimise the possibility of detachment during the service of life.
 - Information required to be stated on the tag must consist of the following:

Fire Protected Window – Refer to Occupancy Permit and Fire Engineering Report for Replacement Requirements.

Table 9.1 – Opening Requirements

Distance to Fire Source Feature	Protection Methods
Parallel Openings	
2.6m < x < 3.5m	1 or 2

- d. Openings must be provided at opposing ends of the residential corridors within Building 4 must be constructed with the following requirements:
 - i. The openings must extend from the underside of the ceiling to a sill height of not more than 1.5m AFFL
 - ii. Openings must achieve an effective free area of not less than 50% of the total area of the wall in which the opening is located
 - iii. Louvres or the like must be constructed of with material non-combustible material in accordance with AS1530.1.
 - iv. Openings within public corridors which open onto the northern boundary of Building 4 must be provided with automatic openings and closing louvres which operate as follows:
 - Louvres must close upon activation of a smoke detector within the public corridor of Building 4

- Louvres must drive open upon the sprinkler activation within Building 4.
- Louvres must achieve the minimum effective free area requirements set out in Item “d.i”

Provisions for Escape

- e. The number of exits provided on each level must be in accordance with NCC DTS Clause D1.2, except that:
 - i. A single exit is permitted to be provided to the Building 3 Bike Storage D located on Mezzanine Level, contingent on the following:
 - Strobe Lights must be provided as per item ‘s’.
- f. The exit travel distances must comply with NCC DTS Clause D1.4, except that the distance of travel:
 - i. from any point on the floor to a point from which travel in different directions to two (2) exits are available is permitted to be not more than:
 - 24m within the Building 3 Gym
 - 21m within Building 3 Bike Store D located on the mezzanine level
 - 28m within the Communal Terrace of Building 4, on Level 9
 - ii. from the entrance doorway of any SOU to an exit is permitted to be not more than 12.8m on the residential levels in Building 4 contingent on the following:
 - natural ventilation must be provided to the public corridor as per item ‘d’; and
 - doorsets must be provided as per item ‘k’ and item ‘l’.
- g. Travel via fire isolated egress paths must comply with NCC DTS Clause D1.7, except that egress paths leading from fire-isolated stairs from Building 4 are permitted to travel within 6m of unprotected openings in an external wall of Building 3, contingent on the following:
 - i. occupants discharging the fire-isolated stairs must be provided with a choice of egressing in two opposite directions from the stair discharge point, and the opposing egress routes must pass by separate fire compartments as per Appendix 1 – Mark up of Drawings.
- h. Re-entry provisions for fire-isolated stairways within Building 4 need not comply with NCC Clause D2.22, provided that:
 - i. Doors are provided with an Electronic Access Control System (EACS) on the stair side, that unlocks the doors on fire alarm activation and power failure.
 - ii. A manual ‘break glass’ door release shall be located within the Fire-isolated stairs on every fourth level (e.g. Level 4, Level 8) to provide re-entry in normal mode operation. The manual door release shall be interfaced with the building security system to notify the building’s security monitoring service when activated.
 - iii. Signage must be provided within the Fire-isolated stairways on every level notifying occupants that a manual ‘break glass’ door release is available on every fourth level, this sign shall state “MANUAL BREAK GLASS DOOR RELEASE ON EVERY FOURTH LEVEL”.
 - iv. signage be located on the Fire-Isolated Stair doors, in clear view of a person from outside the stair saying ‘USE FIRE STAIR DURING EMERGENCY ONLY’ The signage must be a minimum of 50mm in height and contrasting colour

- v. The level at which the manual 'break glass' door release is located must be provided with signage identifying the 'break glass' door release is located on that level.
- i. Evacuation routes must be kept free from obstruction, as per the requirements of the Building Fire Safety Regulation 2008, or any legislation that supersedes it.
- j. Building 3 Gym need not be provided with access to the emergency lift within the main core.

Doorsets and the Like

- k. Doorsets to SOU entrances and other rooms that bound the public corridors on residential levels must comply with NCC DTS requirements and the following:
 - i. Achieve an FRL of at least –/60/30 when tested in accordance with AS 1530.4:2005 and be installed in accordance with AS 1905.1:2005.
 - ii. be fitted with medium temperature smoke seals to the top and sides which have been tested in accordance with AS 1530.7:2007 as a complete system.
 - iii. Be self-closing
- l. Doorsets to cupboards or the like that bound the public corridors residential levels, except cupboards containing only water meters, water services, or fire services, must comply with NCC DTS requirements and the following:
 - i. Achieve an FRL of at least –/60/30 when tested in accordance with AS 1530.4:2005 and be installed in accordance with AS 1905.1:2005.
 - ii. The internal side of the door leaves must be provided with a non-combustible lining, securely screwed fixed to the door.
 - iii. Each door leaf be fitted with medium temperature smoke seals to the top and sides.
 - iv. be self-closing or lock in the closed position
- m. Doorsets providing access to the electrical services area from the fire-isolated stair on Level 01 of Building 4 as highlighted in Appendix 1 – Mark up of Drawings must comply with the following:
 - i. Achieve an FRL of at least –/60/30 when tested in accordance with AS 1530.4:2005 and be installed in accordance with AS 1905.1:2005.
 - ii. be fitted with medium temperature smoke seals to the top and sides which have been tested in accordance with AS 1530.7:2007 as a complete system.
 - iii. be self-closing
 - iv. must remained locked when not in use for maintenance purposes.

Fire Hydrants, Hose Reels and Extinguishers

- n. The building must be provided with a fire hydrant system in accordance with NCC DTS provisions, except that:
 - i. The fire hydrant system must be designed in accordance with AS2419-2017;
 - ii. Fire hydrant booster assembly located on the western side of the building adjacent Botany Road need not be provided with a fire-rated freestanding wall as per AS2419-2012.
 - iii. The vertical ring main is permitted to pass through a fire stair at alternate levels.
- o. The building must be provided with a fire hose reel system in accordance with NCC DTS provisions.
NOTE: Fire Hose Reels are not required in the Class 2 areas of the Building.
- p. The building must be provided with portable fire extinguishers in accordance with NCC DTS provisions.

Fire Sprinkler Systems

- q. Fire sprinkler system must be provided throughout the building in accordance with AS 2118.1:2017, and as follows:
- i. Where fire sprinkler protection is required to protect the glazed openings in the construction separating the communal areas from the public corridors on residential levels, the following requirements must be met:
 - The communal area side of the glazed opening must be protected with wall wetting fire sprinklers.
 - Be fed from separate reticulation pipe work connected to the fire hydrant system complete with flow switch, monitored isolation valves and permanent signage stating, 'WALL WETTING SPRINKLER SYSTEM – DO NOT ISOLATE'.
 - Spaced and located in accordance with AS2118.1:2017 Clause 3.2.4.
 - Where a window covering is proposed, the fire sprinkler head must be located between the window covering and the glass,
 - Operation of fire sprinkler heads protecting the glazing may be considered as part of the hydraulic demand of the floor sprinkler system.
 - ii. Fire sprinkler protection may be omitted from Refuse Chutes, contingent on the following:
 - A single fire sprinkler must be provided at the top of the refuse chute in accordance with AS2118.1:2017.
 - The refuse chute (including lining) must be of non-combustible construction
 - iii. Connected to a fire alarm monitoring system connected to a fire station or fire station dispatch centre in accordance with AS 1670.3:2004.
 - iv. Flow switches must be provided to the fire sprinkler system and must be located to serve each individual residential level and indicate level of activation at the FIP.
 - v. Activation of the fire sprinkler system (monitored via the control valve or flow switches where applicable) must initiate a General Fire Alarm via the occupant warning system.

Smoke Detection System

- r. A smoke detection and alarm system must be installed throughout the building in accordance with NCC DTS Specification E2.2a, and as follows:
- i. The detection and alarm system in Building 3 must be provided in accordance with AS 1670-2015 Clause 3.4 (Alarm Delay Facility - ADF) within SOUs and the following:
 - The delay period may be set to 300 seconds;
 - Activation of a smoke detector within an SOU must provide a local alarm throughout the whole SOU;
 - A signal must be provided at reception to indicate activation of any smoke detector, thus allowing for investigation. Furthermore, notification must be sent to the Building Manager (via pager or equivalent means) to notify them of fire alarm activation;
 - i. An addressable smoke detector must be located at the top of each lift shaft.
 - ii. An addressable heat detector must be provided at the top of each lift shaft and be connected to a fire alarm monitoring system in accordance with AS1670.3:2004.
 - iii. AS 3786:2014 smoke alarms must be installed in accordance with Clause 3 within SOUs and all smoke alarms within a single SOU must be interconnected to provide a common alarm.

- iv. An addressable heat detector must be installed within each SOU which meets the following requirements:
 - Comply with AS 7240.5:2004 for Type A1 class/grading (i.e. be rate of rise type) and have a maximum static response temperature of 65°C.
 - Be located at ceiling level within 1.5m of the SOU entry door.
- v. Addressable smoke detection system must be installed in all public corridors and internal public areas/spaces, located in accordance with the requirements of AS 1670.1:2018, except as follows:
 - On residential levels, detectors must be located within the public corridor at ceiling level and within 1.5m of each SOU entry door.
 - Smoke detectors must be installed to cupboards or the like, except cupboards containing only water meters, water services or fire services.
- vi. Activation of any detector must initiate the occupant warning system.
- vii. Activation of any detector in Building 4 must initiate the operable louvres on the North Corridor ends to shut.
- s. Fire Alarm Strobes are to be provided to the Mezzanine Bike Storage of Building 3 and the Communal Terrace of Building 4 located at the underside of the ceiling adjacent to the exit.

Occupant Warning

- t. A Sound System and Intercom System for Emergency Purposes (SSISEP) must be provided throughout each of the buildings in accordance with NCC DTS provisions

Fire Control Room

- u. A Fire Control Room must be provided in accordance with NCC DTS requirements, except that:
 - i. The Fire Control Room wall is permitted to be less than 2.5m in length.

Stair Pressurisation

- v. Stair pressurisation must be provided in accordance with NCC DTS provisions.

Building Fire Services Infrastructure

- w. Building 3 and Building 4 are permitted to share the same water supplies (tanks and pumps).

Zone Pressurisation

- x. Zone pressurisation need must be provided throughout the building in accordance with NCC DTS provisions, except as follows:
 - i. zone pressurisation need not be provided to Class 6 (Retail) and Class 9b (Gym) tenancies of Ground Level to Level 2.

Emergency Lighting and Exit Signs

- y. Emergency lighting must be provided in accordance with the NCC DTS requirements.
- z. Exit signs must be provided in accordance with the NCC DTS requirements.

Commissioning

- aa. All fire safety equipment or equipment associated with fire safety must be correctly commissioned including integrated testing.
- bb. Equipment and Safety Installations must be maintained in accordance with current and future building maintenance legislation. Failure to do so will render the outcomes of this document invalid, null and void.

- cc. Maintenance of Equipment and Safety Installations must be undertaken by an independent, suitably qualified and/or competent representative, i.e. qualified maintenance company or Building Manager's representative – not by the Building Owner.
- dd. The following additional Equipment and Safety Installations must be carried out and listed on the Occupancy Permit: The following additional Special Fire Services and Fire Safety Installations must be carried out and listed on the Certificate of Classification:
 - i. Fire Sprinkler System
 - Prior to fire sprinkler isolation, formal approval by the building management is required.
 - ii. Paths of Egress and Discharge from Exits
 - To be kept clear of items that constitute a fuel load or that impede occupant egress.
 - iii. Signage
 - All signage requirements nominated in the FER to be inspected on a yearly basis for compliance with the FER and be recorded in a logbook or other appropriate tracking/maintenance system accessible on site.
 - iv. Window Protection
 - Any required window protection must be inspected on a yearly basis for compliance with this document and recorded in a logbook or other appropriate tracking/maintenance system accessible on site.
- ee. Up to date logbooks must be provided on site.

Maintenance

- ff. Special Fire Services and Fire Safety Installations must be maintained in accordance with current and future building maintenance legislation. Failure to do so will render the outcomes of this document invalid, null and void.
- gg. Maintenance of Special Fire Services and Fire Safety Installations must be undertaken by an independent, suitably qualified and/or competent, i.e. qualified maintenance company or Building Manager's representative – not by the Building Owner.
- hh. Up to date logbooks must be provided on site.

Other Provisions

- ii. A no-smoking policy must be implemented in accordance with State legislation.
- jj. All occupants of the building must be given instruction on the fire and evacuation plan in accordance with the Building Fire Safety Regulation 2008 and/or future legislation, when it comes into force.
Note that the provision of an Evacuation Plan in public areas within the building is considered to meet this requirement.
- kk. A sign must be provided adjacent to the Fire Detection and Control Indicating Equipment (FDCIE) or in the main entry listing the Performance Solution applicable to the building. The sign must be incised, inlaid or embossed letters on a metal, wood, plastic or similar plate, securely and permanently attached to the wall.
- ll. A copy of the approved Fire Engineering Report must be provided at building handover and be located at one of the following:
 - i. within the FDCIE; or
 - ii. in the Essential Safety Measures logbook cabinet; or
 - iii. Management In Use Plan manual; or

- iv. Maintenance manual for the fire protection systems.
- mm. No changes to the fire safety strategy without the express written consent of Omnii Pty Ltd.

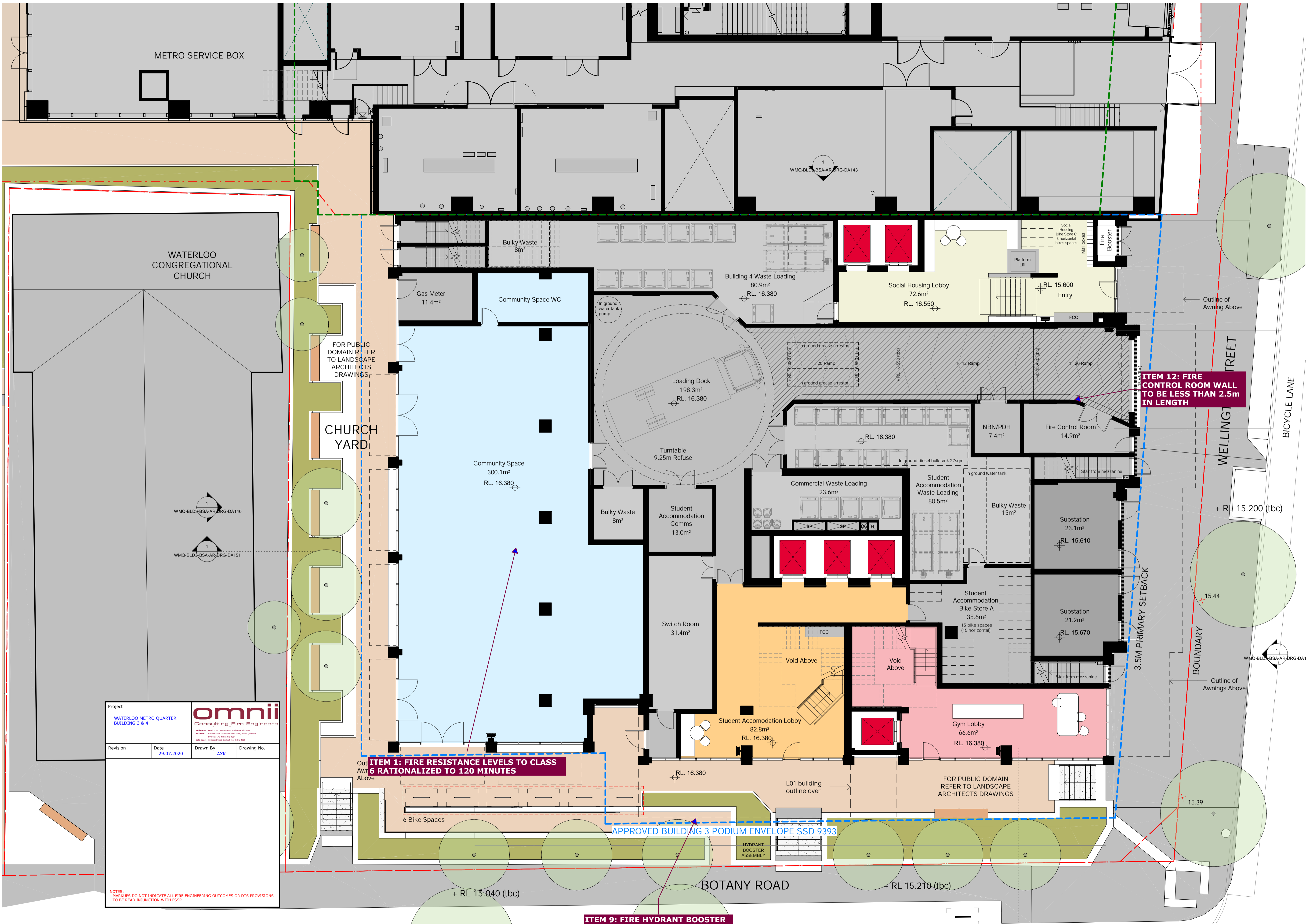
10. Conclusion

This documents intent is to undertake a performance-based review of the NCC DTS non-compliances for Building 3 & 4. Where a fire engineering assessment is proposed, the assessment will address the relevant Performance Requirements of the National Construction Code 2019 Volume One, (NCC). Utilising the NCC, an acceptable Compliance Solution is to be achieved by a combination of compliance with the NCC Deemed-to-Satisfy (DTS) provisions and formulating an acceptable Performance Solution. This approach is intended to allow the development of an effective performance-based building design, whilst maintaining an acceptable level of Fire and Occupant Life Safety.

The details of the proposed performance solutions discussed in Section 8 are subject to the outcome of the fire engineering assessment. The performance solutions for the building will be developed as part of the ongoing design and development process. However, building as currently designed and reviewed is capable of achieving compliance with the NCC.

11. Appendices

11.1 Appendix 1 – Mark up of Drawings



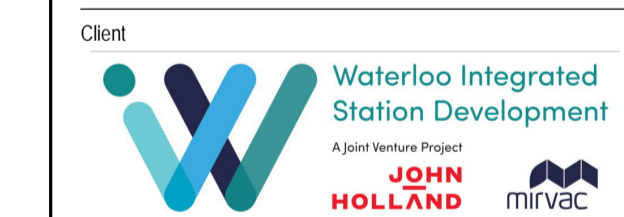
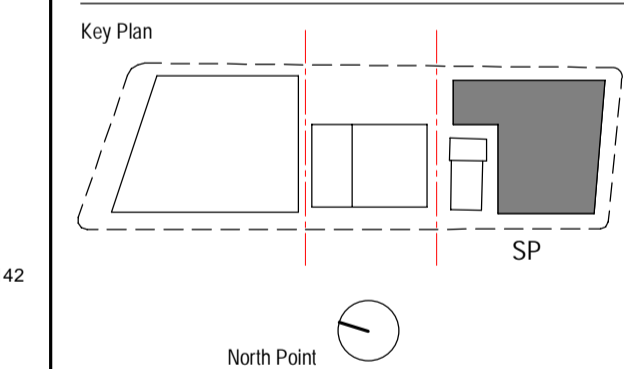
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B	ISSUE FOR INFORMATION	17.04.20
C	ISSUE FOR INFORMATION	24.04.20
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E	ISSUE FOR INFORMATION	01.06.20
F	DRAFT SSDA ISSUE	15.06.20
G	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
H	SSDA ISSUE - FOR LANDOWNER'S CONSENT	30.07.20
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General Arrangement Plan

Ground Floor Plan

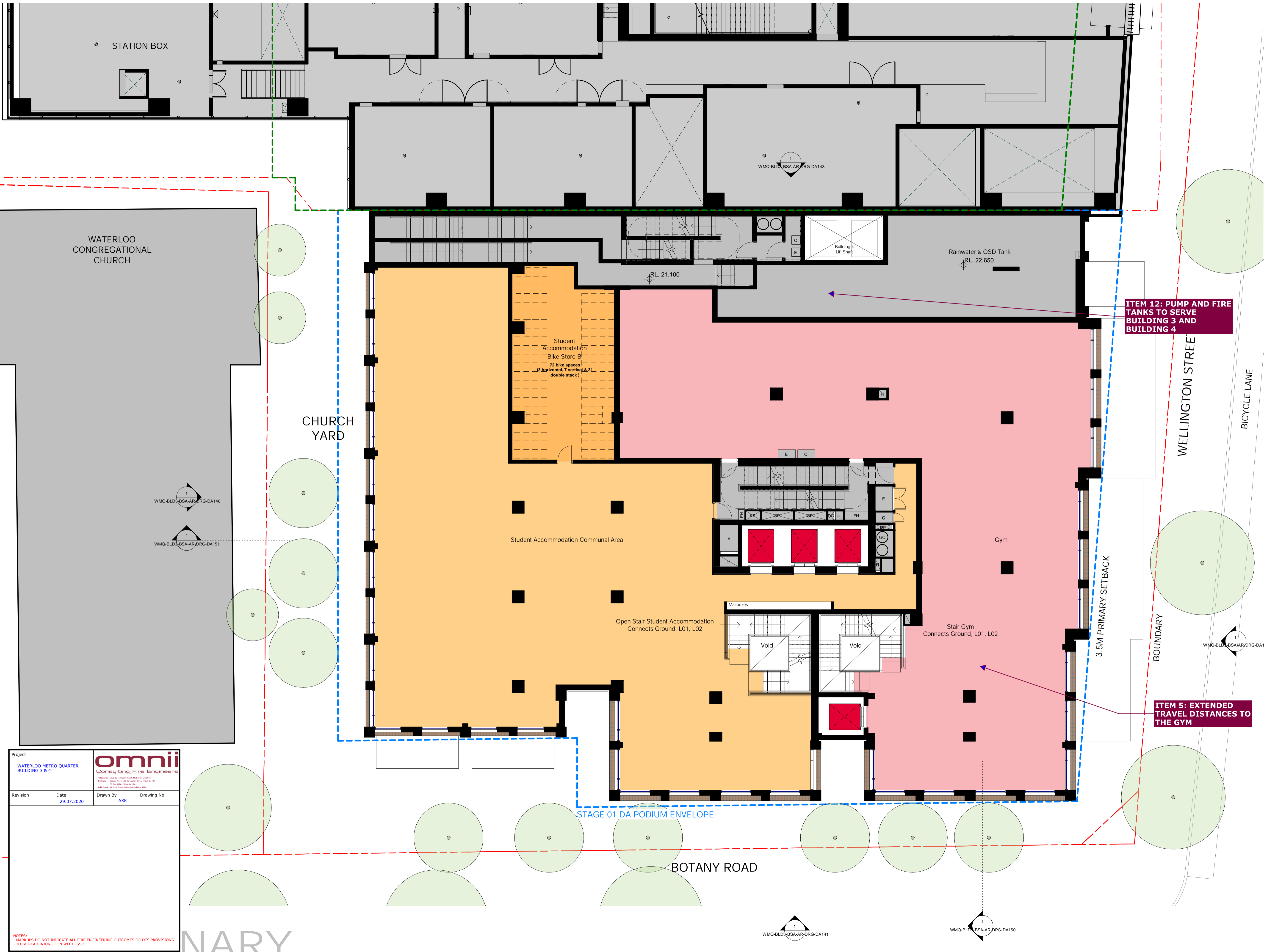
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WMQ-BLD3-BSA-AR-DRG-DA100

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Project

WATERLOO METRO QUARTER
BUILDING 3 & 4

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Date

29.07.2020

Drawn By

AXK

Drawing No.

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Consulting Fire Engineers

Head Office: Level 1, 15 Green Street, Melbourne VIC 3000

Head Office: 03 9594 1234

Head Office: 03 9594 1234

Head Office: 03 9594 1234

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A	COST PLAN B		30.03.20
B	ISSUE FOR INFORMATION		24.04.20
C	ISSUE FOR INFORMATION		15.05.20
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Key Plan

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25mm

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1: 100

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General Arrangement Plan

Level 1 Plan

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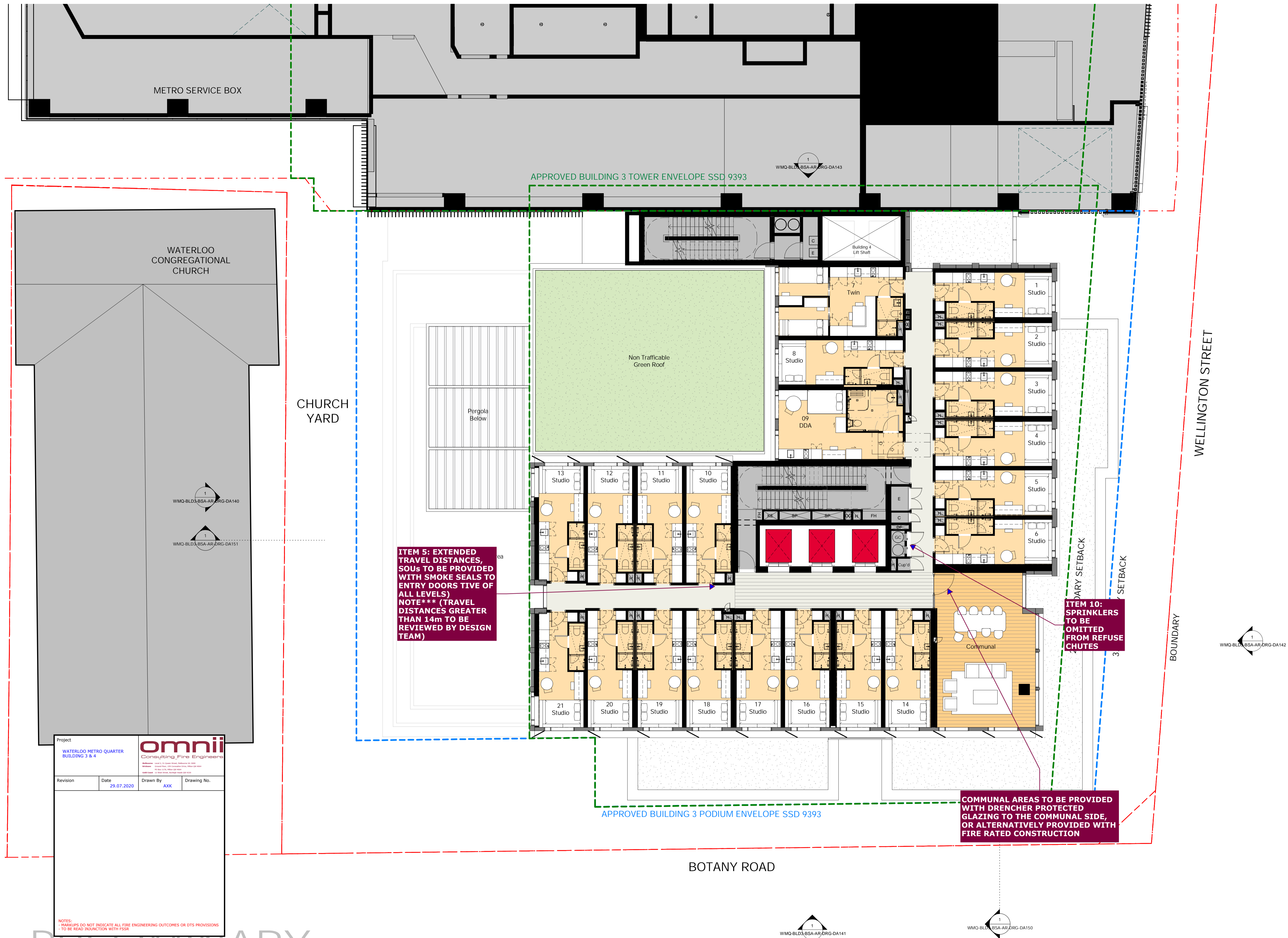
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WATERLOO METRO QUARTER
BUILDING 3 & 4

Revision

Date

29.07.2020

Drawn By

AXK

Drawing No.

omnii

Consulting Fire Engineers

Address: Level 3-13, Sydney Metro, Waterloo NSW 2000
Phone: (02) 9550 1111
Fax: (02) 9550 1112
Email: info@omnii.com.au
Web: www.omnii.com.au

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A	COST PLAN B		30.03.20
B	ISSUE FOR INFORMATION		24.04.20
C	ISSUE FOR INFORMATION		15.05.20
D	ISSUE FOR INFORMATION		01.06.20
E	DRAFT SSDA ISSUE		15.06.20
F	SSDA ISSUE - FOR LANDOWNER'S CONSENT		27.07.20
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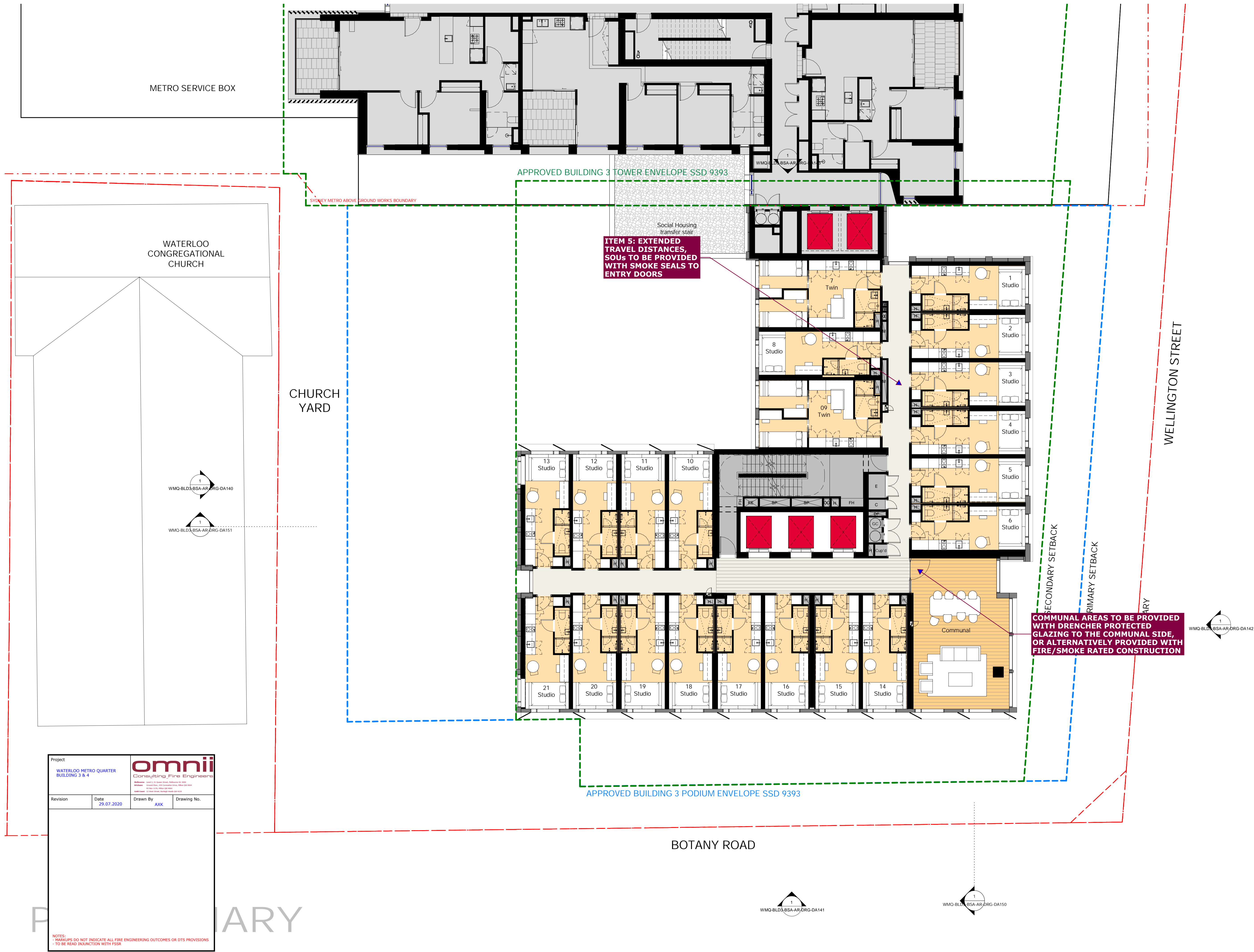
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E		DRAFT SSDA ISSUE	15.06.20
F		SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
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General Arrangement Plan
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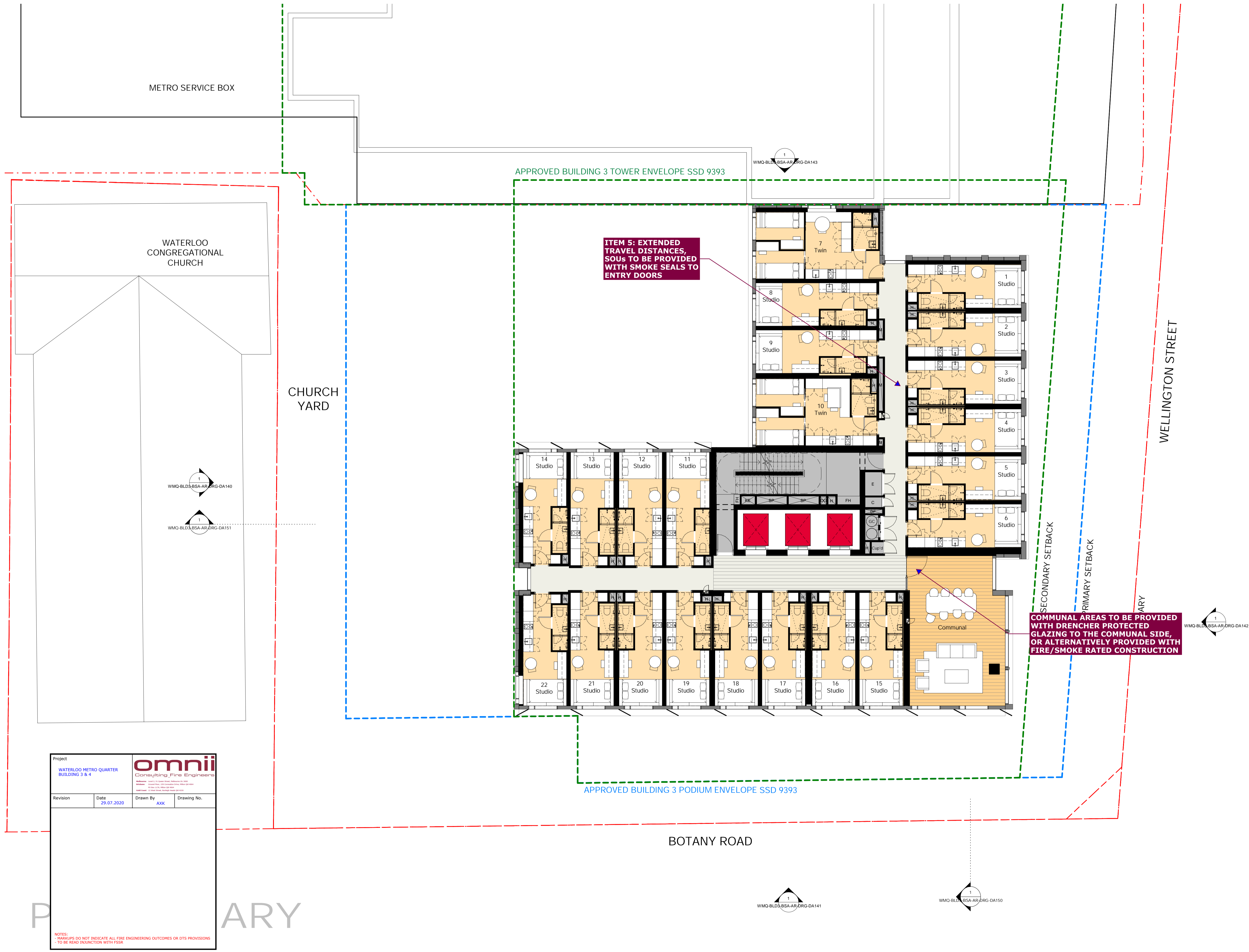
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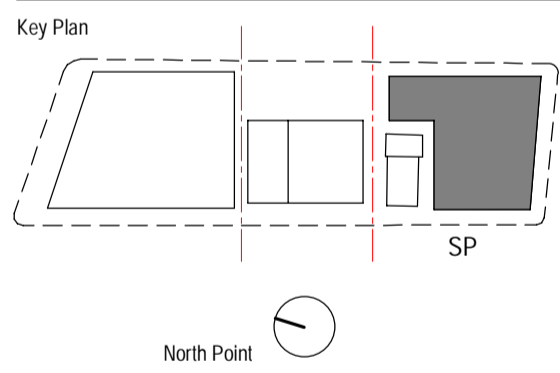
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B	ISSUE FOR INFORMATION	01.06.20
C	DRAFT SSDA ISSUE	15.06.20
D	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
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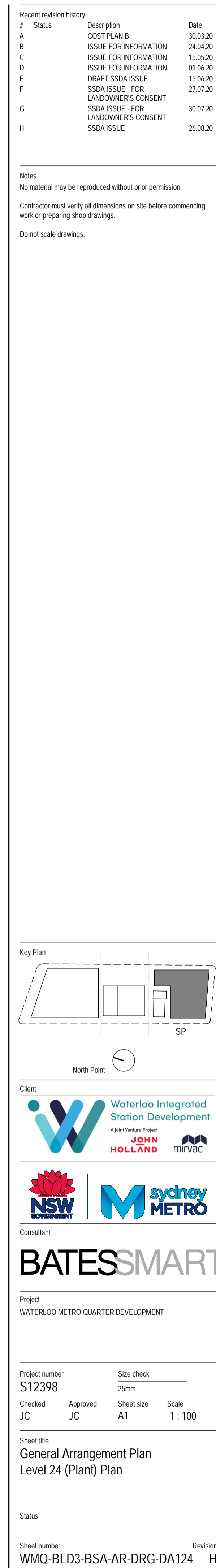
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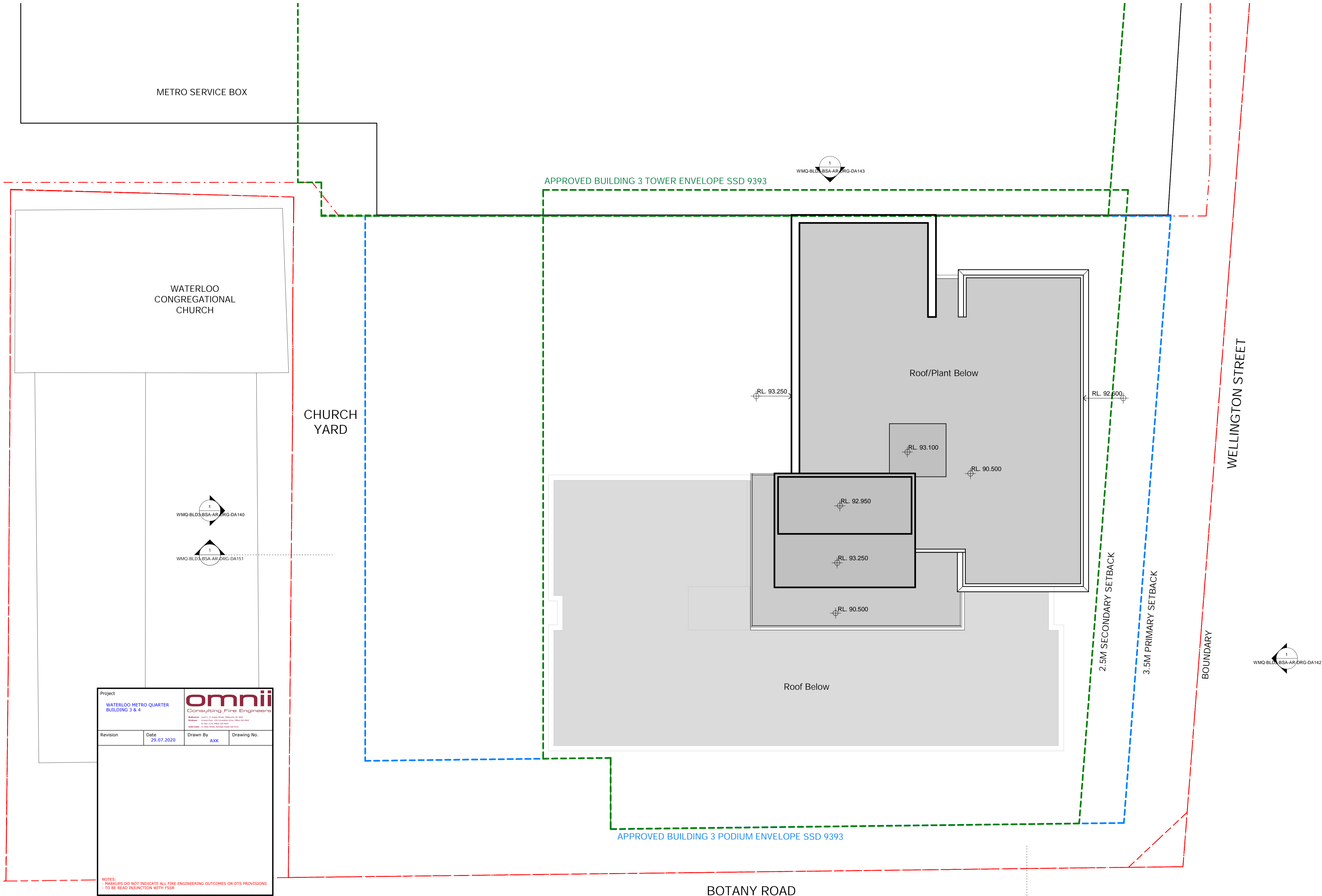
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BUILDING 3 & 4

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Date
29.07.2020

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AKK

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#	Status	Description	Date
A	ISSUE FOR INFORMATION	17.04.20	
B	ISSUE FOR INFORMATION	24.04.20	
C	ISSUE FOR INFORMATION	15.05.20	
D	ISSUE FOR INFORMATION	01.06.20	
E	DRAFT SSDA ISSUE	15.06.20	
F	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20	
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Roof Plan

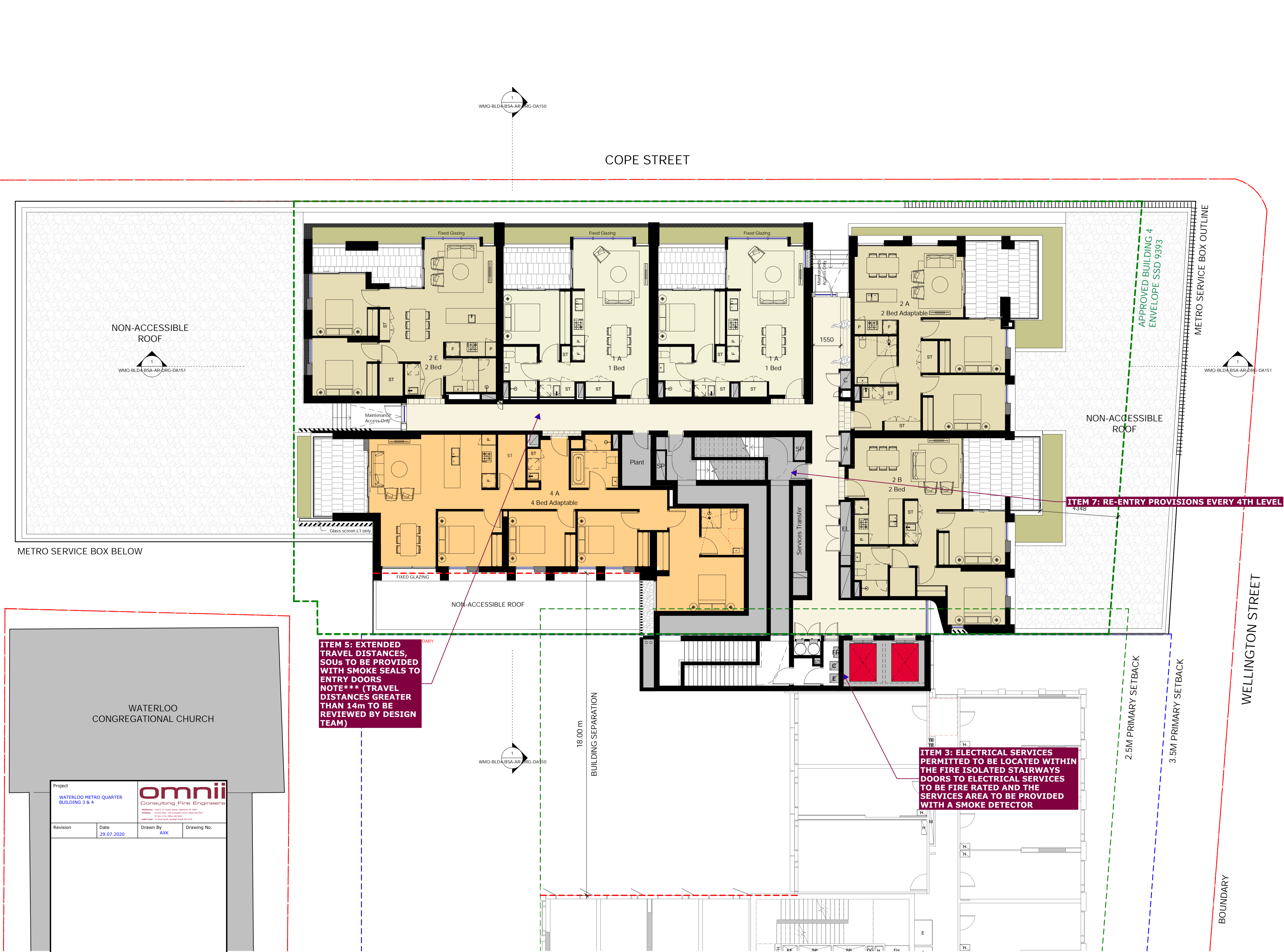
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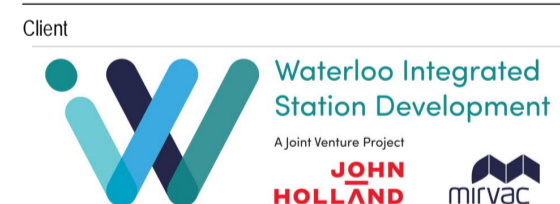
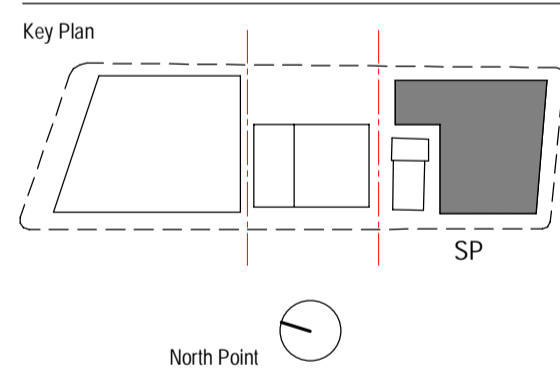
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E	ISSUE FOR INFORMATION	15.05.20
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G	DRAFT SSDA ISSUE	15.06.20
H	ISSUE FOR INFORMATION	14.07.20
I	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
J	SSDA ISSUE - FOR LANDOWNER'S CONSENT	30.07.20
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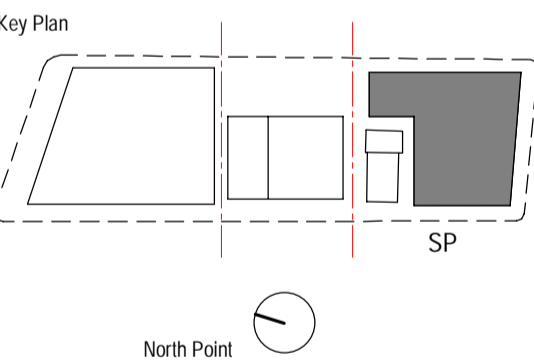
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A Joint Venture Project
JOHN HOLLAND 



Consultant

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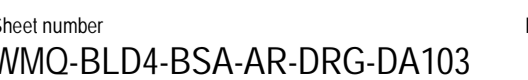
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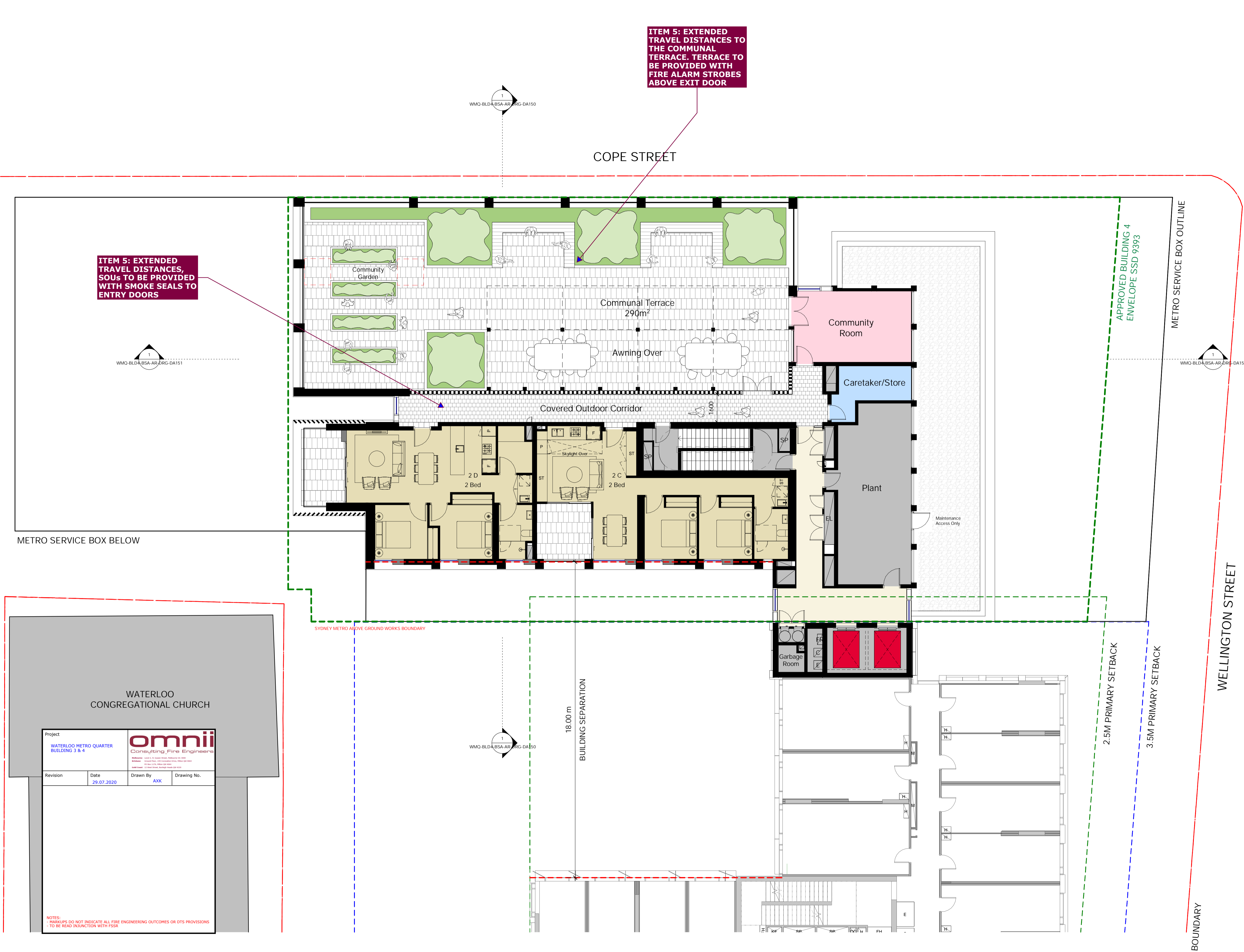
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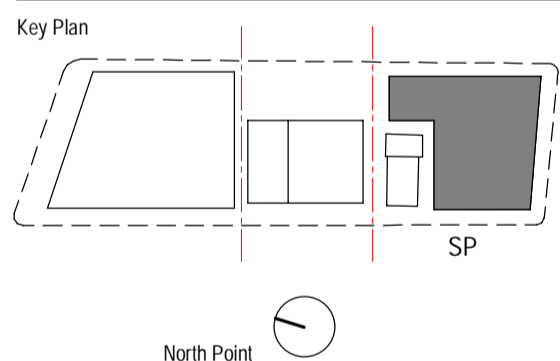
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E		ISSUE FOR INFORMATION
F		ISSUE FOR INFORMATION
G		DRAFT SSDA ISSUE
H		SSDA ISSUE - FOR LANDOWNER'S CONSENT
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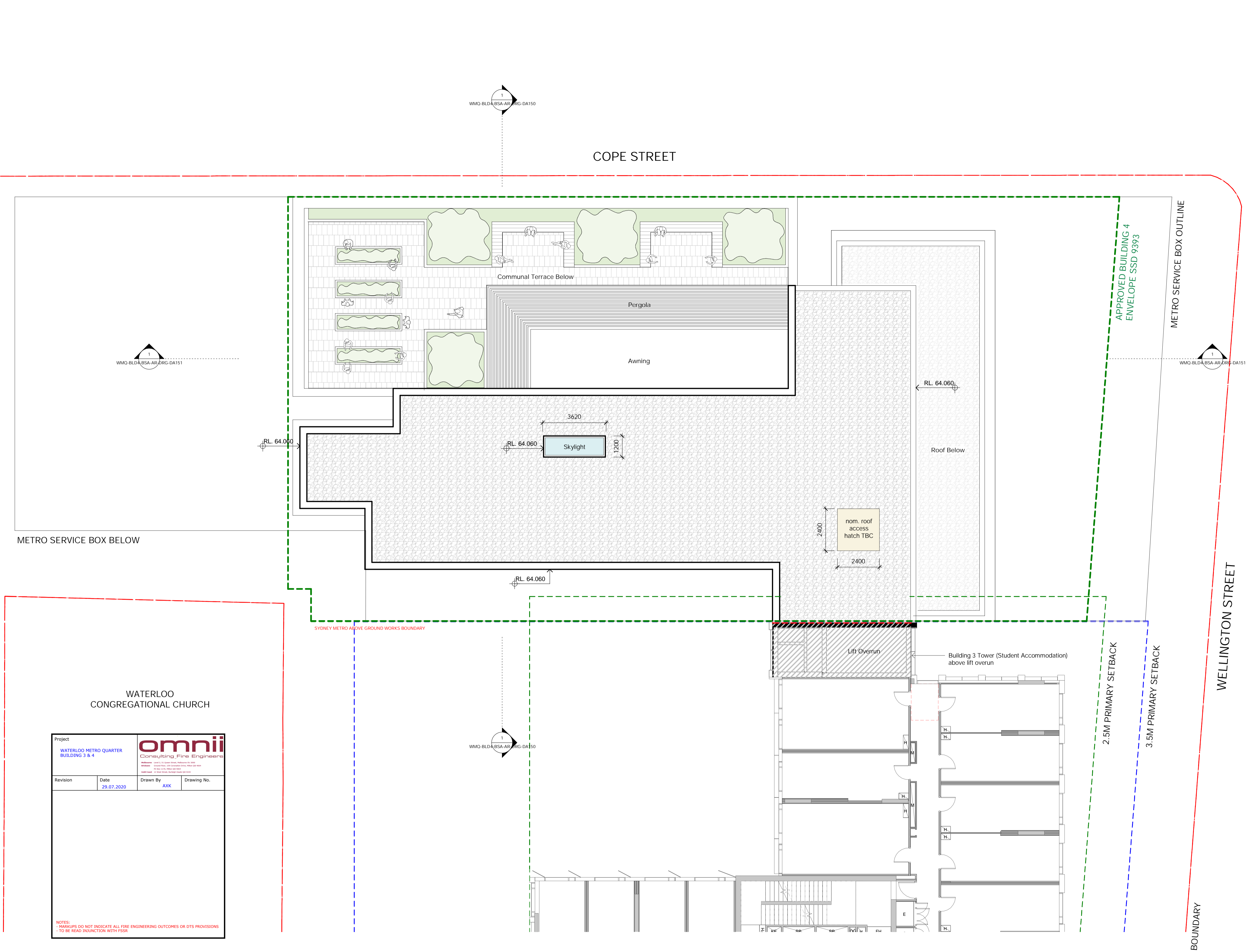
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Sheet number
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WATERLOO METRO QUARTER
BUILDING 3 & 4

Revision

Date

29.07.2020

Drawn By

AXK

Drawing No.

omnii

Consulting Fire Engineers

Head Office: Level 2, 111 Sydney Street, Melbourne VIC 3000

Head Office: Level 2, 111 Sydney Street, Melbourne VIC 3000

Head Office: Level 2, 111 Sydney Street, Melbourne VIC 3000

Head Office: Level 2, 111 Sydney Street, Melbourne VIC 3000

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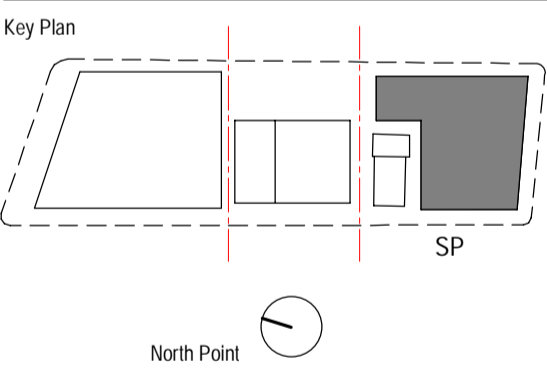
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F	DRAFT SSDA ISSUE	15.06.20
G	SSDA ISSUE - FOR LANDOWNER'S CONSENT	27.07.20
H	SSDA ISSUE - FOR LANDOWNER'S CONSENT	30.07.20
I	SSDA ISSUE	26.08.20

Notes

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Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.



Consultant

BATESSMART

Project

WATERLOO METRO QUARTER DEVELOPMENT

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

Sheet title

Roof Plan

Status

Sheet number	Revision
WMO-BLD4-BSA-AR-DRG-DA110	I

PRELIMINARY