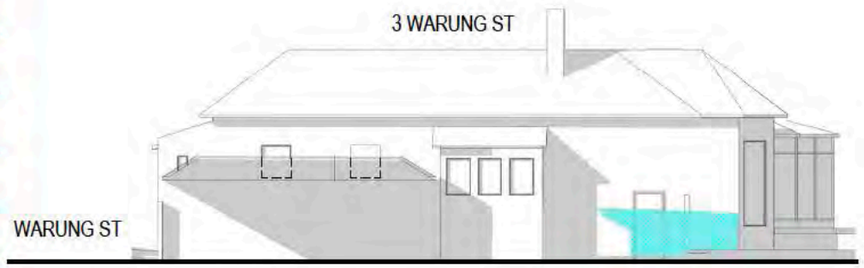
WESTERN FACADE OF 3 WARUNG ST

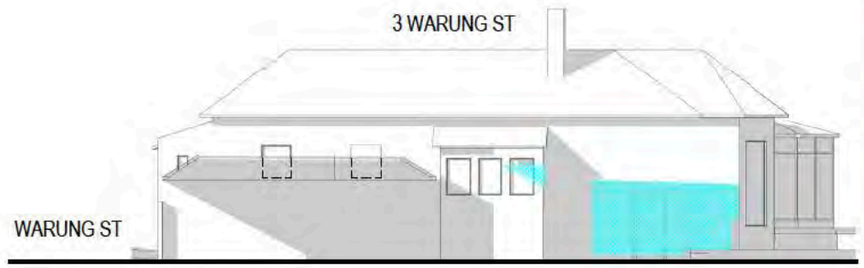
SHADOW STUDY @ WINTER SOLSTICE

1 **3 WARUNG ST - 1.45 PM**
@ A1

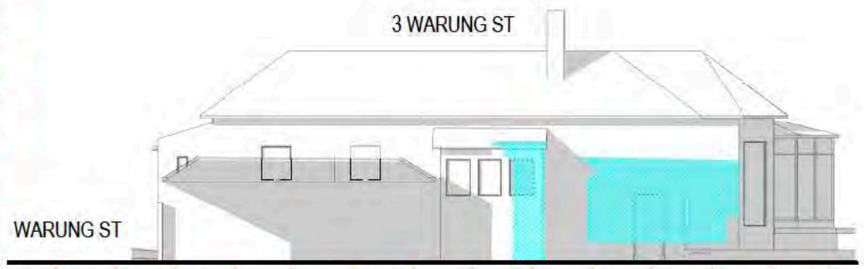
2 **3 WARUNG ST - 2.00 PM** - NO OVERSHADOWING BEFORE 2:00 PM
@ A1



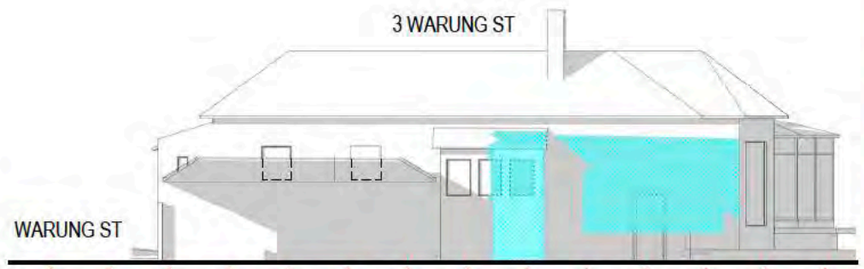
3 **3 WARUNG ST - 2.15 PM**
@ A1



4 **3 WARUNG ST - 2.30 PM**
@ A1



5 **3 WARUNG ST - 2.45 PM**
@ A1



6 **3 WARUNG ST - 3.00 PM**
@ A1

ADDITIONAL SHADOWS CAST BY PROPOSED NEW WORKS

18

C

AMENDMENTS TO ARCHITECTURAL DRAWINGS

1. BASEMENT ENTRY WIDTH REDUCED TO 3.6m & RELOCATED 2.7m FROM THE BOUNDARY TO RETAINED NATURAL ROCK FORMATION. NEW PHOTOMONTAGE & DETAILS ADDED (DA-701 & DA-800).
2. REPLACED 2 CAR SPACES WITH COMMUNAL OPEN SPACE SPACES ON LOWER GROUND LEVEL. VISITOR BICYCLE SPACE RELOCATED.
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Member Australian Institute of Architects

STATUS
DEVELOPMENT APPLICATION

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GRAPHIC SCALE

NOT TO SCALE

DRAWING NOTES

LEGEND

SHADOW CAST BY EXISTING BUILDINGS

ADDITIONAL SHADOWS CAST BY PROPOSED NEW WORKS

ISS	DATE	PURPOSE OF ISSUE
B	28.03.2022	ISSUE FOR DA
A	01.12.2021	ISSUE FOR DA

CLIENT
Highbury Warung Pty Ltd

squillace

ARCHITECTURE / INTERIORS

www.squillace.com.au

SYDNEY
1/60 Albion Street, Surry Hills, NSW 2010
Ph: +61 2 8354 1300
ABN: 24 132 554 753

NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. **DA-450** ISSUE **B**

JOB NO.	SCALE	DATE
HIG2009	N.T.S.	28.03.2022

DRAWING TITLE
3 WARUNG ST - SHADOW STUDY @ WINTER SOLSTICE

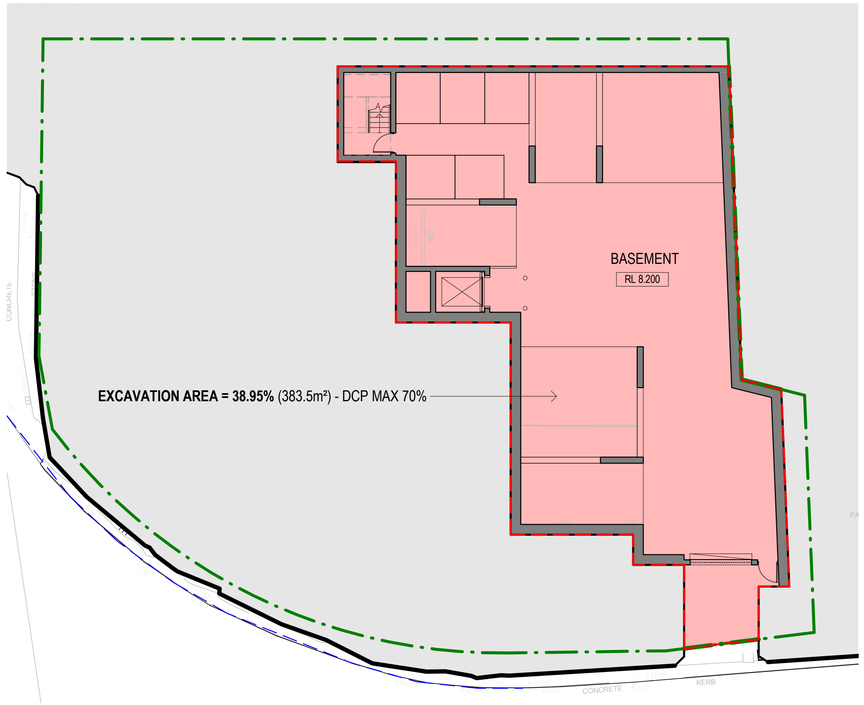
DRAWN BY	CHECKED BY
FO	SC

DEEP SOIL LANDSCAPING = 26.9% (264.70m²)

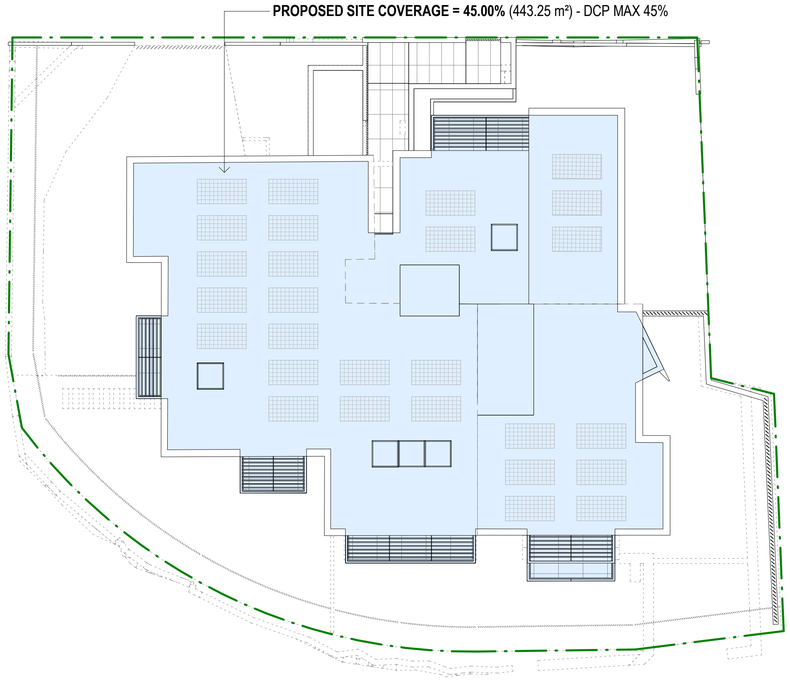
TOTAL LANDSCAPE AREA = 42.4% (417.60m²) - DCP MIN 40%

UN-BUILT = 11.9% (117.20 m²) - DCP MAX 15%

1 LANDSCAPE AREA



2 EXCAVATION PLAN.



18

3 SITE COVERAGE - PROPOSED

SITE AREA : 985m²

DCP CONTROLS

Landscape area = Min 40% **(COMPLIES)**

Un-built Upon = Max 15% **(COMPLIES)**

Excavation = Max 70% **(COMPLIES)**

Site coverage = Max 45% **(COMPLIES)**

C

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NOT TO SCALE

DRAWING NOTES

ISS	DATE	PURPOSE OF ISSUE
C	28.03.2022	ISSUE FOR DA
B	26.08.2021	ISSUE FOR DA
A	18.08.2021	ISSUE FOR DA

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PROJECT

Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-531

ISSUE C

JOB NO. HIG2009

SCALE **N.T.S.**

DATE 28.03.2022

DRAWING TITLE

LANDSCAPE COVERAGE & EXCAVATION PLAN

DRAWN BY FO

CHECKED BY SC

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

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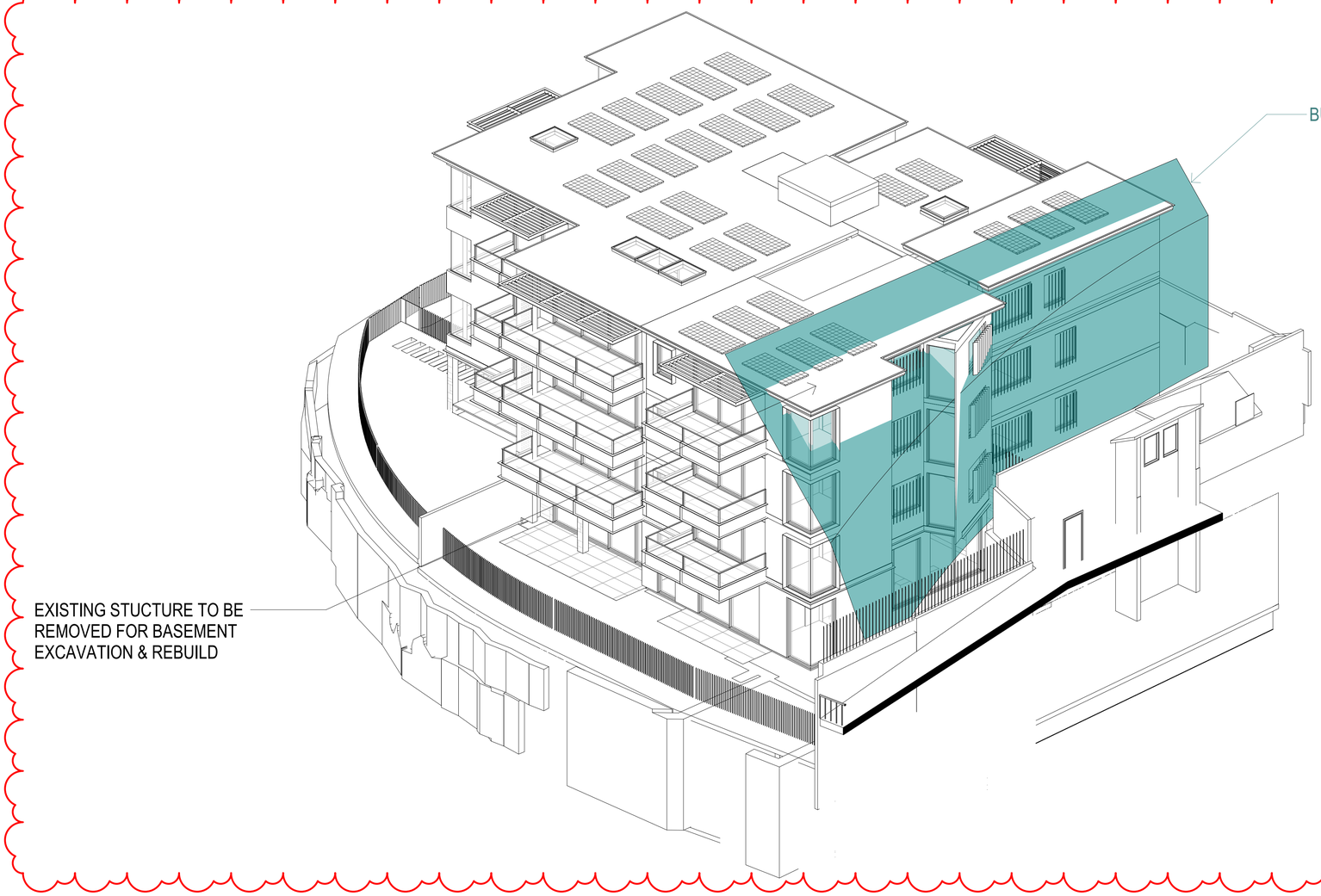
GRAPHIC SCALE

NOT TO SCALE

DRAWING NOTES

18



2 **BUILDING ENVELOPE**

C

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

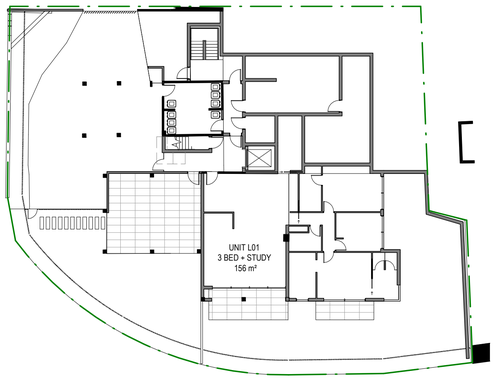
DRAWING NO. DA-551

ISSUE C

JOB NO.	SCALE	DATE
HIG2009	**N.T.S.**	28.03.2022

DRAWING TITLE
BUILDING ENVELOPE

DRAWN BY	CHECKED BY
FO	SC



2 **LOWER GROUND LEVEL - SOLAR ACCESS**
1 : 250 @ A1

1 **GROUND FLOOR - SOLAR ACCESS**
1 : 250 @ A1

3 **LEVEL 1- SOLAR ACCESS**
1 : 250 @ A1

4 **LEVEL 2 - SOLAR ACCESS**
1 : 250 @ A1

SOLAR ACCESS CALCULATIONS

SEPP 65 APARTMENT DESIGN GUIDE REQIREMENT -
SECTION 4A; SOLAR AND DAYLIGHT ACCESS

MINIMUM NUMBER OF APARTMENTS WITH LIVING AND PRIVATE OPEN SPACES RECEIVING MINIMUM 2 HOURS DIRECT SUNLIGHT BETWEEN 9am - 3pm AT MID WINTER = 70%

	UNITS WITH MORE THAN 2 HOUR SOLAR ACCESS	TOTAL NUMBER OF UNITS
LOWER GROUND LEVEL	0	1
GROUND LEVEL	2	3
LEVEL 1	2	3
LEVEL 2	2	2
	TOTAL 6*	**TOTAL 9**

7* UNITS OUT OF 10 UNITS = **66.7%** OF UNITS RECEIVE MORE THAN 2 HOURS SOLAR ACCESS.

(UNIT 202 IS ABLE TO COMPLY VIA THE USE OF SKYLIGHTS)

NATURAL VENTILATION CALCULATIONS

SEPP 65 APARTMENT DESIGN GUIDE REQUIREMENT -
4B NATURAL VENTILATION:

MINIMUM NUMBER OF APARTMENTS CROSS VENTILATED ON FIRST 4 STORIES	= 60%
TOTAL NUMBER OF UNITS	= 9
NUMBER OF UNITS WITH CROSS-VENTILATION	**= 9**
	= 100% (COMPLIES)

6

C

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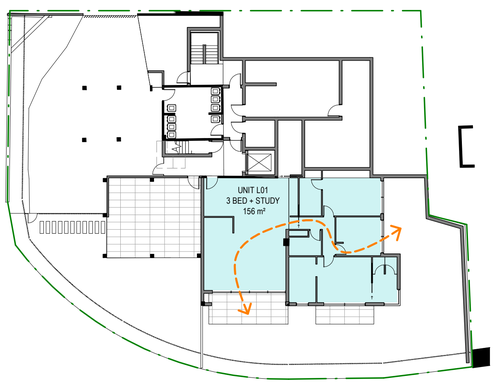
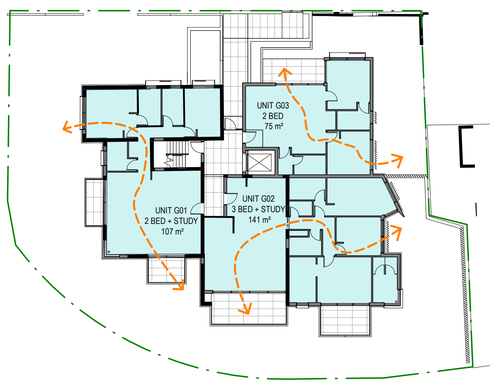
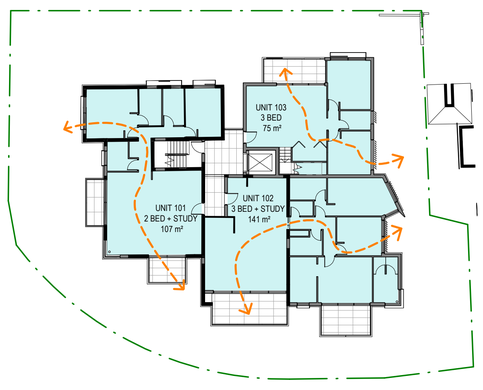


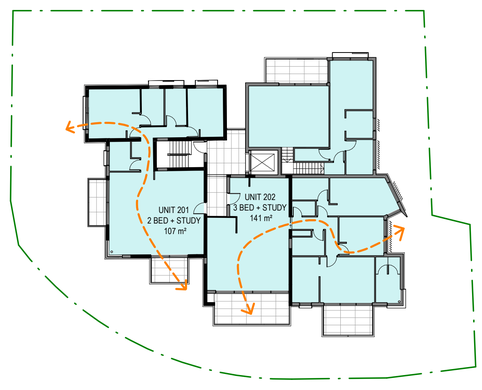
8 **LOWER GROUND LEVEL - CROSS FLOW**
1 : 250 @ A1



5 **GROUND FLOOR - CROSS FLOW**
1 : 250 @ A1



6 **LEVEL 1 - CROSS FLOW**
1 : 250 @ A1



7 **LEVEL 2 - CROSS FLOW**
1 : 250 @ A1

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STATUS

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GRAPHIC SCALE

1:500 @ A3 0 5m 10m
1:250 @ A1

DRAWING NOTES

ISS	DATE	PURPOSE OF ISSUE
C	28.03.2022	ISSUE FOR DA
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PROJECT
Warung Street Apartments

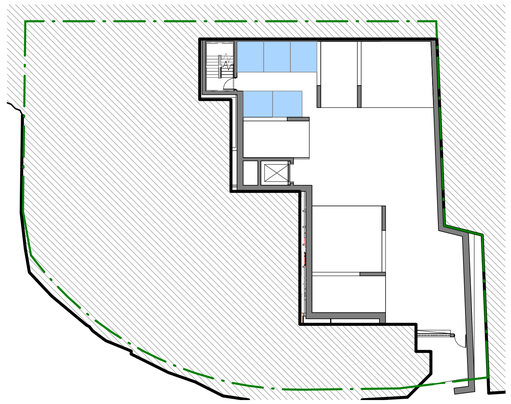
1 Warung Street, McMahons Point NSW

DRAWING NO. DA-601
ISSUE C

JOB NO. HIG2009
SCALE As indicated@ A1
DATE 28.03.2022

DRAWING TITLE
SOLAR ACCESS & CROSS FLOW VENTILATION

DRAWN BY FO
CHECKED BY SC



5 **BASEMENT LEVEL**
1 : 250 @ A1

1 **LOWER GROUND LEVEL - STORAGE AND P.O.S**
1 : 250 @ A1

2 **GROUND FLOOR - STORAGE AND P.O.S**
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3 **LEVEL 1 - STORAGE AND P.O.S**
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C

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STORAGE REPORTED IN APARTMENTS

LEVEL	APT NUMBER	NUM BEDS	IN-APARTMENT STORAGE	MANDATED IN-APARTMENT STORAGE	COMPLIANCE
LOWER GROUND LEVEL	L01	3 Bed	19.3 m³	5.0 m³	YES
GROUND FLOOR	G01	2 Bed	4.2 m³	4.0 m³	YES
GROUND FLOOR	G02	3 Bed	12.3 m³	5.0 m³	YES
GROUND FLOOR	G03	2 Bed	5.6 m³	4.0 m³	YES
LEVEL 1	101	2 Bed	4.2 m³	4.0 m³	YES
LEVEL 1	102	3 Bed	12.3 m³	5.0 m³	YES
LEVEL 1	103	3 Bed	7.1 m³	5.0 m³	YES
LEVEL 2	201	2 Bed	4.2 m³	4.0 m³	YES
LEVEL 2	202	3 Bed	12.3 m³	5.0 m³	YES

STORAGE MANDATED BY APARTMENT BEDROOMS - AREA

Key Name	MANDATED IN-APARTMENT STORAGE	MANDATED TOTAL APARTMENT STORAGE
N/A	0.00 m³	0.00 m³
Studio	2.00 m³	4.00 m³
1 Bed	3.00 m³	6.00 m³
2 Bed	4.00 m³	8.00 m³
3 Bed	5.00 m³	10.00 m³

*AT LEAST 50% OF THE REQUIRED STORAGE IS LOCATED WITHIN THE APARTMENT. THE REMAINING STORAGE IS LOCATED IN THE BASEMENT.

PRIVATE OPEN SPACE REPORTED IN APARTMENTS

LEVEL	APT NUMBER	Area	REQUIRED AREA	COMPLIANT
LOWER GROUND LEVEL	L01	24 m²	12m²	COMPLIES
GROUND FLOOR	G01	11 m²	10m²	COMPLIES
GROUND FLOOR	G02	25 m²	12m²	COMPLIES
GROUND FLOOR	G03	86 m²	10m²	COMPLIES
LEVEL 1	101	11 m²	10m²	COMPLIES
LEVEL 1	102	25 m²	12m²	COMPLIES
LEVEL 1	103	10 m²	10m²	COMPLIES
LEVEL 2	201	11 m²	10m²	COMPLIES
LEVEL 2	202	25 m²	12m²	COMPLIES

DRAWING NOTES

- IN-APARTMENT AREA STORAGE
- COMMON AREA STORAGE
- PRIVATE OPEN SPACE

ISS	DATE	PURPOSE OF ISSUE
C	28.03.2022	ISSUE FOR DA
B	26.08.2021	ISSUE FOR DA
A	18.08.2021	ISSUE FOR DA

Member Australian Institute of Architects

STATUS
DEVELOPMENT APPLICATION

Do not scale drawing. Verify all dimensions on site. Report any discrepancies in documentation to architect. This drawing is for the purpose of council approval and as such, is not suitable for construction.

GRAPHIC SCALE
1:500 @ A3 / 1:250 @ A1 — 0 5m 10m

CLIENT
Highbury Warung Pty Ltd

squillace
ARCHITECTURE / INTERIORS
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SYDNEY
1/80 Albion Street, Surry Hills, NSW 2010
Ph: +61 2 8354 1300
ABN: 24 132 554 753

NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-603
ISSUE C

JOB NO. HIG2009
SCALE **AS SHOWN**
DATE 28.03.2022

DRAWING TITLE
SEPP65 - STORAGE, PRIVATE & COMMUNAL OPEN SPACE

DRAWN BY FO
CHECKED BY SC

EXISTING VIEW FROM BLUES POINT ROAD

18

EXISTING DEVELOPMENT SHOWN AS DASHED

PROPOSED VIEW FROM BLUES POINT ROAD

C

AMENDMENTS TO ARCHITECTURAL DRAWINGS

1. BASEMENT ENTRY WIDTH REDUCED TO 3.6m & RELOCATED 2.7m FROM THE BOUNDARY TO RETAINED NATURAL ROCK FORMATION. NEW PHOTOMONTAGE & DETAILS ADDED (DA-701 & DA-800).
2. REPLACED 2 CAR SPACES WITH COMMUNAL OPEN SPACE SPACES ON LOWER GROUND LEVEL. VISITOR BICYCLE SPACE RELOCATED.
3. UNIT L01 AREA REDUCED TO ACCOMMODATE A LARGER SERVICE ROOM & REDUCED GARBAGE ROOM.
4. LOWER GROUND LEVEL LOWERED BY 300mm TO PROVIDE 2.7m CEILINGS TO HABITABLE ROOM OF UNIT L01.
5. UNIT G03 LEVEL LOWERED BY 300mm TO PROVIDE 2.7m CEILINGS TO HABITABLE AREAS.
6. UNIT 103 CONVERTED TO A 2-STORY UNIT (UNIT 203 REMOVED) TO ACHIEVE 2.7m CEILINGS ON LOWER LEVEL & 2.4m CEILINGS TO UPPER LEVEL. * REFER TO ADG, OBJECTIVE 4C-1.
7. BASEMENT STAIRS CONNECTED WITH LOWER GROUND LEVEL LOBBY.
8. NEW STAIRS FROM LOWER GROUND LEVEL TO GROUND FLOOR LEVEL ADDED.
9. DEEP SOIL AREA AND LANDSCAPE AREA INCREASED.
10. LINE OF EASTERN EXISTING BUILDING FACADE SHOWN AS DASHED ON PROPOSED FLOOR PLANS.
11. BALCONY SIZES REDUCED, STEEL POSTS REMOVED & GLASS BALUSTRADE AREA REDUCED. REDUCTION IN CONTRAST ON EXTERNAL COLOURS.
12. BUILDING ENTRY ON GROUND FLOOR RECONFIGURED. STAIRS & STAIRS LIFT REPLACED WITH A 1:20 RAMP & SITTING AREA.
13. BASEMENT CAR PARK EXHAUST ADDED. CAR PARK EXHAUST TO DISCHARGE AT LOWER ROOF LEVEL.
14. LIFT OVERRUN RAISED BY 675mm TO ACCOMMODATE STANDARD LIFT.
15. PORTION OF THE ROOF ABOVE UNIT 103 RAISED BY 360mm TO ACHIEVE 2.4m CEILINGS ON UPPER LEVEL.
16. SOLID BALCONY AWNINGS REPLACED BY OPERABLE LOUVRES.
17. FLAT SOLAR PANELS & DECORATIVE PEBBLES ADDED TO THE ROOF.
18. PHOTOMONTAGE & DRAWINGS AMENDED AS PER THE UPDATED DESIGN AND MATERIAL CHANGES.

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

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GRAPHIC SCALE

NOT TO SCALE

DRAWING NOTES

ISS	DATE	PURPOSE OF ISSUE
C	28.03.2022	ISSUE FOR DA
B	26.08.2021	ISSUE FOR DA
A	18.08.2021	ISSUE FOR DA

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NOMINATED ARCHITECT

Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT

Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-700

ISSUE C

JOB NO. HIG2009

SCALE **N.T.S.**

DATE 28.03.2022

DRAWING TITLE

PHOTOMONTAGE

DRAWN BY FO

CHECKED BY SC

EXISTING VIEW FROM HENRY LAWSON AVE

PROPOSED BASEMENT ENTRY FROM HENRY LAWSON AVE

C

AMENDMENTS TO ARCHITECTURAL DRAWINGS

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Member Australian Institute of Architects

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GRAPHIC SCALE

NOT TO SCALE

DRAWING NOTES

ISS	DATE	PURPOSE OF ISSUE
A	28.03.2022	ISSUE FOR DA

CLIENT

Highbury Warung Pty Ltd

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ABN: 24 132 554 753

NOMINATED ARCHITECT

Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT

Warung Street Apartments

1 Warung Street, McMahons Point NSW

1

DRAWING NO. DA-701 ISSUE A

JOB NO. HIG2009 | SCALE **N.T.S.** | DATE 28.03.2022

DRAWING TITLE

BASEMENT ENTRY PHOTOMONTAGE

DRAWN BY FO | CHECKED BY SC

C

AMENDMENTS TO ARCHITECTURAL DRAWINGS

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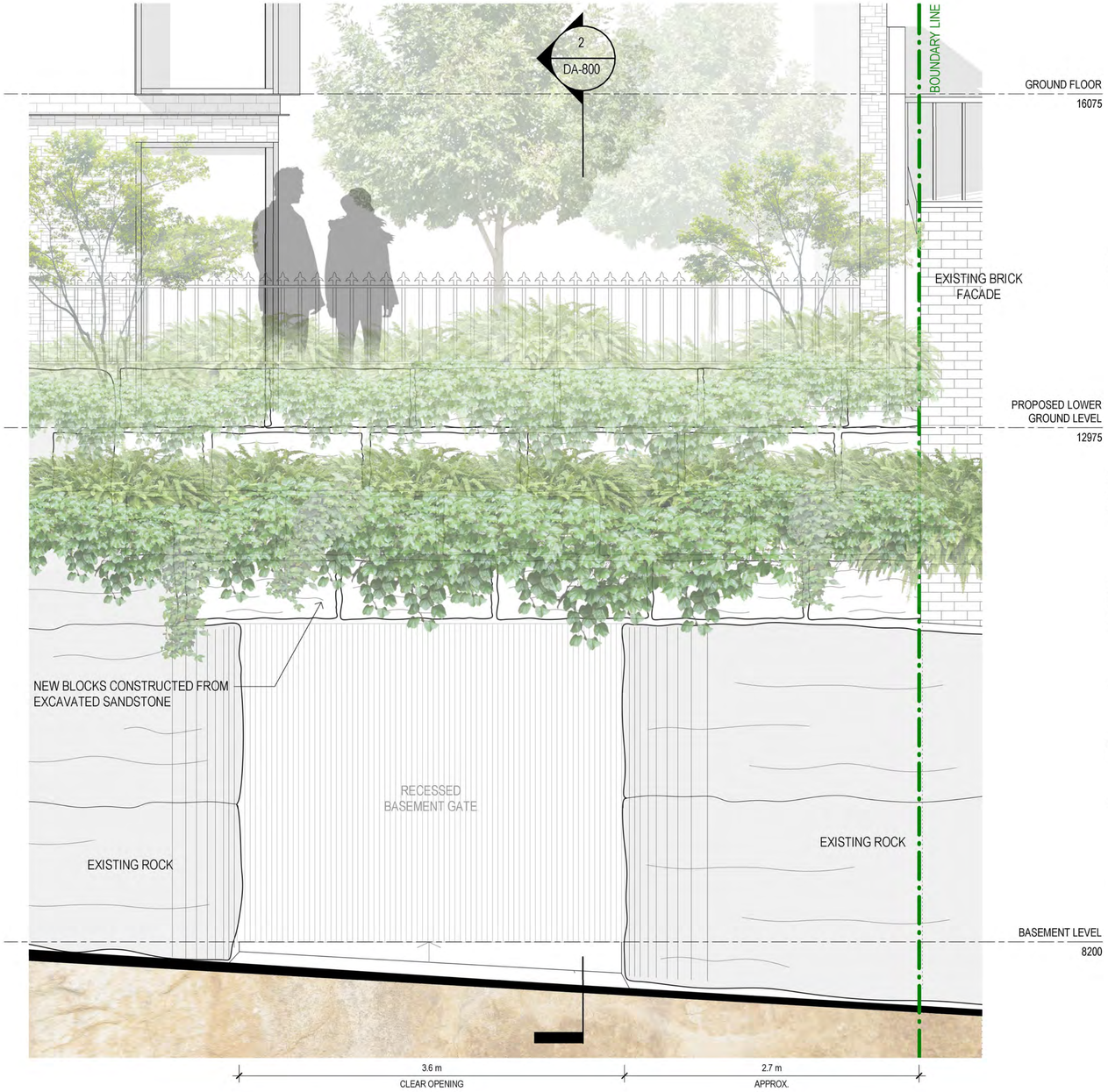
18. PHOTOMONTAGE & DRAWINGS AMENDED AS PER THE UPDATED DESIGN AND MATERIAL CHANGES.

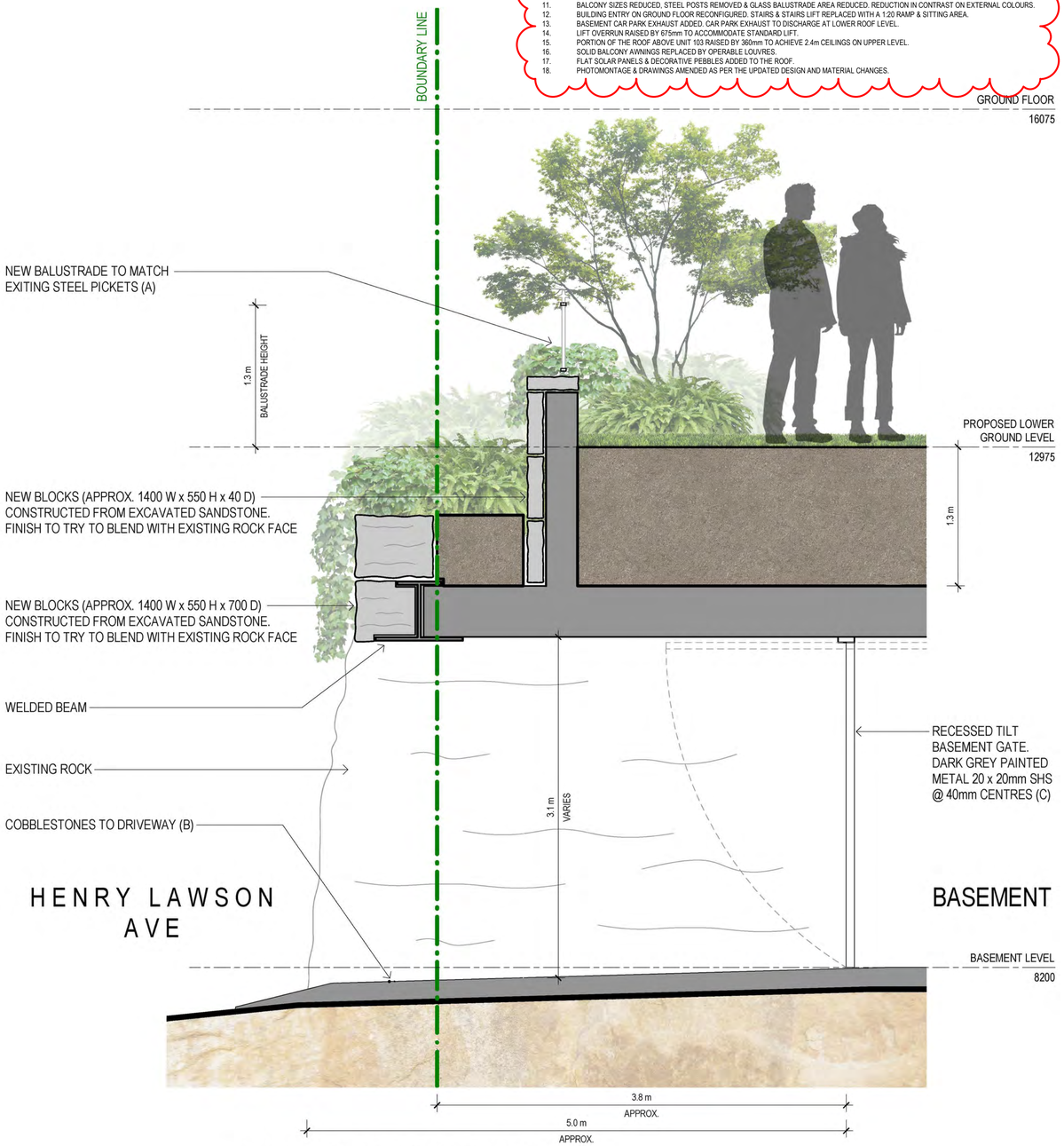
A. NEW BALUSTRADE TO MATCH EXISTING STEEL PICKETS

B. COBBLESTONE TILES TO BASEMENT DRIVEWAY

C. BASEMENT GATE. DARK GREY PAINTED METAL 20 x 20mm SHS @ 40mm CENTRES



1 **DA BASEMENT ENTRY ELEVATION**
1 : 25 @ A1



2 **DA BASEMENT ENTRY SECTION**
1 : 25 @ A1

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STATUS
DEVELOPMENT APPLICATION

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ISS	DATE	PURPOSE OF ISSUE
B	28.03.2022	ISSUE FOR DA
A	11.02.2022	ISSUE FOR DA

GRAPHIC SCALE
1:50 @ A3
1:25 @ A1
0 500 1000

DRAWING NOTES

PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

CLIENT
Highbury Warung Pty Ltd

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SYDNEY
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NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

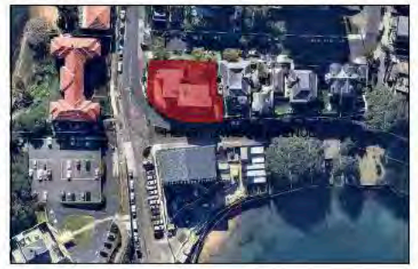
1

DRAWING NO. DA-800
ISSUE B
JOB NO. HIG2009
DRAWN BY FO
CHECKED BY SC
SCALE AS SHOWN
DATE 28.03.2022

DRAWING TITLE
BASEMENT ENTRY DRAWING

LOCATION PLAN

Scale: NTS



TREE SURVEY

Refer to Arboricultural Impact Assessment prepared by Advanced Treescape consulting (AQF5 Arboriculturist) on 27/08/2021

No.#	Species	Size (Ht x Sp)	Conclusions
1	*Jacaranda mimosifolia*	9m x 2- 4m	Retain
2	*Jacaranda mimosifolia*	Removed and replanted by council	
3	*Jacaranda mimosifolia*	8m x 1-4m	Retain
4	*Jacaranda mimosifolia*	8mx 2m radial	Retain
5	*Jacaranda mimosifolia*	12mx3-6m	Retain
6	*Plumeria (Frangipani)*	4m x 2m	Retain
7	*Plumeria (Frangipani)*	4m x 2m	Remove
8	*Lagerstroemia indica (Crepe Myrtle)*	6m x 2m	Remove
9	*Cotoneaster glaucophyllus (Grey-leaved Cotoneaster)*	5m x 2m	Remove
10	*Pittosporum undulatum(Native Daphne)*	6m x 3m	Remove
11	*Olea europaea Africana (African Olive)*	6m x 3m	Remove
12	Morus sp(Mulberry)	6m x 3m	Dead
13	Washingtonia robusta (Cotton Palm)		Remove

DRAWING SCHEDULE

SHEET #	DRAWING TITLE	REV.
/1	EXISTING TREES SITE PLAN	B
/2	LANDSCAPE PLAN	B
/3	SECTIONS	B
/4	DETAIL + SPECIFICATION	A

KEY

TOW	Top Of Wall
FFL Level	Finished Floor
RL	Reduced Level
+ 99.88	Existing level
	Trees proposed to be removed and replaced with new landscaping
	Existing trees proposed to be retained and protected
	Structural root zone to arborist's report
	Tree protection zone to arborist's report
	Landscaped area
	Nature strip to be re-instated where is necessary

LANDSCAPE PLAN NOTES

This plan should be read in conjunction with the architectural and hydraulics plans. Work specific to these plans should be prepared in accordance to these plans, including specification and details prior to the installation of landscaping, and should not be altered or compromised during landscape construction. **Retaining wall details to engineers design.**
Elements such as drainage swales may be incorporated in garden bed areas (using non-floatable mulch) without compromising the capacity or form.

This plan has been prepared for Development Application approval only, not for construction.

This plan has been prepared with reference to ***North Sydney*** Landscaping Guidelines & requirements. Planting proposed using commercially available plant species selected from local planting lists and the BASIX local plant list and from Sydney Waters "Plant Selector" web site one-drip rated native plants ***(acceptable for BASIX planting)***.

The Design & location of new letter boxes shall be in accordance with Australia Post's "Requirements for Delivery of Mail to Residential Premises" published Feb '97. All noxious weeds listed in Councils weed lists & located on the site shall be continually removed & suppressed. Reinstate all boundary fencing in poor condition with Council approved 1.8m fencing to rear of building line, rake to 1m forward of BL. Pollution, sediment & erosion control devices as specified shall be in place, and maintained for the duration of the construction period. Proposed excavation near existing established trees to be supervised by arborist.

North Sydney approved landscape plan's are required to be constructed as approved to obtain occupancy certificate. ***Permeable areas may be indicated to achieve site coverage restrictions & should be constructed as drawn on this plan.***

GENERAL NOTES:

ARCHITECT: SQUILLACE ARCHITECTS

LANDSCAPE ARCHITECT: Conzept Landscape Architects — Suite 101, 506 Miller Street, CAMMERAY NSW 2062 — Phone: 9922 6312 — Fax: 9299 4982 — Mob: 0413 851 351 — www.conzept.net.au — enquiries@conzept.net.au

COUNCIL: NORTH SYDNEY

CLIENT: HIGHBURY GROUP

REV	DATE	NOTATION/AMENDMENT
A	31.08.21	For DA
B	01.04.22	Revised Architectural for DA

PROJECT: PROPOSED ALTERATIONS AND ADDITIONS TO RESIDENTIAL FLAT BUILDING
1 WARUNG ST,
McMahons Point

Bar Scale 0 2 4 6 8 10m

TITLE: TITLE PAGE

STATUS: DEVELOPMENT APPLICATION

SCALE: 1:100@A1 — DATE: APRIL 2022

DWG No: LPDA 22 - 79 — SHEET: 1 — ISSUE: A — DRAWN: EW — CHECKED: RF

LEGEND & SCHEDULE

Species selected from North Sydney Council's Live Local Plant Local (A guide to native plants in North Sydney)

TALL TREES

Botanical Name: *Banksia integrifolia**
Common Name: Coastal Banksia (Native)
Pot size: 75Lt
Mature H x S: 6-16m x 4-5m
Qty Required: 1

MEDIUM & SUB CANOPY TREES

Botanical Name: *Backhousia myrtifolia*
Common Name: Grey myrtle (Native)
Pot size: 45 Lt
Mature H x S: 5-7m x 3-6m
Qty Required: 2

Botanical Name: Callicoma serratifolia*
Common Name: Black Wattle (Native)
Pot size: 75Lt
Mature H x S: 4-5m x 3-4m
Qty Required: tbc

Botanical Name: *Ceratopetalum gummiferum**
Common Name: NSW Christmas Bush (Native)
Pot size: 75 Lt
Mature H x S: 5-7m x 2-4m
Qty Required: 1

Botanical Name: *Elaeocarpus eumundii*
Common Name: Eumundii Quandong (Native)
Pot size: 75Lt
Mature H x S: 6-9m x 3-5m
Qty Required: 1

FEATURE TREE TO COURTYARDS

Botanical Name: *Lagerstroemia 'Sioux'*
Common Name: Crepe Myrtle (Exotic)
Pot size: 100Lt
Mature H x S: 5m x 4m
Qty Required: 3

Botanical Name: *Plumeria acutifolia*
Common Name: Frangipani (Exotic)
Pot size: 75Lt
Mature H x S: 3-5m x 4m
Qty Required: 1

SHRUBS

Botanical Name: *Banksia spinulosa 'Birthday Candles'*
Common Name: Banksia Birthday Candles (Native)
Pot size: 300mm
Mature H x S: 0.4m x 0.9m
Qty Required: 12

Botanical Name: *Acmena smithii* cvs. 'Minor'*
Common Name: Minor Lilly Pilly (Native)
Pot size: 300mm
Mature H x S: 3-4m x 2m
Qty Required: 16

Botanical Name: *Metrosideros 'Fiji Fire'*
Common Name: NZ Christmas Bush (Exotic)
Pot size: 200mm
Mature H x S: 2m x 1.8m
Qty Required: 12

Botanical Name: *Rhaphiolepis indica 'Oriental Pearl'*
Common Name: Indian Hawthorn (Exotic)
Pot size: 200mm
Mature H x S: 1.0m x 1.0m
Qty Required: 50

Botanical Name: *Syzygium 'Cascade'*
Common Name: Cascade Lilly Pilly (Native)
Pot size: 200mm
Mature H x S: 2.5m x 1.8m
Qty Required: 15

Botanical Name: *Westringia fruticosa* cvs 'Aussie Box'*
Common Name: Westringia Aussie Box (Native)
Pot size: 200mm
Mature H x S: 0.9m x 0.9m
Qty Required: 22

GRASSES + GROUNDCOVERS

Botanical Name: *Dianella caerulea* cvs 'Cassa Blue'*
Common Name: Cassa Blue Flax Lily (Native)
Pot size: 150mm
Mature H x S: 0.5m x 0.4m
Qty Required: 85

Botanical Name: *Liriope 'Isabella'*
Common Name: Lily turf
Pot size: 150mm
Mature H x S: 0.5mm x 0.5m
Qty Required: 6/m2 **(Area as noted)**

Native Fern Mix
Pot size: 150mm
- *Adiantum aethiopicum**
- *Doodia aspera**
- *Calochlaena dubia**

Qty Required: 5/m2 **(Area as noted)**

Native Grass Groundcover Mix:
Lomandra longifolia cvs 'Tanika'*
Lomandra fluviatilis 'Shara'
Dianella caerulea "Clarity Blue"*
Libertia paniculata
Pot size: Tube
Mature H x S: < .8m
Qty Required: 6/m2 **(Area as noted)**

Botanical Name: *Viola hederacea**
Common Name: Sweet Violet (Native)
Pot size: 140mm
Mature H x S: 0.2m x spreading
Qty Required: 9/m2 **(Area as noted)**

PALMS & TREE FERNS

Botanical Name: *Cyathea australis**
Common Name: Rough Tree Fern (Native)
Pot size: Min 1m trunk
Mature H x S: 2.5-5m x 3m
Qty Required: 8

Botanical Name: *Livistona australis**
Common Name: Cabbage Palm (Native)
Pot size: Min 1m trunk
Mature H x S: 20m x 3-6m
Qty Required: 8

TRAILING & SPILLOVER GROUNDCOVERS

Botanical Name: *Pandorea pandorana**
Common Name: Wonga Wonga Vine (Native)
Pot size: Tube stock
Mature H x S: 0.3m x climbing
Qty Required: 7/m2 **(Area as noted)**

Botanical Name: *Carpobrotus 'Aussie Rambler'*
Common Name: Aussie Rambler Pigface (Native)
Pot size: Tube stock
Mature H x S: 0.25m x spreading
Qty Required: 7/m2 **(Area as noted)**

Botanical Name: *Cissus antarctica*
Common Name: Kangaroo Vine (Native)
Pot size: Tube stock
Mature H x S: 0.3m x spreading
Qty Required: 4/m2 **(Area as noted)**

ACCENT PLANTS

Botanical Name: *Alpinia caerulea 'Red Back'*
Common Name: *Red Back Native Ginger (Exotic)*
Pot size: 300mm
Mature H x S: 1.5m x 1-1.5m
Qty Required: 7

Botanical Name: *Doryanthes excelsa*
Common Name: Gymea Lily (Native)
Pot size: 300mm
Mature H x S: 1-3m x 1m
Qty Required: 12

Botanical Name: *Plectranthus argentatus*
Common Name: Silver spurflower (Native)
Pot size: 200mm
Mature H x S: 0.5-1m x 1-1.5m
Qty Required: 7

Botanical Name: *Phormium tenax 'Purpureum'*
Common Name: New Zealand Flax (Exotic)
Pot size: 300mm
Mature H x S: 0.9m x 0.9m
Qty Required: 15

NOTES:

1. ALL FINAL PLANT QUANTITIES INDICATED ON PLANS SHALL BE CHECKED AND VERIFIED BY SUCCESSFUL LANDSCAPE CONTRACTOR.
2. ANY PLANT SUBSTITUTES REQUIRED DUE TO UNAVAILABILITY SHALL BE RECOMMENDED BY THE LANDSCAPE CONTRACTOR TO BEST MATCH SUBSTITUTED PLANTS AND APPROVED PRIOR TO PURCHASING BY THE LANDSCAPE ARCHITECT.
3. WORKS CERTIFIED FOR FINAL OCCUPANCY CERTIFICATE ARE TO MATCH APPROVED LANDSCAPE PLANS.
4. LANDSCAPE CONTRACTOR SHALL LOCATE AND AVOID SITE STORM WATER & DRAINAGE SERVICES. LOCATE TREES A MINIMUM 1.25M FROM PITS
5. ALL PLANTING AROUND EXISTING TREES SHALL BE ADJUSTED TO AVOID DAMAGE AND CLASHING WITH SURFACE ROOTS
6. THE NATURE STRIP (STREET FRONTAGE) FOR THE SITE IS PUBLIC LAND, AND ONLY AUTHORIZED WORKS MAY OCCUR HERE. EXISTING CONDITIONS SUCH AS STREET TREES, COUNCIL PLANTING ETC SHALL BE RETAINED AND PROTECTED DURING CONSTRUCTION, UNLESS SPECIFIC APPROVAL HAS BEEN GRANTED FOR NEW WORK IN THIS AREA.

SAMPLE IMAGES

Indicative image only, and final planting species may vary, as determined by Council Approval

Banksia integrifolia | *Callicoma serratifolia* | *Elaeocarpus eumundii* | *Acmena 'Minor'* | *Dianella caerulea* | *Carpobrotus 'Aussie Rambler'* | *Cissus antarctica* | *Pandorea pandorana*

GENERAL NOTE:

DIAL 1100 BEFORE YOU DIG

ARCHITECT: SQUILLACE ARCHITECTS

LANDSCAPE ARCHITECT: Conzept Landscape Architects
Suit 101, 506 Miller Street, CAMMERAY NSW 2062
Phone: 9922 5312
Fax: 8209 4982
Mob: 0413 861 351
www.conzept.net.au
enquiries@conzept.net.au

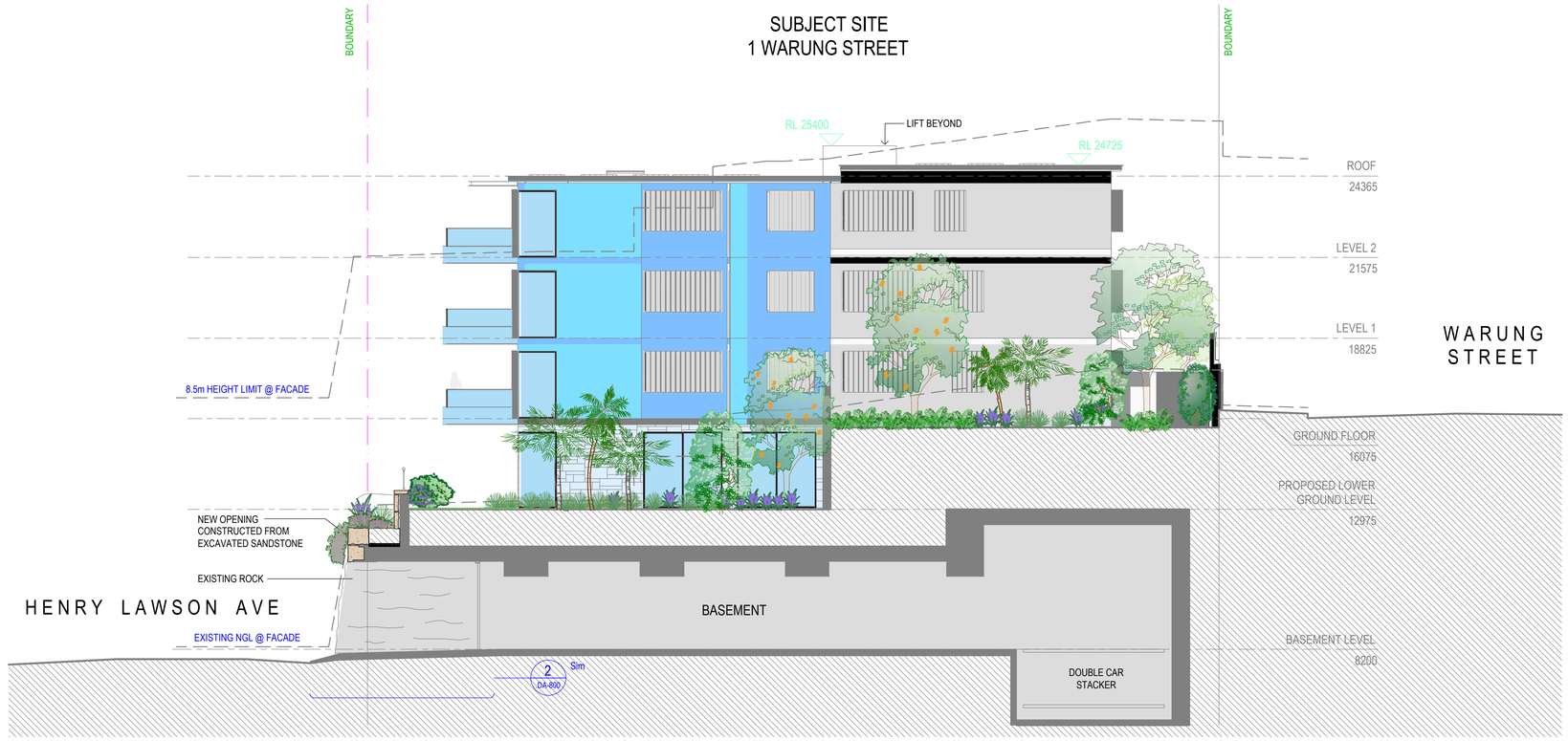
COUNCIL: NORTH SYDNEY
CLIENT: HIGHBURY GROUP

REV	DATE	NOTATION/AMENDMENT
A	31.08.21	For DA
B	01.04.22	Revised Architectural for DA

PROJECT: PROPOSED ALTERATIONS AND ADDITIONS TO RESIDENTIAL FLAT BUILDING
1 WARUNG ST, McMahons Point

Bar Scale 0 2 4 6 8 10m

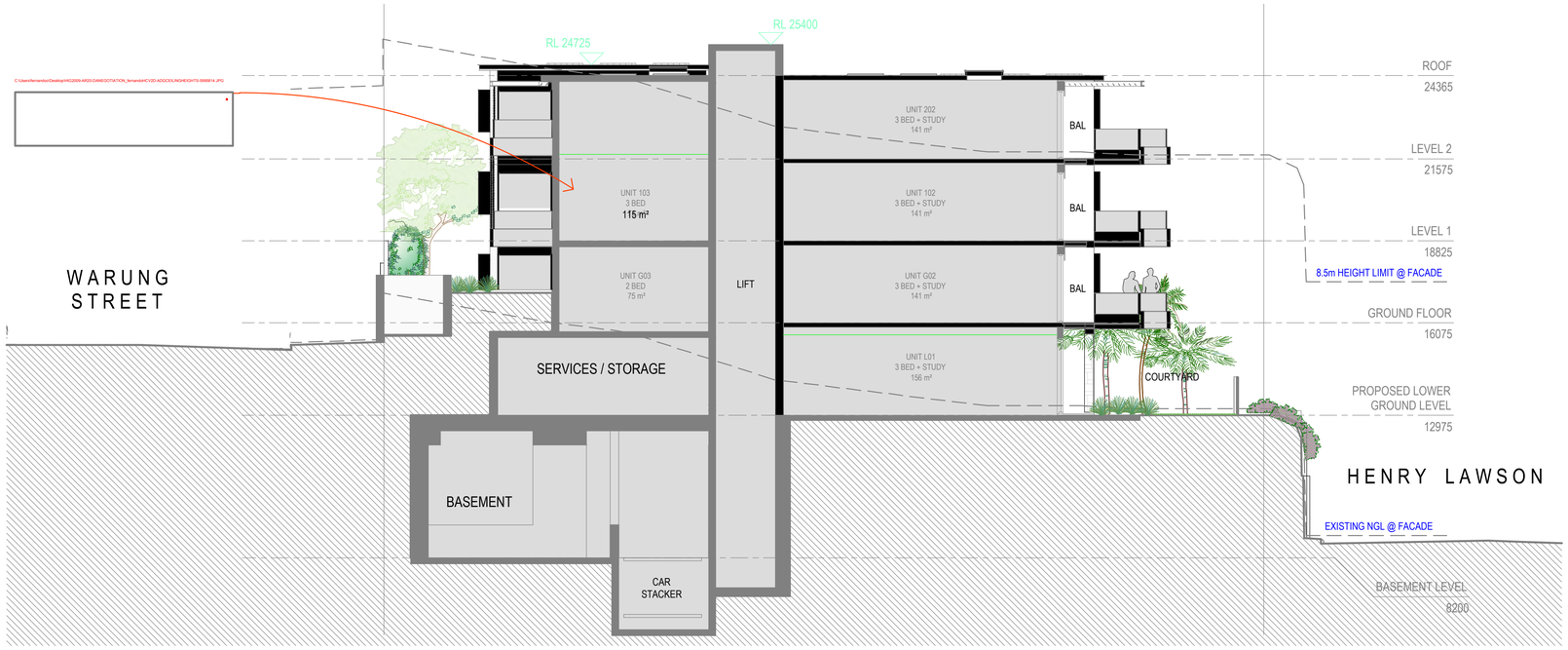
TITLE: LANDSCAPE PLAN
STATUS: DEVELOPMENT APPLICATION
SCALE: 1:100@A1
DATE: MARCH 2022
DWG.No: LPDA 22 - 79
SHEET: 2
ISSUE: A
DRAWN: EW
CHECKED: RF



SECTION 1

SCALE: 1:100

(REFER TO ARCHITECT'S SECTION DA301)



SECTION 2

SCALE: 1:100

(REFER TO ARCHITECT'S SECTION DA301)

GENERAL NOTE:

Figured dimensions take preference to scale readings. Verify all dimensions on site. PDF'd plans may vary slightly in Scale for that indicated on plans. Report any discrepancies to the Landscape Architect before proceeding with the work.

Australian Institute of Landscape Architects
AILA Associate

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COUNCIL
NORTH SYDNEY

CLIENT
HIGHBURY GROUP

REV	DATE	NOTATION/AMENDMENT
A	31.08.21	For DA
B	01.04.22	Revised Architectural for DA

PROJECT:
PROPOSED ALTERATIONS AND ADDITIONS TO RESIDENTIAL FLAT BUILDING
1 WARUNG ST,
McMahons Point

TITLE:
SECTIONS

STATUS:
DEVELOPMENT APPLICATION

SCALE:
1:100@A1

DATE:
MARCH 2022

DWG.No:
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LANDSCAPE WORK SPECIFICATION

PRELIMINARIES

1.01 GENERAL

The following general conditions should be considered prior to the commencement of landscape works:

- The landscape plans should be read in conjunction with the architectural plans, project arborist's assessment, hydraulic plans, service plans and survey prepared for the proposed development.
- All services including existing drainage should be accurately located prior to the commencement of landscape installation. Any proposed tree planting which falls close to services will be relocated on site under the instruction of the landscape architect.
- Installation of conduit for required irrigation, electrical and other services shall be completed prior to the commencement of hardscape works and hardstand pours.
- All outdoor lighting specified by architect or client to be installed by qualified electrician
- Anomalies that occur in these plans should be brought to our immediate attention.
- Where an Australian Standard applies for any landscape material testing or installation technique, that standard shall be followed.

1.02 PROTECTION OF ADJACENT FINISHES

The Contractor shall take all precautions to prevent damage to all or any adjacent finishes by providing adequate protection to these areas / surfaces prior to the commencement of the Works

1.03 PROTECTION OF EXISTING TREES

Existing trees identified to be retained shall be done in accordance with **(AS)4970-Protection of trees on development sites** as well as in accordance with the tree protection measures prepared by project arborist.

Where general works are occurring around such trees, or pruning is required, a qualified Arborist shall be engaged to oversee such works and manage tree health.
Existing trees designated on the drawing for retention shall be protected at all times during the construction period. Any soil within the drip-line of existing trees shall be excavated and removed by hand only. No stockpiling shall occur within the root zone of existing trees to be retained.

Any roots larger in diameter than 50mm shall only be severed under instruction by a qualified arborist. Roots smaller than 50mm diameter shall be cut cleanly with a saw.

Temporary fencing shall be installed around the base of all trees to be retained prior to the commencement of landscape works. Where possible this fencing will be located around the drip line of these trees, or a minimum of 3m from the trunk. The fencing shall be maintained for the full construction period.

1.04 EROSION & POLLUTION CONTROL

The Contractor shall take all proper precautions to prevent the erosion of soil from the subject site. The contractor shall install erosion & sediment control barriers and as required by council, and maintain these barriers throughout the construction period. Note that the sediment control measures adopted should reflect the soil type and erosion characteristics of the site.

Erosion & pollution control measures shall incorporate the following:
- Construction of a sediment trap at the vehicle access point to the subject site.
- Sediment fencing using a geotextile filter fabric in the location indicated on the erosion control plan or as instructed on site by the landscape architect.
- Earth banks to prevent scour of stockpiles
- Sandbag kerb sediment traps
- Straw bale & geotextile sediment filter.
- Exposed banks shall be pegged with an approved Jute matting in preparation for mass planting

Refer to "Sitewise Reference Kit" as prepared by DLWC & WSROC (1997) for construction techniques

SOIL WORKS

2.01 MATERIALS

Specified Soil Conditioner (Generally to improve site soil)
The specified soil conditioner for site top-soil improvement shall be an organic mix, equal to "Botany Humus", as supplied by ANL. Note that for sites where soil testing indicates toxins or extremes in pH, or soils that are extremely poor, allow to excavate and supply 300mm of imported soil mix.

New gardens & proposed Planting
New garden and planting areas shall consist of a 50/50 mix of clean site soil (refer d) below) and imported "Organic Garden Mix" as supplied by ANL or approved equal. All mixes are to comply with AS 4419 Soils for landscaping & garden use, & AS 4454 Composts, Soil conditioners & mulches.

Specified Soil Mix - Turf
The specified soil mix for all turf areas shall be a min 75mm layer of imported soil mix consisting of 80% washed river sand (reasonably coarse), and 20% composted organic matter equivalent to mushroom compost or soil conditioner, or other approved lawn top dress.

Site Topsoil
Site topsoil is to be clean and free of unwanted matter such as gravel, clay lumps, grass, weeds, tree roots, sticks, rubbish and plastics, and any deleterious materials and materials toxic to plants. The topsoil must have a pH of between 5.5 and 7. Use 100% imported soil mix when site when site topsoil runs out.

2.02 INSTALLATION (TO GARDEN OUTSIDE OF TREE PROTECTION ZONES OF TREES RECOMMENDED TO BY RETAINED)
Note: No level changes (Cut or Fill), soil ripping within the Tree Protection Zones of trees to be retained
a) Testing
All testing is to be conducted in accordance with AS 1289 Methods for testing soils for engineering purposes. Site soil shall be given a pH test prior to modifying to ensure conditions are appropriate for planting as stated above. Tests shall be taken in several areas where planting is proposed, and the pH shall be adjusted accordingly with sulphur or lime to suit.

Note that a soil test conducted by the "Sydney Soil Lab" or approved equal shall be prepared for all commercial, industrial and multi-unit residential sites. The successful landscape contractor shall implement the recommendations of this test.

b) Set Out of Individual Trees & Mass Planting Areas
All individual tree planting positions and areas designated for mass planting shall be set out with stakes or another form of marking, ready for inspection and approval. Locate all services.

c) Establishing Subgrade Levels outside of tree protection zones of trees to be retained
Subgrade levels are defined as the finished base levels prior to the placement of the specified material (i.e. soil conditioner). The following subgrade levels shall apply:
- Mass Planting Beds - 300mm below existing levels with specified imported soil mix.
- Turf areas - 100mm below finished surface level.

Note that all subgrades shall consist of a relatively free draining natural material, consisting of site topsoil placed previously by the Civil Contractor. No builders waste material shall be acceptable.

d) Subgrade Cultivation
Cultivate all subgrades to a minimum depth of 100mm in all planting beds and all turf areas, ensuring a thorough breakup of the subgrade into a reasonably coarse tilth. Grade subgrades to provide falls to surface and subsurface drains, prior to the placement of the final specified soil mix.

e) Drainage Works
Install surface and subsurface drainage where required and as detailed on the drawing. Drain subsurface drains to outlets provided, with a minimum fall of 1:100 to outlets and / or service pits.

f) Placement and Preparation of Specified Soil Conditioner & Mixes.
- Trees in turf & beds - Holes shall be twice as wide as root ball and minimum 100mm deeper - backfill hole with 50/50 mix of clean site soil and imported "Organic Garden Mix" as supplied by ANL or approved equal.
- Mass Planting Beds - Install specified soil conditioner to a compacted depth of 100mm

Place the specified soil conditioner to the required compacted depth and use a rotary hoe to thoroughly mix the conditioner into the top 300mm of garden bed soil. Ensure thorough mixing and the preparation of a reasonably fine tilth and good growing medium in preparation for planting.
- Turf Areas - Install specified soil mix to a minimum compacted depth of 75mm.

Place the specified soil mix to the required compacted depth and grade to required finished soil levels, in preparation for planting and turfing.

PLANTING

3.01 MATERIALS

a) Quality and Size of Plant Material
All trees supplied above a 25L container size must be grown and planted in accordance with **AS 2303:2018 'TREE STOCK FOR LANDSCAPE USE'** Certification that trees have been grown to AS 2303:2018 is to be provided upon request of Council's Tree Management Officer.
Above - Ground Assessment:
The following plant quality assessment criteria should be followed:
Plant true to type, Good vigour and health, free from pest & disease, free from injury, self-supporting, good stem taper, has been pruned correctly, is apically dominant, has even crown symmetry, free from included bark & stem junctions, even trunk position in pot, good stem structure
Below - Ground Assessment:
Good root division & direction, rootball occupancy, rootball depth, height of crown, non-suckering For further explanation and description of these assessment criteria, refer to Ross Clark's book.
All Plant material shall be to the type and size specified. No substitutions of plant material shall be permitted without written prior approval by the Landscape Architect. No plant shall be accepted which does not conform to the standards listed above.

b) Stakes and Ties
Provide min. 3 No. Stakes and ties to all plants identified as trees in the plant schedule. Stakes shall be sound, unpainted, straight hardwood, free of knots and pointed at one end. They shall be 1800mm x 50mm x 50mm Hardwood timber, or as per council specification where is available. Ties shall be 50mm wide hessian webbing material.

c) Fertilisers
Fertilisers shall be approved slow release fertilisers suitable for the proposed planting types. Note that for native plants, specifically Proteaceae family plants including Grevillea species, low phosphorus fertilizers shall be used.

d) Mulch
Mulch for general planter bed shall be an approved equal to "FOREST FINE" as supplied by ANL. Mulch shall be completely free from any soil, weeds, rubbish or other debris. Mulch for bio-retention/rain garden area where is required shall be non-floatable materials that could include crushed rock, gravel, coarse river sand, scoria or river pebbles. 4-7mm screenings or similar.

e) Turf
Turf for project site shall be soft leaf Buffalo or Zoysia macrantha 'Nana ' or equivalent unless stated otherwise), free from any weeds and other grasses, and be in a healthy growing condition. Re-turfing to nature strip where is required shall use species that match existing on street.

3.02 INSTALLATION

a) Setting Out
All planting set out shall be in strict accordance with the drawings, or as directed. Note that proposed tree planting located near services should be adjusted at this stage. Notify Landscape Architect for inspection for approval prior to planting.

b) Planting
All plant material shall be planted as soon after delivery as possible. Planting holes for trees shall be excavated as detailed and specified. Plant containers shall be removed and discarded, and the outer roots gently teased from the soil mass. Immediately set plant in hole and backfill with specified soil mix, incorporating the approved quantity of fertiliser for each plant type. Ensure that plants are set plumb vertically and root balls set to the consolidated finished grades detailed on the drawings. Compact the backfilled soil and saturate by hand watering to expel any remaining air pockets immediately after planting.

c) Staking and Tying
Staking and tying shall be in strict accordance with the drawings and shall occur immediately following plant placement and soil backfilling. All plants identified as "Trees" on the planting schedule shall be staked with a min. 3 stakes.

d) Mulching
Mulch for general planter bed shall be an approved equal to "Forest Fine" as supplied by ANL. Mulch shall be completely free from any soil, weeds, rubbish or other debris. Mulch for bio-retention/rain garden area where is required shall be non-floatable materials that could include crushed rock, gravel, scoria or river pebbles. 4-7mm screenings or similar.

e) Turfing
Moisten soil prior to the turf being laid. Turf shall be neatly butt jointed and true to grade to finish flush with adjacent surfaces. Incorporate a lawn fertilizer and thoroughly water in. Keep turf moist until roots have taken and sods/rolls cannot be lifted. Keep all traffic off turf until this has occurred. Allow for top dressing of all turf areas. All turf shall be rolled immediately following installation.

f) Metal edging
Where is required, the Contractor shall install metal edging as detailed on the drawings, to all mass planting beds adjoining turf or gravel mulched areas, and where required. The resultant edge shall be true to line and flush with adjacent surfaces. **However, no edging shall be used within the Structural Root Zone (SRZ) of trees to be retained.**

g) Earth retaining structure
All walls which form part of drainage works must be built as detailed by the hydraulic engineer. All walls exceeding 800mm shall be of **not** timber construction materials, construction details to be provided by a qualified engineer. Install wall to suit site levels and to manufacture's specification.

HARDSCAPE WORKS

4.01 GENERAL

The Contractor shall undertake the installation of all hardscape works as detailed on the drawing, or where not detailed, by manufacturers specification.
- Paving - refer to typical details provided, and applicable Australian Standards. *Permeable paving may be used as a suitable means of satisfying Council permeable surface requirements, while providing a useable, hardwearing, practical surface.* In most instances, the client shall nominate the appropriate paving material to be used.

Australian Standards shall be adhered to in relation to all concrete, masonry & metal work. Some details are typical and may vary on site. All hardscape works shall be setout as per the drawings, and inspected and approved by the Landscape Architect prior to installation. All workmanship shall be of the highest standard. Any queries or problems that arise from hardscape variations should be bought to the attention of the Landscape Architect.
Your attention is directed to any obligations or responsibilities under the Dividing Fences Act, 1991 in respect of adjoining property owner/s which may arise from this application. Any enquiries in this regard may be made to the Crown Lands Division on (02) 8836 5332.

IRRIGATION WORKS

5.01 GENERAL (PERFORMANCE SPECIFICATION)

New irrigation systems to planting areas shall be a Commercial Grade Irrigation System conforming to all relevant Australian standards, including AS 3500 & the Electrical Safety Act 2002, Workplace Health & Safety Act 2011, & the latest Sydney Water Code

An automated drip-irrigation system is to be installed to all gardens, planters and lawn areas in accordance with the approved Irrigation Design.
This system shall be designed and installed by a qualified and licensed irrigation specialist, to the highest industry standards and to maximise the efficient usage of water.
The Installer is required to obtain all approvals necessary for the completion of works in accordance with the Laws of Australia, Laws of the State of NSW, North Sydney Council By-Laws and Ordinances.

Drawings:
- The Landscape Contractor nominated Licensed Irrigation Specialist shall provide irrigation drawings for approval upon engagement.

Design Requirements:
- The irrigation system shall be installed prior to all planting works. It shall incorporate a commercially available irrigation system, with sub-surface dripper lines to irrigate all gardens, planters and lawn areas.
- It shall incorporate a suitable back flow prevention device for the scale of works, an in-line filter, check valves, and suitable high and low density poly hose fittings and PVC piping to achieve flow rates suitable for specified planting.
- The irrigation application rate shall not exceed the infiltration rate of the soil or creates run-off.
- The landscape contractor shall check the existing pressure available from the ring mains and size irrigation piping to suit. Supply shall be from local hose cock where available.
- All piping and fittings shall be buried 50mm below the finished soil levels in garden and lawn areas, and secured in position at 500mm centres with galv wire pins.
- Size of pipes shall be selected to ensure the working pressure at the end of the line does not decrease by more than 5%.

Services Co-ordination:
- Co-ordination required by Landscape Contractor or Project Manager to provide required conduit, pipe work and penetration through slabs and planter walls for water and power provisions.
- The Landscape Contractor shall be engaged with the Irrigation Specialist to co-ordinate with the Project Manager to identify the preferred service and conduit locations.
- Project Manager and Landscape Contractor to establish area suitable for irrigation control system with required area, power provision and water supply.

Testing & Defects:
Upon completion of installation, the system shall be tested, including:
- Main Line Pressure Test: The main line is pressurised to test for leaks. All valves are shut and the pressure is taken over a determined length of time.
- Dripper Pressure Test: Measurement at flushing valves are taken and the pressure gauged to make sure it conforms to the manufacturer recommendations. The inlet pressure is then tested under the same conditions to check it does not exceed 300Kpa.
- All components are to be satisfactorily functional and operational prior to approval. Should any defect develop, or the capacity or efficiency of the system decline during the agreed maintenance system, then these faults shall be immediately rectified.

Warranty :
- A full 12 month warranty shall be included to cover labour and all parts.

Further Documentation:
- On request, a detailed irrigation performance specification report can be issued.

CONSOLIDATION AND MAINTENANCE

6.01 GENERAL

The consolidation and maintenance period shall be either :
- 6 months beginning from the approved completion of the specified construction work (Practical Completion)
- as agreed to in the landscape contractors contractual obligations.
- or as specified by Council in the Determination.

A qualified landscape maintenance contractor shall undertake the required landscape maintenance works. Consolidation and maintenance shall mean the care and maintenance of Contracted works by accepted landscaping or horticultural practices, ensuring that all plants are in optimum growing conditions and appearance at all times, as well as rectifying any defects that become apparent in the contracted works.

This shall include, but not be limited to, the following items where and as required:
- Watering all planting and lawn areas / irrigation maintenance.
- Clearing litter and other debris from landscaped areas.
- Removing weeds, pruning and general plant maintenance.
- Replacement of damaged, stolen or unhealthy plants.
- Make good areas of soil subsidence or erosion.
- Topping up of mulched areas.
- Spray / treatment for Insect and disease control.
- Fertilizing with approved fertilizers at correct rates.
- Mowing lawns & trimming edges each 14 days in summer or 18 days in winter
- Adjusting ties to Stakes
- Maintenance of all paving, retaining and hardscape elements.

On the completion of the maintenance period, the landscape works shall be inspected and at the satisfaction of the superintendent or landscape architect, the responsibility will be signed over to the client.

1. CHAIN WIRE MESH PANELS WITH SHADE CLOTH (IF REQUIRED) ATTACHED, HELD IN PLACE WITH CONCRETE FEET

2. ALTERNATIVE PLYWOOD OR WOODEN PALING FENCE PANELS. THE FENCING MATERIAL ALSO PREVENTS BUILDING MATERIALS OR SOIL ENTERING THE TPZ

3. MULCH INSTALLATION ACROSS SURFACE OF TPZ (AT THE DISCRETION OF THE PROJECT ARBORIST). NO EXCAVATION, CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT OR STORAGE OF MATERIALS OF ANY KIND IS PERMITTED WITHIN THE TPZ

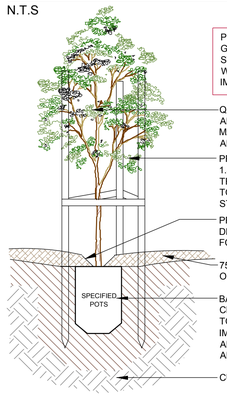
4. BRACING IS PERMISSIBLE WITHIN THE TPZ. INSTALLATION OF SUPPORTS TO AVOID DAMAGING ROOTS

5. PRUNING & MAINTENANCE TO TREE REFER TO AS 4373-2007 PRUNING OF AMENITY TREES

PROVIDE FENCING AS DETAILED TO ALL TREES PROPOSED TO BE RETAINED ON THE SUBJECT SITE. FENCING TO BE LOCATED TO THE DRIP LINE OF TREES OR AS INDICATED ON PLANS OR DIRECTED ON-SITE BY ARBORIST. NO STOCKPILING WITHIN FENCE PERIMETERS.

TREE PROTECTION ZONE

N.T.S



PLANT STOCK SHALL BE SOURCED FROM GROWERS CONFORMING TO AS 2303:2018 'TREE STOCK FOR LANDSCAPE USE' THOROUGHLY WATER IN ALL NEWLY PLANTED STOCK IMMEDIATELY AFTER PLANTING.

QUALITY OF PLANT TO BE APPROVED BY PROJECT MANAGER OR LANDSCAPE ARCHITECT

PROVIDE 3 HARDWOOD STAKES 1.8m X 50mm X 50mm FOR ALL TREES. USE 50mm HESSIAN TIES TO SECURE LOWER TRUNK TO STAKES

PROVIDE SLIGHT DEPRESSION TO ALLOW FOR EFFECTIVE WATERING

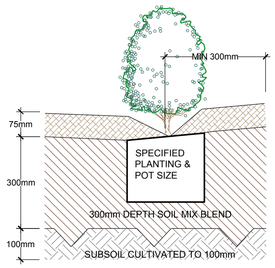
75mm 'FOREST FINE' MULCH OR EQUAL

BACKFILL HOLE WITH CLEAN, TESTED SITE TOP-SOIL BLEND OR IMPORTED SOIL MIX APPROVED BY LANDSCAPE ARCHITECT

CULTIVATE/ RIP SUBGRADE

TREE PLANTING DETAIL

SCALE: 1:10
(ONLY APPLICABLE FOR PLANTING AREA OUTSIDE TREE PROTECTION ZONE OF TREES TO BE RETAINED. NO CHANGES ARE TO OCCUR TO EXISTING LEVELS, INCLUDING RIPPING/CULTIVATING OF THE SOIL WITHIN THE TPZ OF TREES TO BE RETAINED ON SITE)



TYPICAL SETBACK FROM LAWN/GARDEN EDGE

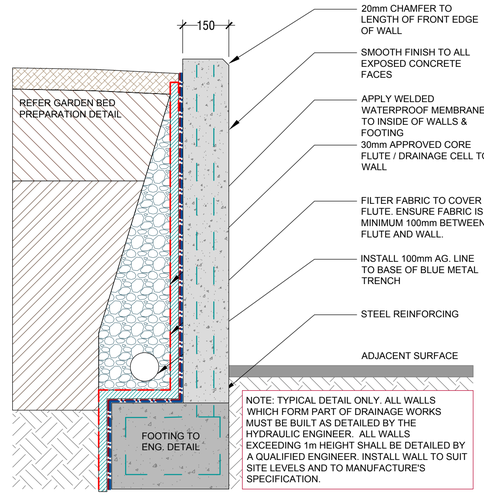
75mm DEPTH "FOREST FINE" MULCH OR EQUIVALENT

SOIL MIX:

50% OF STOCKPILED SITE TOPSOIL FREE FROM ALL BUILDER'S RUBBISH AND DELETERIOUS MATERIALS. TOPSOIL TO BE AMELIORATED, MIXED WITH MINIMUM 50% IMPORTED GARDEN MIX OR SOIL CONDITIONER/ COMPOSTED ORGANIC MATTER - SEE SPEC.
USE 100% IMPORTED SOIL MIX WHEN SITE TOPSOIL RUNS OUT.

TYPICAL GARDEN PREPARATION DETAIL

SCALE 1:10
(ONLY APPLICABLE FOR PLANTING AREA OUTSIDE TREE PROTECTION ZONE OF TREES TO BE RETAINED. NO CHANGES ARE TO OCCUR TO EXISTING LEVELS, INCLUDING RIPPING/CULTIVATING OF THE SOIL WITHIN THE TPZ OF TREES TO BE RETAINED ON SITE)



20mm CHAMFER TO LENGTH OF FRONT EDGE OF WALL

SMOOTH FINISH TO ALL EXPOSED CONCRETE FACES

APPLY WELDED WATERPROOF MEMBRANE TO INSIDE OF WALLS & FOOTING

30mm APPROVED CORE FLUTE / DRAINAGE CELL TO WALL

FILTER FABRIC TO COVER CORE FLUTE. ENSURE FABRIC IS TUCKED MINIMUM 100mm BETWEEN CORE FLUTE AND WALL.

INSTALL 100mm AG. LINE TO BASE OF BLUE METAL TRENCH

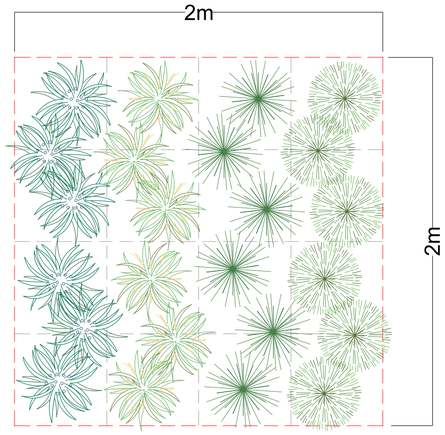
STEEL REINFORCING

ADJACENT SURFACE

NOTE: TYPICAL DETAIL ONLY. ALL WALLS WHICH FORM PART OF DRAINAGE WORKS MUST BE BUILT AS DETAILED BY THE HYDRAULIC ENGINEER. ALL WALLS EXCEEDING 1m HEIGHT SHALL BE DETAILED BY A QUALIFIED ENGINEER. INSTALL WALL TO SUIT SITE LEVELS AND TO MANUFACTURE'S SPECIFICATION.

TYPICAL IN SITU RETAINING WALL DETAIL

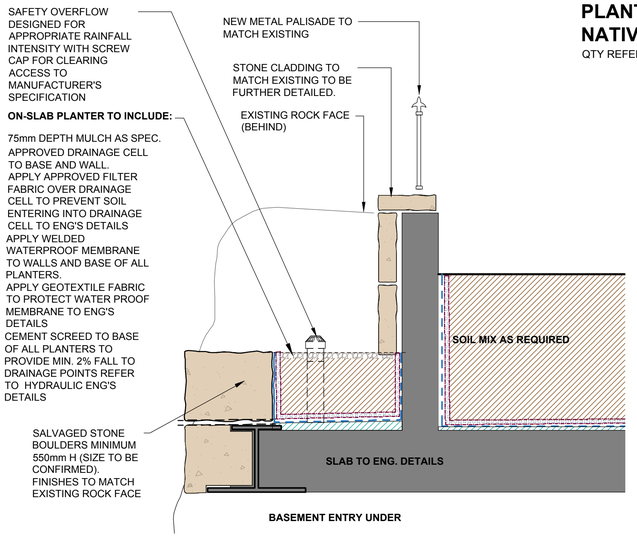
SCALE 1:10



KEY	Botanical Name	Common Name
	Libertia paniculata	
	Lomandra 'Tanika'	*'Tanika' Mat Rush*
	Dianella caerulea "Clarity Blue"	*Flax Lily*
	Lomandra fluvialtilis 'Shara'	*'Shara' Mat Rush*

PLANTING MATRIX:
NATIVE GRASSES & GARMINOIDE MIX

QTY REFER TO LANDSCAPE PLAN



SAFETY OVERFLOW DESIGNED FOR APPROPRIATE RAINFALL INTENSITY WITH SCREW CAP FOR CLEARING ACCESS TO MANUFACTURER'S SPECIFICATION

NEW METAL PALISADE TO MATCH EXISTING

STONE CLADDING TO MATCH EXISTING TO BE FURTHER DETAILED.

EXISTING ROCK FACE (BEHIND)

ON-SLAB PLANTER TO INCLUDE:

75mm DEPTH MULCH AS SPEC.
APPROVED DRAINAGE CELL TO BASE AND WALL.
APPLY APPROVED FILTER FABRIC OVER DRAINAGE CELL TO PREVENT SOIL ENTERING INTO DRAINAGE CELL TO ENG'S DETAILS
APPLY WELDED WATERPROOF MEMBRANE TO WALLS AND BASE OF ALL PLANTERS.
APPLY GEOTEXTILE FABRIC TO PROTECT WATER PROOF MEMBRANE TO ENG'S DETAILS
CEMENT SCREED TO BASE OF ALL PLANTERS TO PROVIDE MIN. 2% FALL TO DRAINAGE POINTS REFER TO HYDRAULIC ENG'S DETAILS

SALVAGED STONE BOULDERS MINIMUM 550mm H (SIZE TO BE CONFIRMED). FINISHES TO MATCH EXISTING ROCK FACE

BASEMENT ENTRY UNDER

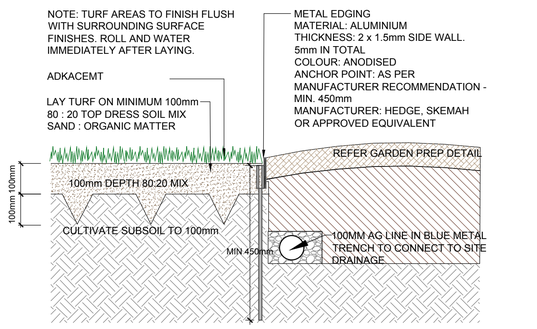
NOTE.(DRAINAGE & WATER PROOFING).
DRAINAGE PITS AND LAYOUT TO BE NOMINATED BY HYDRAULIC ENGINEER TO WORK WITH STRUCTURAL DESIGN AND LANDSCAPE.

THE WATERPROOFING, APPROVED DRAINAGE CELL AND SPECIFIED GEOFABRIC LAYER IN THIS DETAIL ARE INDICATIVE ONLY AND SHOULD BE DETAILED BY THE RELEVANT PROFESSIONAL ENGINEER 'FOR CONSTRUCTION'.

UNDER THE CONSTRUCTION PRACTITIONER BILL, STRUCTURAL WATER-PROOFING SHALL BE DOCUMENTED BY A QUALIFIED ENGINEER

ON-SLAB PLANTER (SANDSTONE) OVER BASEMENT CARPARK

SCALE: 1:25
REFER TO ARCHITECT'S SECTION DWG DA-301,DA-701 & DA-800



TURF WITH METAL GARDEN EDGE DETAIL

SCALE: 1:10

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AILA Associate

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DIAL1100 BEFORE YOU DIG

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PROPOSED ALTERATIONS AND ADDITIONS TO RESIDENTIAL FLAT BUILDING
1 WARUNG ST,
McMahons Point

TITLE:
LANDSCAPE PLAN

STATUS:
DEVELOPMENT APPLICATION

SCALE:
AS SHOWN@A1

DATE:
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Report on
Geotechnical Investigation

Proposed Residential Development
1 Warung Street, McMahon's Point

Prepared for
Highbury Group Pty Ltd

Project 203182.00
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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
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Reviewer		26 August 2021

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Report on Geotechnical Investigation
Proposed Residential Development
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1. Introduction

This report presents the results of a Geotechnical Investigation undertaken for a proposed residential development at 1 Warung Street, McMahon's Point. The investigation was commissioned in an email dated 6 April 2021 by Theo Paradisis of Highbury Group Pty Ltd and was undertaken in accordance with Douglas Partners' proposal , dated 16 April 2021.

It is understood that the proposed development comprises the partial demolition and refurbishment of the existing four storey apartment building with excavation of a single storey basement. It is understood the basement will comprise two double and three single car stackers with the inclusion of a car turntable. Bulk excavation will extend to RL 8.2 m[1] with detailed excavation for the car stackers/lift pit to RL 5.8 m.

The aim of the investigation was to provide comment on the following:

- The indicative geological profile for the site, including anticipated subsurface conditions and comment on groundwater levels;
- Excavatability of materials and suitable methods of excavation;
- Shoring/boundary support and potential impact on adjacent buildings;
- Foundation options and allowable bearing pressures; and
- Other anticipated geotechnical issues, including comments relating to developments near TfNSW infrastructure.

The investigation included the drilling of three boreholes. The details of the field work are presented in this report, together with comments on the items listed above.

2. Site Description

The site is located at 1 Warung Street, McMahon's Point and has a plan area of approximately 983 m^2. The site is bounded by Warung Street to the north, Blues Point Rd to the west, Henry Lawson Avenue to the south and 3 Warung Street to the east (see Figure 1). The property boundary of the Blues Point Metro Access Shaft Site is located approximately 15 m to the south of the site. The actual shaft is understood to be more than 20 m from the site boundary. No information has been provided regarding any other adjacent basements or founding levels of neighboring buildings.

[1] Reduced Level in metres relative to Australian Height Datum.

Figure 1: Site Location and Site Boundary

The surface level varies across the site, sloping from the north east to the south west, with a 4 m fall across the site, dropping abruptly at the retaining, located just to the northwest of the building, then sloping gently down across the building footprint and carpark towards the south west corner.

The survey drawing provided indicates that Blues Point Road had been progressively cut into the rock, with a fall of about 3 m at the corner of Blues Point Road and Henry Lawson Avenue, with a further progressive cut along Henry Lawson Avenue, with a total fall of about 5 m at the eastern end of the southern site boundary. The resulting rock face has been left unsupported, except for weathered areas and where the dyke has been intersected.

The existing structures on the site comprise a four-storey brick building with a ground level carpark. To the east of the site (3 Warung Street) is a two storey brick house with a carport constructed adjoining the eastern boundary.

The TfNSW Sydney Metro City and Southwest tunnels is shown to run beneath the site (see Appendix D).

3. Regional Geology

Reference to the Sydney 1:100 000 Geological Series Sheet indicates that the site (refer Figure 2) is underlain by the Hawkesbury Sandstone of Triassic age, comprising medium to coarse-grained quartz sandstone with minor shale lenses. The Hawkesbury Sandstone typically is pale to mid grey in colour, when fresh, and has both massive and cross bedded units with strength properties mainly in the medium to high strength range. The rock is prone to weathering with red brown or brown iron staining common in the upper beds.

Geological mapping carried out in the Sydney region identified two main joint sets which will most likely be present on this site:

- **Set 1** - NNE striking joints dipping 75° to 90° to the east and west, generally widely spaced but can be as close as 100 mm apart, generally persistent over many metres; and
- **Set 2** - ESE striking joints dipping 75° to 90° to the north and south, generally widely spaced but can be as close a 100 mm apart. These joints are generally strata bound.

Low angle (25° to 35°) thrust faults, dipping to the west are also relatively common. Bedding and cross bedding is also common in the Hawkesbury Sandstone.

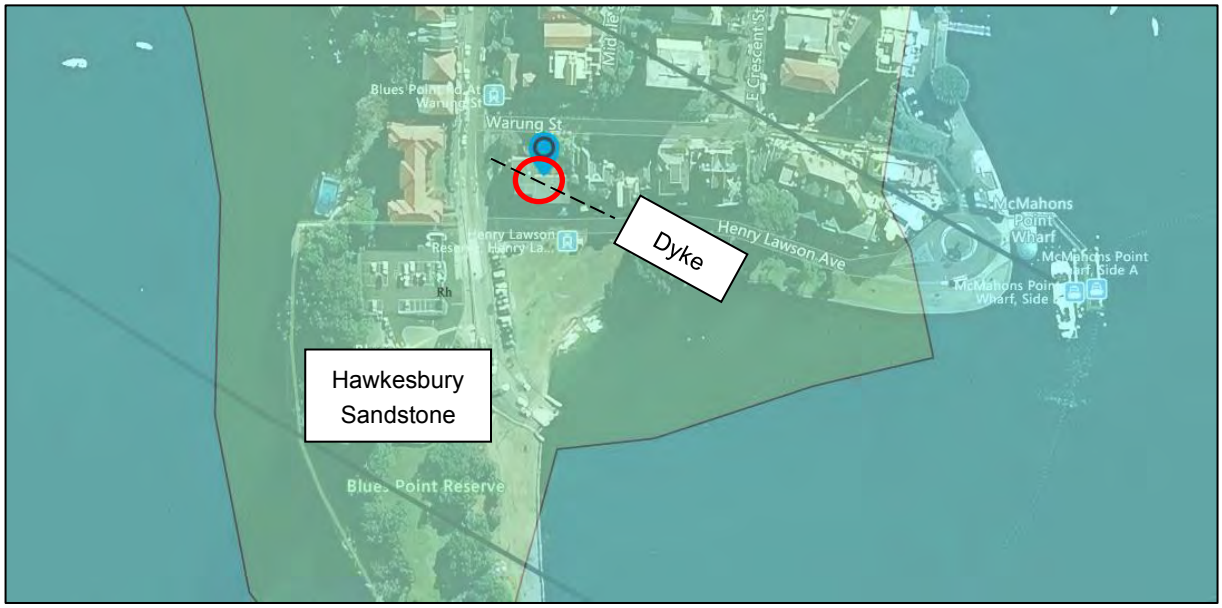


Figure 2: Regional Geology of the Site with the located Dyke Extrapolated.

Two Dykes are shown on the regional geology map (a dyke was encountered on site during the geotechnical investigation, though not on the location shown on the drawing). Dykes within the Sydney region generally trend in an east-west direction[2]. The dyke was previously encountered by DP during the geotechnical investigation for the TfNSW tunnels. Intrusive igneous dykes within the Hawkesbury Sandstone are typically less than 1 m to 3 m in width and usually comprise extensively and deeply weathered basaltic rock, weathered to a 'heavy', high plasticity clay. Associated with the dyke, the

[2] The Geology and Engineering Geology of the "Great Sydney Dyke", Sydney NSW (Dale, Rickwood & Won)

immediately adjacent sandstone is often 'cooked' and commonly closely jointed with the sandstone weathered to a significantly greater depth than the unaffected sandstone.

The Hawkesbury soil landscape generally consists of medium dense to dense residual clayey sand, associated with the underlying bedrock.

The 1:25 000 Acid Sulphate Soil Risk map for Botany Bay indicates the site does not lie within an area known for acid sulphate soils. The site also does not occur within areas known for soil salinity issues.

4. Field Work

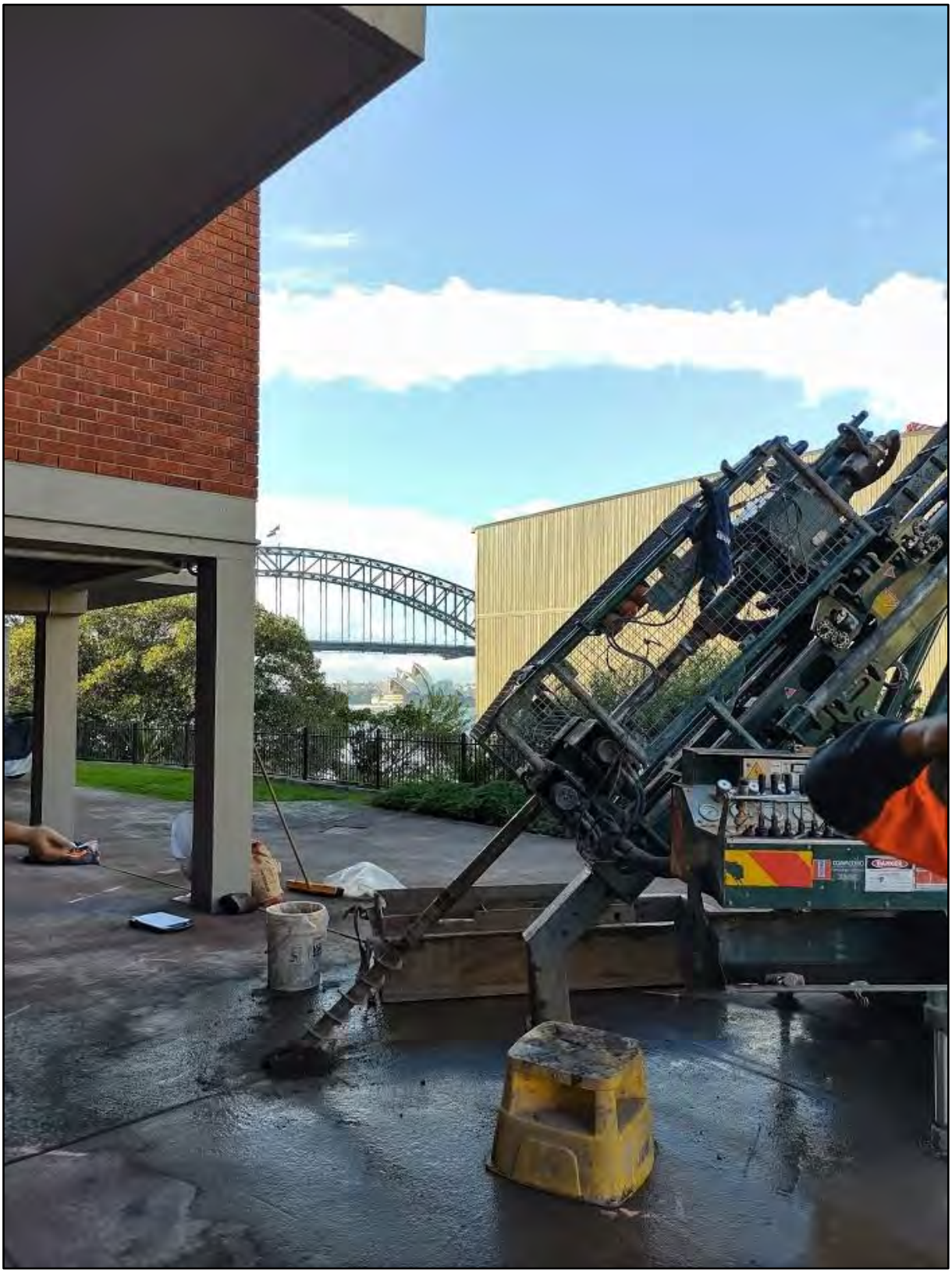
Field work comprised the drilling of two vertical boreholes (BH01 and BH02) and an inclined borehole (BH03), striking north northeast, angled at 45º. The two vertical boreholes were both drilled to depth of 10.0 m (RL 3.1 m for BH01 and RL 4.0 m for BH02). The inclined borehole was drilled slightly longer (to determine the width of the dyke), to an inclined depth of 14.4 m (RL 3.0 m). The borehole locations are shown in Drawing 1 (refer Appendix D). Boreholes BH01 and BH02 were drilled using a bobcat-mounted drilling rig. Borehole BH03 was drilled using a track-mounted drilling rig (see Photograph 1).

Boreholes were commenced by concrete coring through the pavement (BH01 and BH02 only), followed by solid flight augering through the filling, residual soil and weathered rock. NMLC sized diamond core drilling techniques were used in the underlying rock. The boreholes were reinstated on completion of the drilling works.

Standard penetration tests (SPT), at a depth of 0.5 m, were carried out in the vertical boreholes (BH01 and BH02 - Refer Appendix D, Drawing 1 for results).

The rock cores recovered from the boreholes were logged on site before being returned to DP's workshop where they were photographed and Point Load Strength Index ($Is_{(50)}$) tests carried out on selected samples of the rock core, in accordance with AS4133.4.1.

Surface levels at borehole locations were interpolated from the survey plan (CMS Surveyors PTY LTD Drawing 19099detail, dated 04.02.2021).



Photograph 1: Track-mounted drilling rig on 45º angled borehole (BH03)

5. Field Work Results

5.1 Subsurface Conditions

Details of the subsurface conditions encountered are given in the borehole logs included in Appendix C, with notes, defining classification methods and descriptive terms. Photographs of the rock cores were taken and are presented with the borehole logs. A geotechnical cross-section showing the encountered ground profile is provided in drawings 2 and 3, presented in Appendix D.

The general sequence of materials encountered at the borehole locations (based on BH01 and BH02 only – asphalt not included) can be summarised as follows:

Filling:	Generally, medium dense sand Filling containing medium to coarse sandstone gravel to a depth between 0.80 m and 1.0 m, overlying;
Residual Soil:	Typically, medium dense to dense, clayey sand to 1.0 m depth, overlying;
Very Low Strength Sandstone:	Inferred very low strength, extremely weathered to highly weathered, Hawkesbury Sandstone to 2.0 m (BH01) and 1.3 m (BH02) depth, overlying;
Low Strength Sandstone:	Low strength, highly weathered and moderately weathered, fractured and slightly fractured Hawkesbury Sandstone, encountered in BH01, down to 3.0 m , overlying;
Medium Strength Sandstone:	Medium strength, moderately weathered to slightly weathered, fractured to unbroken Hawkesbury Sandstone to depths of 10 m (BH01) and 8.0 m (BH02), overlying;
High Strength Sandstone:	High strength, fresh, unbroken to slightly fractured Hawkesbury Sandstone in BH02.

Depths to the top of the strata are shown below in Table 1.

Table 1: Summary of Strata Levels at Each Borehole

Stratum	Top of Stratum Depth m (RL in brackets)		
	BH01	BH02	BH03*
Asphalt	0.00 (RL 13.20)	Not Encountered	0.00 (RL 13.20)
FILL	0.003 (RL 13.17)	0.00 (RL 14.00)	0.003 (RL 13.17)
Clayey SAND (Residual Soil)	0.80 (RL 12.40)	0.80 (RL 13.20)	1.40 (RL 12.20)
Very Low Strength Sandstone (Hawkesbury Sandstone)	1.00 (RL 12.20)	1.00 (RL 13.00)	1.80 (RL 11.80)
Low Strength Sandstone (Hawksbury Sandstone)	2.00 (RL 11.20)	Not Encountered	2.80 (RL 11.20)
Medium Strength Sandstone (Hawksbury Sandstone)	3.00 (RL 10.20)	1.40 (RL 12.60)	6.05 (RL 8.90)
High Strength (Hawksbury Sandstone)	Not Encountered	8.15 (RL 6.00)	13.70 (RL 3.50)
End of Borehole	**10.00 (RL 3.20)**	**10.00 (RL 4.00)**	**14.40 (RL 3.00)**

* Borehole angled at 45º

5.2 Igneous Dyke

An igneous dyke was encountered in borehole BH03. Coring commenced at a depth of 2.8 m. The inferred 1.4 m wide dyke was encountered at a depth of 6.93 m (RL 8.30 m), extending down to 8.87 m (RL 6.85 m). Recovery of the dyke material was difficult, which resulted in some core loss, inferred to be either highly fractured weak rock or hard clay. The inferred location of the igneous dyke is shown in Drawing 1 in Appendix D.

5.3 Groundwater

No free groundwater was observed during augering. Groundwater level not observed during rock coring due to the introduction of water during the drilling process.

6. Laboratory Testing

6.1 Point Load Tests

The results of Point Load Strength Index testing ($Is_{(50)}$), carried out on selected rock cores, are shown on the respective borehole logs, and summarised in Figure 3 below.

The $Is_{(50)}$ values from axial tests were used to provide an estimate of the Unconfined Compressive Strength (UCS) of the sandstone, based on a UCS:$Is_{(50)}$ ratio of 20:1. The $Is_{(50)}$ values for the sandstone typically ranged from ~0.1 MPa to 1.6 MPa, indicating that the rock tested ranged from very low strength to high strength (estimated UCS ranging from 2 MPa to 32 MPa). Note that the point load samples which recorded 1.2 MPa $Is_{(50)}$ values at depths of 4.0 m (BH02) and 5.9 m (BH03) appeared to be iron cemented associated with weathering. We also note that point load testing can be inaccurate in very low strength materials (i.e. below $Is_{(50)}$ values of 0.1 MPa).

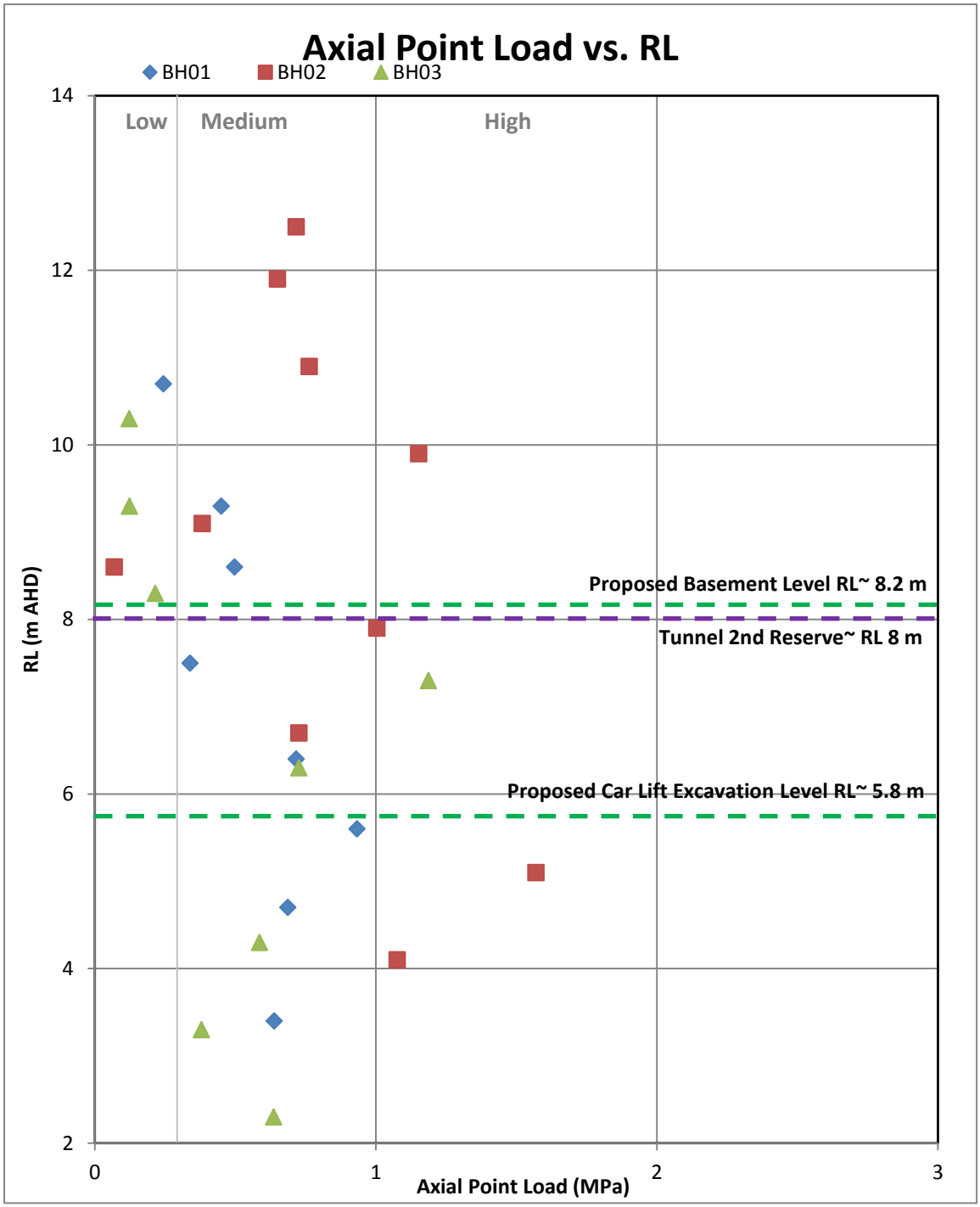


Figure 3: Point Load test VS RL

7. Geotechnical Model

The geotechnical model for the site derived from boreholes BH01 to BH02 is shown in Table 2.

Table 2: Geotechnical Model of the Site (BH01 & BH02)

Unit	Material Description	Approximate Underside of Stratum (RL)
1	Filling (medium dense sand)	14.00 to 13.17
	Residual Soil (Clayey SAND)/ Very Low Strength Sandstone	13.00 to 12.20
2	Very low to Low Strength Sandstone	12.60 to 10.20
3	Medium Strength Sandstone	7.15 to 3.20
4	High Strength Sandstone	4.00 (end of boreholes)

A geotechnical cross-section between BH01 and BH03 (Section B-B') showing the inferred subsurface profile together with the proposed basement excavation is provided in Appendix D, Drawing 3. Note that the above stratum RL's do not reflect the conditions in close proximity to the dyke (Refer Borehole BH3 log for details).

8. Proposed Development

It is understood that the proposed development comprises partial demolition of the existing eastern wing of the building to allow for excavation of a single level basement and the rebuild of the eastern wing of the building (refer to Appendix E for drawings). The basement is proposed to be excavated hard up against the entire eastern boundary with a new driveway entrance proposed on the eastern corner of the site, along Henry Lawson Avenue. It is further understood the basement will comprise of two double and three single car stackers with the inclusion of a car turntable. Bulk excavation will extend to RL 8.2 m with detailed excavation for the car stackers/lift pit to RL 5.8 m. The refurbishment includes retention of the façade, various internal walls and roof of the central block and western wing of the building.

Currently no information is available on adjacent building foundations and basement levels. These levels should be confirmed prior to proceeding with detailed design and basement excavation.

The site is located directly over the Sydney Metro City and Southwest Tunnels (up and down line), owned and operated by TfNSW (see information provided in Appendix B and D).

9. Comments

9.1 Earthworks

9.1.1 Excavation

The proposed bulk excavation level is assumed to be about RL 8.2 m with detailed excavation to RL 5.8 m for the car stackers/lift pit, requiring bulk excavation to about 7.5 m below the existing asphalt level at the south-eastern end of the site, to about 10.8 m below the existing levels at the north-eastern end. Based on the likely subsurface conditions, excavations to depths of up to 1.5 m is likely to be in soil and very low and low strength sandstone. Note, medium strength sandstone is exposed at surface in some areas. Also note that the weathering will be much deeper in close proximity to the dyke. These materials should be readily excavated using conventional earthmoving equipment, such as excavators. Below this level, the type of excavation equipment will largely be dependent on the rock's strength and discontinuity spacing. Excavation of medium and high strength, fractured to unbroken sandstone, as encountered in the boreholes, can be achieved by heavy ripping and by use of excavator mounted hydraulic rock hammers. The combination of high strength and thickly bedded sandstone with few joints suggests ripping may be difficult.

Excavation will result in in situ walls of rock along the southern and eastern boundaries and potentially in the north-eastern corner which will require special consideration to ensure that stability is maintained during and after excavation.

The use of excavation equipment will generally cause dust, noise and vibration, the latter which has the potential to affect adjacent buildings and below ground infrastructure, as well as the occupants of nearby buildings. Where rock hammers are required in the vicinity of adjacent structures (closer than 20 m) it would be prudent to monitor and limit vibrations on these structures, as further discussed in Section 9.1.3.

Prior to commencing bulk excavation, it will be necessary to obtain accurate information on the foundations and founding conditions of the adjacent neighbouring building. This process is critical as excavation of the proposed new basement and footings could destabilise existing structures, including existing retaining walls. Depending on conditions, affected high-level neighbouring footings may require underpinning. Similarly, if a neighbouring basement extends below the new founding levels, consideration will need to be given to taking the new footings down to the adjacent excavation level, unless it can be confirmed that the founding material is of adequate strength to allow founding at the higher level.

The dyke, running through the site, is likely to be highly weathered to substantial depth and will require special consideration. The dyke should be readily excavated using conventional earthmoving equipment, such as excavators.

9.1.2 Disposal of Excavated Material

All surplus excavated materials will need to be disposed of in accordance with the Protection of the Environment Operations Act 1997 (POEO Act). All materials removed from the site are defined as waste under the POEO Act and must be disposed of in accordance with one of the following:

- Virgin Excavated Natural Materials (VENM) as defined under the POEO Act, permitting beneficial reuse; or,
- a waste category meeting the criteria set out in the NSW EPA Waste Classification Guidelines 2014, with the materials disposed to a landfill licenced to receive the waste under the assigned classification or taken to a recycling facility licenced to receive the waste; or
- material complying with a Resource Recovery Order (RRO) as defined under the Protection of the Environment Operations (Waste) Regulation 2014, with complying materials able to be reused under certain conditions.

Accordingly, environmental testing will need to be carried out to determine the most appropriate off-site destination(s) for the surplus excavated material.

9.1.3 Ground-borne Vibration

During excavation, it will be necessary to use appropriate methods and equipment to keep ground vibration at adjacent buildings and structures within acceptable limits. The level of acceptable vibration is dependent on various factors including the type of structure (e.g. reinforced concrete, brick, etc.), its structural condition, founding conditions, the frequency range of vibrations produced by the construction equipment, the natural frequency of the building and the vibration transmitting medium.

Based on DP's experience of and with reference to AS/ISO 2631.2, it is suggested that a maximum peak particle velocity vector sum (PPVi) of 8 mm/s (measured at the first occupied level of neighbouring buildings) be employed at this site for both architectural and human comfort considerations (it should be noted that lower allowable values may be required for heritage or sensitive buildings).

As the magnitude of vibration transmission is site specific, it is recommended that a vibration trial be carried out at the commencement of rock excavation. These trials may indicate that smaller or different types of excavation equipment are required to reduce vibration to acceptable levels. It may also be necessary to install vibration monitors to monitor the vibration during the works.

All heritage structures in close proximity should be identified prior to proceeding with site work. Depending on the condition of these buildings, it may be necessary to limit vibration to 3 to 5 mm/s, which may limit the size and type of the plant that can be used on site.

DP maintains an extensive construction vibration database. As a preliminary estimate, Table 3 provides approximate minimum buffer distances for selected equipment, based on a set vibration limit of 8 mm/s. Ongoing vibration monitoring may be required to reduce the risk of exceeding the set limits during the excavation phase.

Table 3: Approximate buffer distances for selected Plant (PPVi 8 mm/s)

Excavation Plant		Distance from plant at which vibration attenuates to 8 mm/s	
Type	**Operating Weight**	**From DP Trial Maxima[1]**	**From DP Trial Average**
Rock saw on excavator[2]	-	1 m	0.5 m
Ripper on 20 t excavator	-	3 m	0.7 m
Rock Hammer	<500 kg	7 m	3 m
	501 – 1000 kg	8 m	3 m
	1001 – 2000 kg	13 m	5 m
	>2000 kg	7 m	5 m

Notes:

1. *Smaller distances can generally be determined from individual trials, as indicated by those from trial averages.*
2. *Buffer distances for rock hammers may be slightly reduced by prior saw cutting along, or parallel to, excavation boundaries.*
3. *Loading effects from adjacent buildings may reduce vibration levels, to enable boundary saw cuts with few exceedances.*

9.2 Excavation Support

To reduce the risks of causing instability and damage to adjacent structures, surrounding public footpaths/roads, or impact the metro tunnels, careful consideration must be given to the planning and design of any excavation, including any underpinning and excavation retention required to shore the faces.

Vertical excavations in the overburden materials and rock of less than medium strength (Units 1 and 2) will not be self-supporting. Temporary batters may be feasible where space permits and the groundwater table is not intersected. These batters should be cut no steeper than 1.5(H):1(V) for Unit 1 and 2, up to a maximum excavation height of 3 m. Permanent Batters above the water table should be no steeper than 2(H):1(V) for Unit 1 and 2, limited to a maximum height of 3 m.

Where battering of the overburden materials and rock of less than medium strength (Units 1 and 2) is not feasible, temporary shoring will be required. The structure will have to provide permanent support to these faces in the long term.

Vertical excavated faces in medium strength or stronger sandstone (Units 3 and 4) are generally self-supporting, apart from where adversely oriented jointing is present. Due to the orientation of the site, the eastern and western excavation faces are more likely to be affected by the prominent NNE trending joint set, as mentioned in Section 3. These joints (where present) will only become evident once the faces have been cut. Bedding planes and low strength seams are also common in the Hawkesbury Sandstone, even within high strength rock. These joints, bedding planes and seams can adversely affect the rock mass and form unstable rock slivers, blocks, wedges and weak layers. The excavated faces in the medium strength or stronger sandstone can therefore only be considered self-supporting once mapped and assessed to be free of adverse defects.

Rock mass support can only be finalised during excavation, once the actual defect location, dip and dip direction have been determined. It is therefore recommended that all rock faces be inspected/mapped by a suitably experienced geotechnical engineer/engineering geologist at 1.5 m drops in excavation level to confirm that the site conditions are consistent with the geotechnical model and to ensure that suitable support is designed, and installed, in a timely manner (prior to proceeding with the next drop in excavation).

Substantial anchor support (see Figure 4), sometimes in conjunction with shotcrete, may be required to stabilise wedges formed by adversely oriented joints, faults and shear zones. Permanent reinforced concrete walls, supported by the floor slabs, may be required if it is not possible to permanently anchor these wedges.

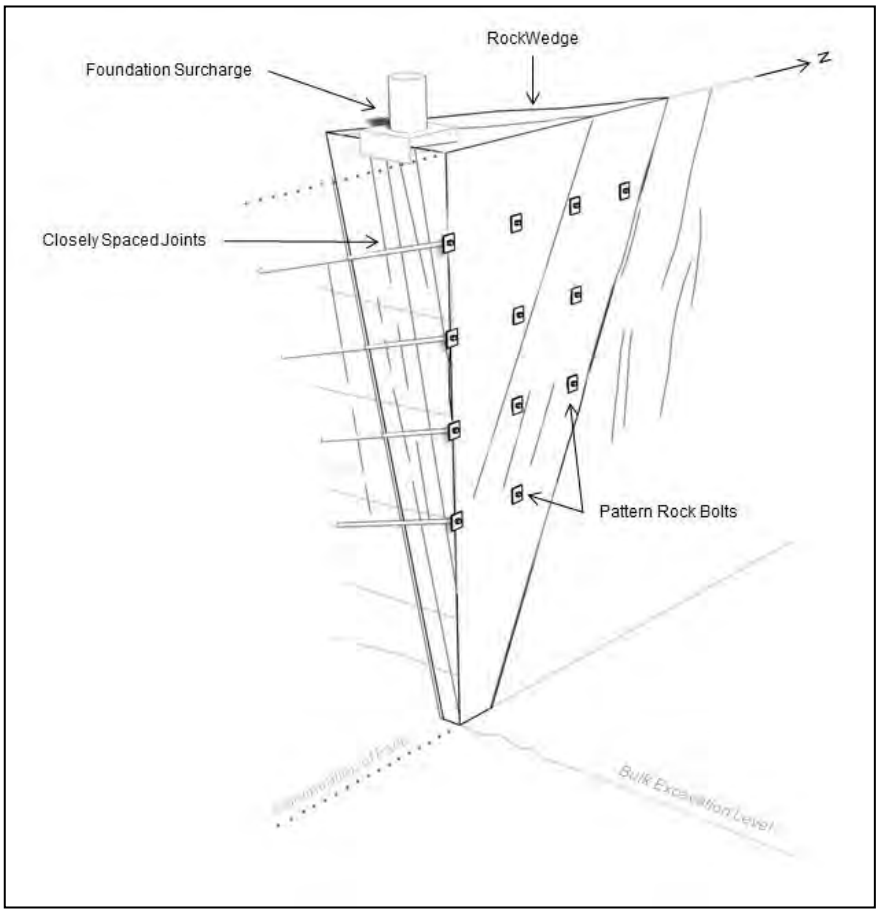


Figure 4: Example of Rock Wedge Support

Anchor/rockbolt support, in conjunction with shotcrete, may also be required to support the dolerite dyke material exposed in the vertical cut faces.

The design for the excavation support should take all surcharge loads into account, including the neighbouring buildings loads, traffic loads, construction surcharge loads, etc.

Should ground anchors or soil nails/dowels be required, it will be necessary to obtain permission from neighbouring landowners and authorities prior to installation. In addition, care should be taken to avoid damaging buried services and pipes during installation.

The founding conditions below neighbouring building footings must be confirmed by further investigation, prior to proceeding with demolition of retaining walls and excavation (a review of all as-built drawings is required).

Care should be taken when excavating the south-eastern boundary, towards Henry Lawson Avenue, where the dyke may affect the stability of the is situ rock wall.

9.2.1 Earth Pressures for Shoring Design

It is suggested that the design of cantilevered shoring systems (or shoring systems with one row of support) be based on a triangular earth pressure distribution, using the earth pressure coefficients provided in Table 4. 'Active' earth pressure coefficient (K_a) values may be used where some wall movement is acceptable. 'At Rest' earth pressure coefficient (K_o) values should be used where the wall movement needs to be limited.

Table 4: Recommended Design Parameters for Shoring Systems

Material	Unit Weight (kN/m^3)	Earth Pressure Coefficient	
		Active (K_a)	At Rest (K_o)
Fill, Clayey Sand	20	0.35	0.5
Very Low to Low Strength Sandstone	22	0.2	0.3
Medium Strength or better Sandstone	24	0	0

Notes: The values above assume a level surface behind the wall.
It is assumed that the medium strength rock mass is free of adverse dipping joints and seams.
It should also be noted that the K_a and the K_o designs will not prevent stress relief movement.

The following equation can be used to calculate the horizontal or lateral pressures earth pressure distribution, acting on the wall:

$$H_z = K(\gamma z + p)$$

Where: H_z = horizontal pressure at depth z
γ = unit weight of soil or rock
K = earth pressure coefficient (see Table 5).
z = depth (m)
p = vertical surcharge pressure

For braced walls or where two or more rows of support are used, the shoring can be designed using a rectangular or trapezoidal earth pressure distribution. Where there are no movement-sensitive structures an earth pressure distribution equal to 4H kPa can be used, where H, in metres, is equal to the height to be supported. Where the wall movement is to be minimised (i.e. close to adjacent buildings or services) the lateral earth pressure can be calculated using 6H kPa. For movement-sensitive structures, where it is critical that deformation is controlled, it may be necessary to calculate the pressure using 8H kPa. These pressures can be applied as either rectangular or trapezoidal earth pressure distributions, depending on support requirements. Note these earth pressure distributions are "pressure

envelopes", selected to ensure that no row of support is overloaded during the temporary support phase. The actual magnitude and distribution of lateral earth pressures for the building in its final (long term) condition may differ from the uniform distributions given above.

In all cases, additional surcharge loads such as new and existing footings, construction loads, hoarding loads, pedestrian loads etc., must be allowed for in the design, where appropriate, applied as a rectangular earth pressure distribution over the depth of influence.

The earth pressure loading described above does not include earthquake loads or hydrostatic pressures. Unless positive drainage measures are incorporated to prevent water pressure build-up behind the walls, the full hydrostatic head should be allowed for in design, while at the same time reducing the unit weight to account for the buoyant condition.

9.2.2 Anchor Design

Post-stressed ground anchors, rockbolts and dowels (support elements) can be used to laterally support new shoring, underpinning works or unstable rock blocks and wedges. Anchors could also be used vertically as hold-down anchors to resist uplift forces. Support elements used for lateral support should be bonded in the stronger rock, inclined as required, but preferably not steeper than 30° below the horizontal. Table 5 provides ultimate and allowable bond stresses for design and estimating purposes.

Table 5: Allowable Bond Stresses

Material	Allowable Bond Stress (kPa)	Ultimate Bond Stress (kPa)
Medium Strength Sandstone	350	800
Medium to High Strength Sandstone	600	1,500
High Strength Sandstone	1,200	3,000

These values should be confirmed by pull-out tests prior to installation of support elements. Ultimately, it is the contractor's responsibility to ensure that the correct design values (specific to the support system and method of installation) are used and that the support element holes are carefully cleaned prior to grouting.

After support elements have been installed, it is recommended that they are tested to at least 125% of their nominal working load. Where stress relief or further unavoidable movement of the shoring is expected, it is recommended that the support elements are locked-off between 60% and 80% of their working loads to accommodate the additional movement and subsequent increase in stress in the support elements. Consideration should, however, be given to the immediate design requirements. The capacity of the anchor may have to be increased if a lower initial lock-off is not feasible. Checks should be carried out to confirm that the load in the support elements has been maintained and that losses due to creep effects or other causes have not occurred.

Shorter support elements (i.e. rockbolts, dowels and pins) may be required to support any unstable rock wedges, slivers or blocks. Short dowels and pins may be required to support feather edges where sub-parallel joints intersect the face. Shotcrete with mesh (or fibrecrete) may be required where beds/seams

of extremely low or very low strength rock are encountered within higher strength sandstone/laminite, secured with anchors, rockbolts, dowels or pins, as required.

Care should be exercised to ensure that anchors are installed progressively during excavation and stressed prior to excavation of the next drop to ensure that stability is maintained at all times.

It is anticipated that the new structure will support the shoring walls over the long term and therefore the support elements are expected to be temporary only. The use of permanent rockbolts and ground anchors, if required, will need careful attention to corrosion protection.

It should be noted that permission will be required from authorities and adjacent property owners prior to installing rockbolts/ground anchors below their land. Due consideration should also be given to below-ground excavations, services, etc.

9.3 Stress Relief

As with most excavations in Hawkesbury Sandstone in Sydney, there will be inward movement of excavated faces due to stress relief effects during excavation. The locked-in stress in the rock is generally higher in the N-S direction than in the E-W direction, apart from where affected by localised anomalies.

Based on previous experience in the Sydney area, it is estimated that at the midpoint of the crest of an excavated rock face, stress relief may result in a horizontal movement of approximately 0.5 to 1 mm per metre depth of excavated rock (defined as medium strength or stronger sandstone). In some cases, movement up to 2 mm per metre depth of excavated rock can occur (more commonly in the north-south direction, where the locked-in stress is higher).

The amount of horizontal movement typically diminishes towards the corners of the excavation and down to the base. Back from the crest, movement occurs over a distance of up to three times the excavated rock depth, with an initial reduction of approximately 1 mm per metre, reducing with distance from the face. This differential movement will give rise to strain in both the rock mass and overburden beyond the excavation and may open up existing cracks or develop new cracks in susceptible structures (buildings, underground service tunnels, etc.).

9.4 Foundations

DP has not been provided with structural loads at this stage and the following comments are, therefore, preliminary in nature.

It is understood from correspondence with Highbury Group that the building is to be founded on pad footings below the basement slab. It is assumed that the footings will be designed for medium strength or stronger sandstone.

Pad and strip foundations should be located at least 1.5 m clear of the dyke. Additional investigation will be required to confirm the exact extent of the dyke and the effect on founding conditions, especially of the sandstone directly either side of the dyke.

Pad/strip footings located closer than 1.5 m from the dyke should be downgraded by 1/3 of the estimated bearing capacity to allow for the additional weathering, generally associated with the dyke. The dyke should be suitable to support light pressures, such as that exerted by floor slabs.

9.4.1 Pad or Strip Footings

The design of pad or strip foundations may be carried out using the values given in Table 6.

Table 6: Foundation Design Parameters (after Pells et al[3])

Material	Ultimate End Bearing Pressure (MPa)	Allowable End Bearing Pressure (MPa)	Testing Requirements
Dyke	0.3	0.15	Site Inspection
Medium strength	20	3.5	Minimum 4 cored bores with spoon testing or cores in at least ⅓ of footings.
Medium to High strength	60	6.0	Cored bores at max 10 m grid spacing or cored bores for 50% of footings and spoon testing of remainder

Note:

- Bearing pressure values assume a minimum embedment of one footing width into the relevant bearing stratum.
- Ultimate parameters are mobilized at large settlements (i.e. >5% of minimum foundation width).
- Allowable end bearing pressures to cause settlement of less than 1% of minimum footing dimension.

The foundation design parameters given in Table 6 assume that the foundation excavations are clean and free of loose debris prior to concrete placement.

Prior to placing rebar or blinding, the base of all footings should be inspected by a geotechnical engineer to confirm that founding conditions are suitable for the design parameters.

Foundations proportioned on the basis of the allowable bearing pressures provided in Table 6 would be expected to experience total settlements of less than 1% of the foundation width under the applied working load, with differential settlements between adjacent foundations (excluding footings on the dyke) expected to be less than half of this value.

9.5 Ground Slabs

The floor at basement level can be designed as a slab on ground, assuming proper compaction is given to the subgrade (if not on rock) on which the slabs are cast. Only suitable material should be used to backfill over-excavated areas, compacted to a minimum 98% standard maximum density. In these areas CBR testing may be required for slab design.

[3] Design Values for Foundations on Sandstone and Shale in the Sydney Region – Pells, Moyston & Walker. AGS 1998

It will be necessary to provide under-floor drainage to safeguard against uplift pressures if the basement is designed as drained. This can comprise a 100 mm thick durable open graded durable crushed rock with subsoil drains and sumps.

9.6 Groundwater

The regional groundwater table is expected to be below the proposed basement level. Seepage, however, should be expected along the soil/rock interface and through the joints in the rock. Seepage is expected to be minor, controllable by pumping from sumps around the excavation.

For the permanent construction, if a drained system is to be adopted, it should allow for water collection of seepage and flows from rock, with sumps and pumps suitably sized to dispose of the water in accordance with council and EPA regulations. Such groundwater may have significant concentrations of iron which will tend to precipitate on exposure to air giving rise to gelatinous iron oxide/hydroxide sludge. This will need to be taken into account when designing permanent drainage lines and pump-out systems.

9.7 Sydney Metro City and Southwest Tunnels (MNW) – Considerations Relating to TfNSW Tunnel Infrastructure

It is understood that the MNW up and down tunnels are located directly below site boundary. The tunnels have approximately 6.2 m inner diameter, with the tunnel crown at approximately RL 22 m, as shown in Drawing 2, attached in Appendix D. It is further understood from drawings received from TfNSW (DRG No. SMCSWTSE-JAB-TPW-AL-DRG-505118, refer Appendix B) that the MNW tunnels 1st reserve is at approximately RL -17 m, with the 2nd reserve at approximately RL 8 m.

Based on the proximity of the MNW tunnels relative to the site it is considered that TfNSW may need an engineering assessment, to assess the effect that the future excavation and footings will have on the MNW tunnels and nearby shaft. Based on our experience with similar projects, the following geotechnical related work is likely to be required:

- Investigation of the subsurface conditions in the vicinity if the MNW tunnel locations (note, DP has previously drilled boreholes for the MNW project, but approval to use this information will have to be obtained from TfNSW);
- An engineering impact assessment, involving numerical modelling, to assess the impact of the proposed development on the MNW tunnels, and vice versa, the effect that the MNW tunnels will have on the development;
- Risk assessment to identify the stakeholders and risks; and
- Monitoring plan to set out the monitoring required during excavation.

TfNSW will need to be consulted on the specific project requirements and the exact extent of the MNW tunnels substratum and alignments.

9.8 Design for Earthquake Loading

When assessed in accordance with the Earthquake Loading Standard (AS1170.4 – 2007), the site has a hazard factor (Z) of 0.08 provided all superstructure loads are carried to rock of at least very low strength. The site sub-soil class would be a rock site, Be, as the soil surface layer is not more than 3 m in depth.

9.9 Geotechnical Inspection

It is suggested that the following geotechnical inspections are carried out by a suitably qualified geotechnical engineer:

- Regular inspections during excavation and any underpinning and shoring works. Inspection of excavated faces to check for instability and to identify any adversely dipping joints that could form wedges and determine if any support or underpinning of adjacent footings is required. In addition to the above it is also recommended that drilling, installation, grouting and stressing of rockbolts and anchors are witnessed; and
- Inspections and spoon tests in the base of proposed pad footings to identify seams or defects in the rock to assess the effect that it has on the bearing capacity. The frequency of these inspections and tests are provided in Section 9.4.1

The level and frequency of inspections should be outlined in an Inspection and Test Plan (ITP), to be prepared once the design has been finalised.

9.10 Monitoring

It is recommended that survey points be installed on the neighbouring building (Structural Engineer to advise) and in situ rock walls. Base readings need to be taken prior to demolition and excavation. Monitoring frequency to be advised by the structural and geotechnical Engineers.

Prior to commencing with demolition or excavation work, a dilapidation survey should be carried out on the adjacent building and pavements to document any existing defects and ensure that claims for damage due to construction related activities can be accurately assessed.

9.11 Additional Geotechnical Investigation

We recommend the following additional geotechnical investigation be carried out:

- Test pit/trench excavation perpendicular to the assumed strike direction of the dyke to map its orientation. This information will be required to optimise foundation design.

10. References

Pells PGN, Mostyn G and Walker BF, 1998, Foundation on sandstone and shale in the Sydney region, *Australian Geomechanics*, December 1998, p 17-29.

Dale, Rickwood and Won, The Geology and Engineering Geology of the “Great Sydney Dyke”, Sydney NSW

11. Limitations

Douglas Partners (DP) has prepared this report for this project at 1 Warung Street, McMahons Point in accordance with DP’s proposal 203182.00.P.001.Rev1 dated 16 April 2021 and acceptance received from Theo Paradisis of Highbury Group Pty Ltd dated 16 March 2021. The work was carried out under DP’s Conditions of Engagement. This report is provided for the exclusive use for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP’s field testing has been completed.

DP’s advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the (geotechnical / environmental / groundwater) components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed ‘safety in design’ assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Douglas Partners Pty Ltd

Appendix A

About This Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

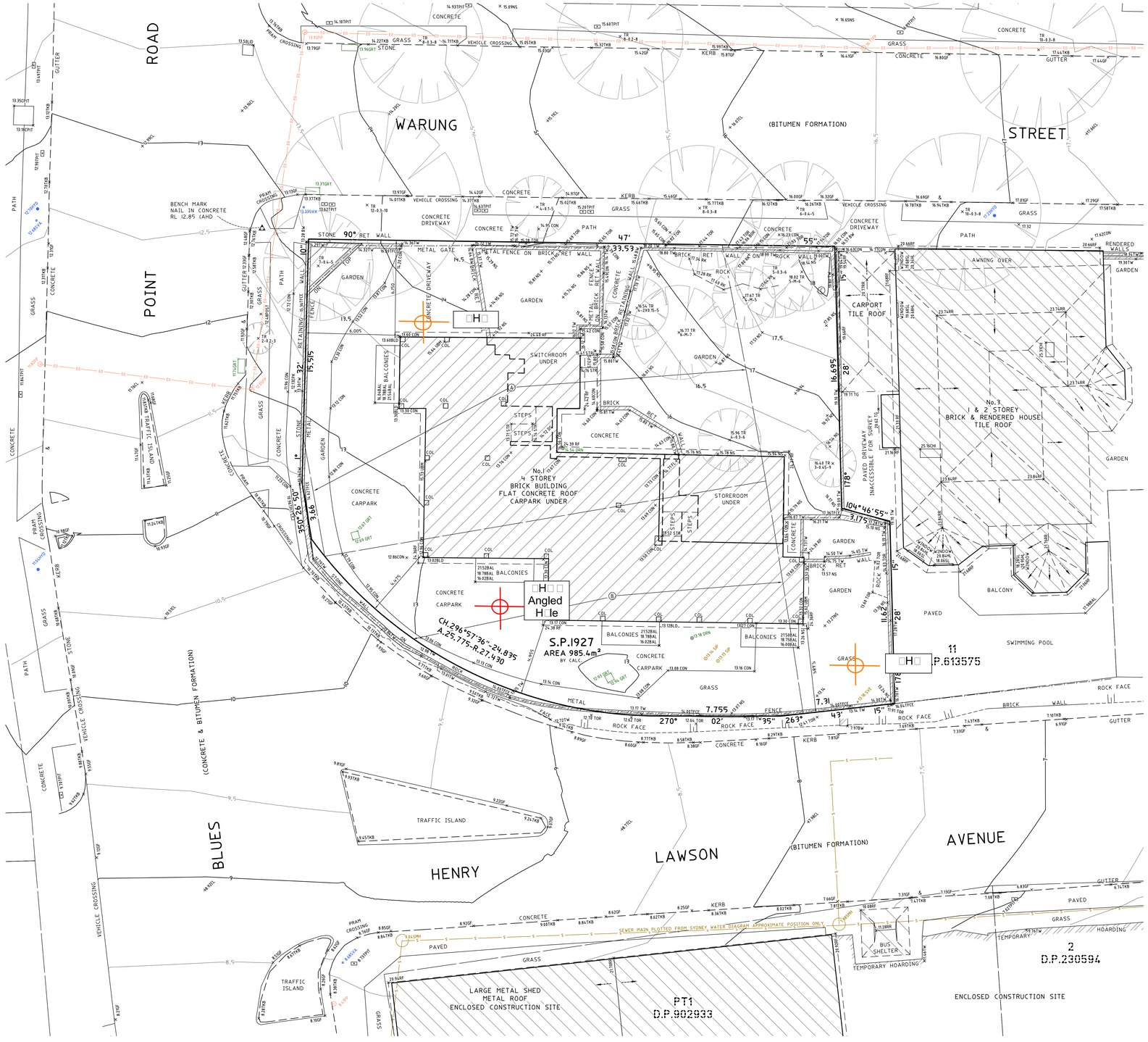
The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Appendix B

Surveyor and TfNSW Drawings

A0

APPROX TRUE NORTH
MGA NORTH



0 1 2 3 4 5 6 7 8 9 10

SCALE 1:100

NOTES

- **BOUNDARIES HAVE BEEN DEFINED .**
- **IF CONSTRUCTION ON OR NEAR BOUNDARIES IS REQUIRED IT IS RECOMMENDED THAT THE BOUNDARIES OF THE LAND BE MARKED.**
- **AREA IS APPROXIMATE ONLY AND HAS BEEN CALCULATED BY TITLE DIMENSIONS. ALL TITLE DIMENSIONS OF THE LAND HAVE NOT BEEN CONFIRMED BY SURVEY. IF AREAS ARE CRITICAL WE RECOMMEND A BOUNDARY SURVEY FOR PUBLIC RECORD.**
- TREE SIZES ARE ESTIMATES ONLY.

THIS PLAN HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF HIGHBURY WARUNG PTY LTD

- RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES IS DIAGRAMMATIC ONLY. WHERE OFFSETS ARE CRITICAL THEY SHOULD BE CONFIRMED BY FURTHER SURVEY.
- EXCEPT WHERE SHOWN BY DIMENSION LOCATION OF DETAIL WITH RESPECT TO BOUNDARIES IS INDICATIVE ONLY.
- ONLY VISIBLE SERVICES HAVE BEEN LOCATED. UNDERGROUND SERVICES HAVE NOT BEEN LOCATED. DIAL BEFORE YOU DIG SERVICES (ph 1100) SHOULD BE USED AND A FULL UTILITY INVESTIGATION, INCLUDING A UTILITY LOCATION SURVEY, SHOULD BE UNDERTAKEN BEFORE CARRYING OUT ANY CONSTRUCTION ACTIVITY IN OR NEAR THE SURVEYED AREA.
- SEWER MAIN PLOTTED FROM SYDNEY WATER SEWER DIAGRAM. LOCATION SHOULD BE MARKED ON SITE IF CRITICAL.
- CRITICAL SPOT LEVELS SHOULD BE CONFIRMED WITH SURVEYOR.
- THIS PLAN IS ONLY TO BE USED FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS.
- CONTOURS SHOWN DEPICT THE TOPOGRAPHY. THEY DO NOT REPRESENT THE EXACT LEVEL AT ANY PARTICULAR POINT. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.
- CONTOUR INTERVAL - 0.5 metre. - SPOT LEVELS SHOULD BE ADOPTED.
- POSITION OF RIDGE LINES ARE DIAGRAMMATIC ONLY (NOT TO SCALE)
- THE INFORMATION IS ONLY TO BE USED AT A SCALE ACCURACY OF 1:100.
- DO NOT SCALE OFF THIS PLAN / FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED READINGS.
- THIS PLAN HAS BEEN PREPARED UNDER THE SUPERVISION OF REGISTERED SURVEYOR S.B McEVOY, BOSSI NUMBER 265.
-
- NO PART OF THIS SURVEY MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM, WITHOUT THE WRITTEN PERMISSION OF THE COPYRIGHT OWNER EXCEPT AS PERMITTED BY THE COPYRIGHT ACT 1968.
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- THIS NOTICE MUST NOT BE ERASED.

STEPHEN EMERY
REGISTERED SURVEYOR No.1605

LEGEND:

BAL = BALCONY
BLD = EXTERNAL BUILDING
BW = BOTTOM WALL
CHI = CHIMNEY
CL = CENTRELINE
CON = CONCRETE
CPIT = COMMUNICATIONS PIT
EPK = ELECTRICITY PILLAR
GF = GUTTER LEVEL
GRT = GRATE
HL = HOOD LEVEL
HYD = HYDRANT
LID = MISCELLANEOUS PIT LID
NS = NATURAL SURFACE
PP = POWER POLE
POST = POST BOX
RF = TOP OF ROOF
RK = ROCK
RR = ROOF RIDGE
SL = SILL LEVEL
SMH = SEWER MAN HOLE
SVA = STOP VALVE
TFCE = TOP OF FENCE
TKB = TOP OF KERB\
TOR = TOP OF ROCK
TPIT = TELSTRA PIT
TR = TREE
TW = TOP OF WALL
E = ELECTRICITY OVERHEAD
S = SEWER UNDERGROUND
TREE SPREAD-DIAMETER-HEIGHT

HORIZONTAL DATUM:
CO-ORDINATE SYSTEM: MGA (GDA94)
MARKS ADOPTED: PM 35753, PM 35754

VERTICAL DATUM:
DATUM: AUSTRALIAN HEIGHT DATUM (AHD)
B.M. ADOPTED: PM 35753
R.L. 19.67 (ORDER 4)
SOURCE: S.C.I.M.S. (28/01/2020)

4	EXTRA DETAIL ADDED	04/02/2021
3	STREET LEVELS ADDED	7/08/2020
2	AMEND SUBJECT BUILDING TEXT	24/02/2020
1	FIRST ISSUE	21/02/2020

CLIENT:
HIGHBURY WARUNG PTY LTD
SUITE 5/540 SYDNEY ROAD
SEAFORTH NSW 2092

SURVEY PLAN
SHOWING DETAIL & LEVELS
OVER S.P.1927
1 WARUNG STREET
McMAHONS POINT NSW 2060

(A) EXCLUDING LOT 90 IN D.P.1231644 LYING BETWEEN RL -13.4 AND RL-36.6m AHD
(B) EXCLUDING LOT 90 IN D.P.1231644 LYING BETWEEN RL -15.4 AND RL-38.7m AHD

TITLE INDICATES THAT IN S.P.1927 IS SUBJECT TO:

- RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- ATTENTION IS DIRECTED TO BY-LAWS SET OUT IN SCHEDULE 2 STRATA SCHEMES MANAGEMENT REGULATION 2016
- (C) DP505859 CROSS EASEMENTS (SEE 18IB, CONVEYANCING ACT, 1919) CREATED BY TRANSFER J566218 AFFECTING THE PARTY WALL ON THE COMMON BOUNDARY AFFECTING THE SITE DESIGNATED (A) IN THE TITLE DIAGRAM
- X903567 CHANGE OF BY-LAWS
- ATTENTION IS DIRECTED TO CLAUSE 9 SCHEDULE 4 STRATA SCHEMES (FREEHOLD DEVELOPMENT) ACT 1973 REGARDING BOUNDARIES BETWEEN LOTS AND COMMON PROPERTY IN STRATA SCHEMES REGISTERED BEFORE 1-7-1974
- AM70719 PROPOSED ACQUISITION PURSUANT TO SECTION 11 LAND ACQUISITION (JUST TERMS COMPENSATION) ACT, 1991 AFFECTING THE LAND ABOVE DESCRIBED, ISSUED 27/6/2017
- AM937666 THIS EDITION ISSUED PURSUANT TO S.31 REAL PROPERTY ACT, 1900

C.M.S. Surveyors Pty Limited
ACN: 096 240 201
PO Box 463 Dee Why NSW 2099
2/994 South Creek Road, Dee Why NSW 2099
Telephone: (02) 9971 4802
Facsimile: (02) 9971 4822
E-mail: info@cmssurveyors.com.au

LGA: NORTH SYDNEY			SHEET 1 OF 1
SURVEYED	DRAWN	CHECKED	APPROVED
PB,MB,ABS	ABS	PB	AF
SURVEY INSTRUCTION	SCALE	DATE OF SURVEY	
19099	1:100 @ A0	28/01/20-25/01/21	

DRAWING NAME: **19099detail**
CAD FILE: 19099detail 4.dwg
ISSUE: **4**

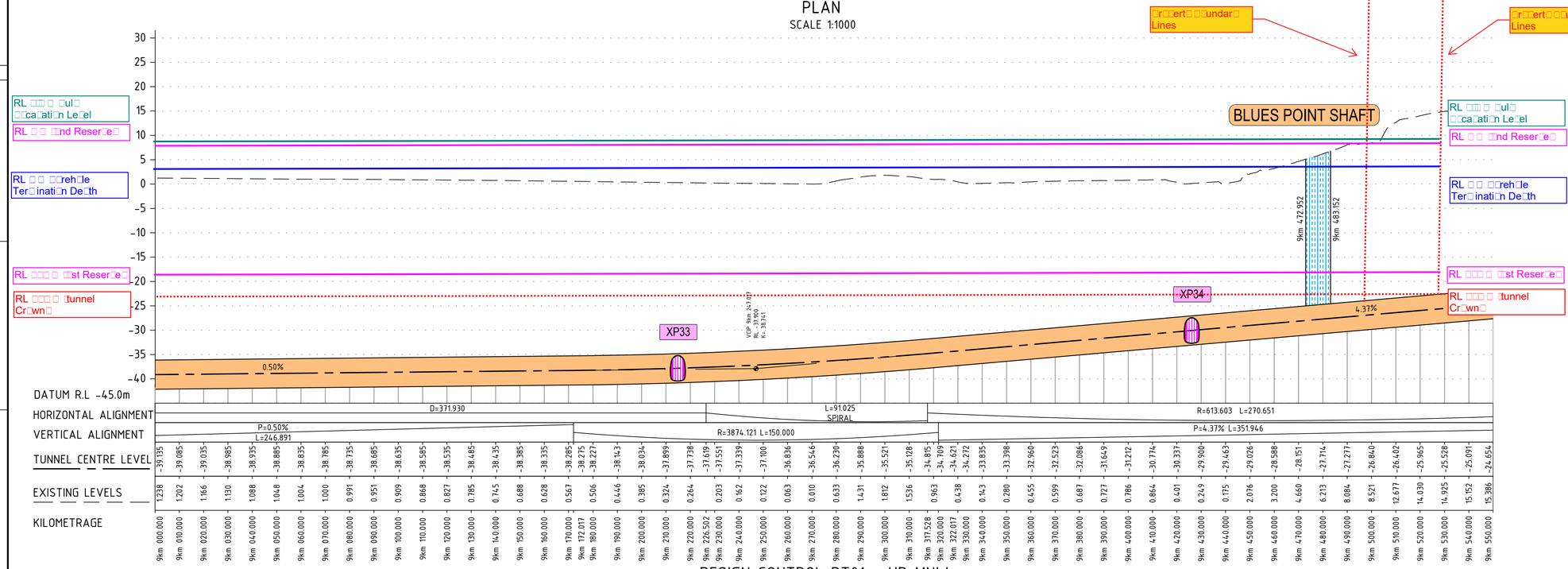
PLAN
SCALE 1:1000

LEGEND

- TUNNEL ALIGNMENT CONTROL LINE
- RUNNING TUNNELS
- CROSS PASSAGES AND CROSS PASSAGES WITH SUMP
- STUB TUNNEL
- DIVE STRUCTURES
- STATION EXCAVATIONS
- NOZZLE ENLARGEMENTS
- CROSSOVER CAVERN
- STATION SHAFTS
- STATION CAVERNS
- STATION ADITS
- SHAFT
- LIFT SHAFTS

CADASTRAL MODEL (BASED ON PR124656-SACM-001-E)

- SURVEY ACCURATE CADASTRAL MODEL
- NEAR SURVEY ACCURATE CADASTRE
- DIGITAL CADASTRAL DATABASE

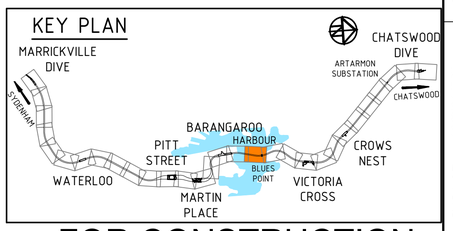


DESIGN CONTROL RT01 - UP MNW
SCALE - HORIZ. 1:1000, VERT. 1:500

NOTE

1. FOR ALL ALIGNMENT NOTES REFER DRAWING NO. SMCSWTSE-JAB-TPW-AL-DRG-505005.

KEY PLAN



DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

FOR CONSTRUCTION

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CO-ORDINATE SYSTEM: MGA | HEIGHT DATUM: AHD | SCALE: 1:1000

SCALES
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SCALE 1:1000 AT A1 SIZE
0 5 10 15 20 25 30m
SCALE 1:500 AT A1 SIZE

IC CERTIFIED - IC CERTIFICATE SMCSWTSE-IC-CER-B2-008-A

CLIENT
NSW GOVERNMENT Transport for NSW

SERVICE PROVIDERS: M2 | city&southwest | CPB | Ghella | ARCADIS | BG&E | NOVA CONSULTING | HOCHTIEF | PSM | McMILLEN JACOBS ASSOCIATES

DRAWN	L. AVUK	09.01.18
DESIGNED	TINSW	-
DRG CHECK	J. MACADANGDANG	09.01.18
DESIGN CHECK	N/A	-
APPROVED	K. LIN	09.01.18

SYDNEY METRO CITY & SOUTHWEST

TSE PROJECT WIDE
ALIGNMENT
GA PLAN AND LONGITUDINAL SECTION
TUNNEL ALIGNMENT CONTROL LINE RT01 - SHEET 18

FILE No.	SHEET: 34 OF 76	A1
STATUS: FOR CONSTRUCTION		©
DRG No. SMCSWTSE-JAB-TPW-AL-DRG-505118	00	EDMS No.

DF 801*554

File Plotted C:\SMCSW-TSE-Export\
Plot Date & Time 1/9/2018 1:57 PM
Plotted by JULIUS.MACADANGDANG

Appendix C

Borehole Logs, Photographs and Explanatory Sheet

Soil Descriptions

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse)
- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse)
- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with 'Mix of Soil and Cobbles/Boulders' with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Soil Descriptions

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) Non-cohesive and free-running.
- Moist (M) Soil feels cool, darkened in colour.
  Soil tends to stick together.
  Sand forms weak ball but breaks easily.
- Wet (W) Soil feels cool, darkened in colour.
  Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- ‘Moist, dry of plastic limit’ or ‘w <PL’ (i.e. hard and friable or powdery).
- ‘Moist, near plastic limit’ or ‘w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- ‘Moist, wet of plastic limit’ or ‘w >PL’ (i.e. soils usually weakened and free water forms on the hands when handling).
- ‘Wet’ or ‘w ≈LL’ (i.e. near the liquid limit).
- ‘Wet’ or ‘w >LL’ (i.e. wet of the liquid limit).

Rock Descriptions

Rock Strength

Rock strength is defined by the Unconfined Compressive Strength and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $Is_{(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

Strength Term	Abbreviation	Unconfined Compressive Strength MPa	Point Load Index * $Is_{(50)}$ MPa
Very low	VL	0.6 - 2	0.03 - 0.1
Low	L	2 - 6	0.1 - 0.3
Medium	M	6 - 20	0.3 - 1.0
High	H	20 - 60	1 - 3
Very high	VH	60 - 200	3 - 10
Extremely high	EH	>200	>10

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$. It should be noted that the UCS to $Is_{(50)}$ ratio varies significantly for different rock types and specific ratios should be determined for each site.

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Residual Soil	RS	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely weathered	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured , usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.

Rock Descriptions

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

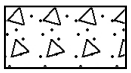
Symbols & Abbreviations

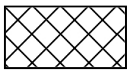
Graphic Symbols for Soil and Rock

General

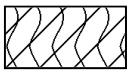

Asphalt

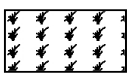

Road base

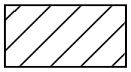

Concrete

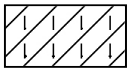

Filling

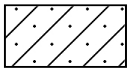
Soils


Topsoil

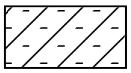

Peat

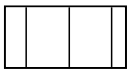

Clay

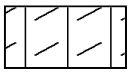

Silty clay

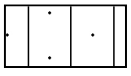

Sandy clay

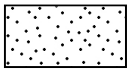

Gravelly clay

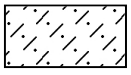

Shaly clay

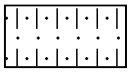

Silt


Clayey silt


Sandy silt

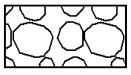

Sand

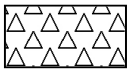

Clayey sand


Silty sand


Gravel

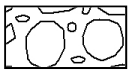

Sandy gravel


Cobbles, boulders

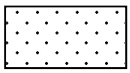

Talus

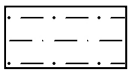
Sedimentary Rocks

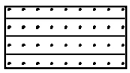

Boulder conglomerate

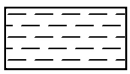

Conglomerate


Conglomeratic sandstone

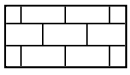

Sandstone


Siltstone

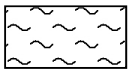

Laminite

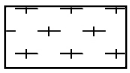

Mudstone, claystone, shale

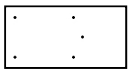

Coal


Limestone

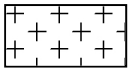
Metamorphic Rocks

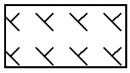

Slate, phyllite, schist

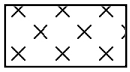

Gneiss

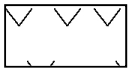

Quartzite

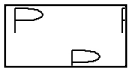
Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

BOREHOLE LOG

CLIENT: Highbury Kirribilli Pty Ltd
PROJECT: Proposed Residential Redevelopment
LOCATION: 1 Warung Street, McMahon's Point

SURFACE LEVEL: 13.2 m AHD
EASTING: 333853
NORTHING: 6253186
DIP/AZIMUTH: 90°/--

BORE No: BH01
PROJECT No: 203182.00
DATE: 13/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 0.05 0.10 0.50 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
13		FILL/SAND: fine to coarse, pale grey, with subrounded sandstone gravel, moist, apparently medium dense										
	0.8								S			8,24,31 N = 55
12	1 1.0	Clayey SAND SC: medium to coarse, pale orange-grey, moist, dense, residual										
		SANDSTONE: fine to medium grained, pale brown, inferred very low strength, extremely weathered to highly weathered, Hawkesbury Sandstone						Unless otherwise stated all discontinuities are B0°-10°, ir, ro, cln				
11	2 2.0	SANDSTONE: fine to medium grained, orange, partial iron cementation in upper 0.28m, thinly bedded, low strength, highly weathered grading to moderately weathered, slightly fractured, Hawkesbury Sandstone						2.07m: B2°, ir, ro, fe stn 2.18m: B2°, ir, ro, fe stn				PL(A) = 0.2
10	3	Below 2.3m: pale yellow Below 3.0m: medium strength							C	100	96	
9	4											PL(A) = 0.5
8	5	Between 4.6-4.7m: iron stained band						4.57m: B2°, ir, ro, fe stn				PL(A) = 0.5
	5.25	SILTSTONE Between 5.24m and 5.78m: thinly laminated, dark grey, medium strength, moderately weathered						5.25m: J30°, un, ro, cln CORE LOSS: 390mm	C	74	96	
	5.64											PL(A) = 0.3
7	6	SANDSTONE: fine to medium grained, pale grey, laminated at 0º-5º, medium strength, slightly weathered, unbroken then slightly fractured, Hawkesbury Sandstone										
6	7	Between 6.40-6.95m: orange iron staining										PL(A) = 0.7
									C	100	100	
												PL(A) = 0.9
5	8	Below 7.78m: Fractured						7.78m: B7°, ir, sm, cbs, vn 7.82m: B0°, ir, sm, cbs, vn 8.12m: J30°, ir, ro, cln 8.4m: Cs 2mm				
		Between 8.48-9.65m: sub-vertical joint, healed below 9.14m						8.75m: J88°, ir, rf, cln 8.48-9.14 then heeled 9.14-9.65				PL(A) = 0.7
4	9							9.1m: B4°, ir, sm, cly 3mm 9.14m: B4°, ir, sm, clay 2mm 9.65m: B4°, ir, sm, cly 15mm	C	100	100	
	10.0											PL(A) = 0.6

Bore discontinued at 10.0m

RIG: Bobcat- Target depth reached **DRILLER:** GM **LOGGED:** DH **CASING:** HW: 0.0-2.0m

TYPE OF BORING: Solid flight auger (TC-bit) to 2.0m; NMLC coring to 10.0m

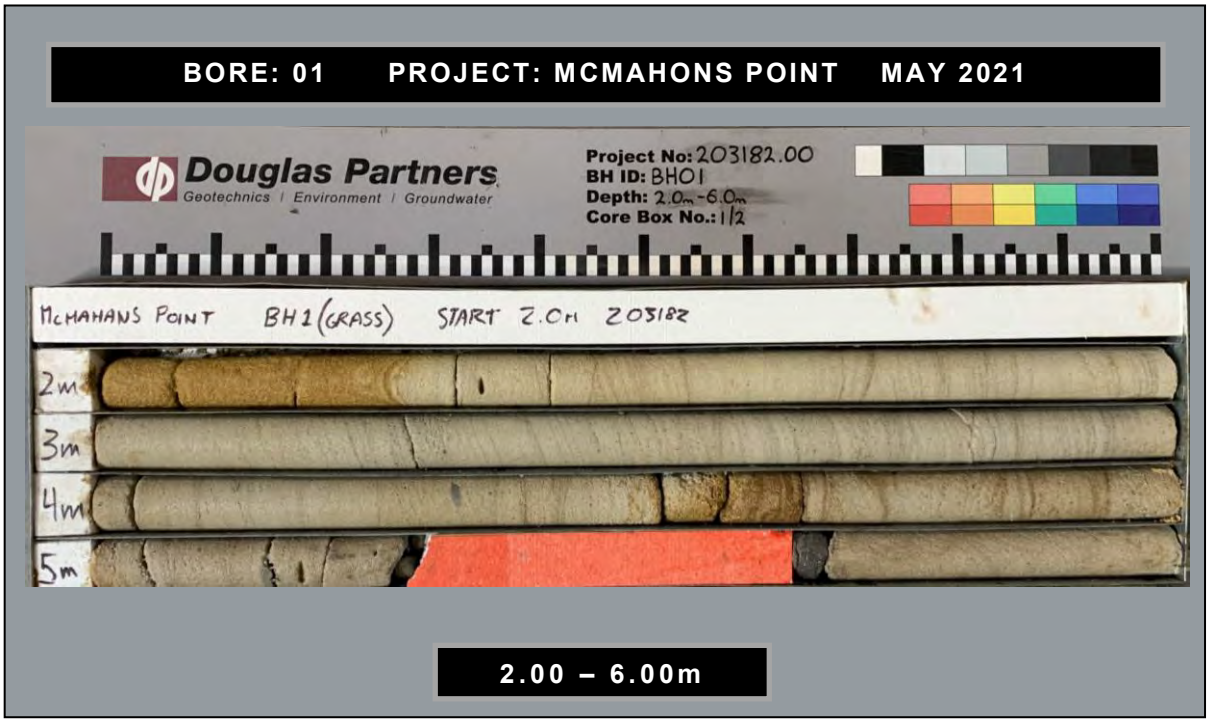
WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater


BORE: 01 PROJECT: MCMAHONS POINT MAY 2021
Douglas Partners
Geotechnics | Environment | Groundwater
Project No: 203182.00
BH ID: BH01
Depth: 2.0m-6.0m
Core Box No.: 1/2
MCMAHANS POINT BH1 (GRASS) START 2.0m 203182
2m
3m
4m
5m
2.00 – 6.00m


BORE: 01 PROJECT: MCMAHONS POINT MAY 2021
Douglas Partners
Geotechnics | Environment | Groundwater
Project No: 203182.00
BH ID: BH01
Depth: 6.0m-10.0m
Core Box No.: 2/2
6
7
8
9
6.00 – 10.00m

BOREHOLE LOG

CLIENT: Highbury Kirribilli Pty Ltd
PROJECT: Proposed Residential Redevelopment
LOCATION: 1 Warung Street, McMahon's Point

SURFACE LEVEL: 14 m AHD
EASTING: 333827
NORTHING: 6253209
DIP/AZIMUTH: 90°/--

BORE No: BH02
PROJECT No: 203182.00
DATE: 13/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Type	Core Rec. %	RQD %	Test Results & Comments
14	0.03	ASPHALT										
		FILL/SAND: fine to coarse, pale grey, with subrounded sandstone gravel, moist, apparently medium dense						Unless otherwise stated all discontinuities are B0°-10°, ir, ro, cln	S			11,32/120 refusal
	0.8	Clayey SAND SC: medium to coarse, pale orange-grey, moist, dense, residual										
13	1.0											
	1.3	SANDSTONE: fine to medium grained, pale brown, inferred very low strength, extremely weathered to highly weathered, Hawkesbury Sandstone						1.36m: CORE LOSS: 40mm				
	1.4								C	96	100	PL(A) = 0.7
12	2	SANDSTONE: fine to medium grained, pale yellow, thinly bedded with occasional siltstone clasts up to 10mm, medium strength, slightly weathered, unbroken, Hawkesbury Sandstone										PL(A) = 0.7
11	3											PL(A) = 0.8
	3.92	SANDSTONE: fine to medium grained, red-brown and pale brown, with iron cemented bands, thinly bedded, medium strength, moderately weathered to slightly weathered, fractured, Hawkesbury Sandstone						4.21m: B2°, ir, ro, fe stn 4.25m: B2°, ir, ro, fe stn CORE LOSS: 400mm	C	74	97	PL(A) = 1.2
10	4											
	4.65							4.74m: B0°, ir, ro, fe stn 4.78m: B2°, ir, ro, fe stn				PL(A) = 0.4
9	5	SANDSTONE: fine to medium grained, red-brown, iron cemented, thinly bedded, medium strength, moderately weathered to slightly weathered, slightly fractured, Hawkesbury Sandstone Between 5.3m and 5.35m: low strength						5.21m: B4°, ir, ro, fe stn 5.33m: B2°, ir, ro, fe stn				PL(A) = 0.1
	5.45							5.45m: CORE LOSS: 130mm				
	5.58							5.58m: B3°, pl, ro, cln				
8	6											PL(A) = 1
		SANDSTONE: medium grained, pale grey, massive, medium strength, fresh, unbroken, Hawkesbury Sandstone										
7	7											
	7.15	SANDSTONE: medium grained, pale grey, cross-bedded, high strength, fresh, unbroken, Hawkesbury Sandstone Between 7.43-7.48m: seam of very stiff high plasticity clay, possible sub horizontal intrusive Sill Below 8.0m: pale brown and high strength						7.38m: B4°, ir, sm, cly 3mm 7.43m: B0°, pl, sm, cly 50mm	C	100	98	PL(A) = 0.7
6	8											
5	9											PL(A) = 1.6
									C	100	96	
								9.37m: B2°, pl, ro, cln				
	10.0											PL(A) = 1.1

Bore discontinued at 10.0m

RIG: Bobcat- Target depth reached **DRILLER:** GM **LOGGED:** DH **CASING:** HW: 0.0-1.3m

TYPE OF BORING: Diatube coring to 0.03m; Solid flight auger (TC-bit) to 1.3m; NMLC coring to 10.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BORE: 02 PROJECT: MCMAHONS POINT MAY 2021

1.30 – 6.00m

BORE: 02 PROJECT: MCMAHONS POINT MAY 2021

6.00 – 10.00m

BOREHOLE LOG

CLIENT: Highbury Kirribilli Pty Ltd
PROJECT: Proposed Residential Redevelopment
LOCATION: 1 Warung Street, McMahon's Point

SURFACE LEVEL: 13.2 m AHD
EASTING: 333829
NORTHING: 6253191
DIP/AZIMUTH: 45°/23°

BORE No: BH03
PROJECT No: 203182.00
DATE: 12/5/2021
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding, J - Joint, S - Shear, F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
13	0.03	ASPHALT										
		FILL/SAND: fine to coarse, pale grey, with subrounded sandstone gravel, moist, apparently medium dense										
12	1.4	Clayey SAND SC: medium to coarse, pale orange-grey, moist, apparently medium dense, residual										
	1.8	SANDSTONE: fine to medium grained, pale brown, inferred very low strength, extremely weathered to highly weathered, Hawkesbury Sandstone										
	2.8							2.8m: CORE LOSS: 100mm				
11	2.9	SANDSTONE: fine to medium grained, orange-brown, iron cemented, thinly bedded and cross bedded, low strength, highly weathered, fractured, Hawkesbury Sandstone						3.2m: B45°, ir, ro, fe stn 3.3m: B45°, ir, ro, fe stn 3.54m: B45°, ir, ro, fe stn 3.65m: J47°, ir, ro, fe stn	C	97	100	PL(A) = 0.1 PL(A) = 0.1
		Between 3.15-3.4m: band of very low strength sandstone										
		Below 3.8m: red-brown and orange-brown						4.38m: B32°, ir, ro, fe stn				
10		Below 5.1m: orange to pale yellow						4.82m: B51°, ir, ro, cln 4.91m: J3°, ir, ro, fe stn 5.08m: J8°, ir, ro, cln 5.68m: B47°, ir, ro, cln				PL(A) = 0.2 PL(A) = 1.2
9	6.05	At 5.9m: band of high strength sandstone						6.09m: B54°, ir, ro, cln 6.42m: Healed J55°	C	80	93	
		SANDSTONE: medium grained, pale grey, medium bedded and cross bedded, medium strength, highly weathered, fractured, Hawkesbury Sandstone						6.67m: Healed J55° 6.75m: J51°, ir, ro, cln				PL(A) = 0.7
8	6.93	DOLERITE: finely crystalline, pale grey, low strength, highly weathered, highly fractured, igneous intrusive dyke						7.17m: CORE LOSS: 620mm				
	7.79	DOLERITE: finly crystalline, pale grey, extremely weathered, recovered as high plasticity, very stiff-hard clay, igneous intrusive dyke										
7	8.87	SANDSTONE: fine to medium grained, red-brown to pale grey, laminated, medium strength, altered and highly weathered with occasional zone of carbonaceous wisps, unbroken, Hawkesbury Sandstone						9.4m: J61°, ir, ro, cln	C	100	100	PL(A) = 0.6
									C	100	100	PL(A) = 0.4

RIG: Comacchio Geo 305 **DRILLER:** GM **LOGGED:** DH **CASING:** HW: 0.0-2.8m

TYPE OF BORING: Diatube coring to 0.03m; Solid flight auger (TC-bit) to 2.8m; NMLC coring to 14.4m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Azimuth - Magnetic North

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Highbury Kirribilli Pty Ltd
PROJECT: Proposed Residential Redevelopment
LOCATION: 1 Warung Street, McMahon's Point

SURFACE LEVEL: 13.2 m AHD
EASTING: 333829
NORTHING: 6253191
DIP/AZIMUTH: 45°/23°

BORE No: BH03
PROJECT No: 203182.00
DATE: 12/5/2021
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low / Very Low / Low / Medium / High / Very High / Ex High)	Water	Fracture Spacing (m) (0.01 / 0.05 / 0.10 / 0.50 / 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
	10.1	SANDSTONE: fine to medium grained, red-brown to pale grey, laminated, medium strength, moderately weathered, unbroken, Hawkesbury Sandstone						10.46m: J58°, ir, ro, cln	C	100	100	PL(A) = 0.6
	12											PL(A) = 0.6
								12.8m: J55°, pl, cly, vn 12.86m: B48°, ir, ro, cln 12.95m: B54°, ir, sm, cbs vn	C	100	93	
	13.7	SANDSTONE: medium grained, red-brown to pale grey, massive, high strength, slightly weathered, slightly fractured, Hawkesbury Sandstone						13.66m: J11°, ir, ro, cln 13.76m: B56°, ir, ro, cln 14.04m: B35°, ir, ro, cln				PL(A) = 1.1
	14.4	Bore discontinued at 14.4m - Target depth reached						14.34m: J70°, ir, ro, cln 14.38m: J33°, ir, sm, cly vn				

RIG: Comacchio Geo 305 **DRILLER:** GM **LOGGED:** DH **CASING:** HW: 0.0-2.8m

TYPE OF BORING: Diatube coring to 0.03m; Solid flight auger (TC-bit) to 2.8m; NMLC coring to 14.4m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Azimuth - Magnetic North

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BORE: 03 PROJECT: MCMAHONS POINT MAY 2021

2.80 – 7.00m

BORE: 03 PROJECT: MCMAHONS POINT MAY 2021

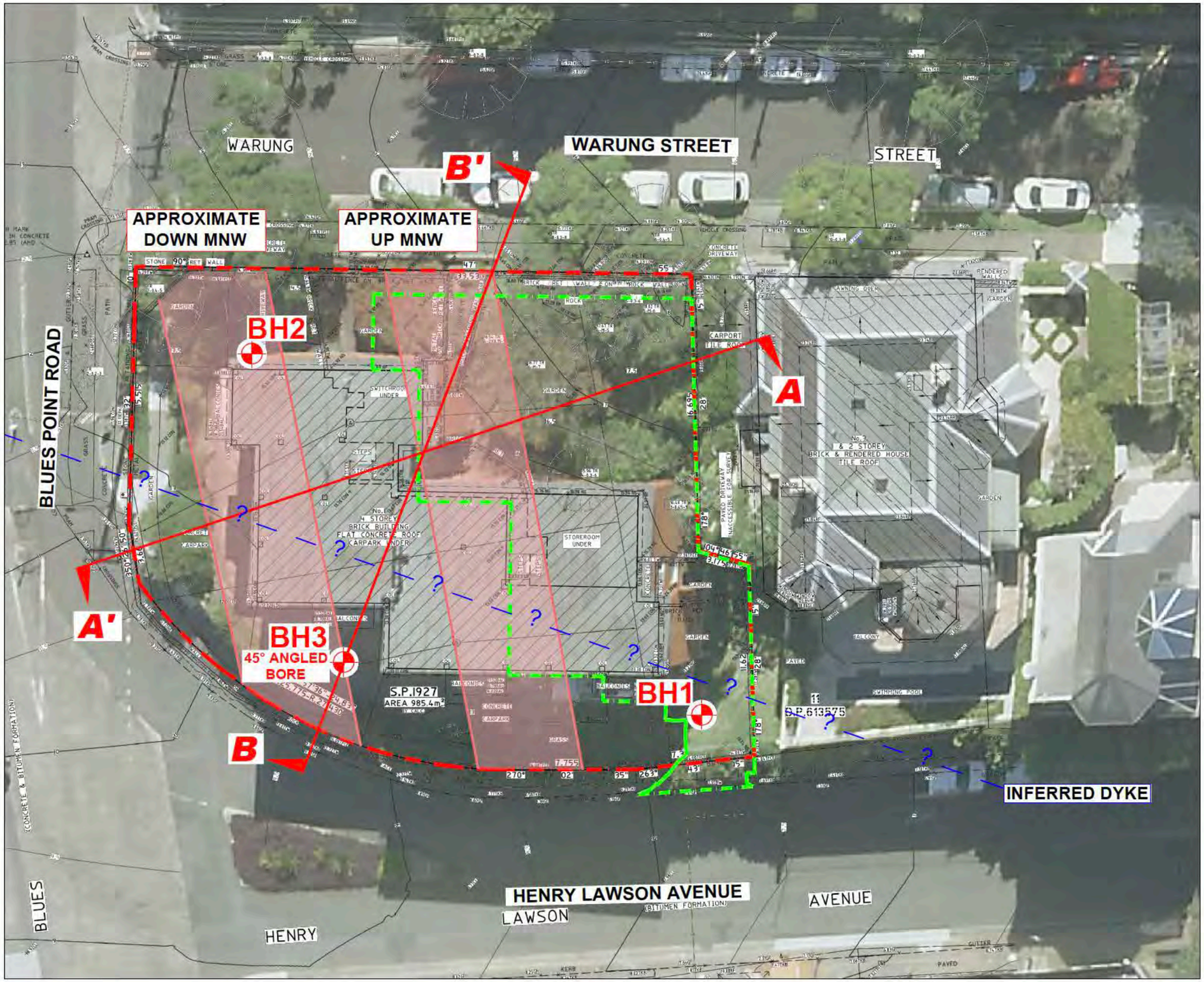
7.00 – 12.00m

BORE: 03 PROJECT: MCMAHONS POINT MAY 2021

12.00 – 14.40m

Appendix D

Site Plan and Geotechnical Cross Sections including TfNSW Information



SITE LOCALITY

NOTE:
1. Base image from MetroMap.com.au (dated 15.04.2021).
2. Survey plan from C.M.S. Surveyors Pty Limited (dated 28.01.2021).

0 1 2 3 4 5 6 7 8 9 10 15 20 25m
1:250 @ A3

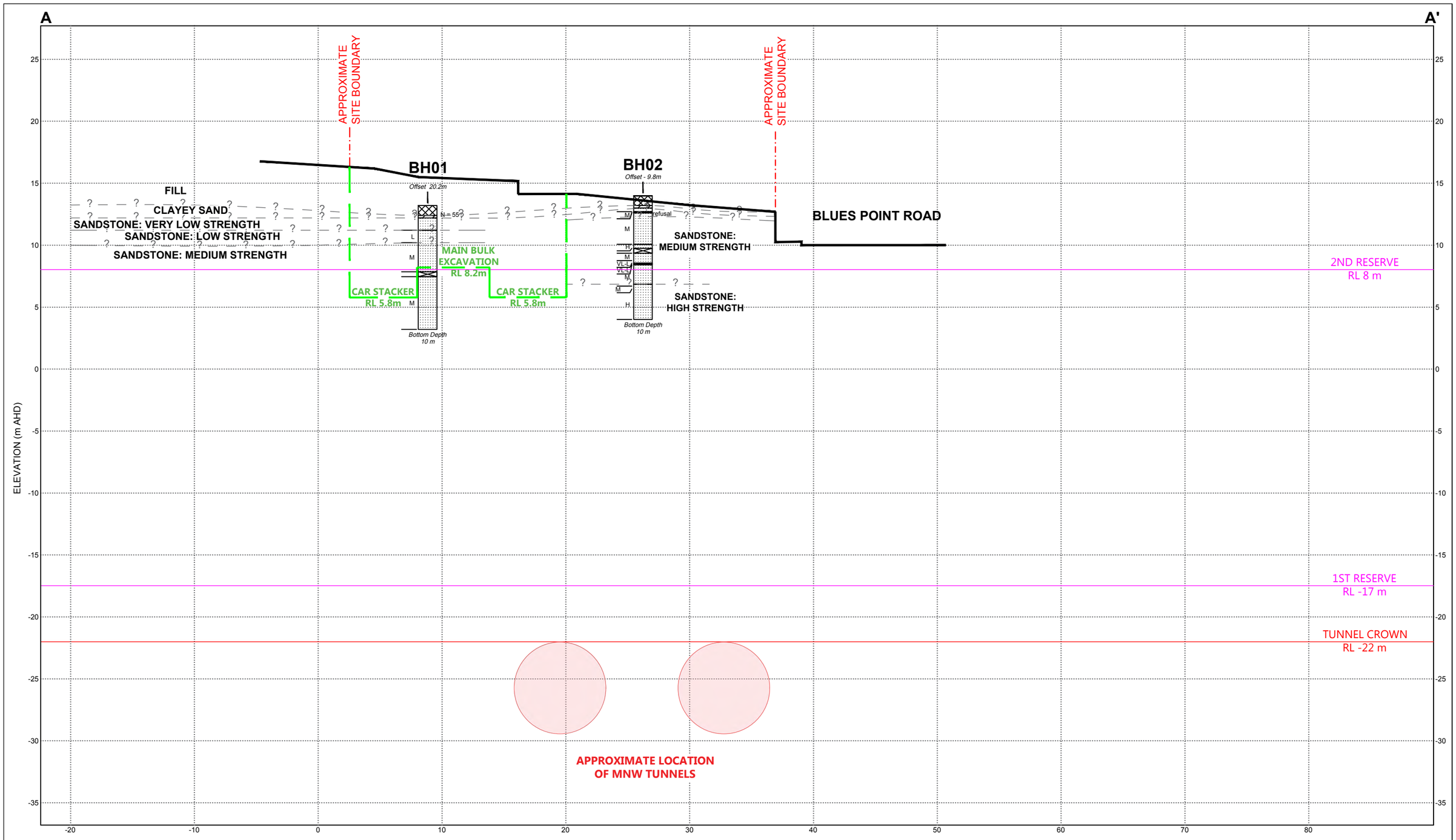
LEGEND

- Test Bore Location
- Site Boundary
- Proposed Basement Footprint
- Geological Cross Section

Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: Highbury Kirribilli Pty Ltd		TITLE: **Test Location Plan**
OFFICE: Sydney	DRAWN BY: CJ	**Proposed Residential Development**
SCALE: 1:250 @ A3	DATE: 13.08.2021	**1 Warung Street, McMahons Point**

PROJECT No: 203182.00
DRAWING No: 1
REVISION: 1



LEGEND

- Core Loss
- Asphaltic Concrete
- Clayey Sand
- Dolerite
- Filling
- Sandstone

NOTES

1. Subsurface conditions are accurate at the borehole locations only. Variations in subsurface conditions may occur between borehole locations. Interpreted strata boundaries are approximate and should be used as a guide only.
2. Summary logs only and should be read in conjunction with detailed logs.

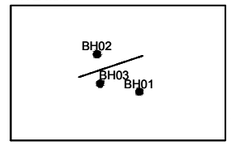
ROCK STRENGTH

- EL - Extremely Low
- VL - Very Low
- L - Low
- M - Medium
- H - High
- VH- Very High

TESTS / OTHER

- N - Standard penetration test value
- — ? — — - Interpreted geotechnical boundary
- ⊻ - Water level

SITE MAP

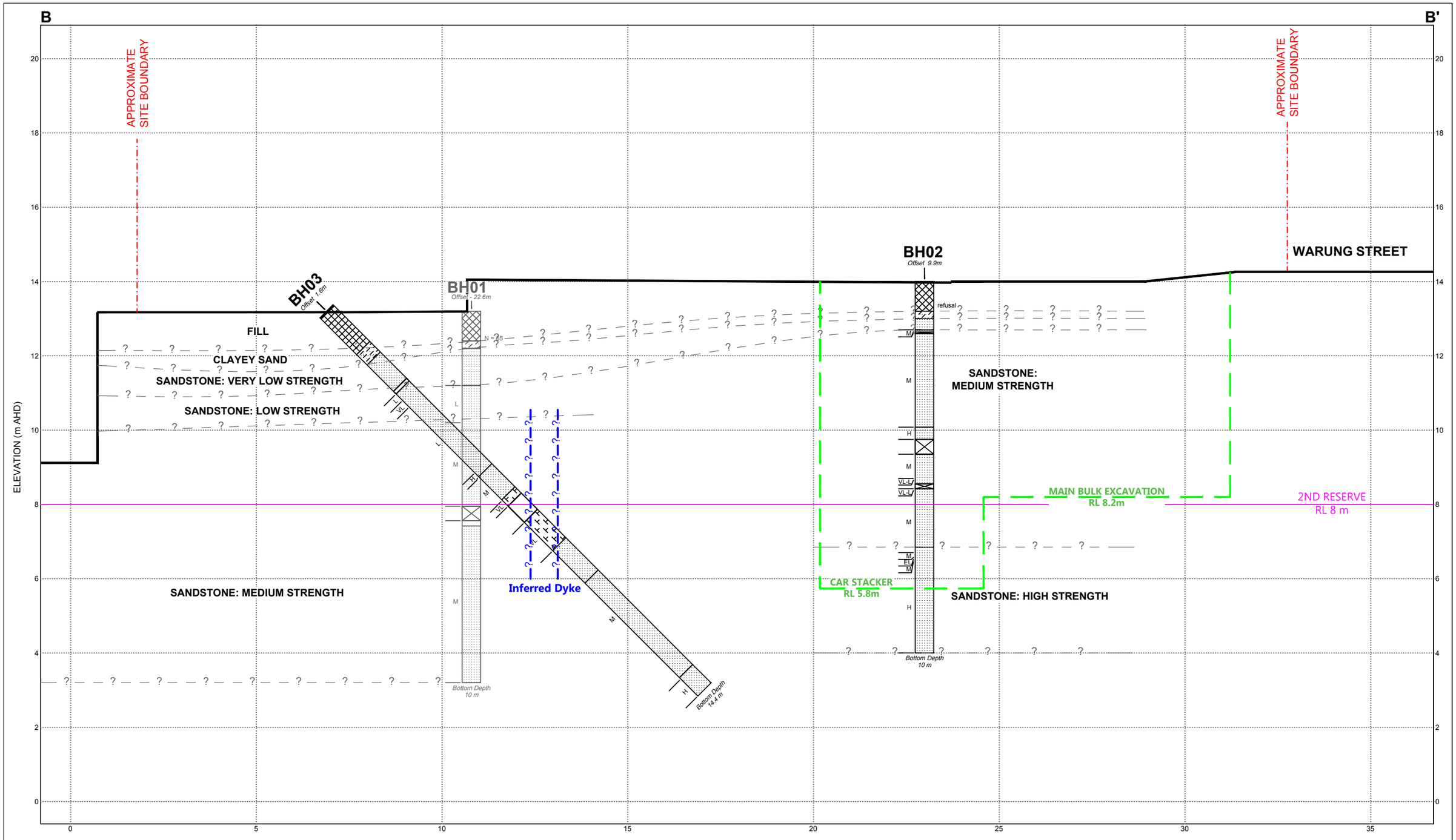


0 6
Horizontal Scale (metres)
Natural Scale

Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: Highbury Kirribilli Pty Ltd		TITLE: **Cross-section A-A'**
OFFICE: Sydney	DRAWN BY: CJ	**Proposed Residential Redevelopment**
SCALE: 1:300 (H) 1:300 (V) @ A3	DATE: 13.08.2021	**1 Warung Street, McMahon's Point**

PROJECT No: 203182.00
DRAWING No: 2
REVISION: 1



LEGEND

- Core Loss
- Asphaltic Concrete
- Clayey Sand
- Dolerite
- Filling
- Sandstone

NOTES

1. Subsurface conditions are accurate at the borehole locations only. Variations in subsurface conditions may occur between borehole locations. Interpreted strata boundaries are approximate and should be used as a guide only.
2. Summary logs only and should be read in conjunction with detailed logs.

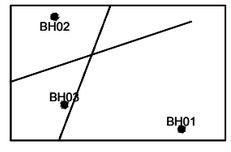
ROCK STRENGTH

- EL - Extremely Low
- VL - Very Low
- L - Low
- M - Medium
- H - High
- VH- Very High

TESTS / OTHER

- N - Standard penetration test value
- — ? — — - Interpreted geotechnical boundary
- ▽ - Water level

SITE MAP



Horizontal Scale (metres) 0 2

Natural Scale

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CLIENT: Highbury Kirribilli Pty Ltd		TITLE: **Cross-section B-B'**	PROJECT No: 203182.00
OFFICE: Sydney	DRAWN BY: CJ	**Proposed Residential Redevelopment**	DRAWING No: 3
SCALE: 1:100 (H) 1:100 (V) @ A3	DATE: 13.08.2021	**1 Warung Street, McMahon's Point**	REVISION: 1

Appendix E

Architectural Drawings

1 **LOCATION PLAN**
1 : 200 @ A1

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

Do not scale drawing. Verify all dimensions on site. Report any discrepancies in documentation to architect. This drawing is for the purpose of council approval and as such, is not suitable for construction.

GRAPHIC SCALE

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

DRAWING NOTES

LEGEND

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE DEMOLISHED
- EXCAVATE
- EXISTING TO BE DEMOLISHED
- NEW WALLS & SLABS
- REMOVE & REBUILD
- NEW ADDITIONS

ISS	DATE	PURPOSE OF ISSUE
A	18.08.2021	ISSUE FOR DA

CLIENT
Highbury Warung Pty Ltd

squillace

ARCHITECTURE / INTERIORS

www.squillace.com.au

SYDNEY
1/80 Albion Street, Surry Hills, NSW 2010
Ph: +61 2 8354 1300
ABN: 24 132 554 753

NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

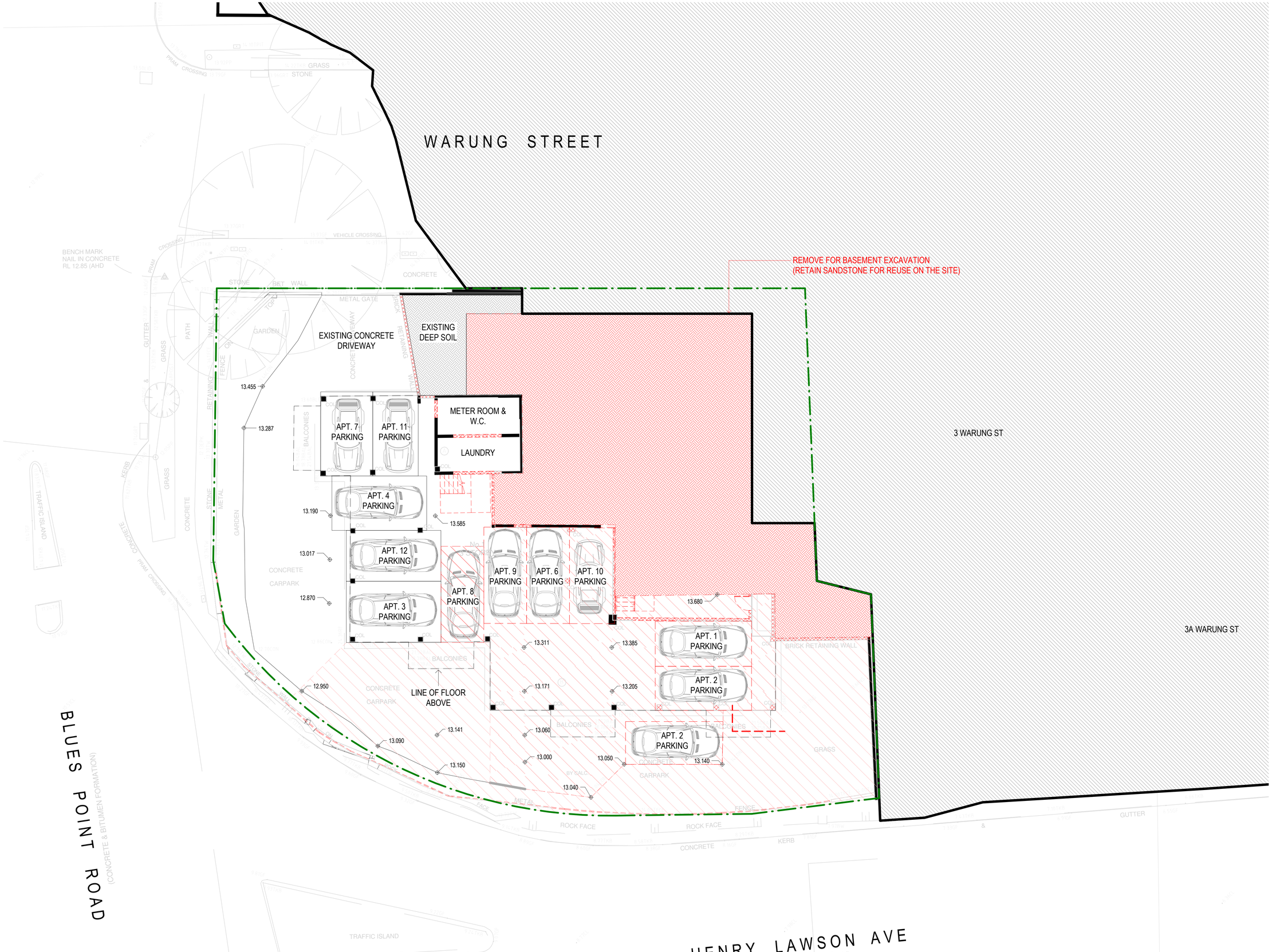
1 Warung Street, McMahons Point NSW

DRAWING NO. DA-012
ISSUE A

JOB NO. HIG2009
SCALE **AS SHOWN**
DATE 18.08.2021

DRAWING TITLE
SITE ANALYSIS PLAN

DRAWN BY FO
CHECKED BY SC



1 **LOWER GROUND LEVEL - DEMOLITION PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

Do not scale drawing. Verify all dimensions on site. Report any discrepancies in documentation to architect. This drawing is for the purpose of council approval and as such, is not suitable for construction.

GRAPHIC SCALE

1:200 @ A3 0 2000 5000
1:100 @ A1

DRAWING NOTES

LEGEND

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE DEMOLISHED
- EXCAVATE
- EXISTING TO BE DEMOLISHED
- NEW WALLS & SLABS
- REMOVE & REBUILD
- NEW ADDITIONS

ISS	DATE	PURPOSE OF ISSUE
A	18.08.2021	ISSUE FOR DA

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Ph: +61 2 8354 1300
ABN: 24 132 554 753

NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

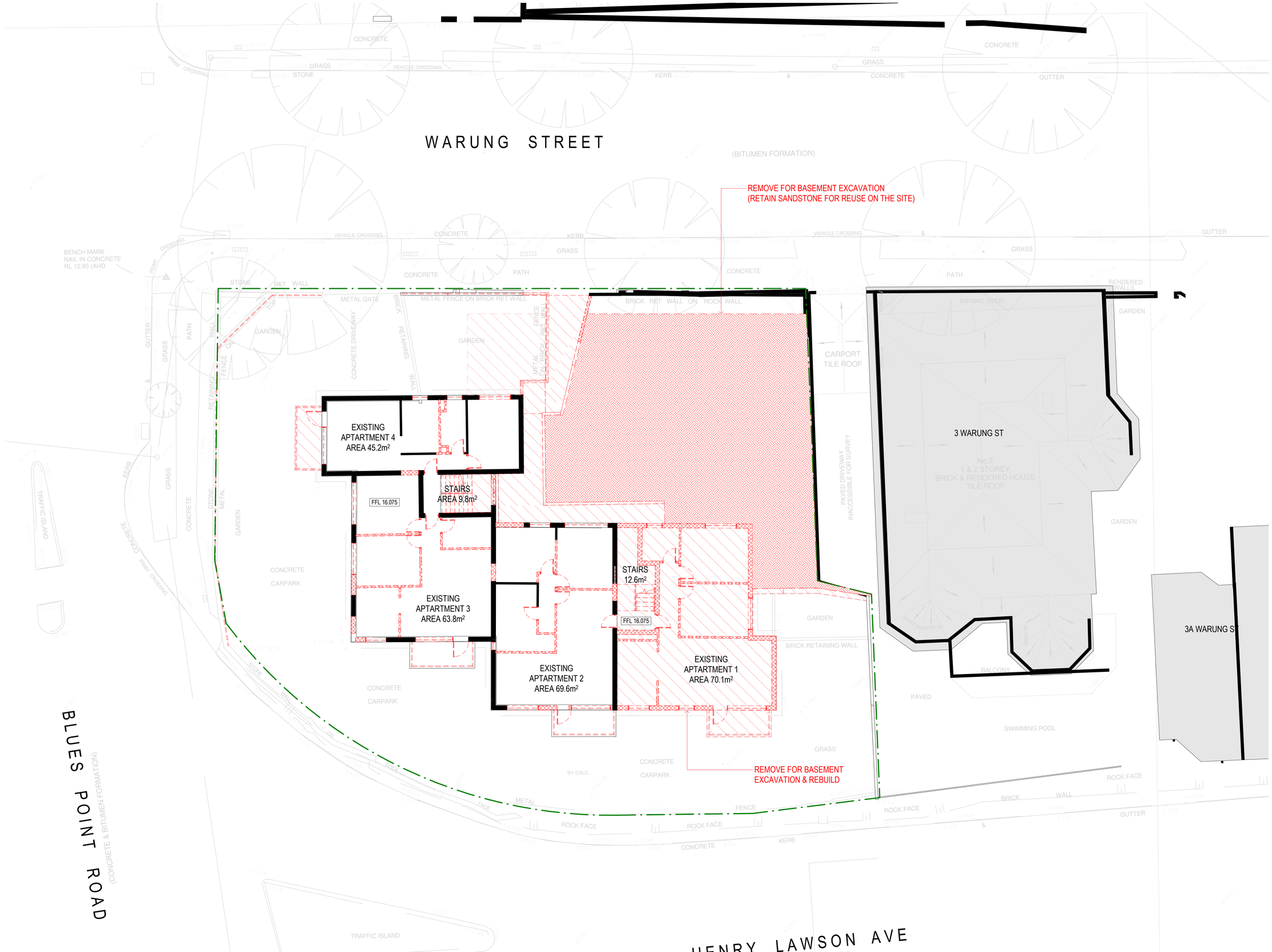
1 Warung Street, McMahons Point NSW

DRAWING NO. DA-019
ISSUE A

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 18.08.2021

DRAWING TITLE
LOWER GROUND LEVEL - DEMOLITION PLAN

DRAWN BY FO
CHECKED BY SC



1 **GROUND FLOOR - DEMOLITION PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

Do not scale drawing. Verify all dimensions on site. Report any discrepancies in documentation to architect. This drawing is for the purpose of council approval and as such, is not suitable for construction.

GRAPHIC SCALE

1:200 @ A3 0 2000 5000
1:100 @ A1

DRAWING NOTES

LEGEND

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE DEMOLISHED
- EXCAVATE
- EXISTING TO BE DEMOLISHED
- NEW WALLS & SLABS
- REMOVE & REBUILD
- NEW ADDITIONS

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NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-020
ISSUE A
JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 18.08.2021

DRAWING TITLE
GROUND FLOOR - DEMOLITION PLAN

DRAWN BY FO
CHECKED BY SC

1 **BASEMENT LEVEL PLAN**
1 : 100 @ A1

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STATUS

DEVELOPMENT APPLICATION

Do not scale drawing. Verify all dimensions on site. Report any discrepancies in documentation to architect. This drawing is for the purpose of council approval and as such, is not suitable for construction.

GRAPHIC SCALE

1:200 @ A3 0 2000 5000
1:100 @ A1

DRAWING NOTES

LEGEND

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE DEMOLISHED
- EXCAVATE
- EXISTING TO BE DEMOLISHED
- NEW WALLS & SLABS
- REMOVE & REBUILD
- NEW ADDITIONS

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A	18.08.2021	ISSUE FOR DA

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NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-098
ISSUE A

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 18.08.2021

DRAWING TITLE
BASEMENT LEVEL PLAN

DRAWN BY FO
CHECKED BY SC

1 **LOWER GROUND LEVEL PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

Do not scale drawing. Verify all dimensions on site. Report any discrepancies in documentation to architect. This drawing is for the purpose of council approval and as such, is not suitable for construction.

GRAPHIC SCALE

1:200 @ A3 0 2000 5000
1:100 @ A1

DRAWING NOTES

LEGEND

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE DEMOLISHED
- EXCAVATE
- EXISTING TO BE DEMOLISHED
- NEW WALLS & SLABS
- REMOVE & REBUILD
- NEW ADDITIONS

ISS	DATE	PURPOSE OF ISSUE
A	18.08.2021	ISSUE FOR DA

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NOMINATED ARCHITECT
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PROJECT
Warung Street Apartments

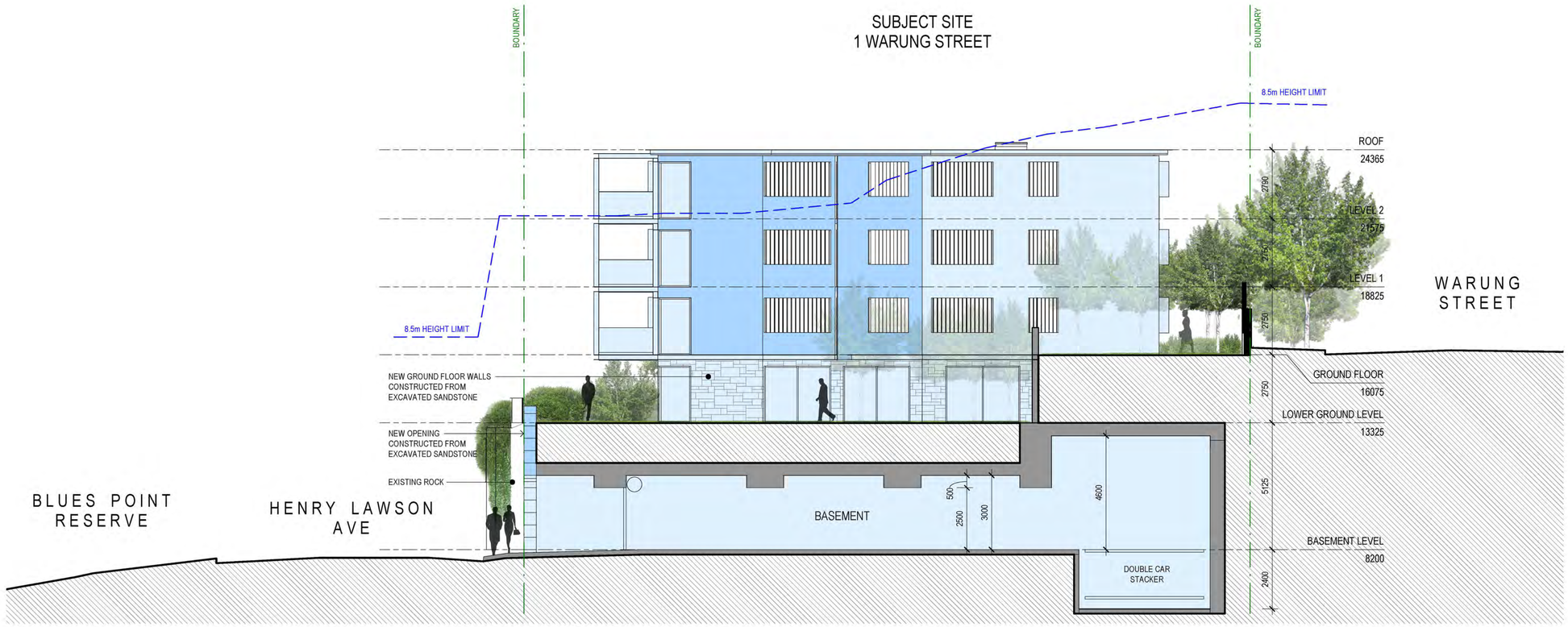
1 Warung Street, McMahons Point NSW

DRAWING NO. DA-099
ISSUE A

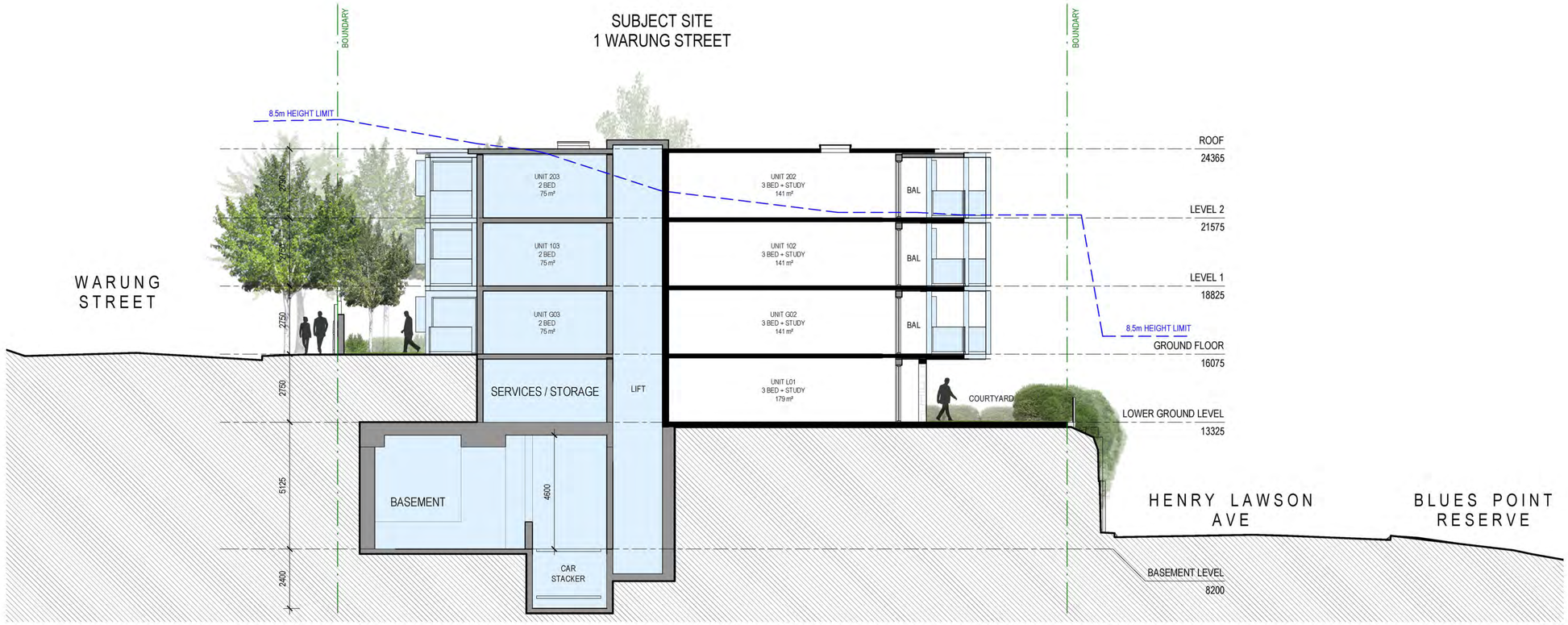
JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 18.08.2021

DRAWING TITLE
LOWER GROUND LEVEL PLAN

DRAWN BY FO
CHECKED BY SC



1 **DA SECTION 1**
1 : 100 @ A1



2 **DA SECTION 2**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

Do not scale drawing. Verify all dimensions on site. Report any discrepancies in documentation to architect. This drawing is for the purpose of council approval and as such, is not suitable for construction.

GRAPHIC SCALE

1:200 @ A3 0 2000 5000
1:100 @ A1

DRAWING NOTES

LEGEND

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE DEMOLISHED
- EXCAVATE
- EXISTING TO BE DEMOLISHED
- NEW WALLS & SLABS
- REMOVE & REBUILD
- NEW ADDITIONS

ISS	DATE	PURPOSE OF ISSUE
A	18.08.2021	ISSUE FOR DA

CLIENT
Highbury Warung Pty Ltd

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SYDNEY
1/80 Albion Street, Surry Hills, NSW 2010
Ph: +61 2 8354 1300
ABN: 24 132 554 753

NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-301
ISSUE A

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 18.08.2021

DRAWING TITLE
SECTIONS SHEET 1

DRAWN BY FO
CHECKED BY SC

Our Ref: SY210-205
Enquiries to: Stephen / Zayad

25 August 2021

1 Warung Street
MCHAHONS POINT NSW 2060

Attention: Theo Paradisis

RE: CERTIFICATE OF ADEQAUCY – STRUCTURAL
1 WARUNG STREET – MCMAHONS POINT
ALTERATIONS AND ADDITIONS

This is to confirm that our company has carried a high-level review of the above project, as documented on the following drawings prepared by us:

- SK210-205 – SK210803-1
- SK210-205 – SK210803-2
- SK210-205 – SK210803-3
- SK210-205 – SK210803-4
- SK210-205 – SK210803-5
- SK210-205 – SK210803-6
- SK210-205 – SK210803-7
- SK210-205 – SK210803-8
- SK210-205 – SK210803-9
- SK210-205 – SK210803-10
- SK210-205 – SK210803-11

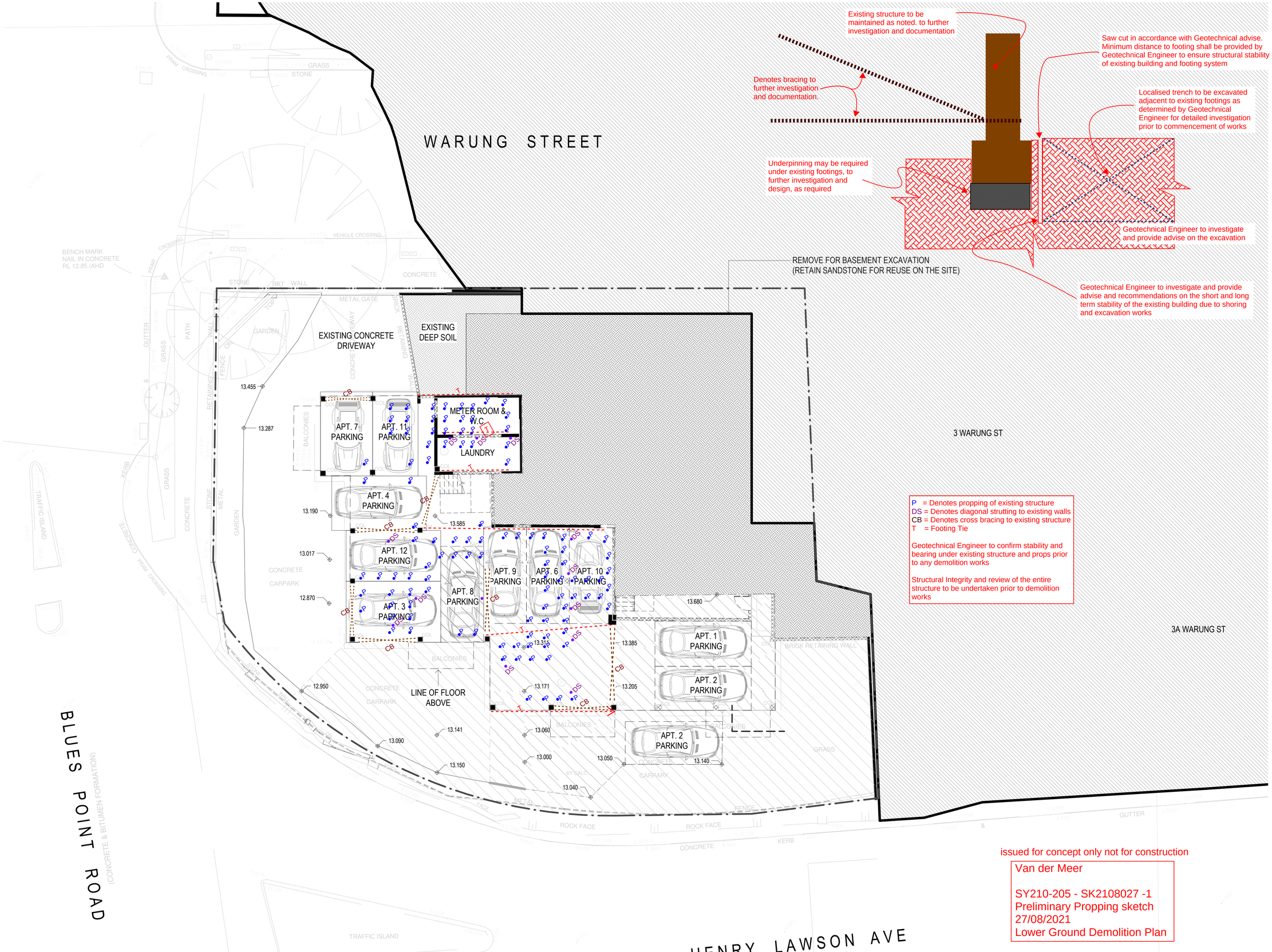
In our opinion, we beileve the existing structure that is to remain, will be structurally adequate and stable during the intended partial demolition works subject to further investigation and documentation as noted on the attached drawings.

We are Professional Engineers with appropriate experience and competence in this field.

Yours faithfully
van der Meer Consulting

Stephen Paget
Senior Associate - Structural

Encl: Drawings



1 **LOWER GROUND LEVEL - DEMOLITION PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

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GRAPHIC SCALE

1:200 @ A3 0 2000 5000
1:100 @ A1

DRAWING NOTES

LEGEND

- EXISTING WALLS TO REMAIN
- EXISTING WALLS TO BE DEMOLISHED
- EXCAVATE
- EXISTING TO BE DEMOLISHED
- NEW WALLS & SLABS
- REMOVE & REBUILD
- NEW ADDITIONS

ISS	DATE	PURPOSE OF ISSUE
B	26.08.2021	ISSUE FOR DA
A	18.08.2021	ISSUE FOR DA

CLIENT
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ABN: 24 132 554 753

NOMINATED ARCHITECT
Vince Squillace Reg No. 6468 (NSW), 17219 (VIC), 3677 (QLD), AR1173 (NT)

PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-019
ISSUE B

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
LOWER GROUND LEVEL - DEMOLITION PLAN

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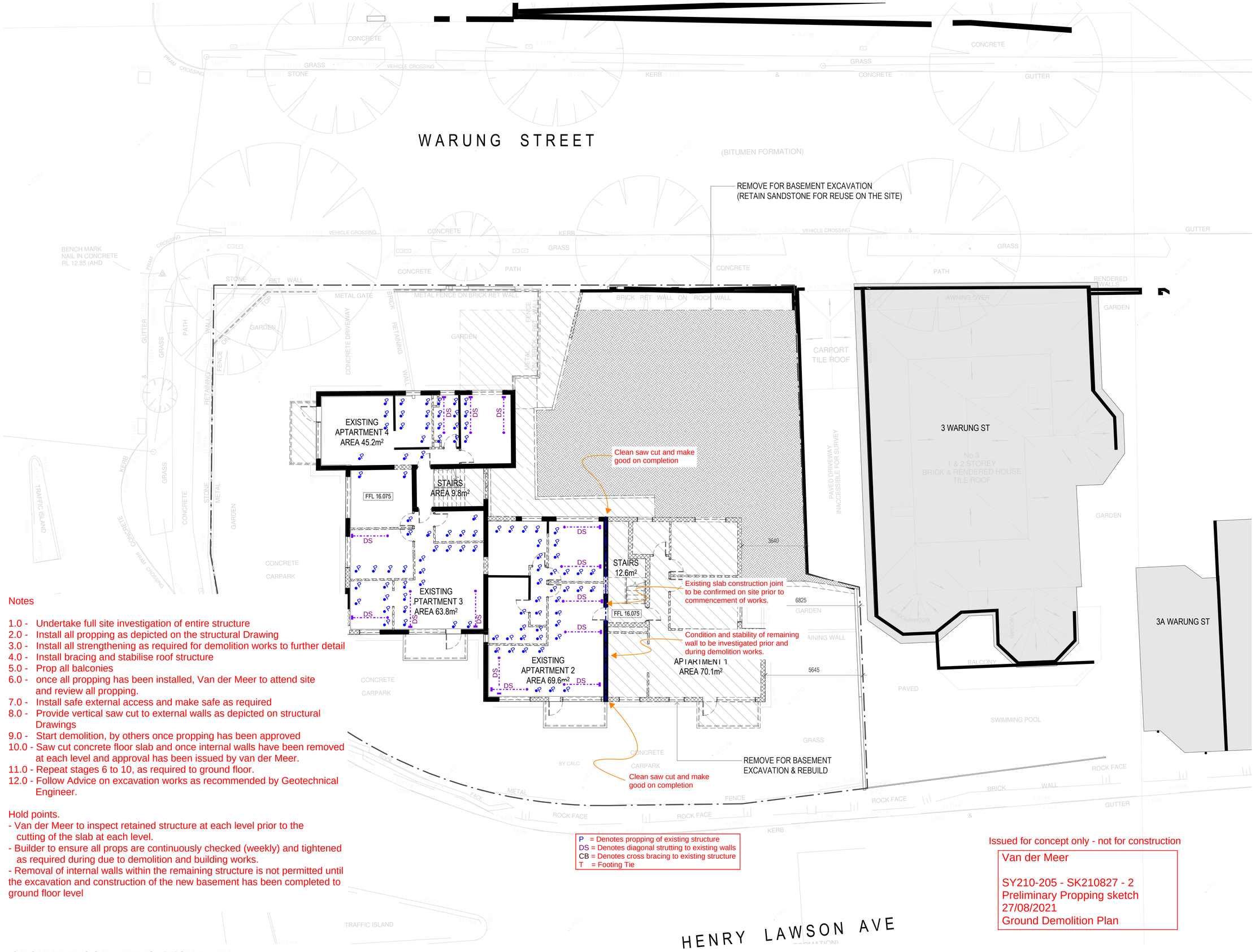

Notes

1.0 - Undertake full site investigation of entire structure
2.0 - Install all propping as depicted on the structural Drawing
3.0 - Install all strengthening as required for demolition works to further detail
4.0 - Install bracing and stabilise roof structure
5.0 - Prop all balconies
6.0 - once all propping has been installed, Van der Meer to attend site and review all propping.
7.0 - Install safe external access and make safe as required
8.0 - Provide vertical saw cut to external walls as depicted on structural Drawings
9.0 - Start demolition, by others once propping has been approved
10.0 - Saw cut concrete floor slab and once internal walls have been removed at each level and approval has been issued by van der Meer.
11.0 - Repeat stages 6 to 10, as required to ground floor.
12.0 - Follow Advice on excavation works as recommended by Geotechnical Engineer.

Hold points.
- Van der Meer to inspect retained structure at each level prior to the cutting of the slab at each level.
- Builder to ensure all props are continuously checked (weekly) and tightened as required during due to demolition and building works.
- Removal of internal walls within the remaining structure is not permitted until the excavation and construction of the new basement has been completed to ground floor level

P = Denotes propping of existing structure
DS = Denotes diagonal strutting to existing walls
CB = Denotes cross bracing to existing structure
T = Footing Tie

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Van der Meer

SY210-205 - SK210827 - 2
Preliminary Propping sketch
27/08/2021
Ground Demolition Plan

1 **GROUND FLOOR - DEMOLITION PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS
DEVELOPMENT APPLICATION

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GRAPHIC SCALE
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1:100 @ A1

DRAWING NOTES

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-020
ISSUE B
JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
GROUND FLOOR - DEMOLITION PLAN

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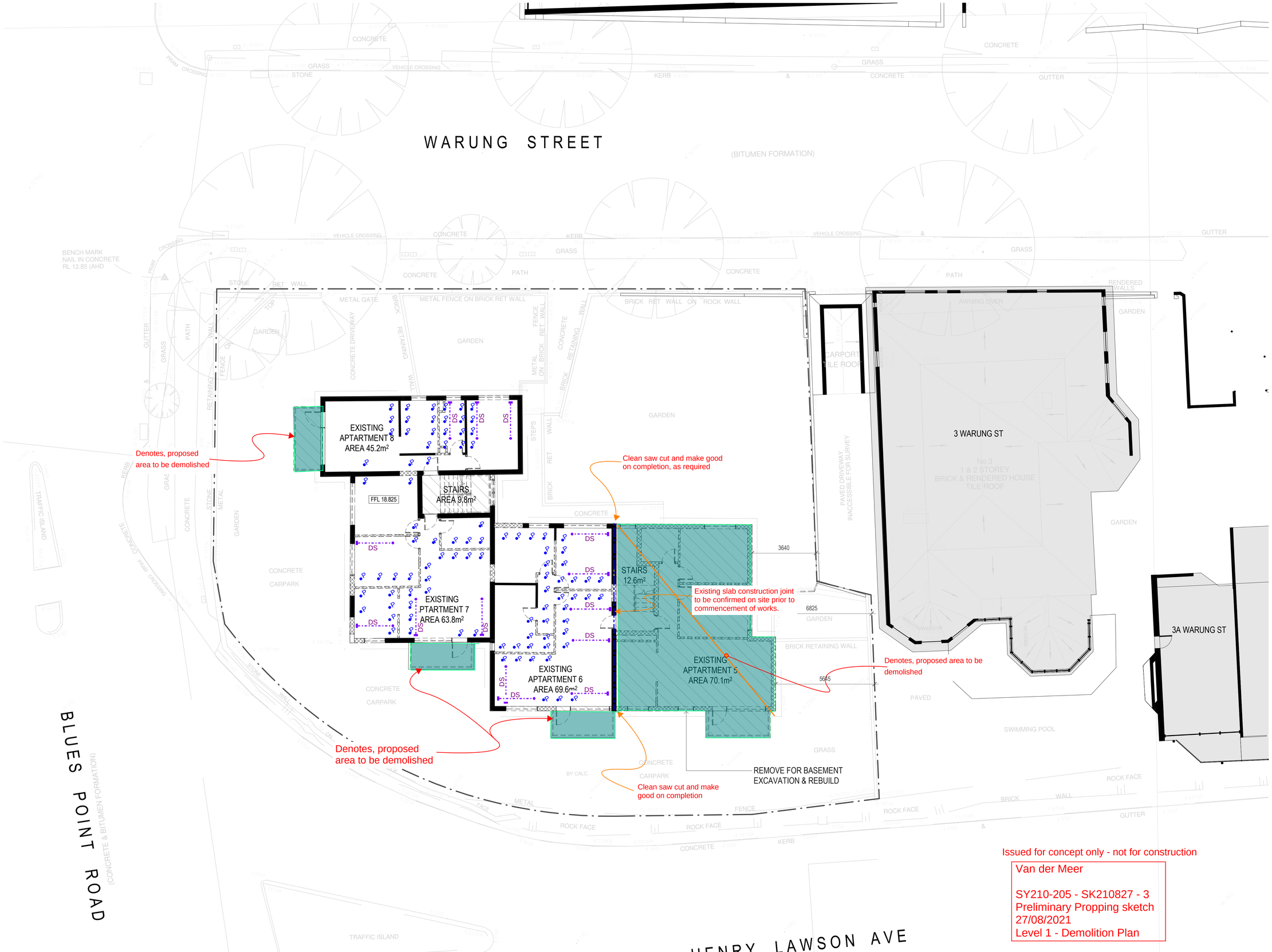

1 **LEVEL 1 - DEMOLITION PLAN**
1 : 100 @ A1

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STATUS

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GRAPHIC SCALE

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1:100 @ A1

DRAWING NOTES

LEGEND

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-021
ISSUE B

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
LEVEL 1 - DEMOLITION PLAN

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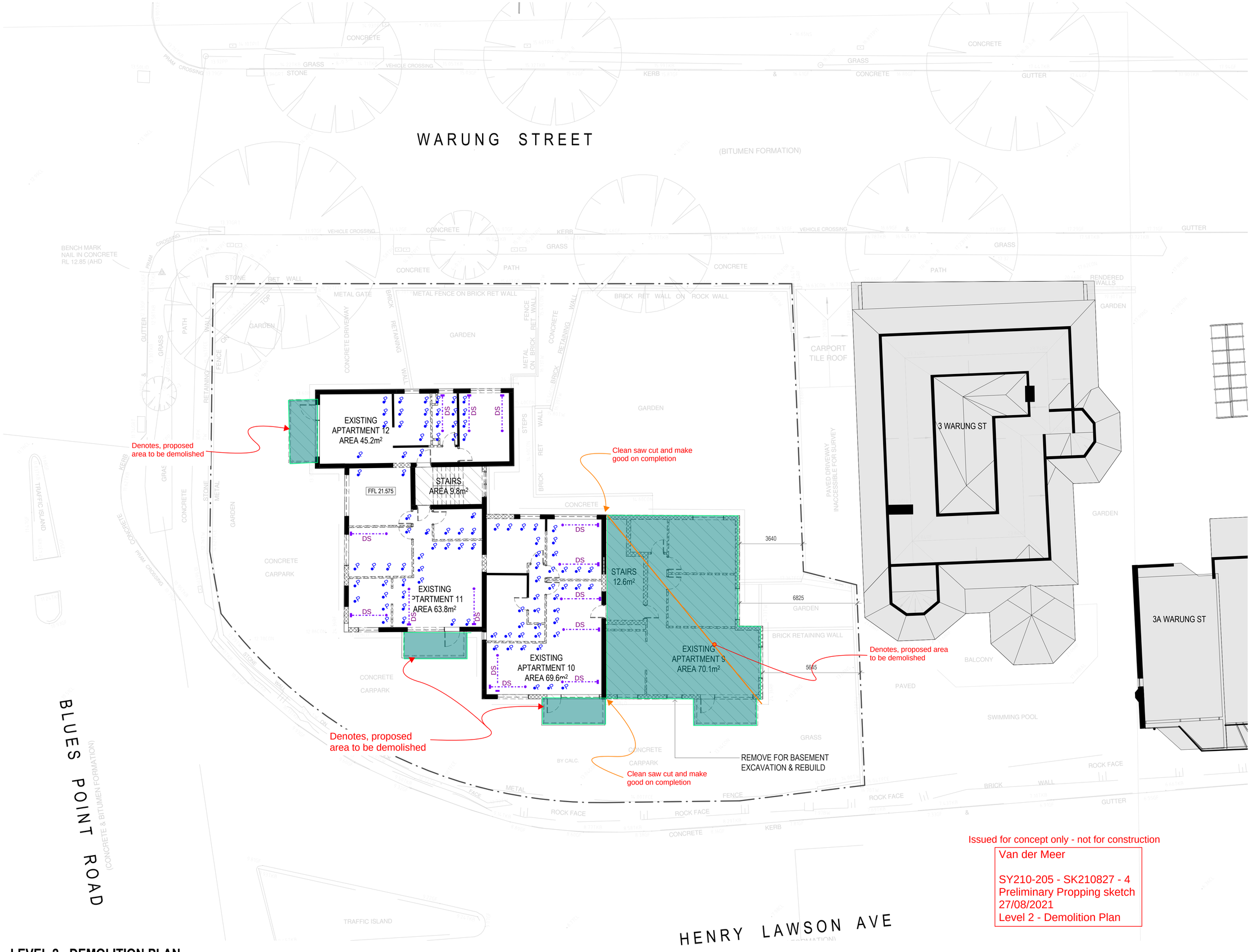
Van der Meer

SY210-205 - SK210827 - 3
Preliminary Propping sketch
27/08/2021
Level 1 - Demolition Plan



1 **LEVEL 2 - DEMOLITION PLAN**
1 : 100 @ A1

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STATUS

DEVELOPMENT APPLICATION

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1:100 @ A1

DRAWING NOTES

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-022
ISSUE B

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
LEVEL 2 - DEMOLITION PLAN

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SY210-205 - SK210827 - 4
Preliminary Propping sketch
27/08/2021
Level 2 - Demolition Plan

Member Australian Institute of Architects

STATUS

DEVELOPMENT APPLICATION

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GRAPHIC SCALE

1:200 @ A3 — 0 — 2000 — 5000

1:100 @ A1

DRAWING NOTES

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WARUNG STREET

HENRY LAWSON AVE

BLUES POINT ROAD

BENCH MARK
NAIL IN CONCRETE
RL 12.85 (AHD

3 WARUNG ST

3A WARUNG ST

Stability of existing roof to further investigation and documentation as required

REMOVE FOR BASEMENT EXCAVATION & REBUILD

3350

6530

5320

BRICK RETAINING WALL

CARPORT TILE ROOF

AWNING OVER

RENDERED WALLS

BALCONY

SWIMMING POOL

PAVED

GARDEN

CONCRETE DRIVEWAY

PAVED DRIVEWAY INACCESSIBLE FOR SURVEY

BALCONIES

CONCRETE CARPARK

TRAFFIC ISLAND

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Van der Meer

SY210-205 - SK210827 - 5
Preliminary Propping sketch
27/08/2021
Roof Level - Demolition Plan

1 **ROOF LEVEL - DEMOLITION PLAN**
1 : 100 @ A1

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-023

ISSUE B

JOB NO. HIG2009

SCALE 1 : 100@ A1

DATE 26.08.2021

DRAWING TITLE
ROOF LEVEL - DEMOLITION PLAN

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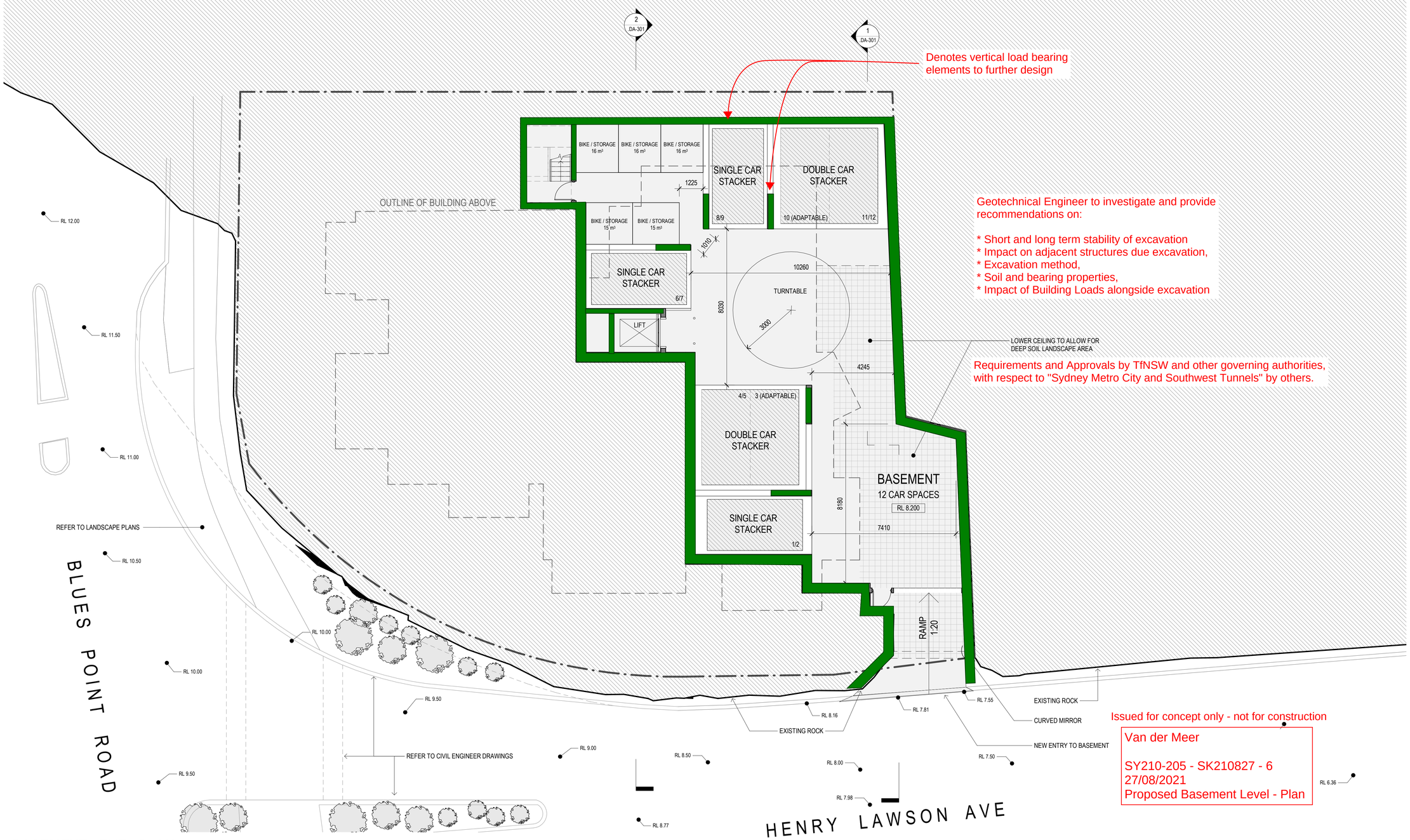

Geotechnical Engineer to investigate and provide recommendations on:

* Short and long term stability of excavation
* Impact on adjacent structures due excavation,
* Excavation method,
* Soil and bearing properties,
* Impact of Building Loads alongside excavation

Requirements and Approvals by TfNSW and other governing authorities, with respect to "Sydney Metro City and Southwest Tunnels" by others.

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Van der Meer

SY210-205 - SK210827 - 6
27/08/2021
Proposed Basement Level - Plan

1 **BASEMENT LEVEL PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS

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1:100 @ A1

DRAWING NOTES

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-098
ISSUE B

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
BASEMENT LEVEL PLAN

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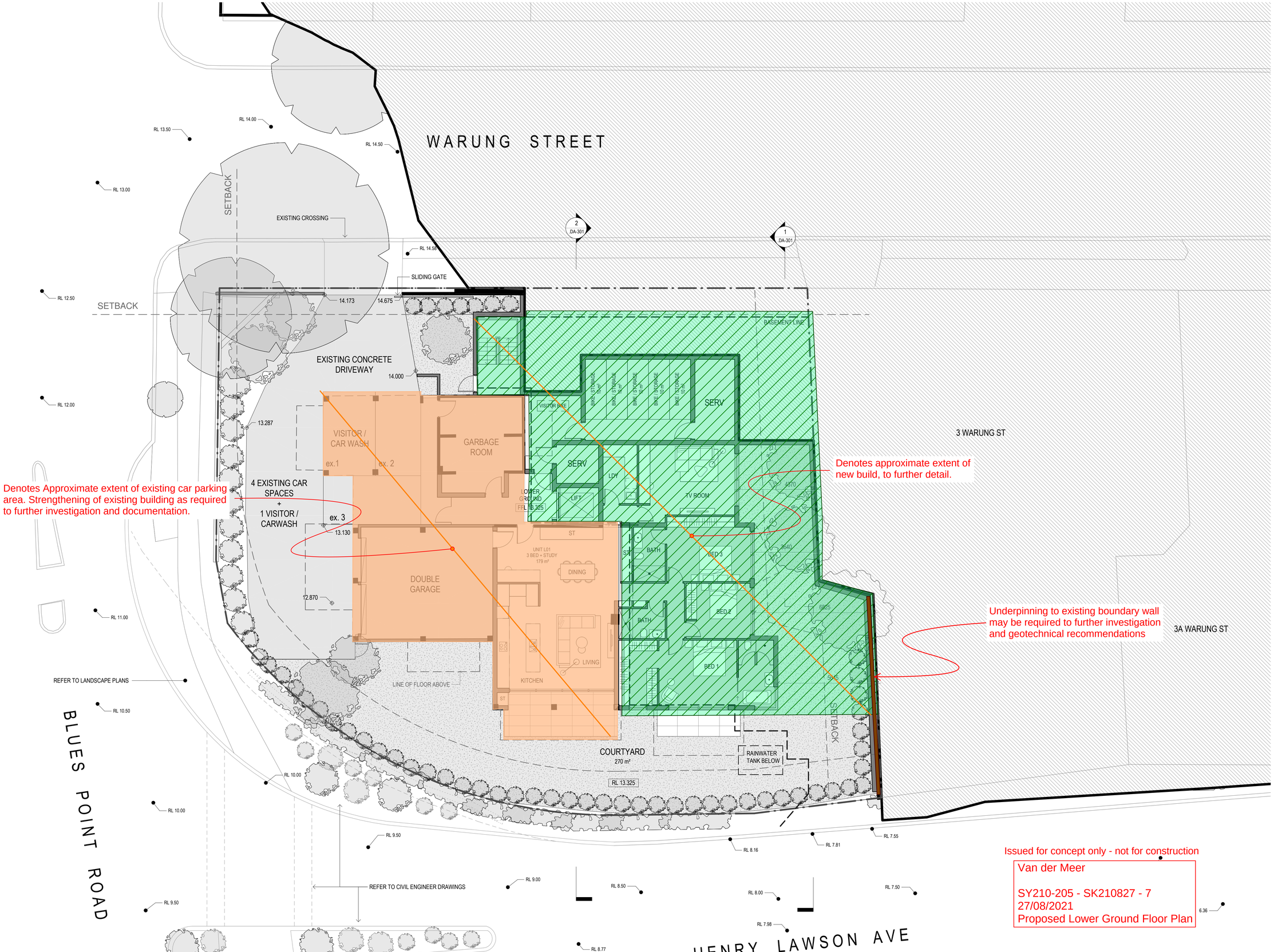

1 **LOWER GROUND LEVEL PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-099
ISSUE B
JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
LOWER GROUND LEVEL PLAN

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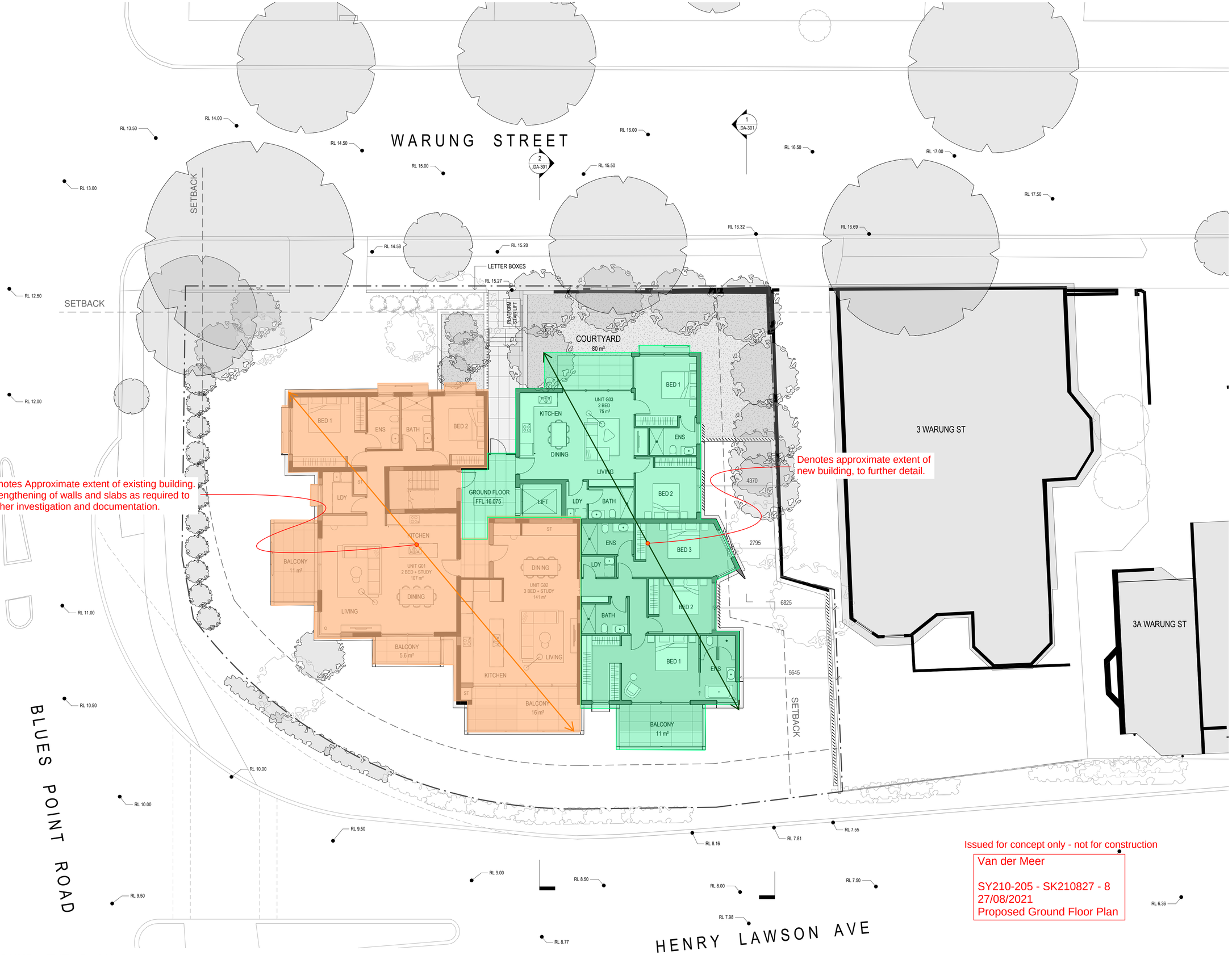

1 **GROUND LEVEL PLAN**
1 : 100 @ A1

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STATUS

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. **DA-100** ISSUE **B**

JOB NO. HIG2009 | SCALE 1 : 100@ A1 | DATE 26.08.2021

DRAWING TITLE
GROUND LEVEL PLAN

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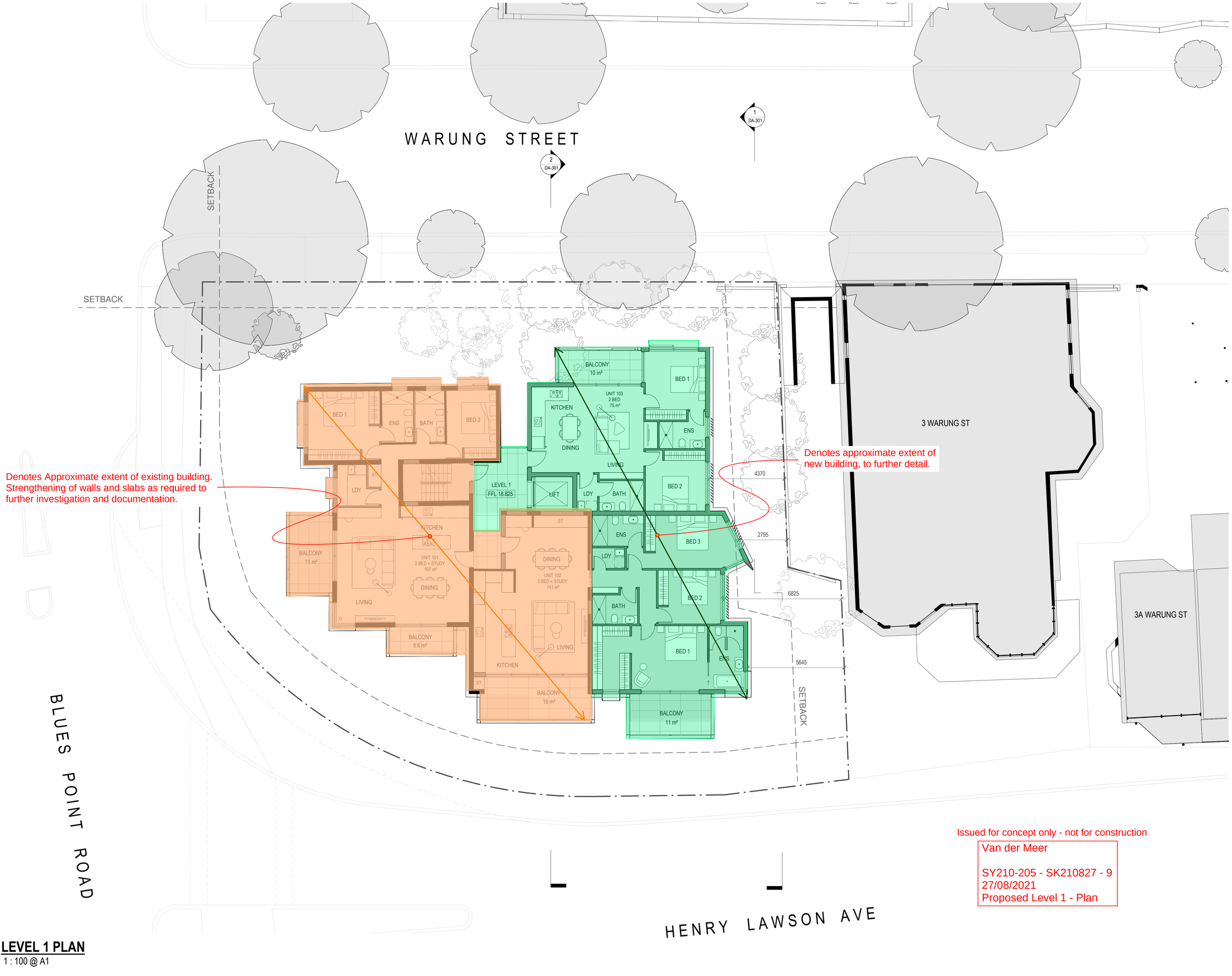
Van der Meer

SY210-205 - SK210827 - 8
27/08/2021
Proposed Ground Floor Plan



1 **LEVEL 1 PLAN**
1 : 100 @ A1

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Van der Meer

SY210-205 - SK210827 - 9
27/08/2021
Proposed Level 1 - Plan

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DRAWING NOTES

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-101
ISSUE B

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
LEVEL 1 PLAN

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1 **LEVEL 2 PLAN**
1 : 100 @ A1

Member Australian Institute of Architects

STATUS
DEVELOPMENT APPLICATION

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1:200 @ A3 | 0 | 2000 | 5000
1:100 @ A1

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-102
ISSUE B

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
LEVEL 2 PLAN

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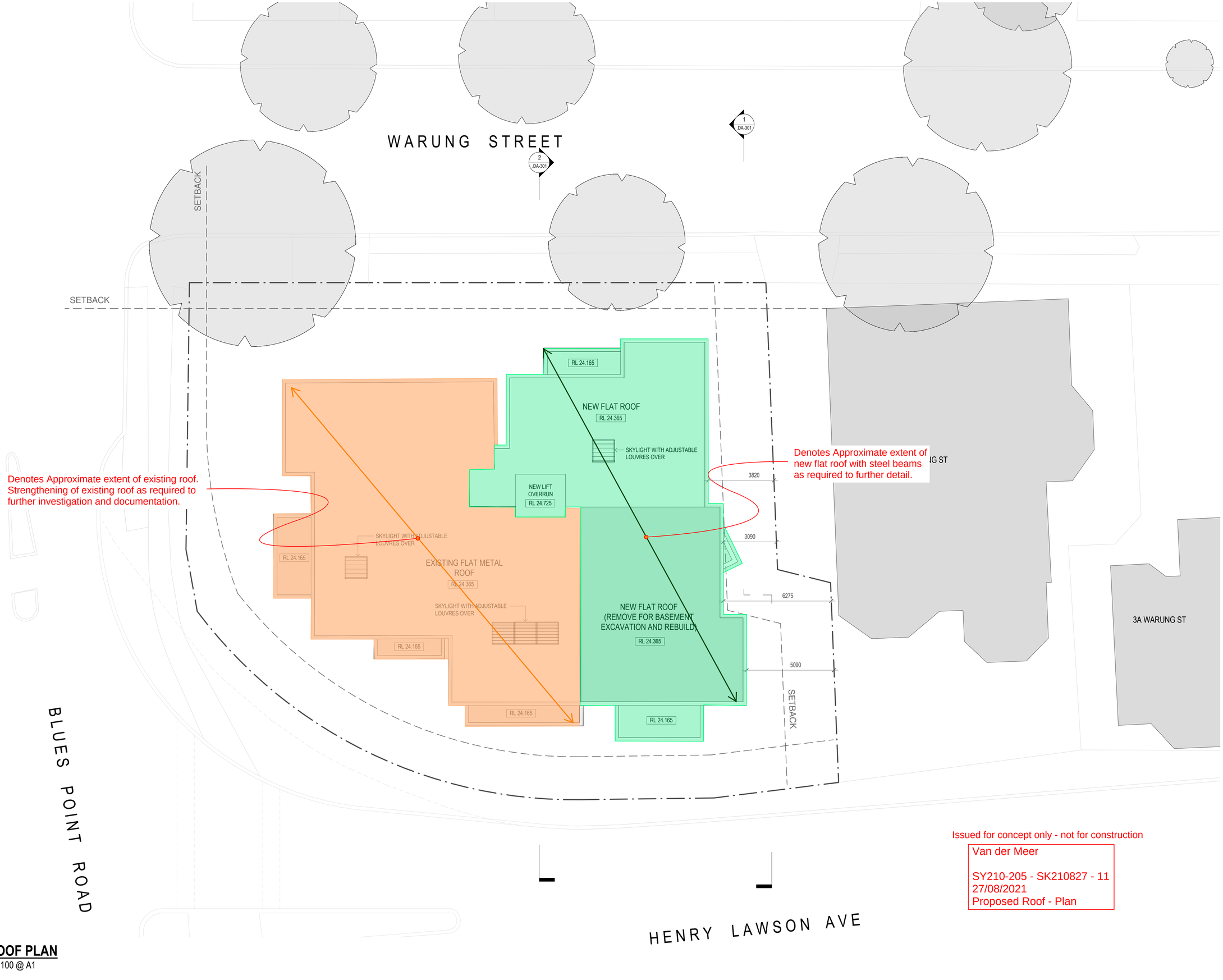
Van der Meer

SY210-205 - SK210827 - 10
27/08/2021
Proposed Level 2 - Plan



1 **ROOF PLAN**
1 : 100 @ A1

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Van der Meer

SY210-205 - SK210827 - 11
27/08/2021
Proposed Roof - Plan

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STATUS

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PROJECT
Warung Street Apartments

1 Warung Street, McMahons Point NSW

DRAWING NO. DA-103
ISSUE B

JOB NO. HIG2009
SCALE 1 : 100@ A1
DATE 26.08.2021

DRAWING TITLE
ROOF PLAN

DRAWN BY FO
CHECKED BY SC

Clause 4.6 Variation Request to the Height of Buildings Development Standard under Clause 4.3 of North Sydney LEP 2013

Partial demolition of existing residential flat building, construction of new units over basement parking and additions and alterations of apartments

1 Warung Street, McMahons Point

15 September 2021

1 Introduction

1.1 Commission

JVUrban Pty Ltd has been commissioned by the Applicant to prepare a written request ('Variation Request') pursuant to cl4.*6 of North Sydney Local Environmental Plan 2013* (the LEP) in respect of an existing residential flat building development, at 1 Warung Street, McMahons Point (the Site).

The Proposal is described in detail in Section 3 of the Statement of Environmental Effects (SEE) prepared by JVUrban Pty Ltd and generally comprises the partial demolition of the existing residential flat building, rebuilding of apartments and additional units over the new basement and alterations of the remaining apartments, including enlarged balconies. Ancillary development includes excavation, landscaping and drainage works.

The Proposal exceeds the 8.5m maximum Height of Buildings (HOB) development standard under cl4.3 of the NSLEP having a maximum building height of 11.65m (EGL to top of lift overrun at RL24.75m AHD). This is a variation of 3.15m or 37%. The general roof level is RL24.365m AHD above existing ground level with a height of 11.5m at the southern façade and compliant 8.3m in the north-east corner (closest to Warung Street).

The overall roof height is not changed. The rebuilt units and north-east addition have the same roof height as the existing building. Only the low-set lift overrun adds to the overall height. On this basis the HOB variation is a function of the existing development, not a result of a new development. Given the age of the flat building it is anticipated that the height controls applying to the site commenced long after the original building was constructed.

Notwithstanding the contravention of the development standard, the development is considered to be consistent with the objectives of the development standard and the objectives of the zone within which the development is located. There are sufficient environmental planning grounds to justify the contravention in this instance including the historical development of the site, the lack of adverse amenity impacts and positive social and economic considerations as a result of the development.

This written request has been prepared to provide a detailed assessment in accordance with the statutory requirements of cl4.6 so that the consent authority can exercise its power to grant development consent, notwithstanding the contravention to the HOB development

1 Introduction

standard.

1.2 Material Relied Upon

This Variation Request has been prepared based on the Architectural Drawings prepared by Squillace Architecture/Interiors, Project No. HIG2009.

This Variation Request should be read in conjunction with the detailed environmental planning assessments contained in the DA documentation submitted with the DA and documents appended thereto.

2 The Relevant LEP Provisions

2.1 North Sydney Local Environmental Plan 2013

2.1.1 Clauses 2.2-2.3 – Zoning and Permissibility

Clause 2.2 and the Land Zoning Map of the LEP provide that the entire Site is zoned R3 Medium Density Residential Zone and the Land Use Table in Part 2 of the LEP specifies the objectives of this zone as follows:

- *To provide for the housing needs of the community within a medium density residential environment.*
- *To provide a variety of housing types within a medium density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To encourage the development of sites for medium density housing if such development does not compromise the amenity of the surrounding area or the natural or cultural heritage of the area.*
- *To provide for a suitable visual transition between high density residential areas and lower density residential areas.*
- *To ensure that a high level of residential amenity is achieved and maintained.*

The proposed landuse is defined as a residential flat building which is permissible with development consent in the R3 Zone pursuant to the NSLEP 2013.

2.1.2 Clause 4.3 – Height of Buildings (HOB)

Clause 4.3 of the NSLEP 2013 sets out the HOB development standard as follows:

> *"(1) The objectives of this clause are as follows:*
>
> *(a) to promote development that conforms to and reflects natural landforms, by stepping development on sloping land to follow the natural gradient,*
>
> *(b) to promote the retention and, if appropriate, sharing of existing views,*
>
> *(c) to maintain solar access to existing dwellings, public reserves and streets, and to promote solar access for future development,*
>
> *(d) to maintain privacy for residents of existing dwellings and to promote privacy for residents of new buildings,*
>
> *(e) to ensure compatibility between development, particularly at zone boundaries,*
>
> *(f) to encourage an appropriate scale and density of development that is in accordance with, and promotes the character of, an area,*
>
> *(g) to maintain a built form of mainly 1 or 2 storeys in Zone R2 Low Density Residential, Zone R3 Medium Density Residential and Zone E4 Environmental Living.*

2 The Relevant LEP Provisions

The Height of Buildings Map designates a maximum 8.5m height limit for the Site (see **Figure 1**).

Figure 1: Extract of NSLEP 2013 Map (HOB_002) – "I" = 8.5m

The NSLEP Dictionary contains the following definitions:

Height of Buildings Map *means the North Sydney Local Environmental Plan 2013 Height of Buildings Map.*

building height *(or* ***height of building****) means:*

(a) in relation to the height of a building in metres—the vertical distance from ground level (existing) to the highest point of the building, or

(b) in relation to the RL of a building—the vertical distance from the Australian Height Datum to the highest point of the building,

including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like.

2.1.3 Clause 4.6 – Exceptions to Development Standards

Clause 4.6(1) of the LEP states the objectives of the clause as follows:

(a) *to provide an appropriate degree of flexibility in applying certain development standards to particular development,*

(b) *to achieve better outcomes for and from development by allowing flexibility in particular circumstances.*

In the Judgment of *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118* ("Initial Action") (see Section 4.7), Preston CJ ruled that there is no provision that requires the applicant to demonstrate compliance with these objectives for the consent authority

2 The Relevant LEP Provisions

to be satisfied that the development achieves these objectives. Furthermore, neither cl4.6(3) nor cl4.6(4) expressly or impliedly requires that development that contravenes a development standard "*achieve better outcomes for and from development*".

Accordingly, the remaining subclauses of cl4.6 provide the operable provisions and preconditions which must be satisfied before a consent authority may grant development consent to a development that contravenes a development standard imposed by an environmental planning instrument.

Clause 4.6(2) provides that:

> *(2) Development consent may, subject to this clause, be granted for development even though the development would contravene a development standard imposed by this or any other environmental planning instrument. However, this clause does not apply to a development standard that is expressly excluded from the operation of this clause.*

The HOB development standard is not expressly excluded from the operation of cl4.6 and accordingly, consent may be granted.

Clause 4.6(3) relates to the making of a written request to justify an exception to a development standard and states:

> *(3) Development consent must not be granted for development that contravenes a development standard unless the consent authority has considered a written request from the applicant that seeks to justify the contravention of the development standard by demonstrating:*
>
> *(a) that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and*
>
> *(b) that there are sufficient environmental planning grounds to justify contravening the development standard.*

The proposed development does not comply with the HOB development standard pursuant to cl4.3 of the NSLEP 2013. However, strict compliance is considered to be unreasonable and unnecessary in the circumstances of this case as detailed in Section 5.1.

In addition, there are considered to be sufficient environmental planning grounds to justify contravening the development standard as detailed in Section 5.2.2.

2 The Relevant LEP Provisions

Clause 4.6(4) provides that consent must not be granted for development that contravenes a development standard unless:

> *(4) Development consent must not be granted for development that contravenes a development standard unless:*
>
> *(a) the consent authority is satisfied that:*
>
> *(i) the applicant's written request has adequately addressed the matters required to be demonstrated by subclause (3), and*
>
> *(ii) the proposed development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out, and*
>
> *(b) the concurrence of the Secretary has been obtained.*

Sections 5.2 and 5.3 of this written request address the matters required under cl4.6(4)(a) of the LEP and Section 5.4 addresses cl4.6(4)(b).

Clause 4.6(5) provides that:

> *(5) In deciding whether to grant concurrence, the Secretary must consider:*
>
> *(a) whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*
>
> *(b) the public benefit of maintaining the development standard, and*
>
> *(c) any other matters required to be taken into consideration by the Secretary before granting concurrence.*

Section 5.5 of this written request addresses the matters required under cl4.6(5) of the LEP.

Clauses 4.6(6) and (8) are not relevant to the proposed development and cl4.6(7) is an administrative clause requiring the consent authority to keep a record of its assessment under this clause after determining a development application.

3 The Nature of the Variation

The roof level of the building remains unchanged at RL24.365m AHD above existing ground level - a maximum height of 11.5m at the southern façade- a variation of 3.0m. The north-east corner of the new addition (closest to Warung Street) is compliant with a building height of 8.3m.

The proposed residential flat building development will result in a maximum height (to the top of the lift overrun (RL24.75m AHD) of 11.65m, constituting a non-compliance of 3.15m or 37%.

The following Figure 2, Figure 3, Figure 4, Figure 5 and Figure 6 show the 8.5m LEP height line across the section plans of the building and the view of the building from the primary corner location.

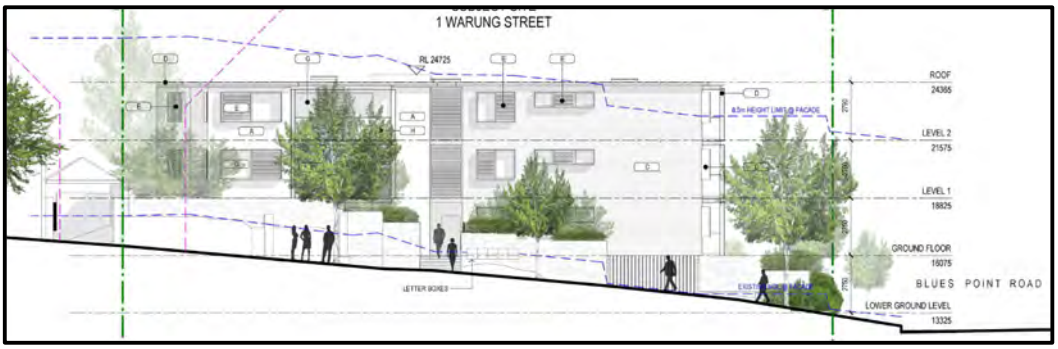

Figure 2: Extract of north elevation (Warung St) showing LEP 8.5m height line (Source: Squillace Architecture, Project No. HIG2009)

Figure 3: Extract of south elevation (Warung St frontage) showing LEP 8.5m height line (Source: Squillace Architecture, Project No. HIG2009)

3 The Nature of the Variation

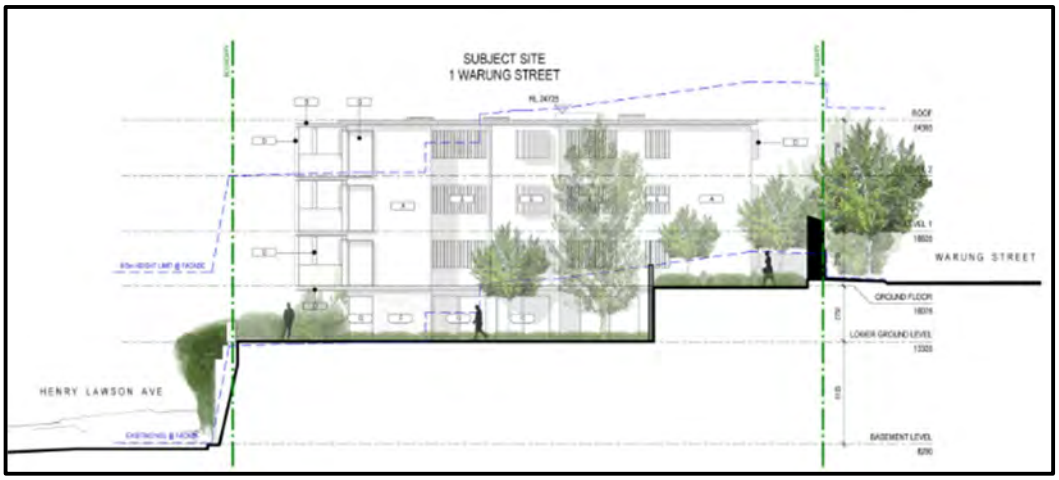

Figure 4: Extract of east elevation (from No. 3 Warung St) showing LEP 8.5m height line (Source: Squillace Architecture, Project No. HIG2009)

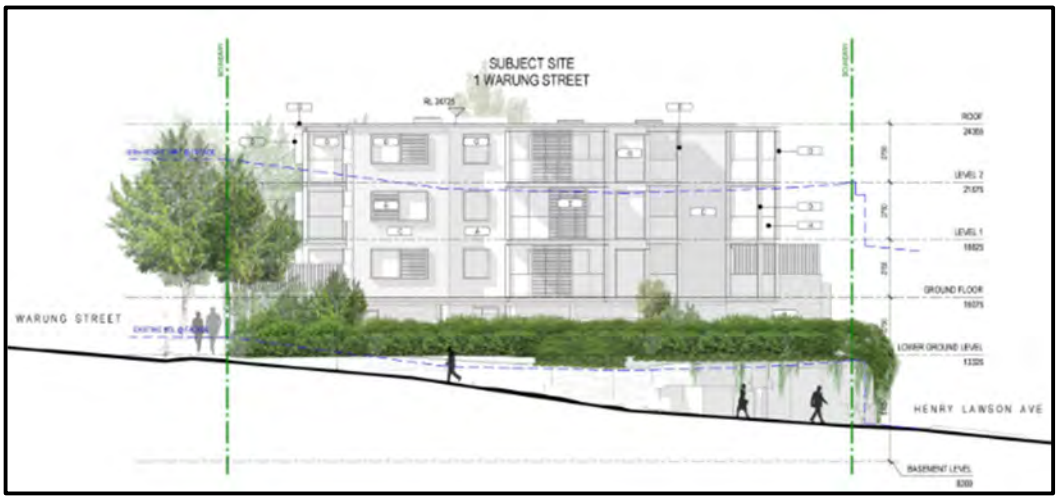

Figure 5: Extract of west elevation (Blues Point Road) showing LEP 8.5m height line (Source: Squillace Architecture, Project No. HIG2009)

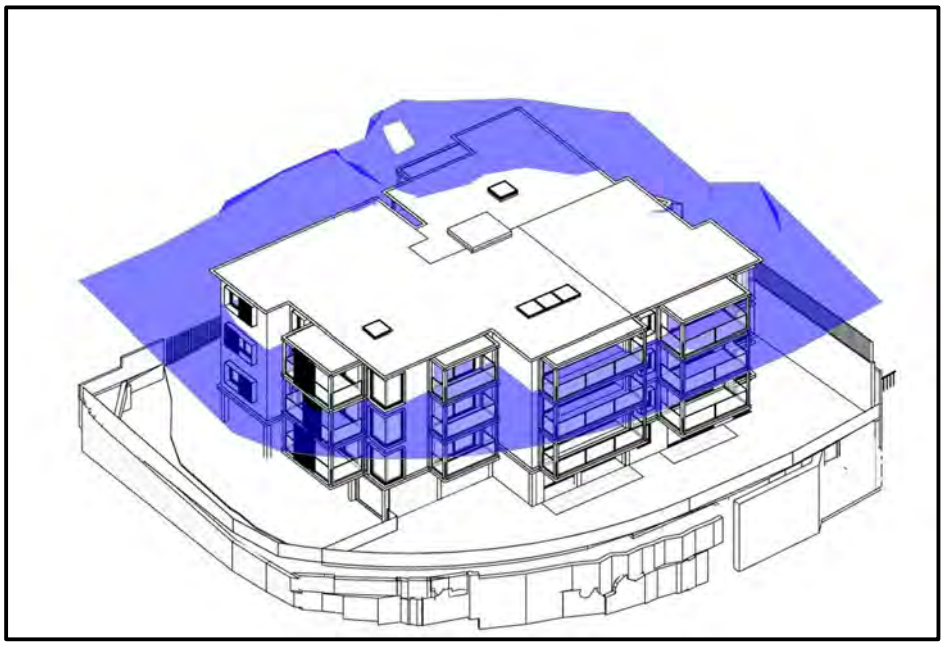

Figure 6: Extract of height blanket diagram (Source: Squillace Architecture, Project No. HIG2009)

4 Case Law

4.1 Introduction

The proposed variation to the development standard has been considered in light of the evolving methodology and "tests" established by the NSW Land & Environment Court (the Court) and the following subsections provide a brief summary of key Judgments in regard to variations under the former SEPP 1 and cl4.6 of the SILEP.

4.2 Winten Developments Pty Ltd v North Sydney Council [2001]

Through the Judgment in *Winten Developments Pty Ltd v North Sydney Council [2001] NSWLEC 46* ("Winten") the Court established a '5-part test' for considering whether strict compliance with a development standard is unreasonable or unnecessary in a particular case. The elements of this test can be summarised as:

- Is the planning control a development standard?
- What is the underlying object or purpose of the standard?
- Is compliance with the standard consistent with the aims of the policy, and in particular, does compliance with the standard tend to hinder the attainment of the objects specified in s 5(a)(i) and (ii) of the *Environmental Planning & Assessment Act 1979*?
- Is compliance with the development standard unnecessary or unreasonable in the circumstances of the case?
- Is the objection well founded?

The 1st 'test' continues to be relevant and is a precondition for the application of cl4.6 – see Section 5.1.

The 2nd 'test' is required to be demonstrated under cl4.6(4)(a)(ii) – see Section 5.2.1.

The 3rd 'test' was specific to cl3 of SEPP 1 and has not been transferred to cl4.6 of the SILEP. Notwithstanding, in Initial Action (see below), Preston CJ indicated that it is reasonable to infer that "environmental planning grounds" as stated in under cl4.6(3)(b), means grounds that relate to the subject matter, scope and purpose of the EPA Act, including the objects in s1.3 of the EP&A Act – see Section 5.2.2.

4 Case Law

The 4th 'test' is required to be demonstrated under cl4.6(3)(a) - see Section 5.1. The 5th 'test' is analogous to cl4.6(4)(a) – see Section 5.3.

4.3 Wehbe v Pittwater Council [2007]

The 5-part test under Winten was later supplemented by the Judgment in *Wehbe v Pittwater Council [2007] LEC 827* ("Wehbe") where Chief Justice Preston expressed the view that there are 5 different ways in which an objection to a development standard may be assessed as being well founded and that approval of the objection may be consistent with the aims of SEPP 1. These included:

1. Notwithstanding the non-compliance, is the proposal consistent with the relevant environmental or planning objectives?
2. Is the underlying objective or purpose of the development standard not relevant to the development with the consequence that compliance is unnecessary?
3. Would the underlying objective or purpose of the development standard be defeated or thwarted if compliance was required with the consequence that compliance is unreasonable?
4. Has the development standard been virtually abandoned or destroyed by the consent authority's own actions in granting consents departing from the standard and hence compliance with the standard is unnecessary and unreasonable?
5. Is the zoning of the particular land unreasonable or inappropriate such that the development standard appropriate for that zoning was also unreasonable or unnecessary as it applied to that land and therefore, compliance with the standard would be unreasonable or unnecessary?

4.4 Four2Five Pty Ltd v Ashfield Council [2015]

In the Judgment of *Four2Five Pty Ltd v Ashfield Council [2015] NSWLEC 1009* ("Four2Five") Pearson C expanded on the earlier Judgments of Winten and Wehbe, indicating that whilst consistency with zoning and standard objectives of the development standard is addressed specifically in cl4.6(4)(a)(ii), there remains an onus of also demonstrating that there are *"sufficient environmental planning grounds"* such that compliance with the development standard is unreasonable or unnecessary. Furthermore, that the environmental planning grounds must be particular to the circumstances of the proposed development rather than public benefits that could reasonably arise from a similar

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development on other land.

The environmental planning grounds that support the proposed variation to the HOB development standard in this circumstance are detailed in Section 5.2.2 of this variation request.

4.5 Randwick City Council v Micaul Holdings Pty Ltd [2016]

In his Judgment of *Randwick City Council v Micaul Holdings Pty Ltd [2016] NSWLEC 7* ('Micaul') Preston CJ made it clear that development consent cannot be granted for a development that contravenes a development standard unless the consent authority:

(a) has considered a written cl 4.6 objection seeking to vary the development standard as required by cl4.6(3) of the SILEP;

(b) is satisfied that the cl4.6 objections adequately addressed the matters required to be demonstrated by cl4.6(3) (as required by cl4.6(4)(a)(i));

(c) is satisfied that the development will be in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out as required by cl4.6(4)(a)(ii).

In addition, Preston CJ elucidated that the consent authority does not have to be directly satisfied that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case – only that it be indirectly satisfied that the applicant's written request adequately addresses the matters in cl4.6(3) that compliance with the development standard is unreasonable or unnecessary.

Furthermore, Preston CJ confirmed that an established means of demonstrating that compliance with a development standard is unreasonable or unnecessary is to establish that a development would not cause environmental harm and is consistent with the objectives of the development standard.

4.6 Moskovich v Waverley Council [2016]

Providing further guidance on the interpretation of cl4.6 compared to its predecessor SEPP 1, the Judgment in *Moskovich v Waverley Council [2016] NSWLEC 1015* ('Moskovich') outlines that cl4.6(3)(a) is similar to cl 6 of SEPP 1 and the ways of establishing that contravention of a development standard is well founded expressed in Wehbe (e.g.

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"achieving" the objectives of the development standard) are equally appropriate for the consideration of cl4.6(3)(a).

However, cl4.6(4)(a)(ii) has different wording to SEPP 1 and requires the consent authority to be satisfied that the proposed development is in the public interest because it is "consistent" with objectives of the development standard and objectives for the zone rather than "achieving" the objectives. Consequently, the considerations of cl4.6(3)(a) and cl4.6(4)(a)(ii) are different with the achievement test being more onerous and requiring justification in 'ways' such as those expressed in Wehbe.

Accordingly, whilst the Judgments in Winten and Wehbe related to variation requests under SEPP 1, the methodology and reasoning expressed in those Judgments continues to be the accepted basis upon which to assess variation requests pursuant to cl 4.6 with minor areas of differing interpretation.

4.7 Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118

In the Judgment of *Initial Action Pty Ltd v Woollahra Municipal Council [2018] NSWLEC 118* ('Initial Action'), Preston CJ indicated that cl4.6 does not directly or indirectly establish a test that a non-compliant development should have a neutral or beneficial effect relative to a compliant development. For example, a building that exceeds a development standard that has adverse amenity impacts should not be assessed on the basis of whether a complying development will have no adverse impacts. Rather, the non-compliance should be assessed with regard to whether the impacts are reasonable in the context of achieving consistency with the objectives of the zone and of the standard.

In addition, Preston CJ ruled that cl4.6 does not directly or indirectly establish a "test" that a development which contravenes a development standard results in a "*better environmental planning outcome*" relative to a development that complies with the development standard. In fact, there is no provision in SILEP that gives substantive effect to the objectives of cl4.6 stated in cl4.6(1)(a) and (b). That is to say, neither cl4.6(3) nor (4) expressly or impliedly requires that development that contravenes a development standard "*achieve better outcomes for and from development*".

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Further, Preston CJ ruled that it is incorrect to hold that the lack of adverse amenity impacts on adjoining properties is not a sufficient ground justifying the development contravening the development standard, when one way of demonstrating consistency with the objectives of a development standard is to show a lack of adverse amenity impacts.

4.8 Summary of the Case Law Methodology and Tests

The collective methodology and tests described above has been applied to the assessment at Section 5 and can be summarised in the following steps:

1. Step 1 - Is the planning control that the applicant seeks to contravene a development standard?

2. Step 2 - Is the consent authority satisfied that the applicant's written request seeking to justify the contravention of the development standard has adequately addressed the matters required by cl 4.6(3) by demonstrating that:

   (a) compliance is unreasonable or unnecessary; and

   (b) there are sufficient environmental planning grounds to justify contravening the development standard?

3. Step 3 - Is the consent authority satisfied that the proposed development will be in the public interest because it is consistent with the objectives of the particular development standard that is contravened and the objectives for development for the zone in which the development is proposed to be carried out?

4. Step 4 - Has the concurrence of the Secretary of the Department of Planning and Environment been obtained?

5. Step 5 - Where the consent authority is the Court, has the Court considered the matters in cl4.6(5) when exercising the power to grant development consent for development that contravenes a development standard.

5 Assessment of the Variation

5.1 Step 1 - Is the planning control a development standard?

This question is the 1st 'test' in Winten. The HOB control in cl4.3 of the NSLEP 2013 is a development standard, defined in Section 1.4 of the EP&A Act as follows:

> *"**development standards** means provisions of an environmental planning instrument or the regulations in relation to the carrying out of development, being provisions by or under which requirements are specified or standards are fixed in respect of any aspect of that development, including, but without limiting the generality of the foregoing, requirements or standards in respect of:*
>
> *…(c) the character, location, siting, bulk, scale, shape, size, height, density, design or external appearance of a building or work"*

The development standard is not expressly excluded from the operation of cl4.6 and accordingly, consent may be granted pursuant to cl4.6.

5.2 Step 2 – Pursuant to cl4.6(4)(a), is the consent authority satisfied that the written request adequately addresses the matters in Clause 4.6(3)?

5.2.1 Clause 4.6(3)(a) – compliance is unreasonable or unnecessary in the circumstances of the case

To demonstrate that compliance with the height of buildings development standard is unreasonable or unnecessary, this written request relies upon:

1. The 2nd 'test' in Winten and the 1st and 2nd 'ways' in Wehbe – i.e. the underlying objectives or purpose of the standard is satisfied or the objectives are not relevant; and
2. The 4th 'way' in Wehbe - the development standard has been virtually abandoned or destroyed by the consent authority's own actions.

These aspects are discussed in the following paragraphs.

The underlying objectives or purpose of the standard

Clause 4.3(1) of the LEP states the objectives of the HOB development standard as follows:

(a) to promote development that conforms to and reflects natural landforms, by stepping development on sloping land to follow the natural gradient,
(b) to promote the retention and, if appropriate, sharing of existing views,
(c) to maintain solar access to existing dwellings, public reserves and streets, and to promote solar access for future development,
(d) to maintain privacy for residents of existing dwellings and to promote privacy for residents of new buildings,

5 Assessment of the Variation

(e) to ensure compatibility between development, particularly at zone boundaries,
(f) to encourage an appropriate scale and density of development that is in accordance with, and promotes the character of, an area,
(g) to maintain a built form of mainly 1 or 2 storeys in Zone R2 Low Density Residential, Zone R3 Medium Density Residential and Zone E4 Environmental Living.

Objective (a) *is to promote development that conforms to and reflects natural landforms, by stepping development on sloping land to follow the natural gradient*

The site has a crossfall from the north-eastern corner on Warung Street to its Henry Lawson frontage, noting that Henry Lawson Avenue slopes from Blues Point Road towards McMahons Point in the east. The pavement on Henry Lawson Avenue is 3.5m-5.7m lower than the subject site.

The existing building was not stepped down the site, rather it was constructed with ground level parking, accessed off Warung Street, with three habitable levels above. The parking areas utilises the slope of the land, not the habitable floor levels.

To satisfy the intent of this objective, a height compliant development on the site would need to step down the slope of the land. In this case this would require dropping off the existing upper-level units across the whole of the building (refer to Figure 6 above).

The proposal provides access to a new basement for parking and services from Henry Lawson Avenue, with reconstructed apartments above, including a lower ground floor level unit that replaces the driveway and parking previously located under the southern wing of the building. The basement, being wholly below ground level, does not add to the overall height or building envelope when viewed from street level.

Overall, the proposal does not explicitly achieve this objective as the building is not stepped down the site. It must be accepted that the building envelope is a function of the existing construction and the proposal does not increase the height or massing of the building over and above the current built form.

Objective (b) *is to promote the retention and, if appropriate, sharing of existing views*

The proposal does not adversely impact views of adjoining or adjacent properties. As shown in Figure 7 below, the properties to the north of the site are either high set or already impacted by the existing building envelope. As the height and eastern extent of the existing building is not changed from the existing building envelope, views from the north are not impacted.

5 Assessment of the Variation

Figure 7: View looking west along Warung Street showing views toward and over the site from properties on the northern side of Warung Street

Properties to the north along Blues Point Road are not unduly impacted by the modification of the western façade of the building. The north-western balconies are removed and the new western balconies do not protrude any further towards the Blues Point Road frontage than the existing balconies. Figure 8 & 9 shown the existing and proposed western façade of the building. Figure 10a and 10b below shows the current view lines down Blues Point Road towards Blues Bay (note the existing temporary shed on Henry Lawson Ave that blocks views to the Bay and the CBD cityscape).

Figure 8: Existing western façade

Figure 9: Proposed western facade

Figure 10a: View from Blues Point Road across western façade of building

Figure 10b: View from Blues Point Road across western façade of building

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The following Figure shows the streetscape on the western side of Blues Point Road, north of the intersection of Warung Street. The mature street trees and lack of outdoor balconies reduces any quantitative or qualitive view impacts from these properties.

Figure 11: View looking north along Blues Point Road from adjacent subject site showing primary views of building blocked by existing mature street trees

The following Figure 12 shows view lines from a unit within No. 30-40 Blues Point Road. Any new balcony on the western façade of the building will sit predominantly within the existing building envelope. Any protrusion will be minor and the iconic view of the Sydney Harbour Bridge and Sydney Cityscape is largely retained (once the temporary shed on Henry Lawson Reserve is removed).

On the southern side of the building (Figure 13) any projection of the line of the balconies beyond the existing will not

Figure 12: View from No. 11/30-40 Blues Point Road (Source: realestate.com.au) showing any view impact from new balconies would be minor as iconic view to bridge and cityscape is retained once temporary tunnel shed is removed

5 Assessment of the Variation

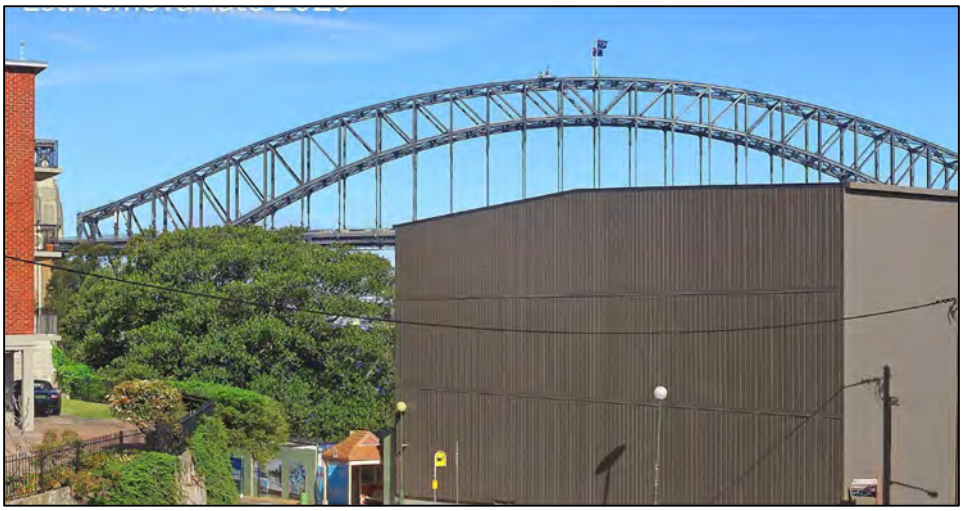

Figure 12: View from No. 22/30-40 Blues Point Road (Source: realestate.com.au) showing any view impact from new south facing balconies would be minor as the iconic view to bridge and cityscape is retained once the temporary tunnel shed is removed

Overall, the height of the new roof is maintained in line with the existing roof height and the only protrusion above the existing roof height is a low set lift overrun (360mm higher than the roof), as shown in Figure 6 above. This particular model of lift was selected due to its low height and ability to significantly reduces any view impacts or loss of amenity. The lift overrun is centrally located within the building footplate. Any distant views across the top of the building will not be obscured to a degree that would warrant refusal or modification of the lift overrun.

The new apartments at the rear are sited behind the existing building (when viewed from the primary public domain), are well setback from the eastern side boundary and from the Warung Street boundary. The height of the addition is compliant and within the parameters of the existing building. This objective is achieved.

Objective (c) *to maintain solar access to existing dwellings, public reserves and streets, and to promote solar access for future development*

The site has a north-south orientation with road reserves on the northern, western and southern sides of the property. Additional shadows from the proposal have been tracked and shadow diagrams submitted with the DA package. These demonstrate that only minor increases occur as a result of the new and updated development and these predominantly fall over the road reserve and Blue Point Reserve areas only. This objective is achieved.

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Objective (d) *is to maintain privacy for residents of existing dwellings and to promote privacy for residents of new buildings*

The layout and orientation of the apartments is not altered by the development. The new apartments (closest to Warung Street) have their main living areas facing the street. The remainder of the units face west and south to take full advantage of the Sydney Harbour and cityscape views. Low traffic rooms, being bedrooms face the eastern side boundary with each window opening screened to ensure cross-boundary privacy. This objective is achieved.

Objective (e) is *to ensure compatibility between development, particularly at zone boundaries*

The development site is not located at a zone boundary and is permissible in the R3 Medium Density Residential zone.

This section of McMahons Point and Blues Point contains an eclectic mix of low, medium and high density development. The existing development is a longstanding flat building, built in the 1960's after the Warung Street heritage listed residences, No. 30-40 Blues Point Road (constructed prior to 1955) and the Blues Point Tower (built around 1962) were constructed. The building's height, bulk and building mass lies between the large, low density residences and the multistorey, high-density tower buildings.

The proposal does not seek to substantially alter the built form of the existing development. In heritage terms the existing building has been categorised as 'uncharacteristic'. The proposed modernisation of the building provides a link between the past and present, providing a recategoristation of the building as 'neutral' within the McMahon Point South Heritage Conservation Area landscape. Given this in addition to the retention of the overall urban morphology of the building the development remains compatible with adjoining and adjacent development. This objective is achieved.

Objective (f) *is to encourage an appropriate scale and density of development that is in accordance with, and promotes the character of, an area*

The subject site is located on a corner block with three street frontages and is opposite Henry Lawson Reserve. The three streets that surround the subject site vary in topography and character. The site is zoned R3 Medium Density Residential and the development is permissible with Council's consent.

As stated above the existing building is a 1960's red brick flat building with at-grade parking

5 Assessment of the Variation

with access off Warung Street. It is situated amongst an eclectic mix of building types, including detached older dwellings (some heritage listed), modern infill developments and residential flat buildings (both medium and high density).

The proposal utilises, as part of its architectural expression, the existing red face brick and further breaks down the scale of the development through the use new painted rendered finishes, sandstone and new steel and glass detailing. The overall composition of these elements creates a scale that enhances the sense of place and comfort.

In terms of heritage, the site is not a listed heritage item, rather Council's DCP (Appendix) lists the site as 'uncharacteristic'. The proposal will improve the visual fit of the development, recategorising the development as 'neutral'. The existing setting is generally unchanged and the building façade modifications remain consistent with the character of the area. This objective is achieved.

Objective (g) *is to maintain a built form of mainly 1 or 2 storeys in Zone R2 Low Density Residential, Zone R3 Medium Density Residential and Zone E4 Environmental Living*

This objective is not applicable to the existing or proposed residential flat building in this case. The existing building is three storeys over at-grade parking. The proposal retains the three habitable floor levels with a new basement below. The locality is clearly defined by buildings greater than 2 storeys and greater on the downslope.

5.2.2 Clause 4.6(3)(b) – There are sufficient environmental planning grounds to justify contravening the development standard

As set out in Four2Five, when a development standard is sought to be varied, there is an onus on the Applicant to demonstrate that there are "*sufficient environmental planning grounds"* such that compliance with the development standard is unreasonable or unnecessary and these environmental planning grounds must be particular to the circumstances of the proposed development rather than grounds that could reasonably apply a similar development on any other land.

Preston J clarified in *Micaul* and *Initial Action*, that sufficient environmental planning grounds may also include demonstrating a lack of adverse amenity impacts. As outlined in

5 Assessment of the Variation

Section 5.2.1, there is considered to be a lack of adverse amenity impacts arising from the proposal's non-compliance, as it will not result in adverse overshadowing, overlooking, view, acoustic, privacy or traffic impacts.

The environmental planning grounds justification for the Height of Building variation is provided as follows:

- The proposal reasonably achieves the NSLEP building height objectives with the exception of the stepping development down the slope of the site. It achieves view sharing, solar access, privacy, scale, density, compatibility and character objectives as outlined in this report.
- The variation is a function of the height of the existing development and the slope of the land. The original flat building was built in the 1960's. It did not step down the site. Rather it was built over at-grade parking. The parking utilised the slope of the land, not the habitable floor levels above. Hence the upper floor level of the existing building varies from Council's adopted height limit. While a stepped development is an objective of development on sloping land, this is an existing circumstance of this particular site.
- The existing building and the site have not been substantially changed since its original construction. The quantitative value of the variation is therefore unchanged from the existing development.
- The proposal does not seek to increase or change the overall height of the building from the original building.
- This particular building is listed in Council's DCP as 'uncharacteristic' in heritage terms. The proposed modification of the building façade will improve its visual appearance within the setting of the McMahons Point South HCA by respecting its history and providing a link between the past and present living standards. The proposal results in a site specific uplift of the building's heritage contribution from 'uncharacteristic' to 'neutral' within the HCA.
- Without the proposal there is no site specific heritage-based incentive for the property owners to change the building.
- The lift overrun is low-set structure (360mm above roof level), located centrally within

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the building envelope and will be barely discernible from ground level around the outside of the building or from the adjoining road reserves (as shown in the perspective drawings). Its inclusion in the proposal provides for disabled access that is currently unavailable to the site. The selection of this particular model of lift minimises any impacts that may arise from a larger, more visually intrusive lift within the landscape.

- The proposed north-eastern addition of the building (facing Warung Street) is compliant with the height limit. It is the only addition to the building envelope and does not seek to breach the height limit or substantially add to the overall bulk and scale of building when viewed from outside of the site.
- The new basement provides for onsite parking under the building, removal of concrete areas and creation of space at ground level for landscaping and private open space for residents. This allows softening of the edges of the property with additional landscaping and enhanced residential amenity via additional, high-quality open space. This addition to the building does not increase its height, density or overall building mass.
- The existing building does not fulfil current standards for access and mobility. The proposal includes the installation of a lift to service the development from basement level to each habitable floor level, disabled access from the street boundary to the building entry and two accessible apartments. The lift overrun has to protrude above the existing roof level. However, the model of lift selected is low set, small scale and is only 360mm higher than the roof.
- The interrelationship of the existing development and the heritage item immediately east of the property (No. 3 Warung St) is not substantially altered by the development as the setbacks, built form and privacy provisions are adequately addressed via the design solution proposed. The north-eastern addition is height compliant.
- The consequence of strict compliance would necessitate the loss of an entire floor of an existing flat building. This is not economically unviable, not desirable and would be contrary to the Object of the Act at s1.3 which seeks to promote the orderly and economic development of the land.

Based on the above the consent authority can be satisfied that there are sufficient environmental planning grounds to warrant the Height of Building variation.

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5.3 Step 3 - Pursuant to cl4.6(4)(b), is the consent authority satisfied that the development will be in the public interest because it is consistent with the objectives of the development standard and the objectives of the zone?

As outlined in Section 5.2.1, the Proposal achieves and is therefore consistent with the relevant objectives of the height of buildings development standard.

However, the consent authority must also be satisfied that the development will be consistent with the objectives of the R3 Medium Density Residential Zone which are expressed in the Land Use Table to cl2.3 of the LEP as follows:

- *To provide for the housing needs of the community within a medium density residential environment.*
- *To provide a variety of housing types within a medium density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To encourage the development of sites for medium density housing if such development does not compromise the amenity of the surrounding area or the natural or cultural heritage of the area.*
- *To provide for a suitable visual transition between high density residential areas and lower density residential areas.*
- *To ensure that a high level of residential amenity is achieved and maintained.*

The Proposal is consistent with the objectives of the R3 Zone for the following reasons:

- *To provide for the housing needs of the community within a medium density residential environment*

The existing and proposed landuse maintains the development typology of the building as medium density residential. While the number of units is reduced from 12 to 10, the overall number of bedrooms is increased from 20 to 24. The modified flat building will continue to provide for a diverse range of households including singles, couples, unrelated households and families. This objective is achieved.

- *To provide a variety of housing types within a medium density residential environment*

The existing building is located within an area characterised by an eclectic mix of development including low, medium and high-density developments. The proposal

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maintains the existing housing type, being medium-density residential apartments, on the site. The dwelling mix will provide accommodation for a variety of households including singles, couples, unrelated households and families. The inclusion of studies in a number of apartments will cater for work-from-home opportunities that characterises the nature of employment and business nowadays. This objective is achieved.

- *To enable other land uses that provide facilities or services to meet the day to day needs of residents*

Not applicable to this development.

- *To encourage the development of sites for medium density housing if such development does not compromise the amenity of the surrounding area or the natural or cultural heritage of the area*

The proposal seeks to make major modifications to the existing flat building via the partial development of the building, construction of a basement level for parking and services with residential apartments above, an addition to the north-east of the building and internal alterations to the remaining units. The existing apartments are updated and new balconies added to improve the overall amenity of the units. Part of the concrete driveway and at-grade parking is replaced with landscaping and open space. A lift is added to the building and disabled access significantly improved. Overall, the internal livability and amenity of the apartments together with the curtilage of the building is significantly improved.

The basement level is wholly below ground level with the only visible element being the entryway off Henry Lawson Avenue. While visible from the adjoining public reserve the opening in the retaining wall is sized and designed to fit with the urban morphology and character of development in the immediate environs of the site. Once constructed it will integrate and recess into the existing landscape.

The neighbourhood is characterised by low, medium and high-density development, comprising an eclectic mix of buildings. The proposal does not compromise the amenity or enjoyment of the surrounding area or the thematic reading of the McMahons Point South Heritage Conservation Area (MPS HCA). There are no adverse impacts on the amenity of adjoining of adjacent development as shadow impacts are not substantially increased, views to the iconic features of the Sydney Harbour Bridge and Sydney Cityscape are not unduly

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impaired and the new landscaping is proposed to upgrade and continue to soften the perimeter of the site.

The building, while externally modified, retains references of the red brick façade, the overall building envelope and general presentation of the building to the public domain spaces. The improvements move the building from an 'uncharacteristic' to 'neutral' contribution within the MPS HCA. Aesthetically, the proposal benefits the area.
This objective is achieved.

- *To provide for a suitable visual transition between high density residential areas and lower density residential areas*

The proposal is neutral for this objective as it does not change the medium-density development typology of the existing development. It is maintained as medium density residential and is considered as a transitional built form and density of development in what is an eclectic mixed density area.

- *To ensure that a high level of residential amenity is achieved and maintained*

The proposal does not seek to maintain the status quo for the existing flat building. Rather, it seeks to provide the highest quality apartment living that is expected in modern Sydney where apartments have access to local services, transport, spectacular views and the access to high quality public reserves.

The proposal seeks to enhance the residential amenity of the site by providing the basement parking, a mix of existing (updated) apartments, new apartments and improved private open space via enlarged balconies and two ground level courtyards. The livability and therefore the residential amenity of the apartments is significantly enhanced via the proposed internal and external modifications.

Based the above it follows that the proposed development is in the public interest because it is consistent with the objectives of the HOB development standard under the NSLEP 2013 and the objectives of the R3 Medium Density Residential Zone under the NSLEP 2013.

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5.4 Step 4 - Clause 4.6(4)(b) – The Concurrence of the Secretary has been obtained

On 21 February 2018, the Secretary of the Department of Planning and Environment issued a Notice ('the Notice') under cl64 of the *Environmental Planning and Assessment Regulation 2000* (the EP&A Regulation) providing that consent authorities may assume the Secretary's concurrence for exceptions to development standards for applications made under cl4.6 of the SILEP or SEPP 1 subject to certain conditions.

As NSLEP 2013 adopts cl4.6 of the SILEP and the conditions of the Notice are not relevant in this instance, the consent authority for the Proposal may assume concurrence in respect of the variation requested to the HOB development standard under the LEP.

In addition, the Court has power to grant development consent to the proposed development even though it contravenes the HOB development standard, without obtaining or assuming the concurrence of the Secretary by reason of s39(6) of the *Land and Environment Court Act 1979* (the Court Act).

5.5 Step 5 - Clause 4.6(5) - Concurrence Considerations

In the event that concurrence cannot be assumed pursuant to the Notice, cl4.6(5) of the LEP provides that in deciding whether to grant concurrence, the Secretary must consider:

(a) *whether contravention of the development standard raises any matter of significance for State or regional environmental planning, and*

(b) *the public benefit of maintaining the development standard, and*

(c) *any other matters required to be taken into consideration by the Secretary before granting concurrence.*

Furthermore, in Initial Action, Preston CJ clarified that, notwithstanding the Court's powers under s39(6) of the Court Act, the Court should still consider the matters in cl4.6(5) when exercising the power to grant development consent for development that contravenes a development standard.

Accordingly, the proposed contravention of the HOB development standard has been considered in light of cl4.6(5) as follows:

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- The proposed non-compliance does not raise any matter of significance for State or regional environmental planning as it is peculiar to the design of the proposed development for this particular Site and this design is not directly transferrable to any other site in the immediate locality, wider region or the State and the scale of the proposed development does not trigger any requirement for a higher level of assessment;

- As indicated in Section 5.3, the proposed contravention of the development standard is considered to be in the public interest because it is consistent with the objectives of the zone and the objectives of the development standard. Accordingly, there would be no significant public benefit in maintaining the development standard in this instance; and

- It is considered that there are no other matters of relevance that need to be taken into consideration by the Court.

6 Conclusion

The proposed development contravenes the Height of Building development standard under cl4.3 of North Sydney LEP 2013.

The height of building control under cl4.3 of the NSLEP is a development standard and is not excluded from the application of cl4.6.

This written request to vary the development standard has been prepared in accordance with cl4.6(3) of the LEP and demonstrates that strict compliance with the development standard is unreasonable and unnecessary for the following reasons:

- The Height of Building variation is a function of the building envelope, including the height, of the existing, longstanding residential flat building. It is not the function of any complete redevelopment of the site seeking additional development yields from the site.
- Notwithstanding the contravention of the development standard, the proposed development is consistent with the relevant objectives of the development standard pursuant to cl4.3 of the NSLEP 2013 and is consistent with the relevant objectives of the R3 Medium Density Residential Zone and therefore, the proposed development is in the public interest;
- Notwithstanding the contravention of the development standard, the proposed residential flat building development will not result in significant adverse environmental harm in that the environmental amenity of neighbouring properties will be preserved and any perceived adverse impacts on the amenity of the locality are minimised through good design solutions and/or retention of the existing urban morphology of the existing development;
- There are direct social and economic benefits for the property owner and the local residents with the modification of the facades of the building, maintenance of the character of the area by sympathetic new development and enhanced residential amenity for occupants.
- The proposal will allow the building to be recategorised, in heritage terms, from 'uncharacteristic' to 'neutral' within its locational context without comprising the thematic reading of nearby heritage items or significantly altering the interrelationship of the site to its immediate, high-profile environs.

6 Conclusion

In addition, this written request outlines, in Section 5.2.2, sufficient environmental planning grounds to justify the contravention of the Height of Building development standard.

Accordingly, this written request can be relied upon by the consent authority in accordance with cl4.6(4) of the LEP.

The consent authority can assume the concurrence of the Secretary pursuant to the Notice issued on 21 February 2018. Alternatively, the Court can use its powers under s39(6) of the Court Act and be satisfied that contravention of the development standard does raise any matter of significance for State or regional environmental planning, there is no public benefit of maintaining the development standard and there are no other relevant matters required to be taken into consideration.

Accordingly, the consent authority can exercise its power pursuant to cl4.6(2) to grant development consent to the proposed development notwithstanding the contravention of the development standard.