Integrated Medical Office Building
Showground Rd, Gosford

Development Numbers

Street Address: 60, 62 and 64 Showground Road, Gosford
Property Description: Lot 1-4 on SP 20095 and Lots 1-6 on SP 20058

Site Area: 2437sqm

Proposal Description: Mixed use development consisting of an integrated health hub facility and basement car parking. Consisting of retail and medical land uses such as GP clinic, potential pharmacy, radiology, pathology as well as a cafe on the ground level; with 4 levels of medical suites above.

Carparking Numbers

Ground
2 Motorcycle Bays
20 Bike Parks

Basement 1
44 Car Spaces
4 Accessible Car Spaces
9 Motorcycle Bays
2 Van Space
28 Bike Parks

Basement 2
70 Car Spaces

Basement 3
42 Car Spaces

Total Carparking Numbers
156 Car Spaces
4 Accessible Car Spaces
11 Motorcycle Bays
2 Van Space
48 Bike Parks

Drawing List

Drawing No.	Drawing Name
00.01	Cover Sheet
00.02	GFA Calculations
01.01	Site Plan
01.02	Existing Survey
01.03	Demolition Plan
01.04	Excavation Plan
03.02	Floor Plan - Basement 3
03.03	Floor Plan - Basement 2
03.04	Floor Plan - Basement 1
03.05	Floor Plan - Ground Floor
03.06	Floor Plan - First Floor
03.07	Floor Plan - Second Floor
03.08	Floor Plan - Third Floor
03.09	Floor Plan - Fourth Floor
04.01	Roof Plan
09.01	Elevations - North
09.02	Elevations - East
09.03	Elevations - South
09.04	Elevations - West
10.01	Section A
10.02	Section B
10.03	Section C
22.01	North-Eastern Perspective
22.02	Showground Rd Perspective
22.03	South-Eastern Perspective
22.04	Showground Road Context

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Department of Planning, Housing and Infrastructure

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Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

Signed: AW **Sheet No: 1 of 55**

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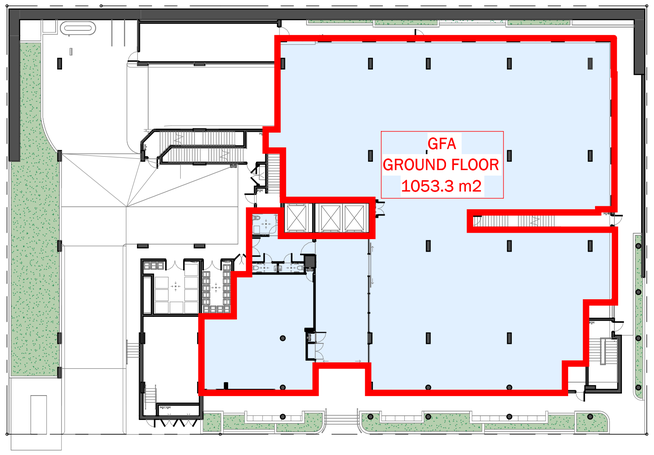
PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

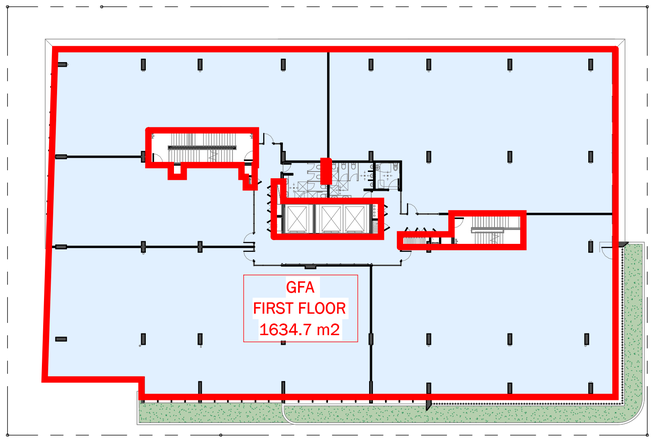
DRAWING TITLE
Cover Sheet

Drawing No.	Revision
6245.DA.00.01	L



1 | Scale @ A1
09.01 | 1 : 300

GFA - Ground Floor



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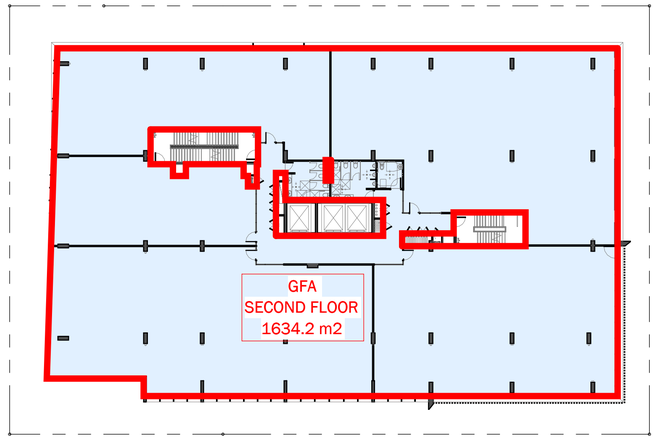
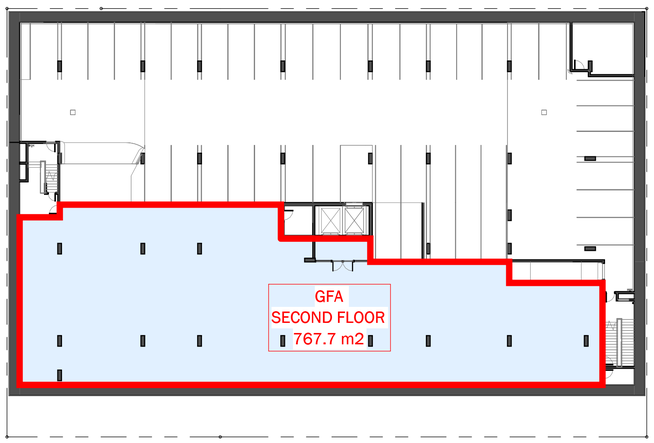
09.01 | 1 : 300

GFA - First Floor



3 | Scale @ A1
09.01 | 1 : 300

GFA - Second Floor



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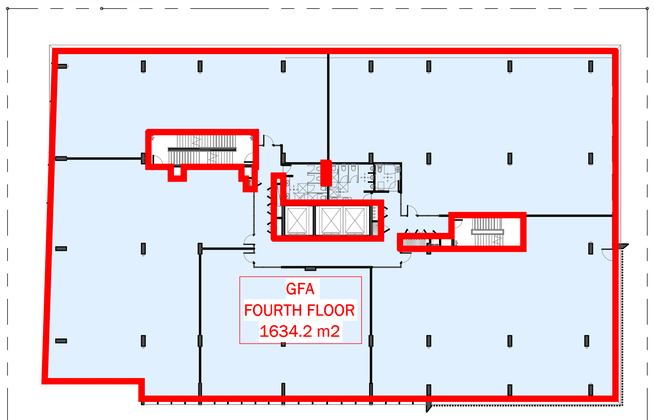
GFA - Basement 3



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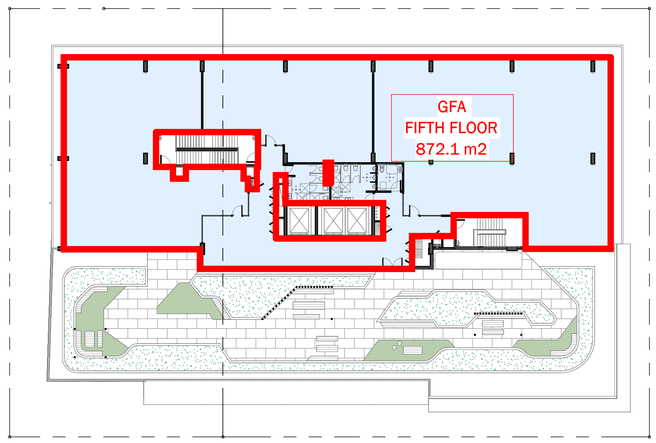
GFA - Third Floor



6 | Scale @ A1
09.01 | 1 : 300

GFA - Fourth Floor

GFA Calculations

Definition for GFA taken from NSW State Environmental Planning Policy (Schedule 10 Dictionary for Chapter 5)

Storey	GFA	NLA
Basement 3	767.7	751.66
Ground Floor	1053.3	926.57
First Floor	1634.7	1462.53
Second Floor	1634.2	1462.58
Third Floor	1634.2	1463.17
Forth Floor	872.1	690.06
TOTAL	7596.2m2	6756.57m2

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
GFA Calculations

N

0 5 10 25
Scale (m) 1 : 250 @A1 Scale (m) 1 : 500 @A3

Drawing No.	Revision
6245.DA.00.02	F

1/05/2024 4:19:38 PM

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Site Plan

N

Drawing No.	Revision
6245.DA.01.01	H

1/05/2024 9:39:00 AM

DOWNPIPE
POWER POLE
LIGHT POLE
HYDRANT
STOP VALVE
COMMUNICATIONS PIT
KERB INLET PIT
STREET SIGN
SEWER MANHOLE
SEWER JUNCTION
WATER METER
GRATED DRAINAGE PIT
WATER
COMMUNICATIONS
SEWER
OVERHEAD ELECTRICITY

GRID NORTH.
MGA. 56

LOT 15 D. P.
LOT 14 400455
LOT 2 D. P. 960197
LOT 12 D. P. 175082
LOT 301 D. P. 1233004
LOT 1 D. P. 981674

PLAN DATED 27/05/2021

ORIGIN OF LEVELS:- PM 19236 RL = 14.712 AHD

DIAL BEFORE YOU DIG www.1100.com.au

PROPERTY DETAILS
LOT/D.P:- SP 20058 & SP 20095
STREET:- SHOWGROUND ROAD
SUBURB:- GOSFORD

AMENDMENTS	BY	DATE

DATUM: A.H.D
CAD DATABASE FILE
FILE REFERENCE :- 15346
COMPUTER FILE:- 15346DET
DRAWING FILE:- 15346DET.DWG

BISSETT & WRIGHT
PTY LIMITED. ACN 001 312 812
CONSULTANTS IN LAND SURVEYING, ENGINEERING AND PLANNING.
SUITE 3 71a VICTORIA STREET EAST GOSFORD NSW 2250
PHONE : 02 43 243799
FAX : 02 43 247941
EMAIL: bwsurvey@optusnet.com.au

SCALE :- 1:1000 @ A1
GRID :- MGA
CONTOUR INTERVAL : 0.5m
DATE OF SURVEY :- 19/05/2021

SURFACE DETAIL PLAN

CLIENT:- CORNERSTONE DEVELOPMENT MANAGEMENT PTY LTD
PLAN No:- 1 DATE:- 27/05/2021 SHEET 1 OF 1 SHEETS.

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Signed: AW Sheet No: 4 of 55

CAUTION:

PROPERTY BOUNDARIES SHOWN HEREON ARE BY TITLE/DEED ONLY. FURTHER SURVEY INVESTIGATION WILL BE REQUIRED TO CONFIRM AVAILABLE DIMENSIONS.

THE RELATIONSHIP OF IMPROVEMENTS ON THE SUBJECT LOT/S TO THE BOUNDARIES ARE DIAGRAMMATIC ONLY UNLESS SHOWN OTHERWISE.

CONTOURS SHOWN ARE INDICATIVE OF THE SURFACE ONLY, SPOT LEVELS SHOW THE SURFACE HEIGHT.

VISIBLE SERVICE UTILITIES IN THE FOOTPATH HAVE BEEN LOCATED ONLY AT THE SURFACE. THEIR EXACT LOCATION UNDERGROUND SHOULD BE DETERMINED BY POTHOLING PRIOR TO COMMENCEMENT OF ANY FUTURE WORKS. A DIAL BEFORE YOU DIG (TELE1100) SEARCH OF SERVICES SHOULD BE DONE.

PERSONS USING THIS PLAN MUST CONFIRM FROM A CURRENT TITLE THE EXISTENCE OF ANY EASEMENTS, RESTRICTIONS ON USE OR COVENANTS THAT MAY AFFECT THE LAND AND THEIR USE OF THE PLAN.

THIS PLAN HAS BEEN PREPARED FOR THE EXPRESS BENEFIT OF CORNERSTONE DEVELOPMENT MANAGEMENT PTY LTD WITH THE EXTENT OF SURVEY BEING LIMITED TO THE INSTRUCTIONS OF JOSH HEACOCK. NO LIABILITY IN NEGLIGENCE WILL BE ACCEPTED TOWARDS THIRD PARTIES WHO ARE WARNED TO RELY ONLY UPON THE RESULTS OF THEIR OWN INVESTIGATIONS.

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PROJECT
Gosford Health Hub
PROJECT ADDRESS
60-64 Showground Road, Gosford
DRAWING TITLE
Existing Survey

N

Drawing No.	Revision
6245.DA.01.02	H

Removal of existing vegetation along Western boundary

Demolition of existing single storey brick units

Removal of existing vegetation along Western boundary

Demolition of existing concrete retaining wall along Western boundary. Retaining wall to be reconstructed

BRICK RET. WALLS

CONC PATH

CONC. BLK

RET.

PEBBLECRETE

DRIVEWAY

COURTYARD

Removal of concrete pathway along Southern boundary

Removal of existing vegetation

COURTYARD

14.00

15.00

Demolition of existing concrete retaining wall along Northern boundary. Retaining wall to be reconstructed

Demolition of existing single storey brick units

COURTYARD

Demolition of existing two storey brick units

EXISTING TWO STOREY BRICK UNITS

COURTYARD

EXISTING SINGLE STOREY BRICK UNITS

EXISTING SINGLE STOREY BRICK UNITS

COURTYARD

CONC PATHWAY

COURTYARD

COURTYARD

Demolition of all existing courtyards

Demolition of all existing courtyards

CARPORT

CONC BASE

CARPORT

COURTYARD

13.00

Demolition of existing carports

Existing driveway and crossover to be removed. Reinstate existing kerb and footpath

Existing driveway and crossover to be removed. Reinstate existing kerb and footpath

MONITORING WELL

PEBBLECRETE

DRIVEWAY

Demolition of all existing courtyards

CONC ACCESS

SERVICE POLE

COURTYARD

Demolition of neighbouring retaining wall the increase the connection (to neighbouring site) and amenity

Sewer junction & water meter to be relocated as per proposed design

SEWER JUNCTION

WATER METER

BRICK WALLS

WATER METER

BRICK WALLS

CONCRETE FOOTPATH

ACCESS CROSSOVER

POWER POLE

ACCESS CROSSOVER

Demolition of brick walls along Showground Road

Service pole to be relocated as per proposed design

Removal of existing vegetation

Existing water meter to be relocated as per proposed design

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Approved Application No: DA 22/11444 Mod 1

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

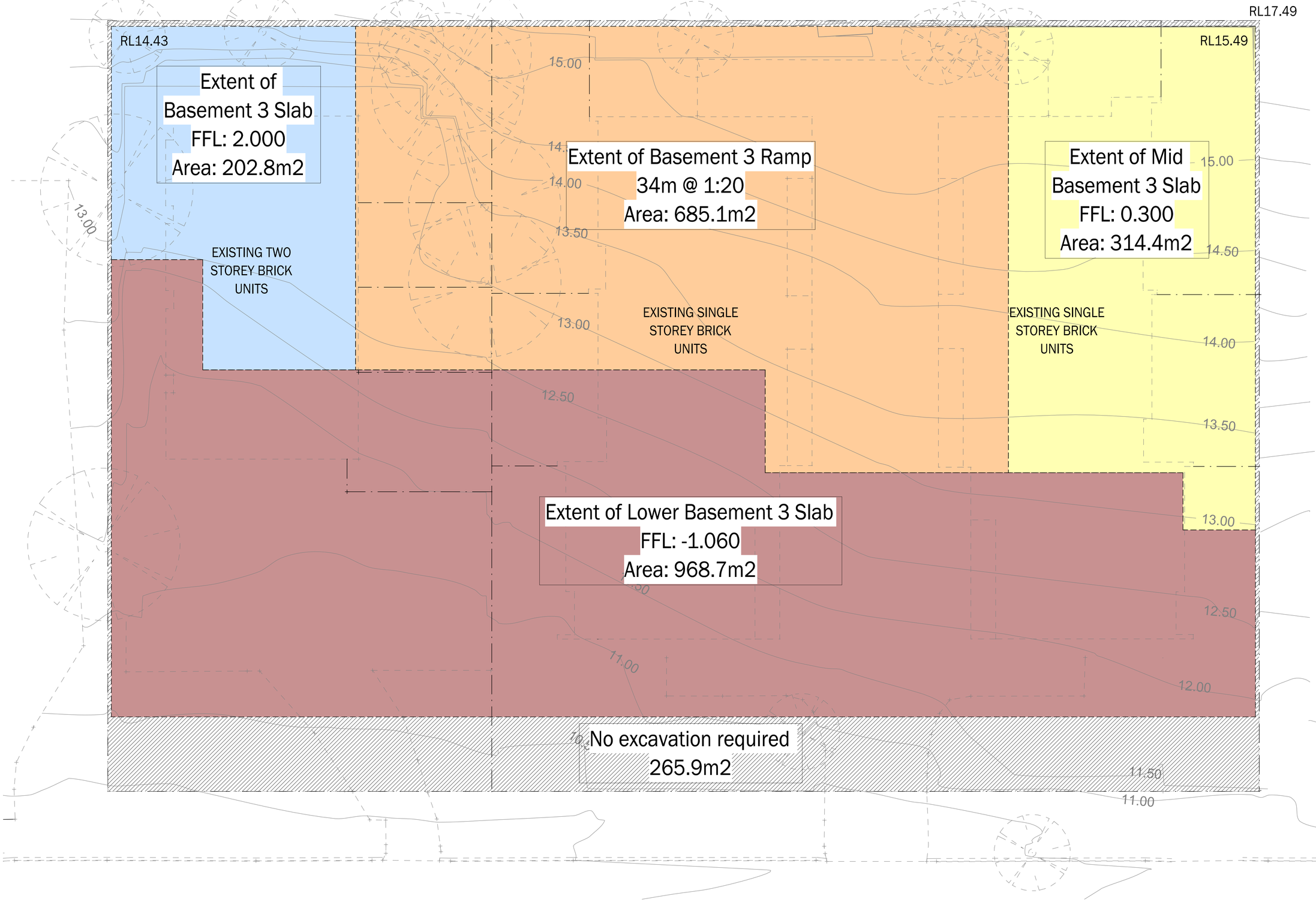
DRAWING TITLE
Demolition Plan

N

0 2 4 10

Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.01.03	E



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PROJECT
Gosford Health Hub

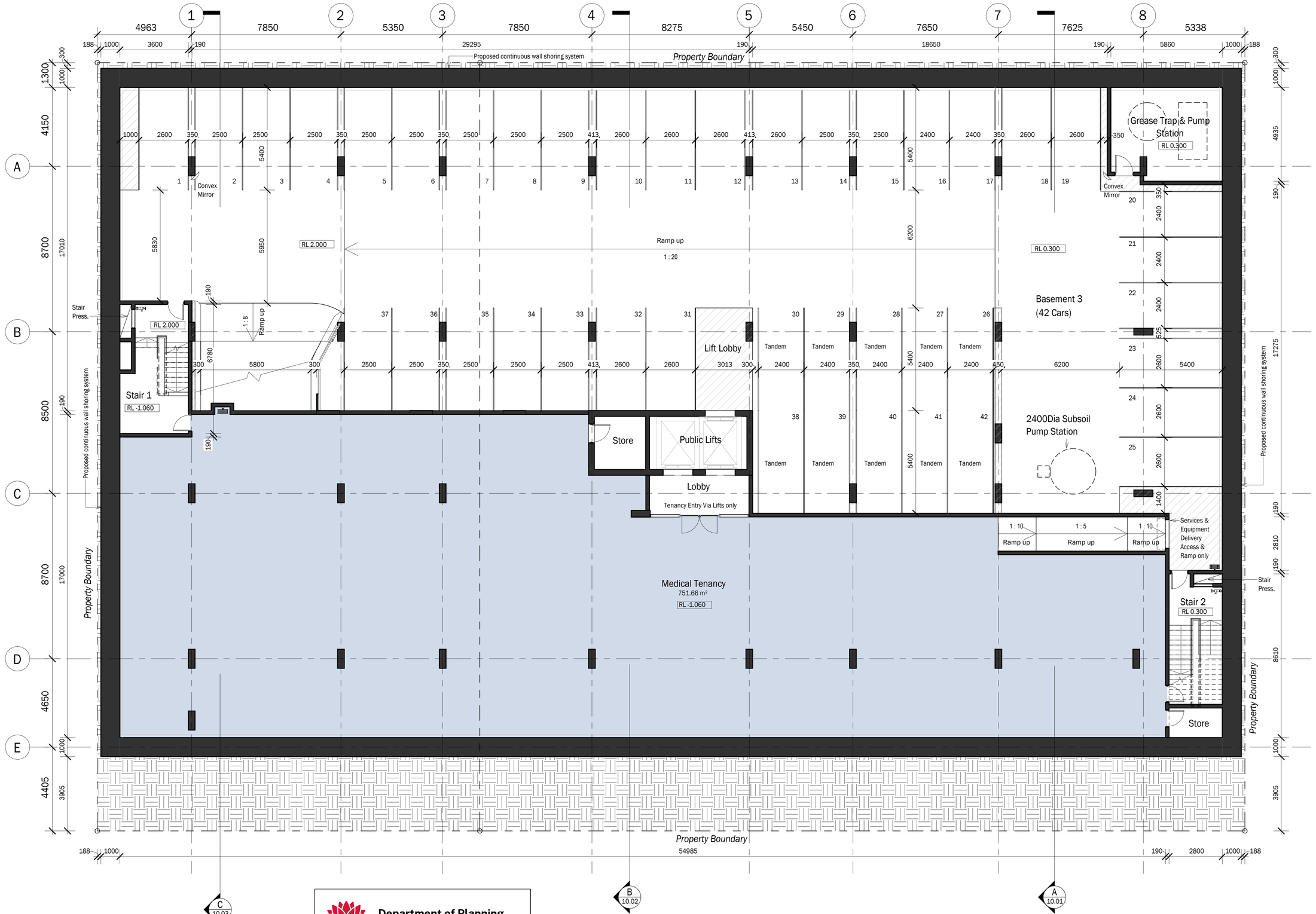
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Excavation Plan

N

0 2 4 10
Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.01.04	E



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PROJECT
Gosford Health Hub

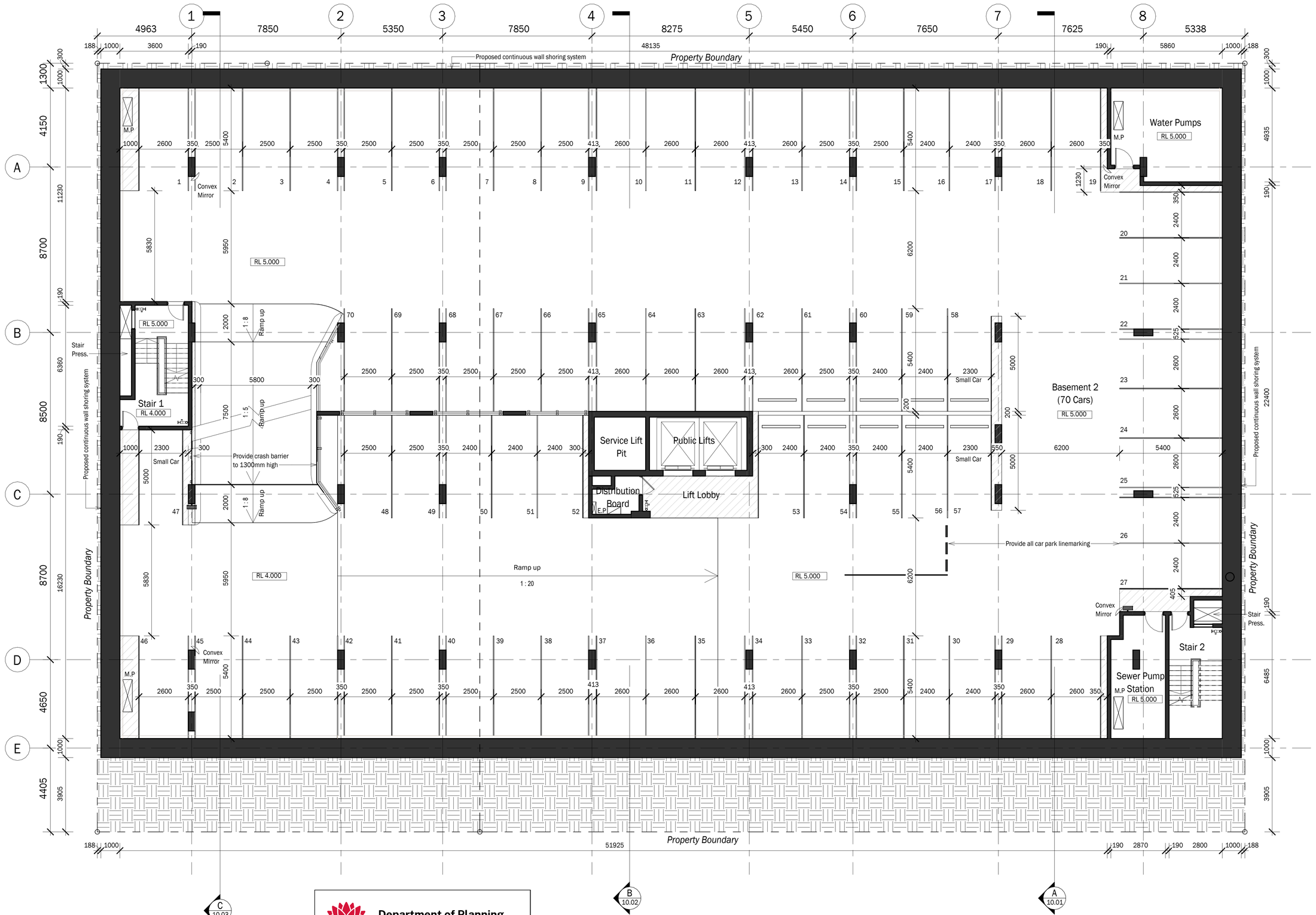
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - Basement 3

N

0 2 4 10
Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.03.02	K



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PROJECT
Gosford Health Hub

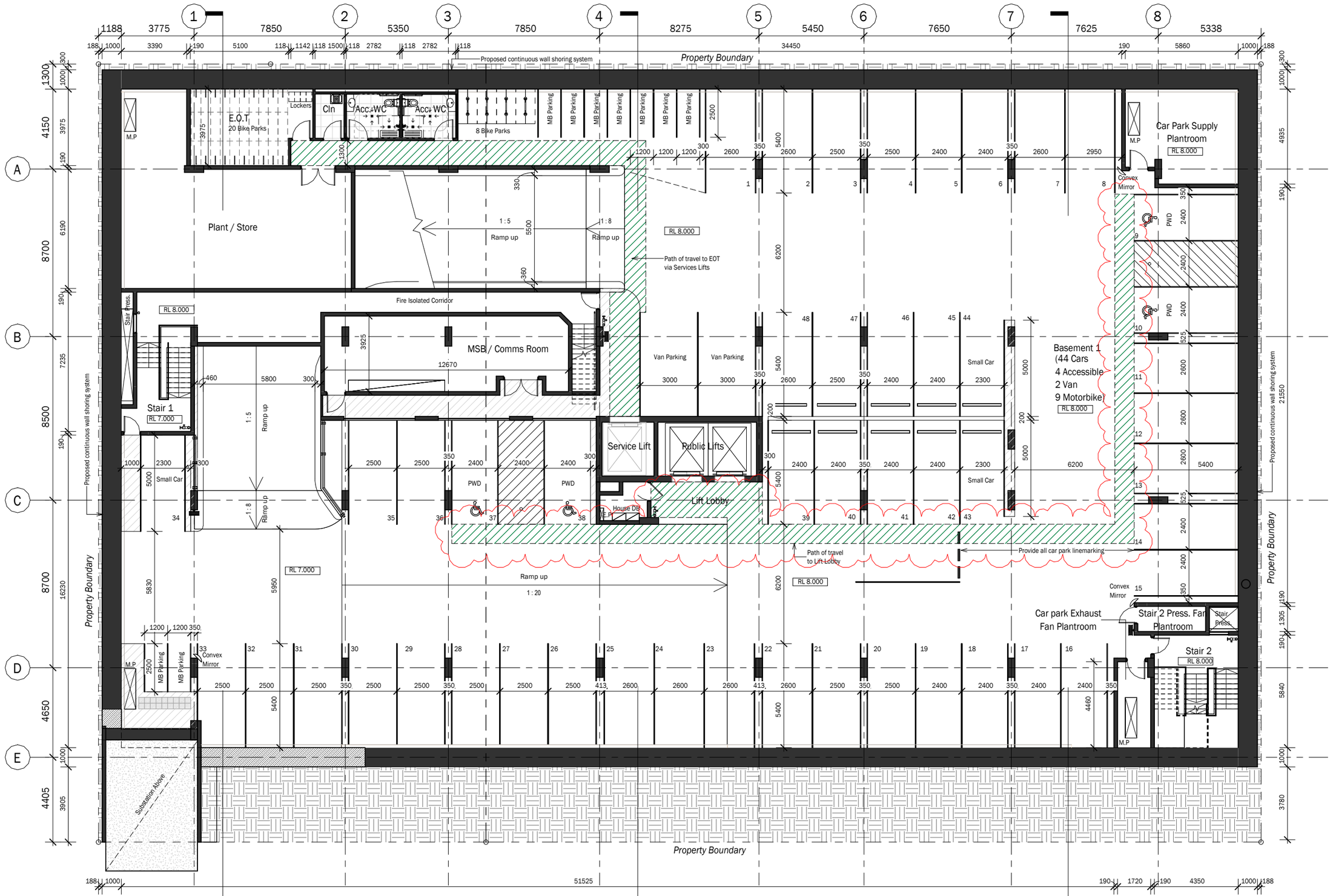
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - Basement 2

N

Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.03.03	L



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PROJECT
Gosford Health Hub

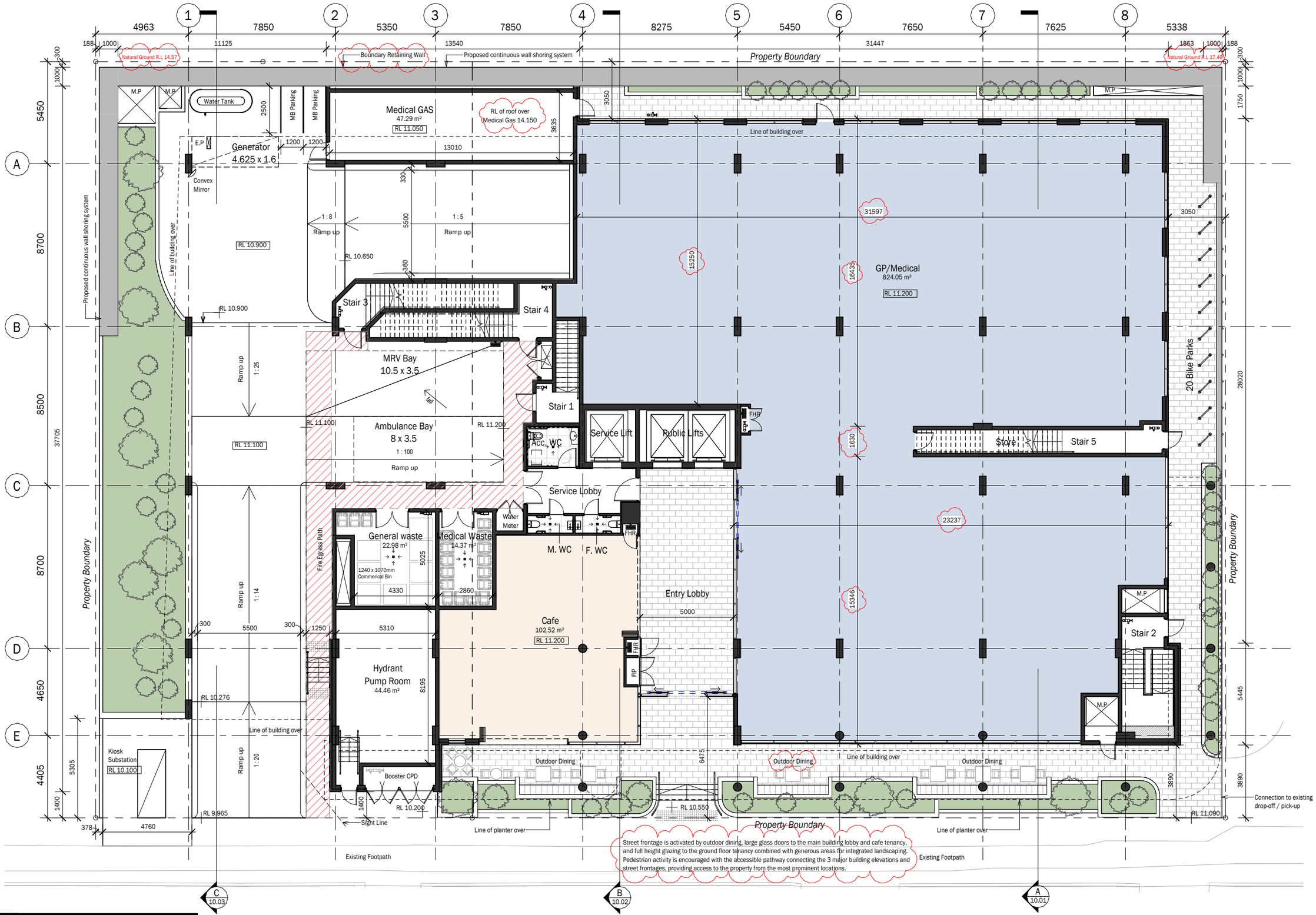
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - Basement 1

N

Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.03.04	N



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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - Ground Floor

N

Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
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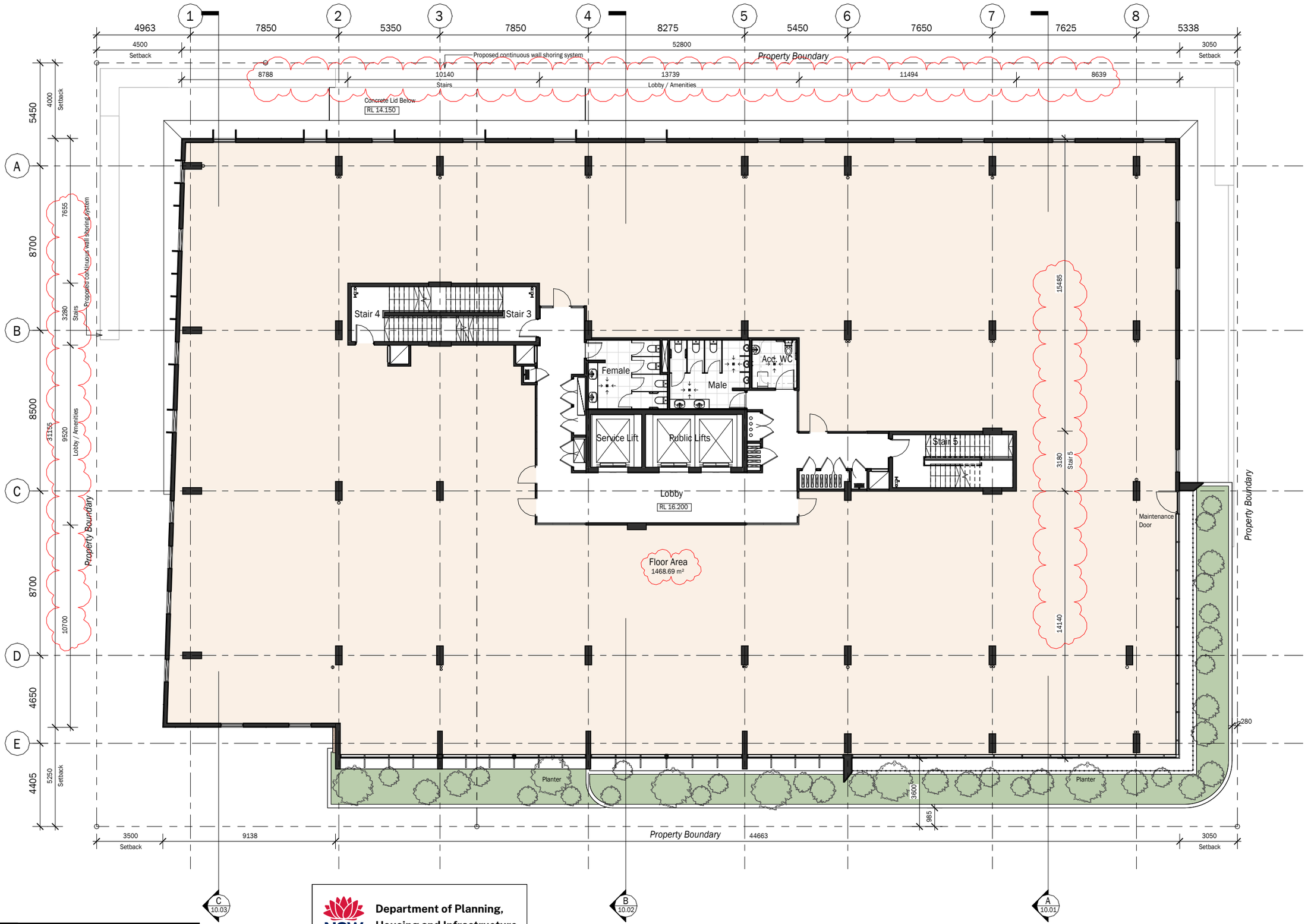

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Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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PROJECT
Gosford Health Hub

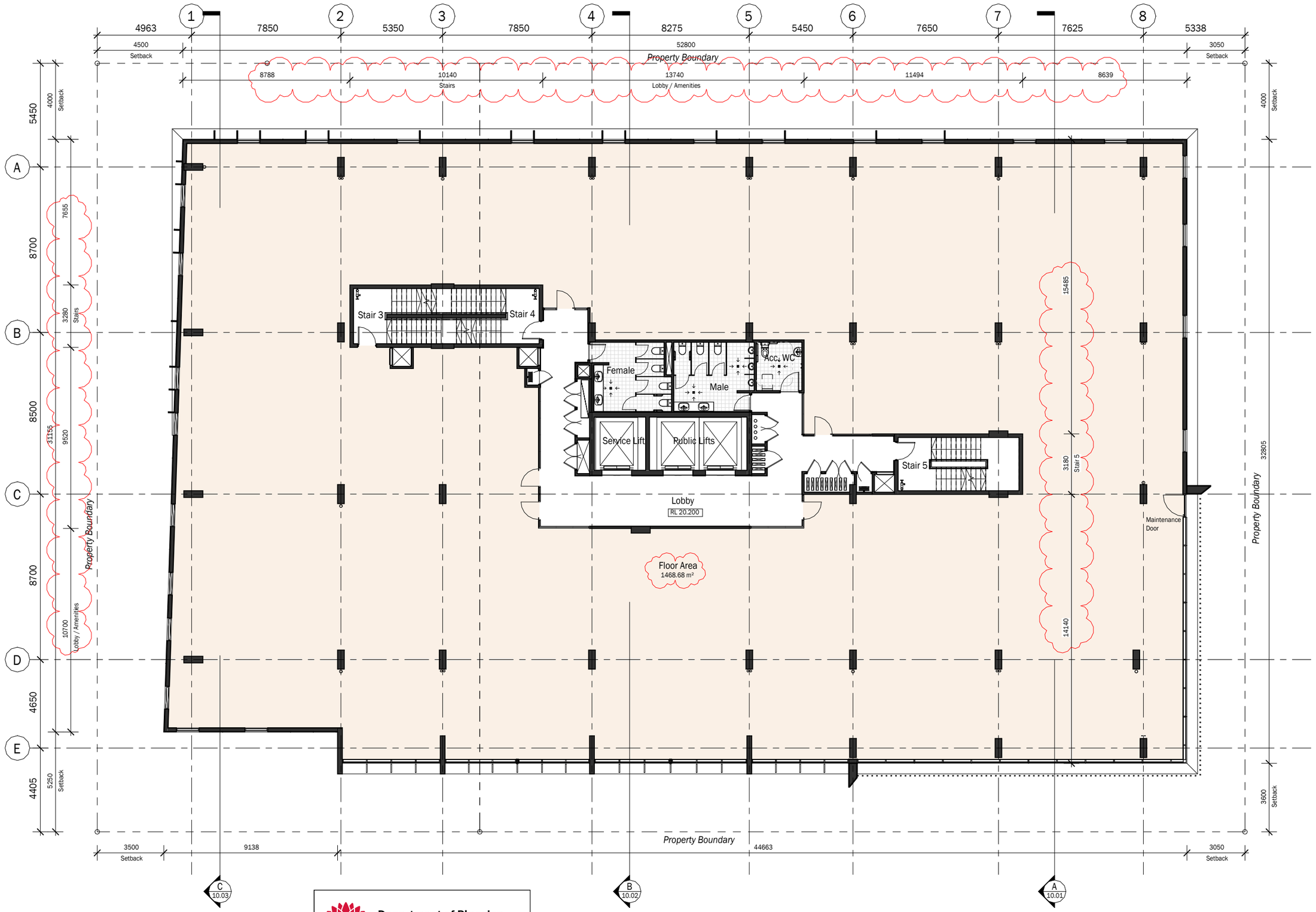
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - First Floor

N

0 2 4 10
Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.03.06	L



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PROJECT
Gosford Health Hub

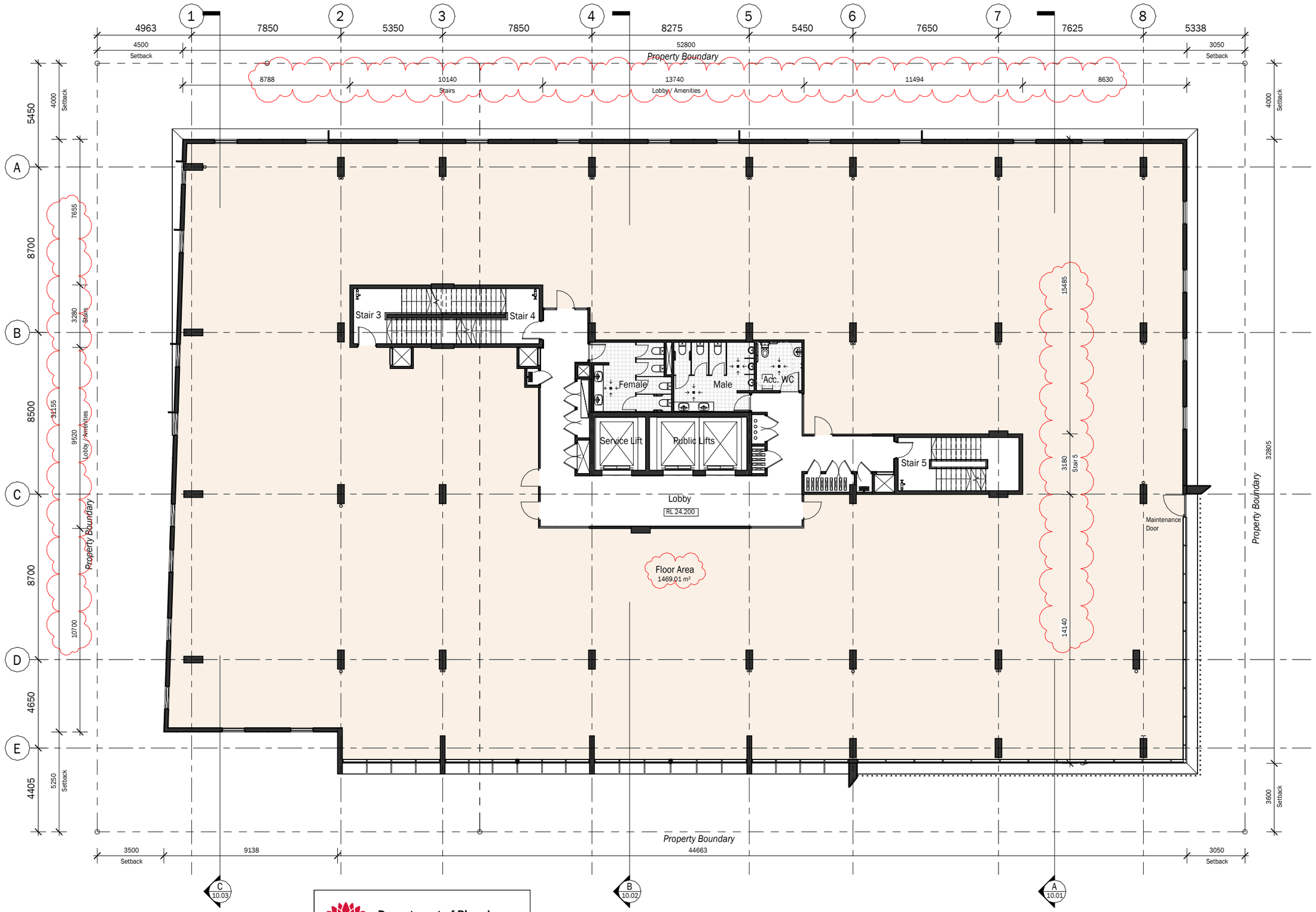
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - Second Floor

N

0 2 4 10
Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.03.07	K



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PROJECT
Gosford Health Hub

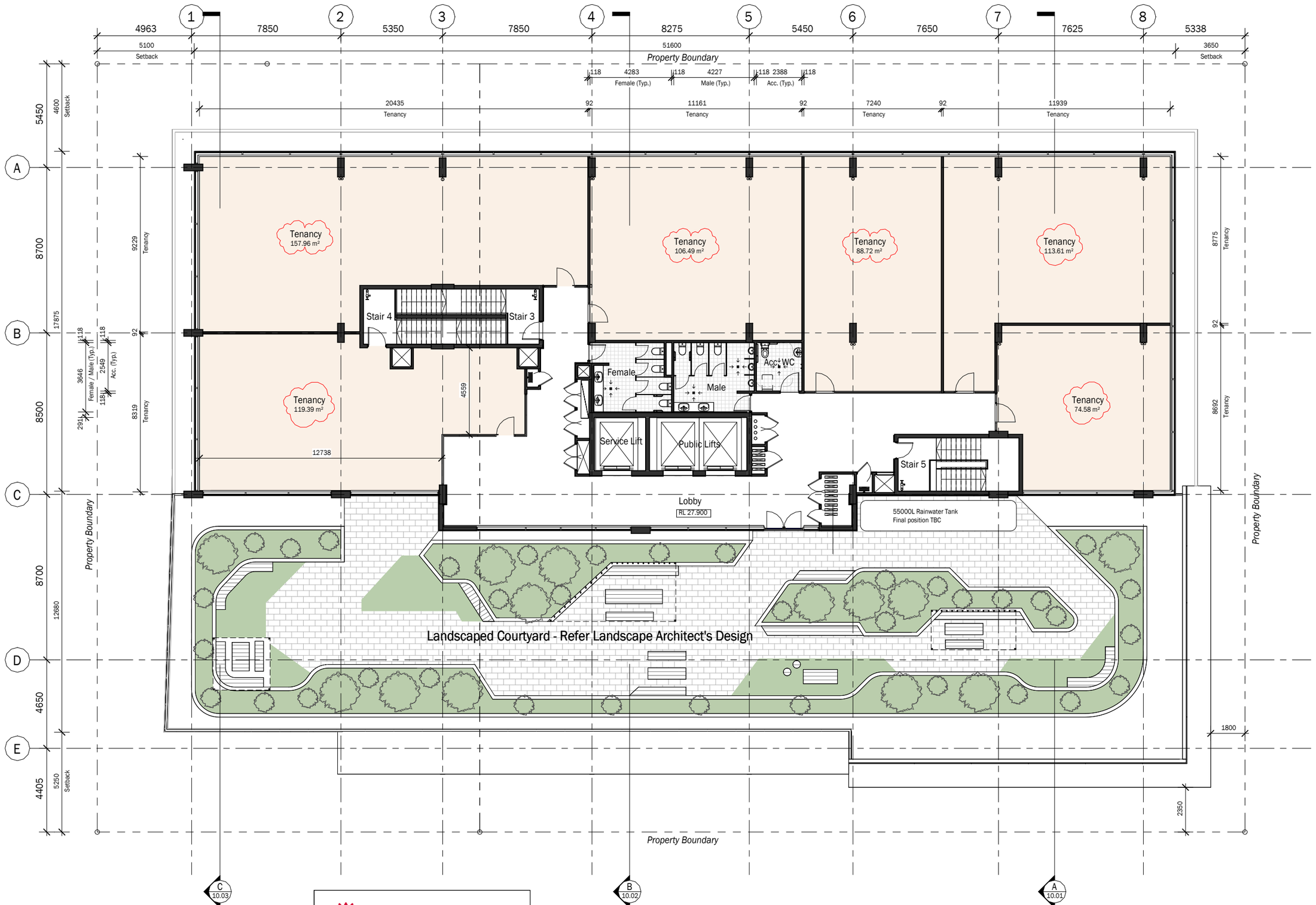
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - Third Floor

N

0 2 4 10
Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.03.08	K



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PROJECT
Gosford Health Hub

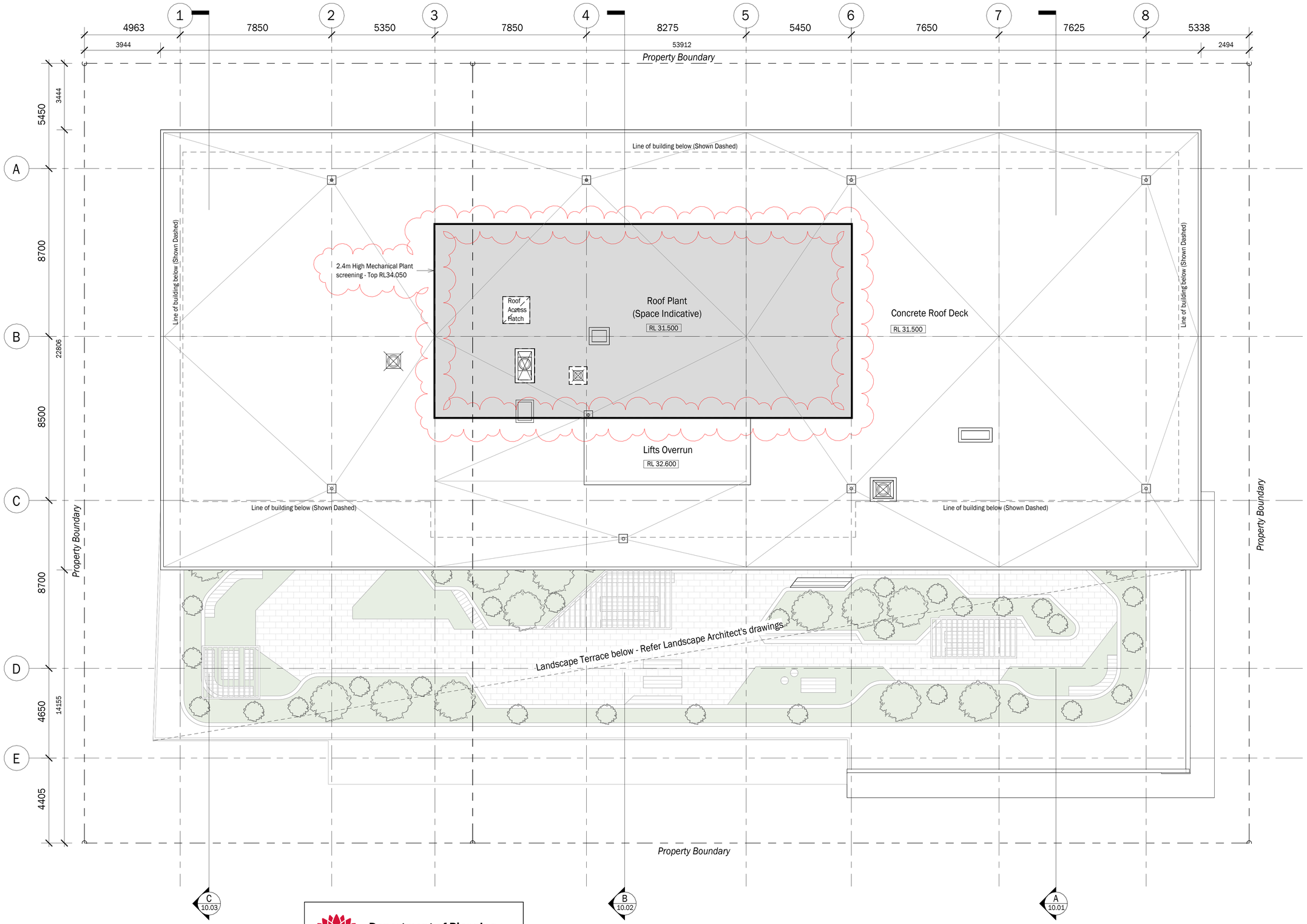
PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Floor Plan - Fourth Floor

N

0 2 4 10
Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.03.09	K



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Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Roof Plan

N

0 2 4 10

Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.04.01	K

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Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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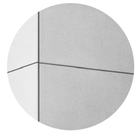
BRK-01
Austral Bricks
Nubrik Pressed Brick Range Spencer Tan

REN-01
Blockwork
Rendered Paint Finish - White

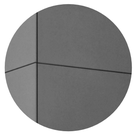
REN-02
Blockwork or Concrete
Rendered Paint Finish - Brown / Bronze

SCR-01
50 x 50 Aluminium Battens
@ 250 Centres
Powdercoated Finish - White

FC-01
FC Cladding
Painted Finish - White



ETC-01
Exo-Tec Cladding
Painted Finish - Light Grey



ETC-02
Exo-Tec Cladding
Painted Finish - Medium Grey

ETC-03
Exo-Tec Cladding
Painted Finish - Dark Grey

TVS

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Elevations - North

0 2 4 10
Scale (m) 1 : 100 @A1
Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.09.01	K

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Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

Signed: AW **Sheet No: 17 of 55**

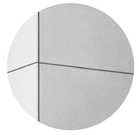
BRK-01
Austral Bricks
Nubrik Pressed Brick Range Spencer Tan

REN-01
Blockwork
Rendered Paint Finish - White

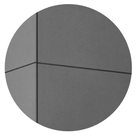
REN-02
Blockwork or Concrete
Rendered Paint Finish - Brown / Bronze

SCR-01
50 x 50 Aluminium Battens
@ 250 Centres
Powdercoated Finish - White

FC-01
FC Cladding
Painted Finish - White



ETC-01
Exo-Tec Cladding
Painted Finish - Light Grey



ETC-02
Exo-Tec Cladding
Painted Finish - Medium Grey

ETC-03
Exo-Tec Cladding
Painted Finish - Dark Grey

TVS

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Elevations - East

0 2 4 10
Scale (m) 1 : 100 @A1
Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.09.02	L

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Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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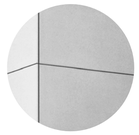
BRK-01
Austral Bricks
Nubrik Pressed Brick Range Spencer Tan

REN-01
Blockwork
Rendered Paint Finish - White

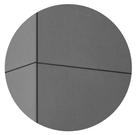
REN-02
Blockwork or Concrete
Rendered Paint Finish - Brown / Bronze

SCR-01
50 x 50 Aluminium Battens
@ 250 Centres
Powdercoated Finish - White

FC-01
FC Cladding
Painted Finish - White

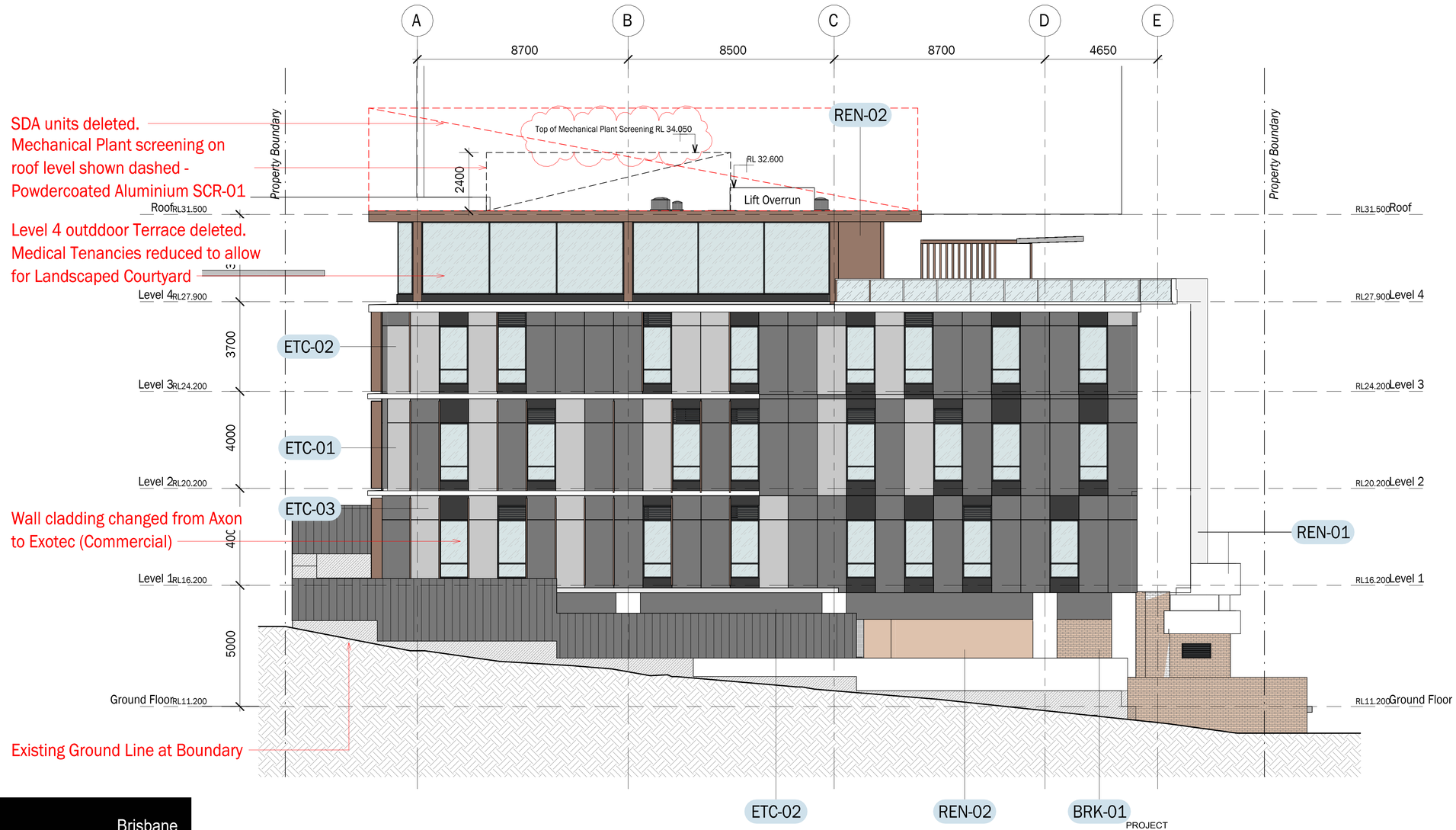


ETC-01
Exo-Tec Cladding
Painted Finish - Light Grey



ETC-02
Exo-Tec Cladding
Painted Finish - Medium Grey

ETC-03
Exo-Tec Cladding
Painted Finish - Dark Grey



SDA units deleted.
Mechanical Plant screening on roof level shown dashed - Powdercoated Aluminium SCR-01

Level 4 outddoor Terrace deleted. Medical Tenancies reduced to allow for Landscaped Courtyard

Wall cladding changed from Axon to Exotec (Commercial)

Existing Ground Line at Boundary

TVS

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Elevations - South

0 2 4 10
Scale (m) 1 : 100 @A1
Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.09.03	K

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Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

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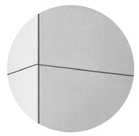
BRK-01
Austral Bricks
Nubrik Pressed Brick Range Spencer Tan

REN-01
Blockwork
Rendered Paint Finish - White

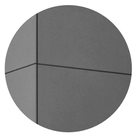
REN-02
Blockwork or Concrete
Rendered Paint Finish - Brown / Bronze

SCR-01
50 x 50 Aluminium Battens
@ 250 Centres
Powdercoated Finish - White

FC-01
FC Cladding
Painted Finish - White



ETC-01
Exo-Tec Cladding
Painted Finish - Light Grey



ETC-02
Exo-Tec Cladding
Painted Finish - Medium Grey

ETC-03
Exo-Tec Cladding
Painted Finish - Dark Grey

TVS

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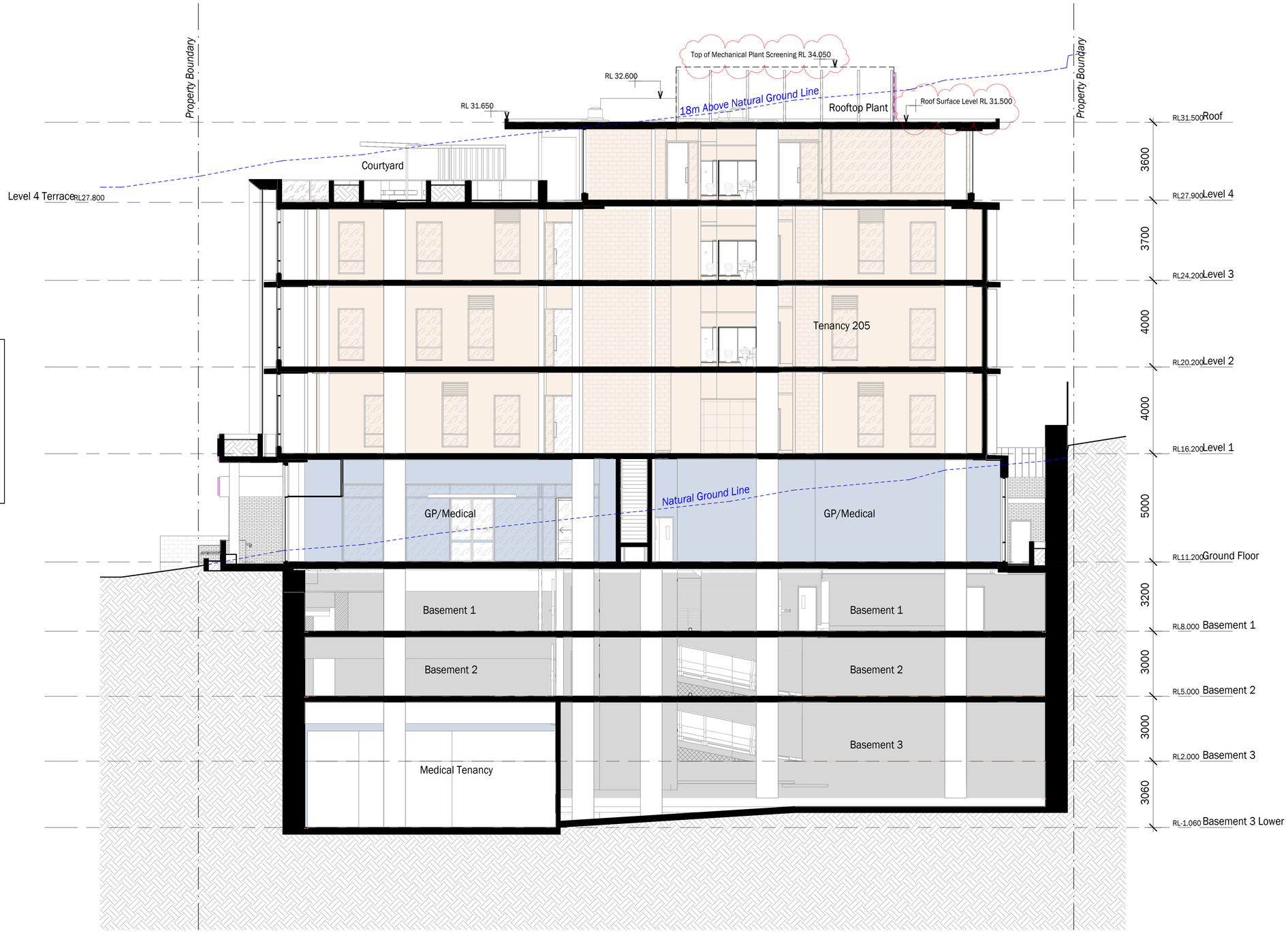
PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Elevations - West

0 4 8 20
Scale (m) 1 : 200 @A1
Scale (m) 1 : 400 @A3

Drawing No.	Revision
6245.DA.09.04	K



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Approved Application No: DA 22/11444 Mod 1

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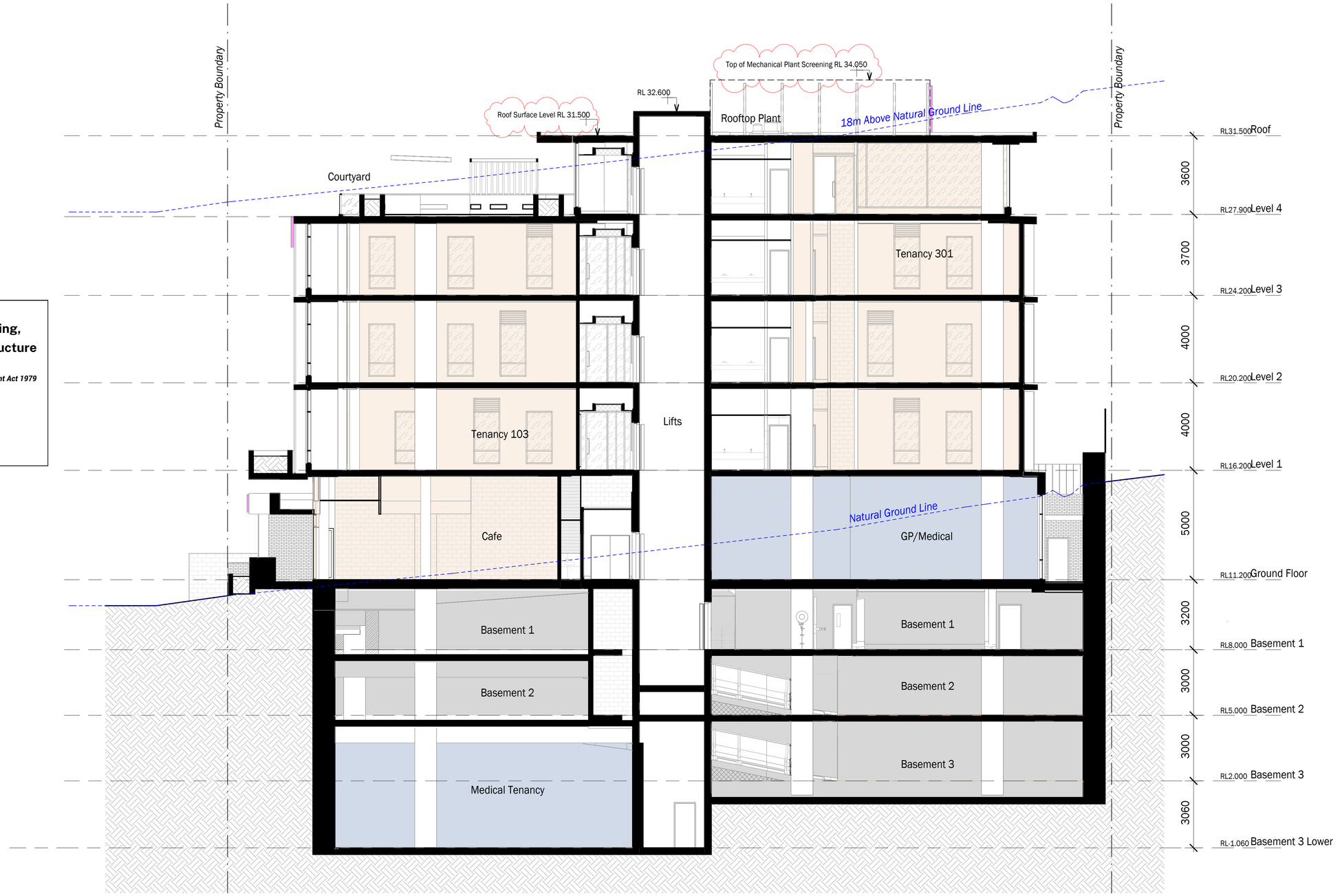
PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Section A

Drawing No.	Revision
6245.DA.10.01	J



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Approved Application No: DA 22/11444 Mod 1

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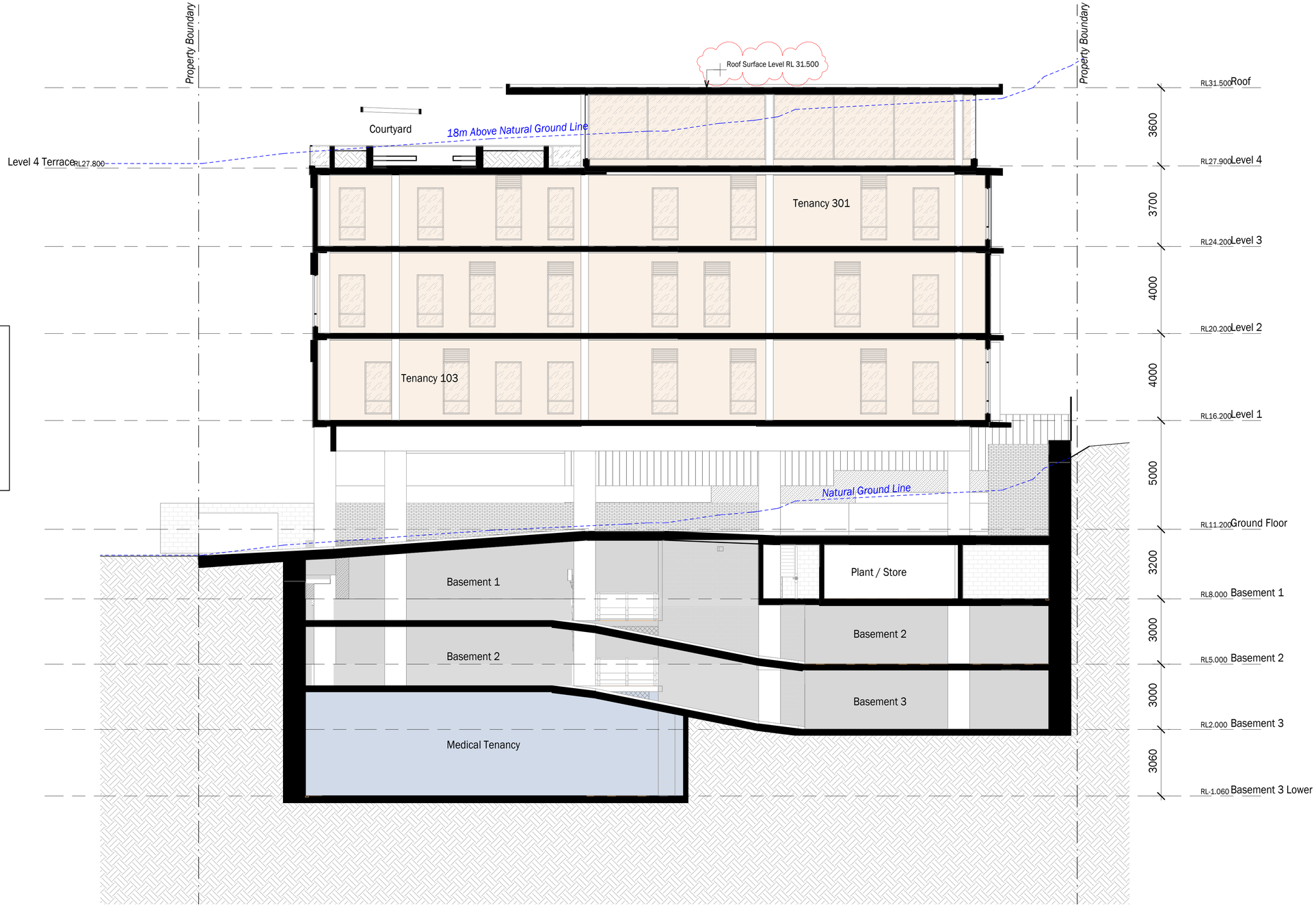
PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Section B

0 2 4 10
Scale (m) 1 : 100 @A1 Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.10.02	J



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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Section C

0 2 4 10
Scale (m) 1 : 100 @A1
Scale (m) 1 : 200 @A3

Drawing No.	Revision
6245.DA.10.03	I

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
North-Eastern Perspective

Drawing No.	Revision
6245.DA.22.01	F

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Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Showground Rd Perspective

Drawing No.	Revision
6245.DA.22.02	F

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Approved Application No: DA 22/11444 Mod 1

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
South-Eastern Perspective

Drawing No.	Revision
6245.DA.22.03	F

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NSW GOVERNMENT
Department of Planning, Housing and Infrastructure

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Approved Application No: DA 22/11444 Mod 1

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PROJECT
Gosford Health Hub

PROJECT ADDRESS
60-64 Showground Road, Gosford

DRAWING TITLE
Showground Road Context

Drawing No.	Revision
6245.DA.22.04	F

Department of Planning, Housing and Infrastructure

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Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

Signed: AW Sheet No: 27 of 55

Concept design
ground floor layout

L01

may 2024

planter with creepers and shade plants with the high retaining wall to create visual interest for ground floor tenancies

paved area around the building

20 nos. of bike parking

REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN: MA
DATE: 30.05.24
SCALE: 1:200

JOB NO. 13922.5
PHASE: DA
DWG No: L01
REV: M

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412 king street newcastle nsw2300
ph: 49 294 926
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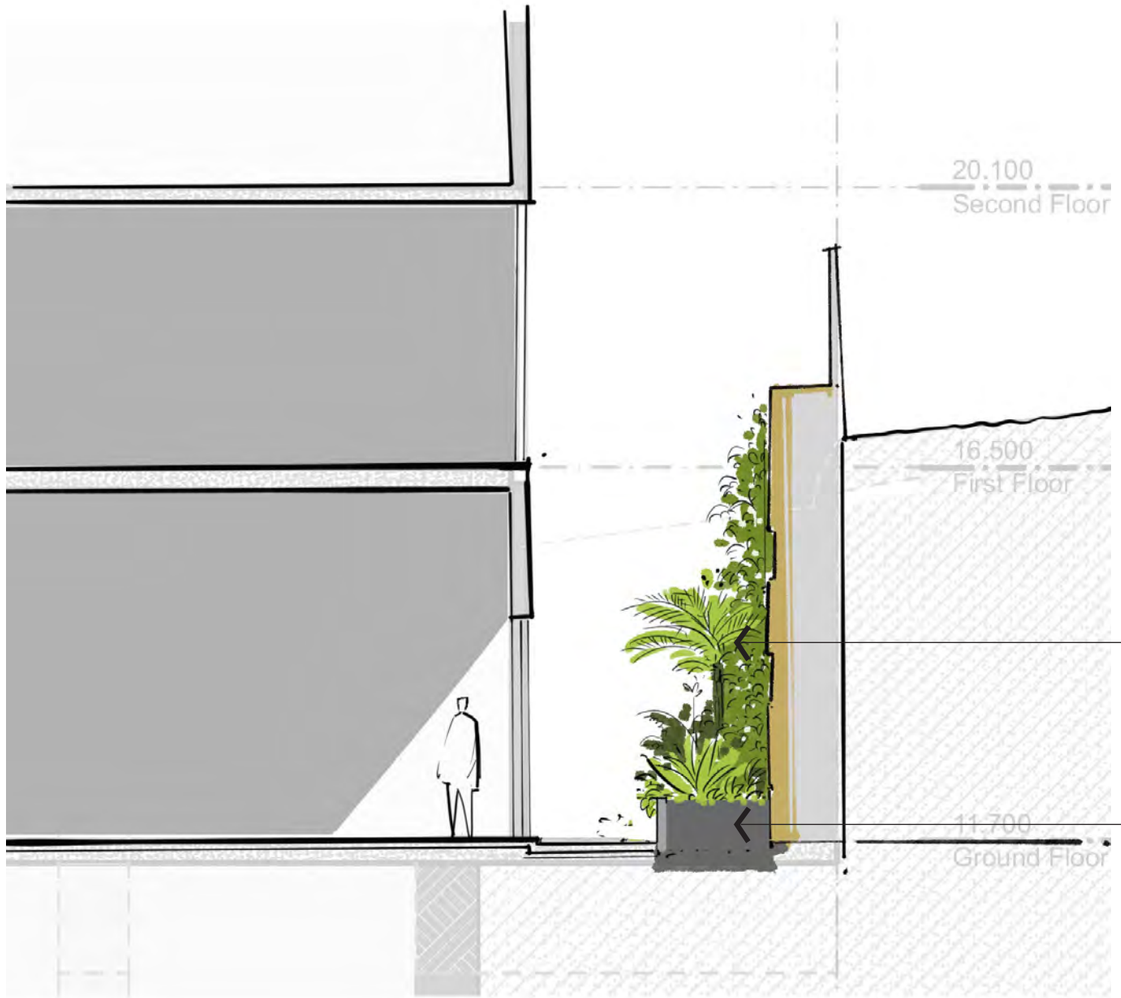
Concept design
ground floor retaining wall 1

L02

may 2024



planter with creepers and shade plants with the high retaining wall

elevated planter to provide soil for plants as well as break the height of retaining wall height 800 to 1100 mm

philodendron xanadu

Zamia furfuracea

Dicksonia antarctica

REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated
Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN: MA
DATE: 30.05.24
SCALE: 1:200

JOB NO. 13922.5
PHASE: DA
DWG No: L02
REV: M

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Concept design
ground floor retaining wall 2

L03

may 2024

potential of having a green creeper wall and green soft edge as feature

REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN: MA
DATE: 30.05.24
SCALE: 1:200

JOB NO. 13922.5
PHASE: DA
DWG No: L03
REV: M

Department of Planning, Housing and Infrastructure

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Approved Application No: DA 22/11444 Mod 1

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Concept design
ground floor retaining wall 3

L04

may 2024

REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated
Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN:	DATE:	SCALE:
MA	30.05.24	1:200

JOB NO.	PHASE:	DWG No:	REV:
13922.5	DA	L04	M

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Housing and Infrastructure

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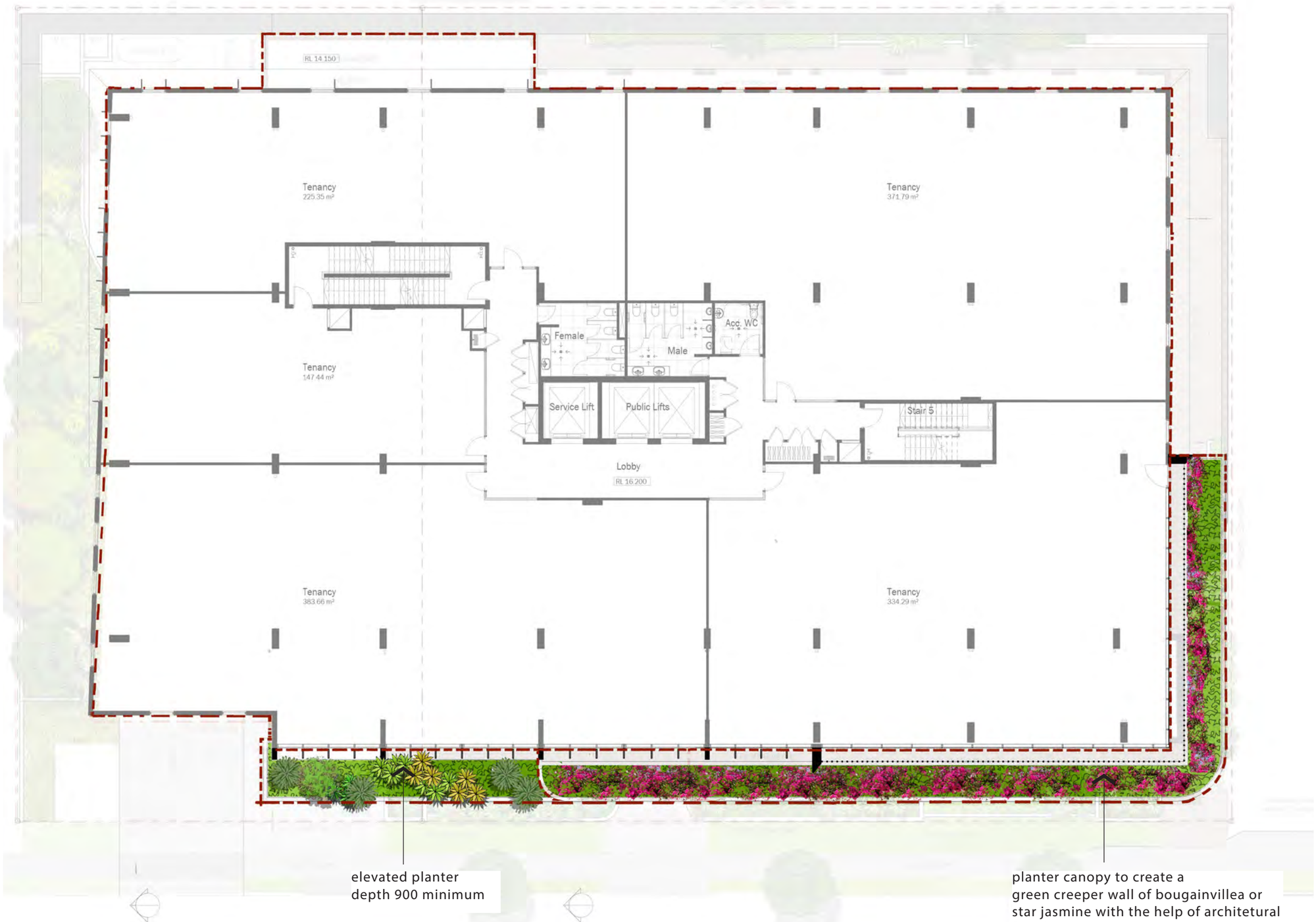
Concept design
first floor layout

L05

may 2024



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Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated
Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN: MA
DATE: 30.05.24
SCALE: 1:200

JOB NO. 13922.5
PHASE: DA
DWG No: L05
REV: M

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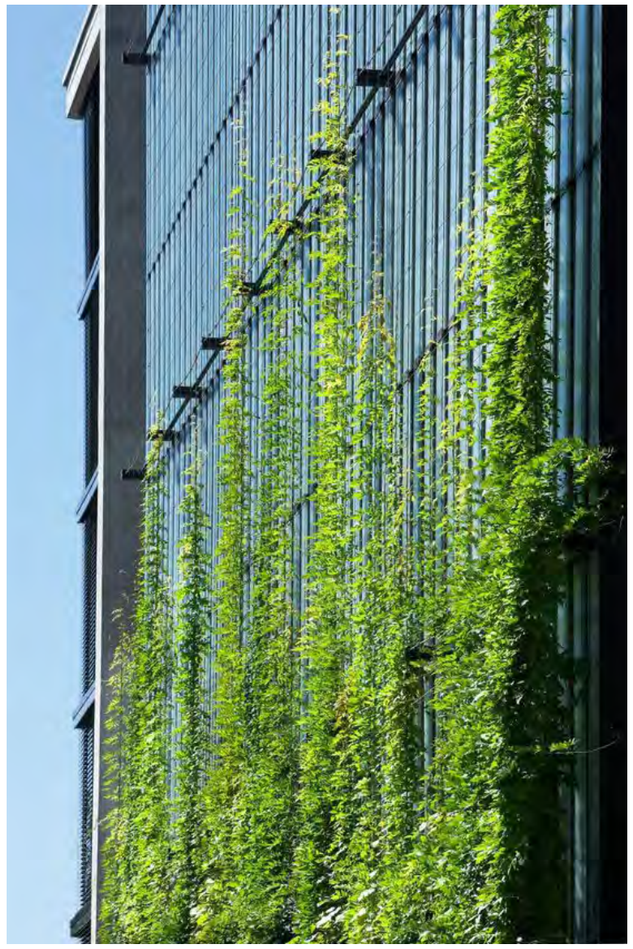
Concept palette

creeper wall

L06

may 2024



Green facade: Wire mesh & climber from planter

REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated
Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN: MA
DATE: 30.05.24
SCALE: 1:200

JOB NO. 13922.5
PHASE: DA
DWG No: L06
REV: M

NSW GOVERNMENT

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Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

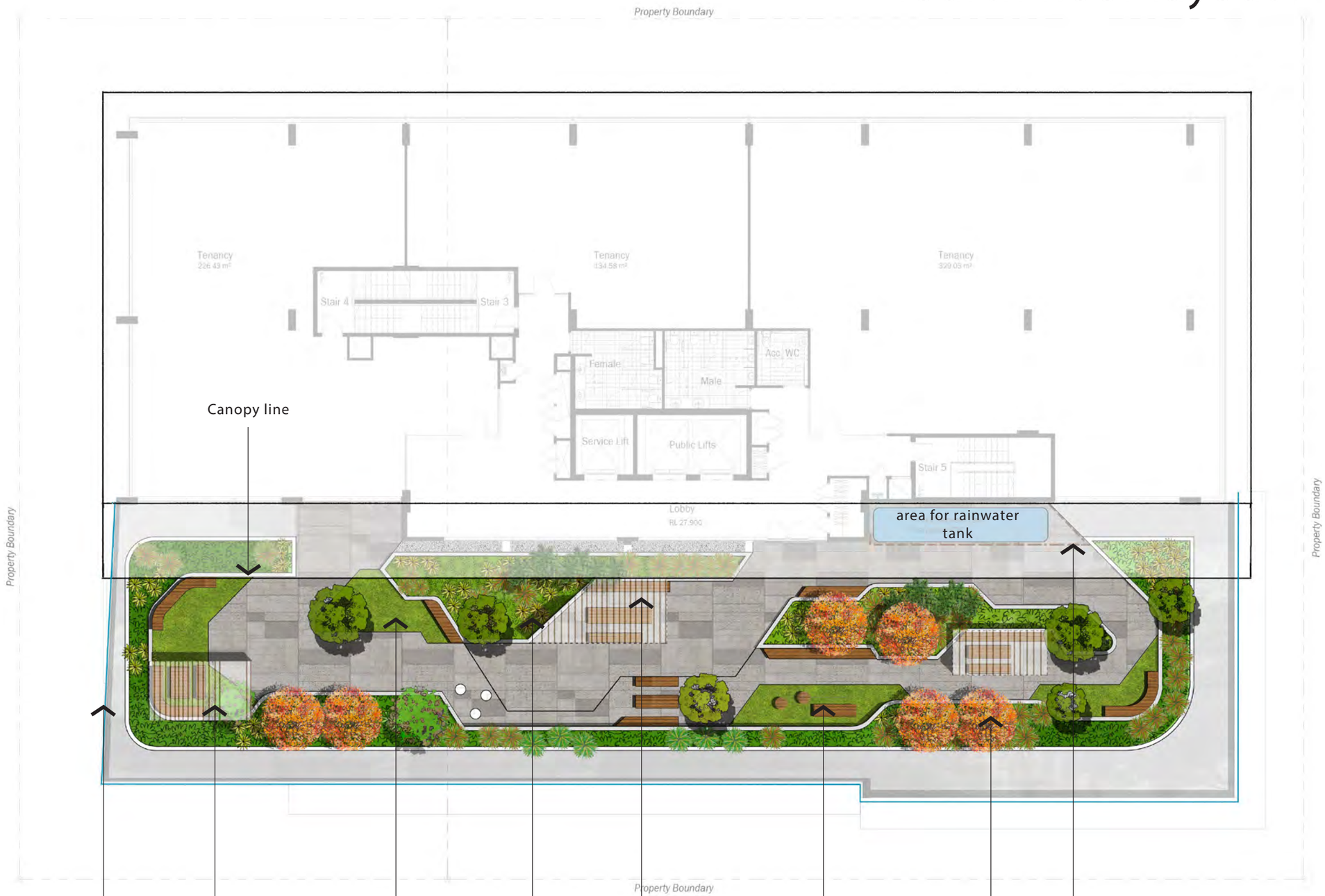
Approved on: 2 December 2024

Signed: AW Sheet No: 33 of 55

Concept design
fourth floor layout

L07

may 2024



REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN:	DATE:	SCALE:
MA	30.05.24	1:200

JOB NO.	PHASE:	DWG No:	REV:
13922.5	DA	L07	M

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Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

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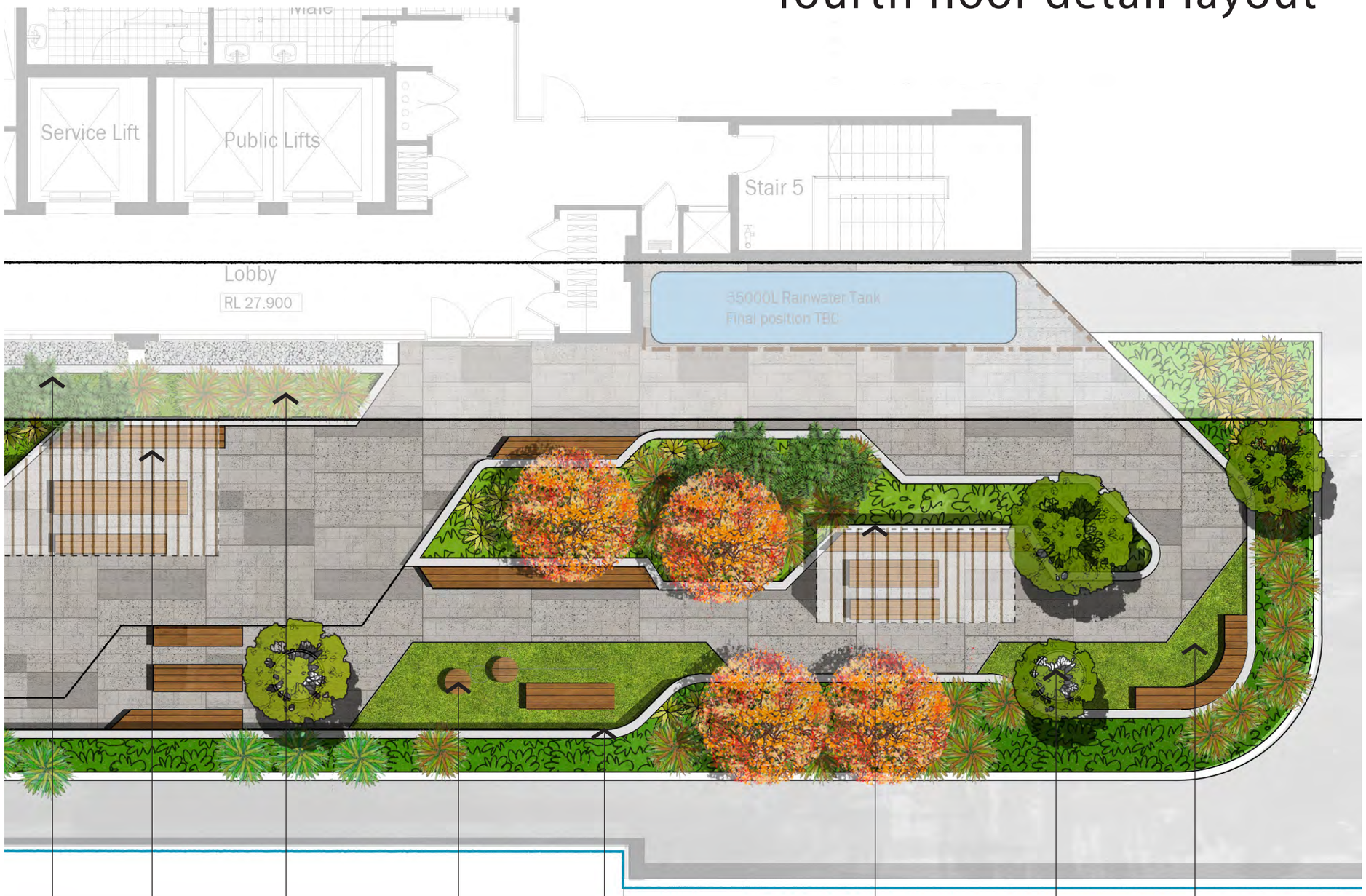
Concept design
fourth floor detail layout

L08

may 2024



REV	DATE	COMMENTS
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L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN:	DATE:	SCALE:
MA	30.05.24	1:100

JOB NO.	PHASE:	DWG No:	REV:
13922.5	DA	L08	M

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Concept palette
precedent images 1

L09

may 2024

Simple shade on top following architecture language

Seating areas with vertical battens behind . Protection from afternoon sun

Barbeque & kitchentte

Shade structures and seating below

REV	DATE	COMMENTS
M	30/05/24	
L	14/05/24	
k	03/05/24	
j	30/04/24	
i	01/11/23	
H	24/10/23	
G	18/10/23	
F	07/03/21	

PROJECT:
Showground Road Integrated Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN: MA
DATE: 30.05.24
SCALE:

JOB NO. 13922.5
PHASE: DA
DWG No: L09
REV: M

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NSW GOVERNMENT
Department of Planning, Housing and Infrastructure

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 4.55 (2) Modification Application

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Signed: AW **Sheet No: 35 of 55**

Concept palette
precedent images 2

L10

may 2024

Synthetic turf area and seating edges around

planter edge

REV	DATE	COMMENTS
M	30/05/24	
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13922.5	DA	L10	M

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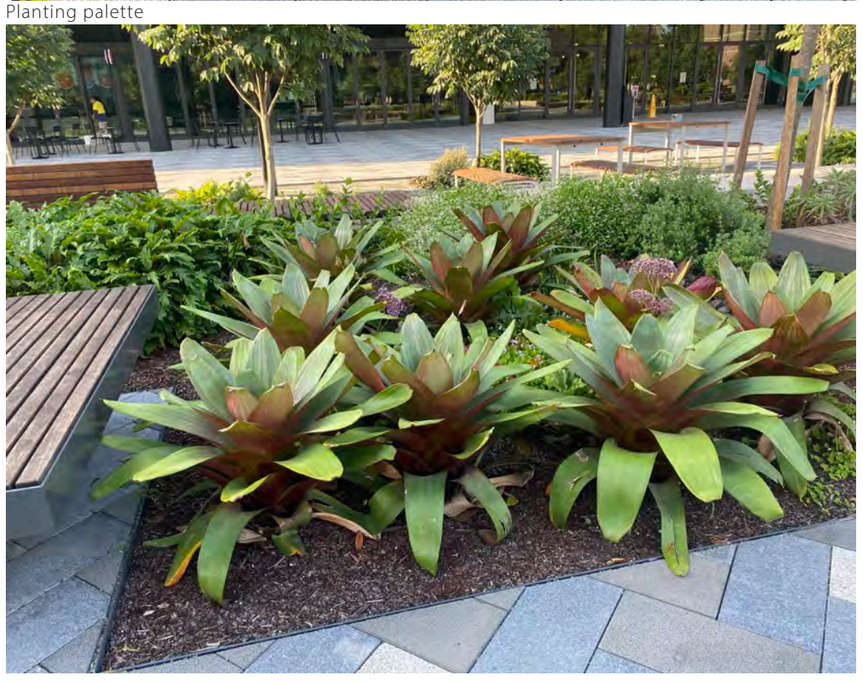
Planting palette: roof
planting palette 1

L11

may 2024

Planting palette



Planting palette

Tree options

No.	Botanical Name	Common Name	Height	Width
01	*Magnolia grandiflora 'Exmouth*	Bull Bay Magnolia	8	5.0

Mass planting

03	Lomandra longifolia	Mat Rush	1	0.6
04	*Westringia fruticosa Mundi*	Coastal rosemary	0.5	1.5
05	*Syzygium australe*	Lily Pilly	1.5- 2	0.8
06	*Gazania hybrid*	Cream lea	1.5	1.0
07	*Dietes iridioides*	Dietes	0.6	0.6
08	*Liriope muscari 'Isabella'*	Liriope Isabella	0.4	0.4
09	*Banksia spinulosa*	Hair pin banksia	1.5	0.3
10	Myoporum parvifolium	Creeping boobialla	0.6	0.9
11	Senecio serpens	Blue chalk stick	0.5	1.0
12	Alcantarea imperialis	bromeliads	1 m	0.9

Lomandra longifolia 'Katrinus

Myoporum parvifolium

Dietes iridioides

Magnolia grandiflora 'Exmouth

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Planting palette: ground

planting palette 2

L12

may 2024

Elaeocarpus eumundi

Tristaniopsis laurina

Tree options

No.	Botanical Name	Common Name	Height	Width
01	Elaeocarpus eumundi	Quandong	8	5.0
02	Tristaniopsis laurina	Water gum	8-10	6.0
03	Hymenosporum flavum	Native Frangipani	8	5
04	Backhousia myrtifolia	Grey myrtle	4	3
05	Cyathea cooperi	Australian Tree Fern	5-10	3

Mass planting/ groundcover/climber

06	Lomandra longifolia	Mat Rush	1	0.6
07	Philodendron xanadu	xanadu	1.5	1.5
08	*Syzygium australe*	Lily Pilly	1.5- 2	0.8
09	*Chrysocephalum apiculatum*	Yellow buttons	0.3	0.5
10	*Dietes iridioides*	Dietes	0.6	0.6
11	*Zamia furfuracea*	Cardboard palm	1.0	1.5
12	*Dichondra silver falls*	Silver falls	0.5	0.8
13	Myoporum parvifolium	Creeping boobialla	0.6	0.9
14	Senecio serpens	Blue chalk stick	0.5	1.0
15	Plectranthus argentatus	Silver Shield	0.4	0.7
16	Trachelospermum asiaticum	Star jasmine	0.5	1.5

Backhousia myrtifolia

Hymenosporum flavum

Cyathea cooperi

philodendron xanadu

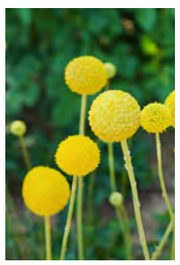
Zamia furfuracea

Dichondra silver falls

Plectranthus argentatus

Trachelospermum asiaticum

Myoporum parvifolium



yellow buttons

Department of Planning, Housing and Infrastructure

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Signed: AW **Sheet No: 38 of 55**

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JOB NO. 13922.5
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DWG No: L12
REV: M

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Concept design
soil depth

L13

may 2024

Glassfibre Reinforced Concrete bowl planter. height 900 mm

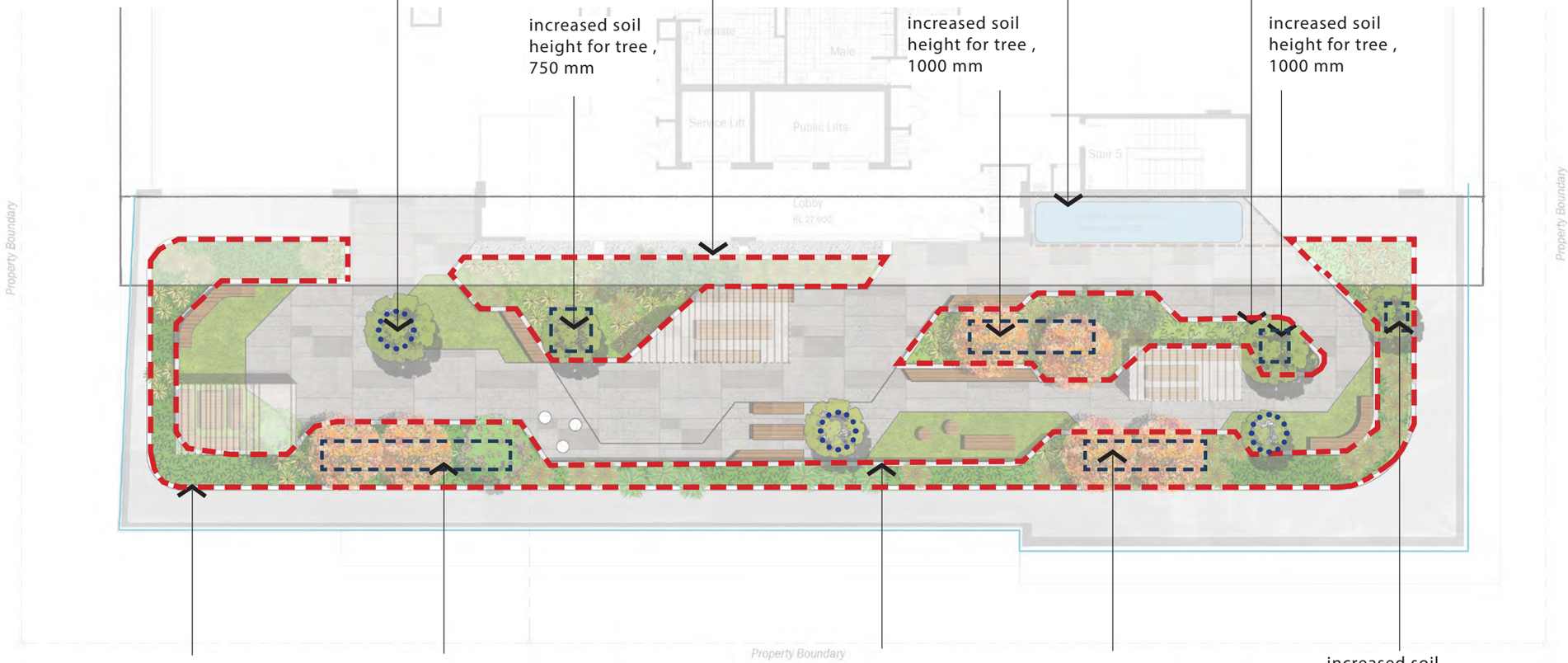
Concrete/ Glassfibre Reinforced Concrete wall max height 600 mm

Concrete/ Glassfibre Reinforced Concrete wall max height 900 mm

increased soil height for tree , 750 mm

increased soil height for tree , 1000 mm

increased soil height for tree , 1000 mm



Concrete/ Glassfibre Reinforced Concrete wall max height 900 mm

increased soil height for tree , 1000 mm

Glassfibre Reinforced Concrete bowl planter. height 900 mm

increased soil height for tree , 1000 mm

increased soil height for tree , 1000 mm

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PROJECT:
Showground Road Integrated Medical Office Building

SITE:
60, 62 & 64 Showground Road Gosford NSW

CLIENT:
CHP

DRAWN: MA
DATE: 30.05.24
SCALE: 1:200

JOB NO. 13922.5
PHASE: DA
DWG No: L13
REV: M

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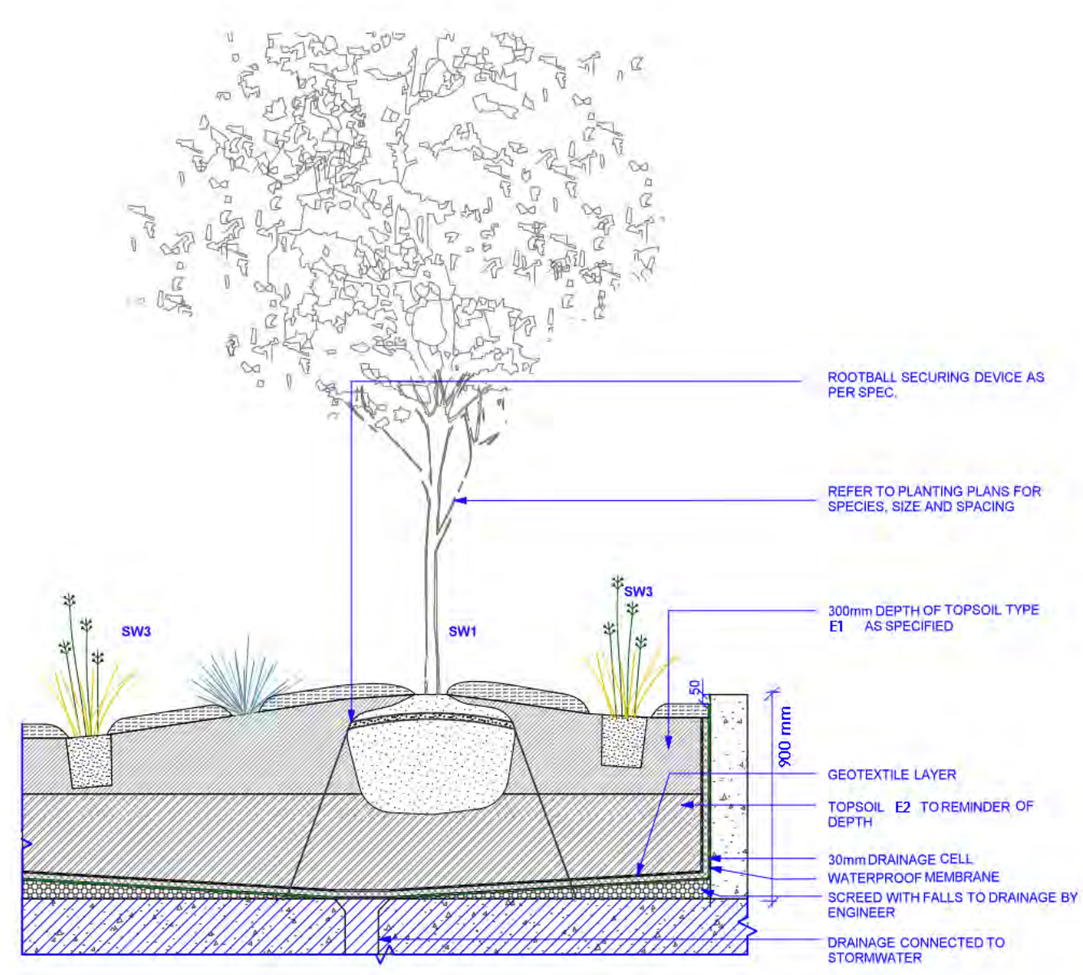
Concept design
soil specification

L14

may 2024

Specification E1: On slab soil media 'A' horizon
Part A. 'Fit-for-purpose' performance description
The specification describes the formulation of an open granular well-drained growing media with a saturated density of less than 2400 kg/m3 (2.4 kg/L) for use in on-slab applications, including green roofs with an expectation of longevity. It is a topsoil formulation to be used in the surface 300 mm of all on-slab installations including planter boxes, containers and garden beds. In order to maintain structure and porosity over extended periods, and to avoid slumping and volume loss over time, the formulation must employ low density mineral
components such as ash, perlite, scoria, pumice and diatomaceous earth, or artificial components such as urea formaldehyde and styrofoam. Physically, the media has the properties of a potting media and is assessed using the methodology of AS 3743.

Specification E2: On slab soil media 'B' horizon
Part A. 'Fit-for-purpose' performance description
The specification describes the formulation of an open granular well-drained growing media with an all-up saturated density of less than 2400 kg/m3 (2.4 kg/L) for use in on-slab applications with an expectation of longevity to be used as a subsoil below 300 mm of all
on-slab installations, including planter boxes, containers and garden beds. For the upper/above 300 mm 'A' horizon use Specification E1.
In order to maintain structure and porosity over extended periods, and to avoid slumping and volume loss over time, the formulation must employ low-density mineral components such as ash, perlite, scoria, pumice and diatomaceous earth, or artificial components such as urea formaldehyde and Styrofoam. Physically the media has the properties of a potting media and is assessed using the
methodology of AS 3743.



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PROPOSED DEVELOPMENT
No.60, 62 & 64 SHOWGROUND ROAD, GOSFORD
EROSION & SEDIMENT CONTROL PLANS

GENERAL INSTRUCTIONS

1. THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
2. CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 1998 (BLUE BOOK).
3. ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

LAND DISTURBANCE INSTRUCTIONS

4. DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
5. ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
6. ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
7. WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
   - A) INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
   - B) CONSTRUCT THE STABILISED SITE ACCESS.
   - C) CONSTRUCT DIVERSION DRAINS AS REQUIRED.
   - D) INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
   - E) INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
   - F) CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
   - G) UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
   - H) GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
   - I) REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
5. ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING.
6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.

SITE MAINTENANCE INSTRUCTIONS

7. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
   - A) ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
   - B) REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
   - C) REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
   - D) ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
   - E) CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
   - F) MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
8. THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
   - A) THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
   - B) THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
   - C) THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
   - D) THE NEED FOR DUST PREVENTION STRATEGIES.
   - E) ANY REMEDIAL WORKS TO BE UNDERTAKEN.

THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

SEDIMENT CONTROL INSTRUCTIONS

9. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE.
10. SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
11. SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
12. STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
13. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE.
14. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
15. ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

SOIL EROSION CONTROL INSTRUCTIONS

16. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:
    - 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES
    - 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
    - 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES.
    - 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
17. ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
18. WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUNDCOVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
19. STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
20. ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.

SOIL EROSION CONTROL INSTRUCTIONS cont.

21. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A
22. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
23. PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND-COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
24. REVEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

WASTE CONTROL INSTRUCTIONS

25. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.
26. ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
27. ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
28. ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
29. PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

PROCEDURE FOR DE-WATERING

1. ENSURE PERMISSION FOR DE-WATERING IS RECEIVED FROM AUTHORITIES BEFORE PUMPING OUT.
2. AN ON-SITE TREATMENT PROCESS DISCHARGING TO THE STORMWATER SYSTEM WILL BE IMPLEMENTED. ALL SITE WATERS DURING CONSTRUCTION WILL BE CONTAINED ON SITE AND RELEASED ONLY WHEN pH IS BETWEEN 8.5 & 6.5, SUSPENDED SOLIDS ARE LESS THAN 50mg/L, TURBIDITY LESS THAN 100 NTU'S, OIL AND GREASE LESS THAN 10mg/L AND BIOCHEMICAL OXYGEN DEMAND (BOD5) LESS THAN 30mg/L (FOR STORMS LESS INTENSE THAN 1 IN 5 YEAR EVENTS).
3. METHODS OF SAMPLING AND ANALYSIS OF WATER QUALITY WILL BE IN ACCORDANCE WITH THE APPLICABLE METHOD LISTED IN THE EPA PUBLISHED APPROVED METHODS FOR THE SAMPLING ANALYSIS OF WATER POLLUTANTS IN NEW SOUTH WALES.
4. WHERE LABORATORY ANALYSIS IS REQUIRED AS INDICATED BY IN-SITU TESTING, APPROPRIATE SAMPLE BOTTLES AND PRESERVATIVES WILL BE USED AND GUIDANCE FOR THE SAMPLING METHOD OBTAINED FROM APPLICABLE PARTS OF AS5667.1 AND AS5667.6. ANALYSIS WILL BE UNDERTAKEN WHERE PRACTICAL BY A NATA REGISTERED LABORATORY CERTIFIED TO PERFORM THE APPLICABLE ANALYSIS.
5. A FURTHER INSPECTION WILL BE CARRIED OUT DURING A STORM EVENT (DURING WORK HOURS WHERE POSSIBLE) TO ENSURE CONTROLS ARE COPING WITH THE EVENT. THIS APPLIES TO ANY RAIN EVENT AS WELL.
6. AS EXCAVATION TO TOP SOIL PROGRESSES, ANY WATER COLLECTED AT THE BOTTOM OF EXCAVATIONS WILL BE DIVERTED TO A TEMPORARY SEDIMENTATION BASIN OR SETTLEMENT TANK. IF THE WATER CONTAINS ONLY SEDIMENTS, IT WILL BE FILTERED AND PUMPED TO STORMWATER. BEFORE THIS CAN HAPPEN IT MUST CONTAIN LESS THAN 50mg/L TOTAL SUSPENDED SOLIDS.
7. POLLUTED WATER MUST NOT ENTER THE STORMWATER SYSTEM. IN SOME CIRCUMSTANCES, A LIQUID WASTE COMPANY MAY BE REQUIRED TO COLLECT CONTAMINATED WATER FOR DISPOSAL AT A LICENSED TREATMENT FACILITY

SHEET INDEX

COVER SHEET & NOTES	SHEET E1
EROSION & SEDIMENT CONTROL PLAN	SHEET E2
EROSION & SEDIMENT CONTROL DETAILS	SHEET E3

Department of Planning, Housing and Infrastructure

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Approved on: 2 December 2024

Signed: AW **Sheet No: 41 of 55**

LOCATION PLAN

DRAWINGS MUST BE PRINTED IN COLOUR

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPLICATION	16.05.24	LW	BK
A	ISSUED FOR APPROVAL	14.06.22	SJ	BK

1 0 1cm at full size 10cm

North

Client: CHP FUND

Architect: TSV ARCHITECTS PTY LTD

ACOR Consultants (CC) Pty Ltd
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED COMMERCIAL DEVELOPMENT
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: EROSION & SEDIMENT CONTROL COVER SHEET & NOTES

Drawn	Date	Scale A1	Q.A. Check	Date
SJ	14.06.22	AS NOTED	-	-
Designed	**Project No.**		**Dwg. No.**	**Issue**
BK	CC220233		E1	B

EROSION & SEDIMENT LEGEND

1. SITE ACCESS PROVIDE LARGE COARSE DIA AGGREGATE OR RECYCLED CONCRETE. IN ACCORDANCE WITH DETAIL SD 6-14, SHEET E3

2. STOCKPILE IN ACCORDANCE WITH DETAIL SD 4-1, REFER TO SHEET E3 LOCATION MAY VARY PENDING CONSTRUCTION STAGING

3. BARRIER FENCING OR UTILISE EXISTING BOUNDARY FENCE — B — B —

4. PROPOSED DISTURBED AREA

5. PROVIDE TYPE 'D' SEDIMENT RETENTION BASIN.
NOMINAL SIZE: 8.5m x 2.5m x 0.5m DEEP
VOLUME = 20.0m³
TO BE CONFIRMED AT CC STAGE
DISHCARGE TO BE CONTOLLED PUMP OUT FOLLOWING FLOCCULATION

6. PROVIDE TEMPORARY PUMP OUT AND RISING MAIN TO OUTLET. — W/RM —

7. TRUCK WASH DOWN AREA. PROVIDE RAILWAY LINE SHAKER ON LARGE COARSE DIA. AGGREGATE OR RECYCLED CONCRETE IN ACCORDANCE WITH DETAIL SD 10-1 ON SHEET E3

8. NOTE: PROVIDE SEDIMENT CATCHMENT SANDBAGS AT KERB AND SANDBAG PROTECTION TO DOWNSTREAM STREET PIT IN ACCORDANCE WITH DETAILSD6-11 ON SHEET E3

Department of Planning, Housing and Infrastructure

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

Signed: AW **Sheet No: 42 of 55**

LIFT WELLS

STOCKPILE

TRUCK WASH-DOWN COLLECTION TO BE DIRECTED TO ON-SITE TREATMENT SUMPS VIA 100 DIA uPVC PIPE.

OUTLINE OF BASEMENTS 1, 2 & 3

BRICK RET. WALLS · CONC PATH · COURTYARD · PEBBLECRETE DRIVEWAY · CONC. BLK RET. WALL · TWO STOREY BRICK UNITS · SINGLE STOREY BRICK UNITS · CONC BASE · CARPORT · CONCRETE DRIVEWAY · CONCRETE FOOTPATH · SERVICE POLE · WATER METER · POWER POLE · ACCESS CROSSOVER · KERB INLET PIT · MEDIAN · LANELINE

EROSION & SEDIMENT CONTROL PLAN

SCALE - 1:100/A1, 1:200/A3

0 1 2 4 6 8 10m

SHOWGROUND ROAD

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPLICATION	16.05.24	LW	BK
A	ISSUED FOR APPROVAL	14.06.22	SJ	BK

North

Client: CHP FUND

Architect: TSV ARCHITECTS ARCHITECTURE

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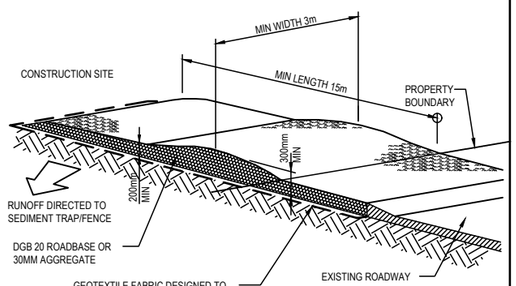
Platinum Building, Suite 2.01, 4 Ilya Avenue
ERINA NSW 2250, Australia
T +61 2 4324 3499
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED COMMERCIAL DEVELOPMENT
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: EROSION & SEDIMENT CONTROL PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
SJ	14.06.22	AS NOTED	-	-
Designed	Project No.	Dwg. No.	Issue	
BK	CC220233	E2	B	

SOURCE: MANAGING URBAN STORMWATER
SOILS AND CONSTRUCTION
THIRD EDITION, AUGUST 1998
PRODUCED BY THE DEPARTMENT
OF HOUSING



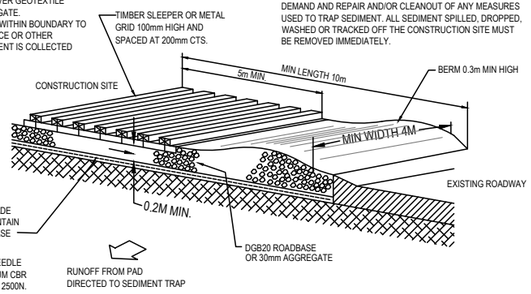
CONSTRUCTION NOTES:

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200MM THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30MM AGREGATE. MINIMUM LENGTH 15M OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BUUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP.

STABILISED SITE ACCESS SD 6-14

CONSTRUCTION NOTES
1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200MM THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30MM AGGREGATE.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP WHERE THE SEDIMENT IS COLLECTED AND REMOVED.

MAINTENANCE NOTES
THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT OFF THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OFF THE CONSTRUCTION SITE MUST BE REMOVED IMMEDIATELY.



TEMPORARY CONSTRUCTION EXIT SD 10-1

SOURCE: MANAGING URBAN STORMWATER
SOILS AND CONSTRUCTION
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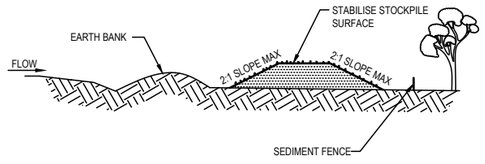

CONSTRUCTION NOTES:

1. LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW, FLAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METERS IN HEIGHT.
4. REHABILITATE IN ACCORDANCE WITH THE SWMP/ESCP.
5. CONSTRUCT EARTH BANK (STANDARD DRAWING 5-2) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-7) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

STOCKPILES SD 4-1

SOURCE: MANAGING URBAN STORMWATER
SOILS AND CONSTRUCTION
THIRD EDITION, AUGUST 1998
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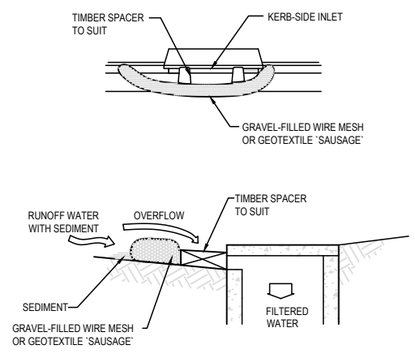
OF HOUSING



NOTE: THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN AN APPROVED SWMP/ESCP.

CONSTRUCTION NOTES:

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT.
2. FILL THE SLEEVE WITH 25MM TO 50MM GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150MM HIGH X 400MM WIDE.
4. PLACE THE FILTER AT THE OPENING OF THE KERB INLET LEAVING A 100MM GAP AT THE TOP TO ACT AS AN EMERGENCY SPILLWAY.
5. MAINTAIN THE OPENING WITH SPACER BLOCKS.
6. FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER.
7. FIT TO ALL KERB INLETS AT SAG POINTS.

MESH AND GRAVEL INLET FILTER SD 6-11

Department of Planning, Housing and Infrastructure

Issued under the Environmental Planning and Assessment Act 1979

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Approved on: 2 December 2024

Signed: AW **Sheet No: 43 of 55**

Issue	Description	Date	Drawn	Approved
B	ISSUED FOR DEVELOPMENT APPLICATION	16.05.24	LW	BK
A	ISSUED FOR APPROVAL	14.06.22	SJ	BK

North

0 1cm at full size 10cm

Client: CHP FUND

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Project: PROPOSED COMMERCIAL DEVELOPMENT
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: EROSION & SEDIMENT CONTROL PLAN

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Signed: AW **Sheet No: 44 of 55**

PROPOSED DEVELOPMENT
No.60, 62 & 64 SHOWGROUND ROAD, GOSFORD
STORMWATER & WATER CYCLE MANAGEMENT REPORT

LEGEND

- DENOTES ON-SITE DETENTION TANK
- DENOTES ON-SITE RETENTION TANK
- DENOTES DWELLING FOOTPRINT
- SW — DENOTES 100mm DIA. STORMWATER/SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
- RW — DENOTES 100mm DIA. FULLY SEALED RAINWATER SYSTEM PIPE U.N.O.
- 150 RW — DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- 150 SW — DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- 65 W/RM — DENOTES RISING MAIN AND PIPE DIA. U.N.O.
- 100 SS — DENOTES SUBSOIL DRAINAGE LINE AND DIA. WRAPPED IN GEOFABRIC U.N.O.
- DP — DENOTES DOWNPIPE
- IO — DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL
- CO — DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL FOR SYSTEM FLUSHING PURPOSES
- STORMWATER PIT - SOLID COVER
- STORMWATER PIT - GRATED INLET
- DENOTES GRATED DRAIN
- DENOTES ABSORPTION TRENCH
- NON RETURN VALVE
- PUMP
- STOP VALVE (ISOLATION VALVE)
- 240v REQUIRED
- IL23.31 — DENOTES LEVEL OF INLET /OUTLET OF STORMWATER PIPE. NOTE: UNLESS NOTED OTHERWISE, THE BASE OF THE PIT IS THE SAME AS THE PIPE INLET/OUTLET.

DIAL BEFORE YOU DIG

DIAL BEFORE YOU DIG www.1100.com.au

IMPORTANT: THE CONTRACTOR IS TO MAINTAIN A CURRENT SET OF "DIAL BEFORE YOU DIG" DRAWINGS ON SITE AT ALL TIMES.

GENERAL NOTES

1. THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS. WHERE DISCREPANCIES ARE FOUND ACOR CONSULTANTS (CC) MUST BE CONTACTED IMMEDIATELY FOR VERIFICATION
2. WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES
3. SUBSOIL DRAINAGE SHALL BE DESIGNED AND DETAILED BY THE STRUCTURAL ENGINEER. SUBSOIL DRAINAGE SHALL NOT BE CONNECTED INTO THE STORMWATER SYSTEM IDENTIFIED ON THESE PLANS UNLESS APPROVED BY ACOR CONSULTANTS (CC)

STORMWATER CONSTRUCTION NOTES

1. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500 (CURRENT EDITION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL'S POLICIES AND CODES
2. THE MINIMUM SIZES OF THE STORMWATER DRAINS SHALL NOT BE LESS THAN DN90 FOR CLASS 1 BUILDINGS AND DN100 FOR OTHER CLASSES OF BUILDING OR AS REQUIRED BY THE REGULATORY AUTHORITY
3. THE MINIMUM GRADIENT OF STORMWATER DRAINS SHALL BE 1%, UNLESS NOTED OTHERWISE
4. COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO. NO TREES SHALL BE REMOVED UNTIL PERMIT IS OBTAINED
5. PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY AT THE CLIENT'S EXPENSE
6. ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP
7. MAKE SMOOTH JUNCTION WITH ALL EXISTING WORK
8. VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION
9. SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATIONS AND ARE NOT GUARANTEED COMPLETE NOR CORRECT. IT IS THE CLIENT & CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION
10. ANY VARIATION TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY ACOR CONSULTANTS (CC) PRIOR TO THEIR COMMENCEMENT

RAINWATER RE-USE SYSTEM NOTES

1. RAINWATER SUPPLY PLUMBING TO BE CONNECTED TO OUTLETS WHERE REQUIRED BY BASIX CERTIFICATE (BY OTHERS)
2. TOWN WATER CONNECTION TO RAINWATER TANK TO BE TO THE SATISFACTION OF THE REGULATORY AUTHORITY. THIS MAY REQUIRE PROVISION OF:
   2.1. PERMANENT AIR GAP
   2.2. BACKFLOW PREVENTION DEVICE
3. NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAIN WATER SUPPLY
4. AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK
5. PROVIDE AT LEAST ONE EXTERNAL HOSE COCK ON THE TOWN WATER SUPPLY FOR FIRE FIGHTING
6. PROVIDE APPROPRIATE FLOAT VALVES AND/OR SOLENOID VALVES TO CONTROL TOWN WATER SUPPLY INLET TO TANK IN ORDER TO ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL DETAIL
7. ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS/NZS3500.1 NATIONAL PLUMBING AND DRAINAGE CODE
8. PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY A LICENSED ELECTRICIAN
9. ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK . SURFACE WATER INLETS ARE NOT TO BE CONNECTED
10. PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBING ARE TO BE APPROVED MATERIALS TO AS/NZS3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINWATER'. THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345)
11. EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELED 'RAINWATER' ON A METALLIC SIGN IN ACCORDANCE WITH AS1319
12. ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY

SHEET INDEX

COVER SHEET & NOTES	SHEET C1
STORMWATER MANAGEMENT PLAN - BASEMENT 3	SHEET C2
STORMWATER MANAGEMENT PLAN - BASEMENT 2	SHEET C3
STORMWATER MANAGEMENT PLAN - BASEMENT 1	SHEET C4
STORMWATER MANAGEMENT PLAN - GROUND FLOOR	SHEET C5
STORMWATER MANAGEMENT DETAILS SHEET No.1	SHEET C6
STORMWATER MANAGEMENT DETAILS SHEET No.2	SHEET C7
ON-SITE DETENTION REPORT	SHEET C8
WATER QUALITY REPORT SHEET 1	SHEET C9
WATER QUALITY REPORT SHEET 2	SHEET C10
WATER QUALITY REPORT SHEET 3	SHEET C11
FLOOD SUMMARY	SHEET C12

CENTRAL COAST COUNCIL REQUIREMENTS

SITE AREA (m²)	2438
TOTAL PROPOSED IMPERVIOUS AREA (m²)	2370 (97%)
PROPOSED ROOF AREA (m²)	1380
PROPOSED DRIVEWAY	30
MISC. PAVING / COURTYARDS (m²)	960

PROPOSED COMMERCIAL MULTI UNIT COMPLEX IN ACCORDANCE WITH THE GOSFORD CITY COUNCIL DCP 2013 CLAUSE 6.7.6.1 THE FOLLOWING DEVELOPMENT TARGETS ARE REQUIRED.

6.7.6.1 Intent

All developments that require consent will be required to demonstrate compliance with the targets in Table 1.

Table 1 Development Control Targets Matrix

Development Control Targets	Development Types						
	Pools & Spas	Alterations & Additions in excess of 50m²	Single Dwellings & Dual Occupancy	Medium and High Density Residential Development	Group homes, seniors housing, emergency facilities	Commercial, Industrial	Subdivisions (Urban & Rural)
Water Conservation	Covered by BASIX					✓	x
Retention	✓	✓	✓	✓	✓	✓	✓
Stormwater Quality	x	x	✓	✓	✓	✓	✓
Onsite Detention	x	x	x	✓	✓	✓	✓
Local Overland Drainage	✓	✓	✓	✓	✓	✓	✓
Flooding	✓	✓	✓	✓	✓	✓	✓

(i) WATER CONSERVATION

82,000 LITRE RAINWATER RE-USE TANK PROVIDED FOR LANDSCAPE IRRIGATION

(ii) STORMWATER RETENTION

STORMWATER RETENTION HAS BEEN PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF GOSFORD DEVELOPMENT CONTROL PLAN 2013 PART 6.7.7.2..4 DEEMED TO COMPLY.

THE FOLLOWING MINIMUM RETENTION STORAGE IS TO BE PROVIDED TO SATISFY THIS REQUIREMENT:-

TOTAL RETENTION VOLUME REQUIRED = 82,000 LITRES
- RAINWATER TANK/S = 82,000 LITRES
- REFER WATER QUALITY REPORT SHEET C11

WE NOTE THIS MEETS THE MINIMUM DEEMED TO COMPLY WATER RETENTION TARGET.

(ii) ON SITE DETENTION

REFER TO SHEET C10 'ON SITE DETENTION REPORT'

(iii) STORMWATER QUALITY CONTROL

REFER TO WATER QUALITY REPORT SHEETS C11 TO C13

(iv) FLOOD PLANNING LEVEL FPL

REFER TO FLOOD SUMMARY ON SHEET C14

DESIGN PREPARED IN ACCORDANCE WITH GOSFORD CITY COUNCIL'S DCP 2013 PART 6.7, GOSFORD CITY COUNCIL WATER CYCLE MANAGEMENT GUIDELINES, AR&R AND AS/NZS 3500.

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C	RE - ISSUED FOR DEVELOPMENT APPLICATION	16.05.24	LW	BK
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1 0 1cm at full size 10cm

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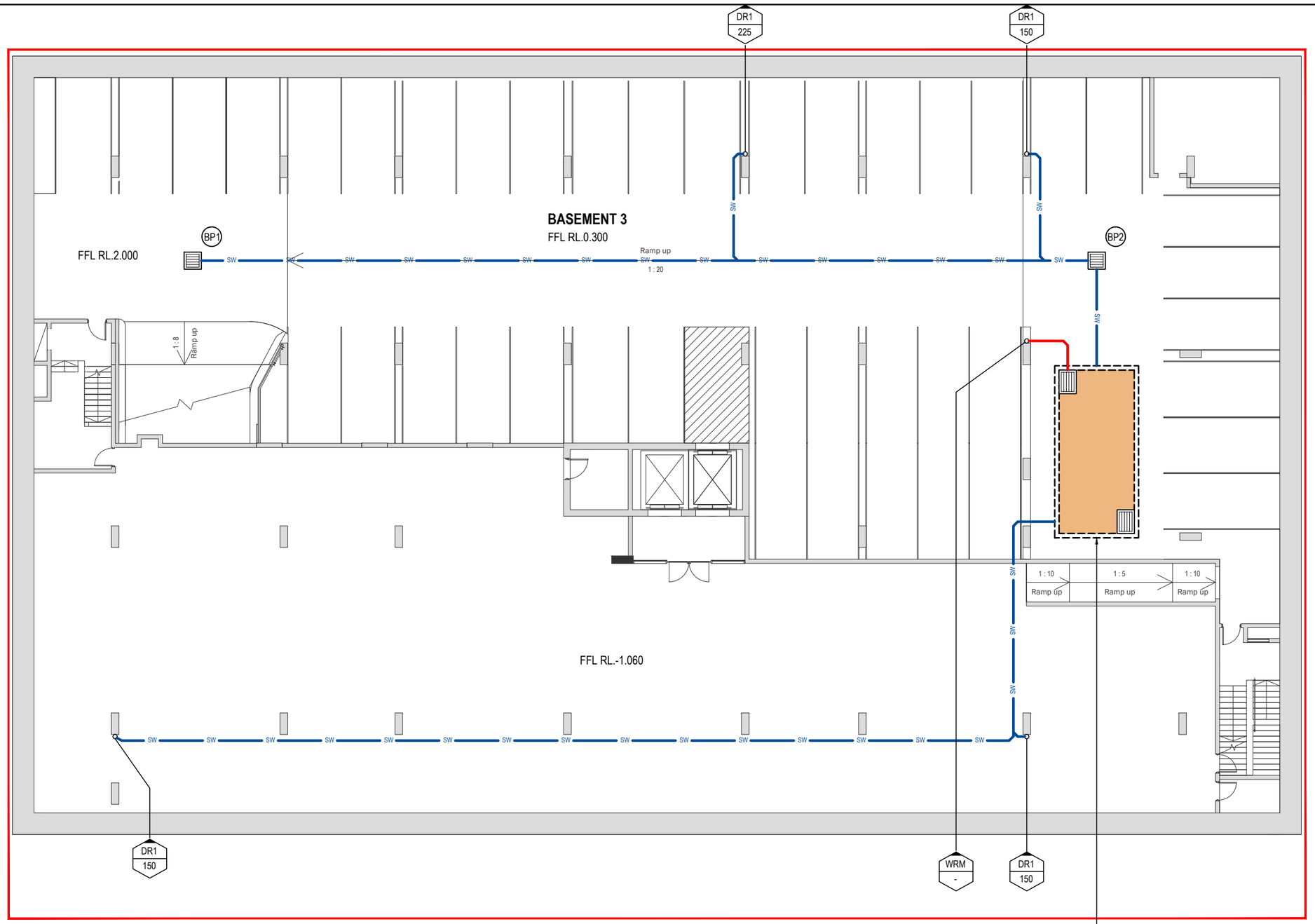
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: COVER SHEET & NOTES

Drawn	Date	Scale A1	Q.A. Check	Date
SJ	05.07.22	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220233		C1	C

LEGEND

- RW — DENOTES 100mm DIA. FULLY SEALED UNDERGROUND RAINWATER SYSTEM PIPE U.N.O.
- SW — DENOTES 100mm DIA. UNDERGROUND STORMWATER / SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
- 150 RW — DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- 150 SW — DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- W/RM — DENOTES WATER RISER MAIN (BY OTHERS)
- 150 — DENOTES SEALED AERIAL LINE RAINWATER PIPE (UNDER SLAB) AND DIA. WHEN PIPE EXCEEDS 100mm DIA. INSTALLED IN ACCORDANCE WITH AS3500.3
- 150 — DENOTES SEALED AERIAL LINE STORMWATER PIPE (UNDER SLAB) AND DIA. WHEN PIPE EXCEEDS 100mm DIA. INSTALLED IN ACCORDANCE WITH AS3500.3
- DP 150 — DENOTES THE LOCATIONS OF DOWNPIPES AND SPECIFIED DIAMETER. FINAL LOCATIONS TO BE CONFIRMED BY THE ARCHITECT AT CC STAGE.
- DR1 150 — DENOTES THE LOCATIONS OF STORMWATER DROPPERS AND SPECIFIED DIAMETER.
- SO — DENOTES SURFACE OUTLET.
- PO — DENOTES PLANTER BOX OUTLET.
- TF — 260mm DIA 'SPS TRUFLO' INLET (150mm DIA INLET PIPE) OR EQUIVALENT.
- DENOTES PROPOSED SURFACE WATER FLOW PATH GENERATED BY DEVELOPMENT SITE CATCHMENT ONLY
- CC — DENOTES STORMWATER LINE CATCHMENT TO BE FINALISED AT CC STAGE DESIGN
- C2 — DENOTES STORMWATER LINE CONTINUATION REFERENCE DRAWING
- GD — DENOTES 100 WD x 100 DP GRATED DRAIN. LEVELS TO BE FINALISED AT CC STAGE
- DENOTES 30mm DEEP DRAINAGE CELLS COVERED IN GEOTEXTILE UNDER GRASSED AREAS. DIRECT SEEPAGE TO STORMWATER SYSTEM



PIT SCHEDULE				
PIT No.	TYPE	SIZE	TOP GRATE	INVERT
BP1	HD GRATED INLET	600 x 600	1.95	1.35
BP2	HD GRATED INLET	600 x 600	0.25	-0.35
PROPOSED PIT SURFACE LEVELS AND INVERTS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION				

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BASEMENT PUMPOUT TANK

REFER TO SHEET C6 FOR DETAILS
MINIMUM STORAGE CAPACITY BASED ON DRIVEWAY CATCHMENT AREA OF 325m² = 40m³
APPROXIMATE TANK DIMENSIONS
INTERNAL LENGTH 7.6m
INTERNAL WIDTH 3.5m
INTERNAL DEPTH 1.50m
COVER LEVEL -0.250 NOM.
TANK INVERT LEVEL -2.05 NOM

STORMWATER MANAGEMENT PLAN - BASEMENT 3

SCALE - 1:100/A1, 1:200/A3

0 1 2 4 6 8 10m

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Project: PROPOSED COMMERCIAL DEVELOPMENT
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: STORMWATER MANAGEMENT PLAN - BASEMENT 3

Drawn	Date	Scale A1	Q.A. Check	Date
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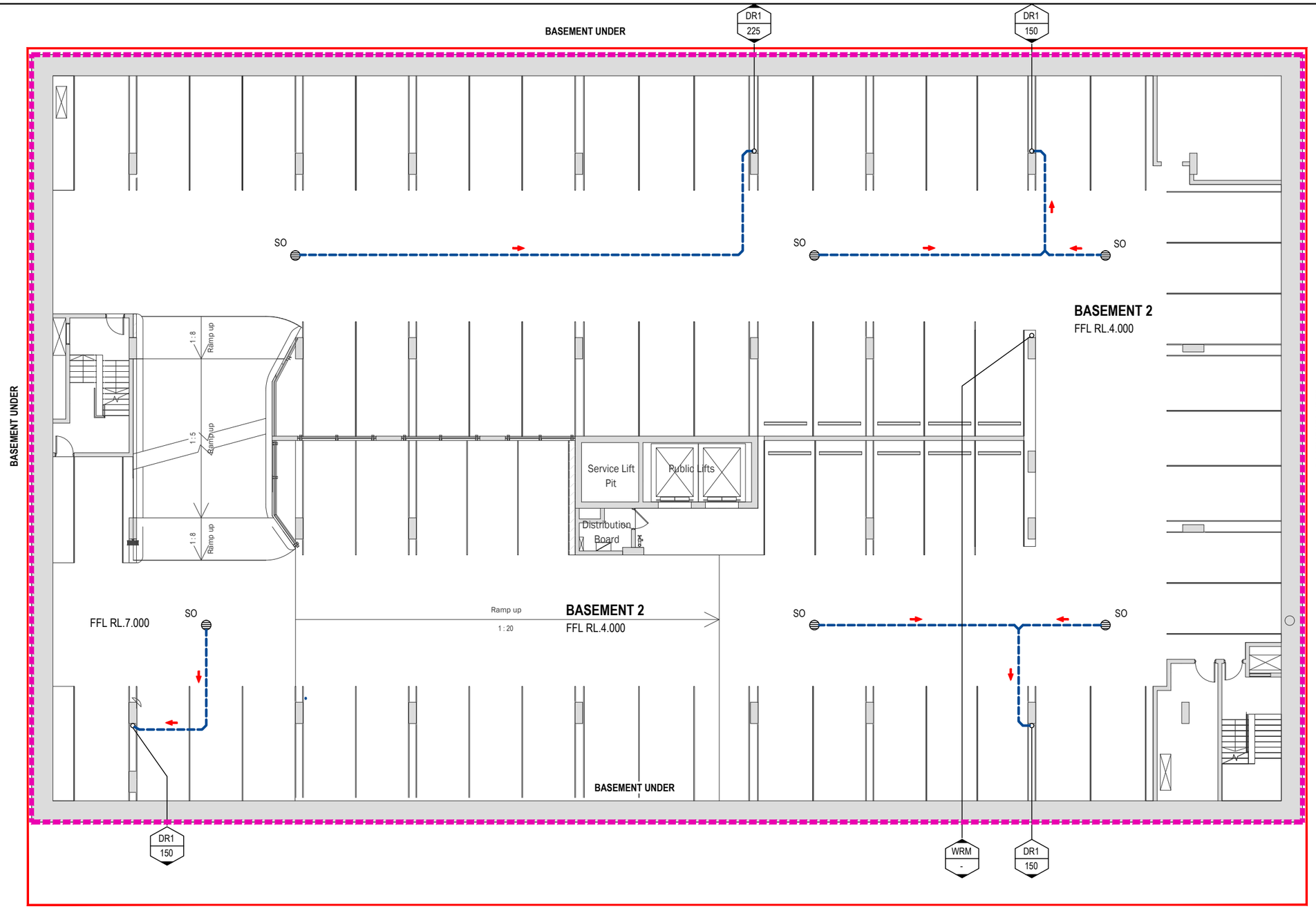
- GD — DENOTES 100 WD x 100 DP GRATED DRAIN. LEVELS TO BE FINALISED AT CC STAGE
- DENOTES 30mm DEEP DRAINAGE CELLS COVERED IN GEOTEXTILE UNDER GRASSED AREAS. DIRECT SEEPAGE TO STORMWATER SYSTEM



STORMWATER MANAGEMENT PLAN - BASEMENT 2

SCALE - 1:100/A1, 1:200/A3

0 1 2 4 6 8 10m

Department of Planning, Housing and Infrastructure

NSW GOVERNMENT

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 4.55 (2) Modification Application

Approved Application No: DA 22/11444 Mod 1

Approved on: 2 December 2024

Signed: AW **Sheet No: 46 of 55**

Issue	Description	Date	Drawn	Approved
C	RE - ISSUED FOR DEVELOPMENT APPLICATION	16.05.24	LW	BK
B	ISSUED FOR DEVELOPMENT APPLICATION	06.07.22	SJ	BK
A	ISSUED FOR CLIENT REVIEW	05.07.22	SJ	BK

1cm at full size 10cm

North

Client: CHP

Architect: TSV ARCHITECTS PTY LTD

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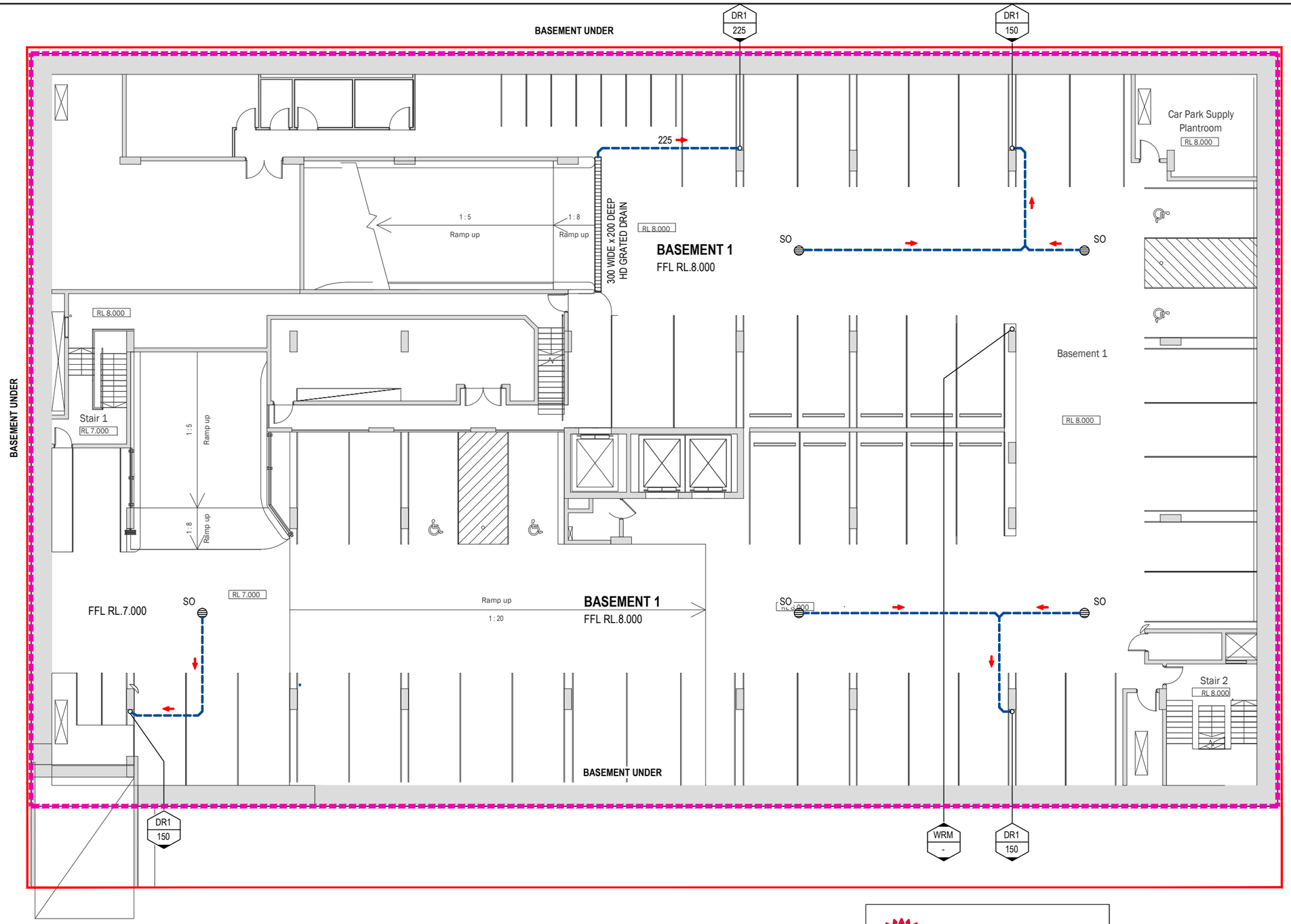
Project: PROPOSED COMMERCIAL DEVELOPMENT
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: STORMWATER MANAGEMENT PLAN - BASEMENT 2

Drawn	Date	Scale A1	Q.A. Check	Date
SJ	05.07.22	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220233		C3	C

LEGEND

- RW — DENOTES 100mm DIA. FULLY SEALED UNDERGROUND RAINWATER SYSTEM PIPE U.N.O.
- SW — DENOTES 100mm DIA. UNDERGROUND STORMWATER / SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
- 150 RW — DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- 150 SW — DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
- W/RM — DENOTES WATER RISER MAIN (BY OTHERS)
- 150 — DENOTES SEALED AERIAL LINE RAINWATER PIPE (UNDER SLAB) AND DIA. WHEN PIPE EXCEEDS 100mm DIA. INSTALLED IN ACCORDANCE WITH AS3500.3
- 150 — DENOTES SEALED AERIAL LINE STORMWATER PIPE (UNDER SLAB) AND DIA. WHEN PIPE EXCEEDS 100mm DIA. INSTALLED IN ACCORDANCE WITH AS3500.3
- DP 150 — DENOTES THE LOCATIONS OF DOWNPIPES AND SPECIFIED DIAMETER. FINAL LOCATIONS TO BE CONFIRMED BY THE ARCHITECT AT CC STAGE.
- DR1 150 — DENOTES THE LOCATIONS OF STORMWATER DROPPERS AND SPECIFIED DIAMETER.
- SO — DENOTES SURFACE OUTLET.
- PO — DENOTES PLANTER BOX OUTLET.
- TF — 260mm DIA 'SPS TRUFLO' INLET (150mm DIA INLET PIPE) OR EQUIVALENT.
- DENOTES PROPOSED SURFACE WATER FLOW PATH GENERATED BY DEVELOPMENT SITE CATCHMENT ONLY
- CC — DENOTES STORMWATER LINE CATCHMENT TO BE FINALISED AT CC STAGE DESIGN
- C2 — DENOTES STORMWATER LINE CONTINUATION REFERENCE DRAWING
- GD — DENOTES 100 WD x 100 DP GRATED DRAIN. LEVELS TO BE FINALISED AT CC STAGE
- DENOTES 30mm DEEP DRAINAGE CELLS COVERED IN GEOTEXTILE UNDER GRASSED AREAS. DIRECT SEEPAGE TO STORMWATER SYSTEM



STORMWATER MANAGEMENT PLAN - BASEMENT 1

SCALE - 1:100/A1, 1:200/A3

0 1 2 4 6 8 10m

Department of Planning, Housing and Infrastructure

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Drawing Title: STORMWATER MANAGEMENT PLAN - BASEMENT 1

Drawn	Date	Scale A1	Q.A. Check	Date
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Designed	Project No.	Dwg. No.	Issue
BK	CC220233	C4	C

LEGEND

RW (green line)	DENOTES 100mm DIA. FULLY SEALED UNDERGROUND RAINWATER SYSTEM PIPE U.N.O.
SW (blue line)	DENOTES 100mm DIA. UNDERGROUND STORMWATER / SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
150 RW	DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
150 SW	DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
W/RM (red line)	DENOTES WATER RISER MAIN (BY OTHERS)
150 (green dashed)	DENOTES SEALED AERIAL LINE RAINWATER PIPE (UNDER SLAB) AND DIA. WHEN PIPE EXCEEDS 100mm DIA. INSTALLED IN ACCORDANCE WITH AS3500.3
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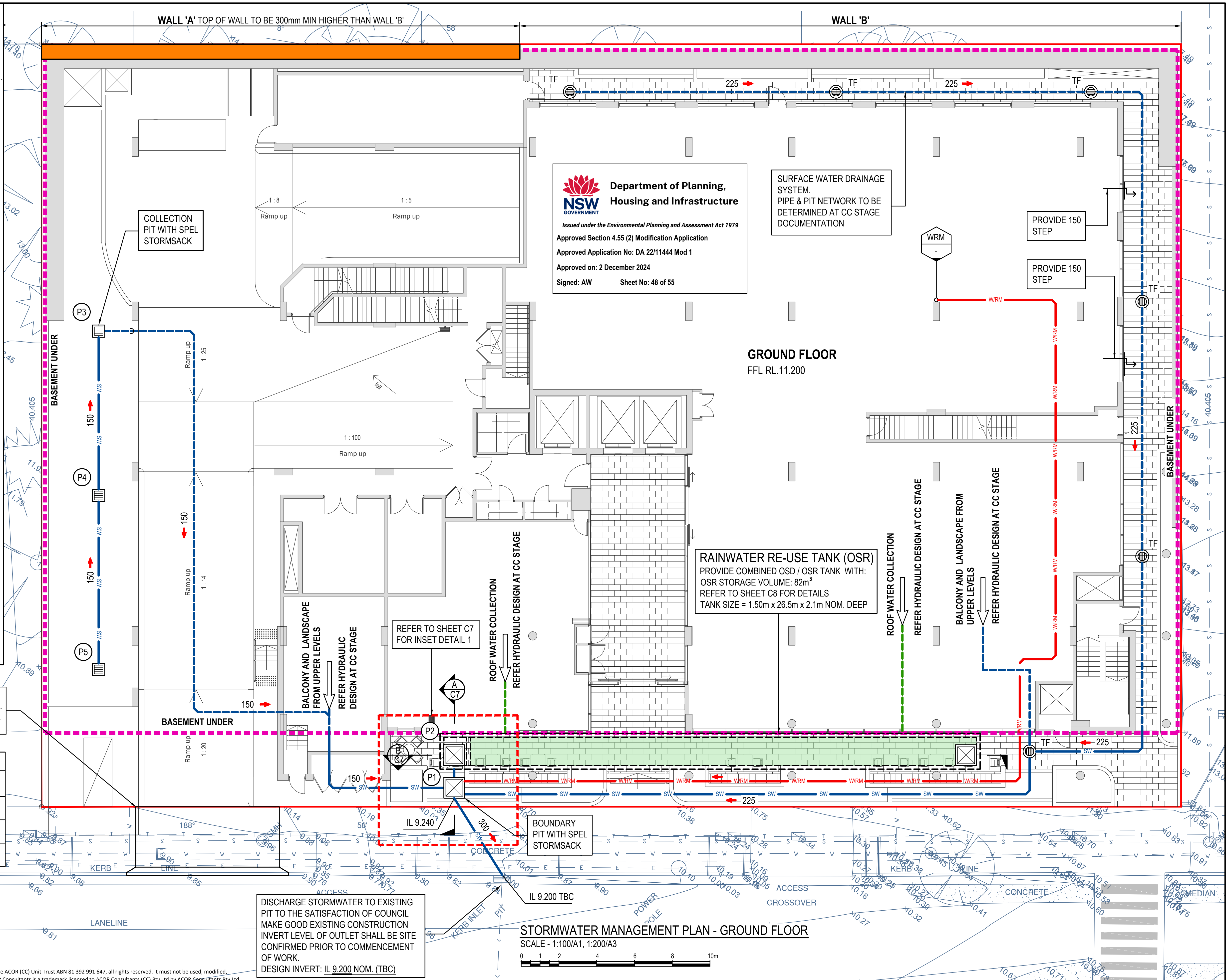
SO	DENOTES SURFACE OUTLET.
PO	DENOTES PLANTER BOX OUTLET.
TF	260mm DIA 'SPS TRUFLO' INLET (150mm DIA INLET PIPE) OR EQUIVALENT.
(arrow)	DENOTES PROPOSED SURFACE WATER FLOW PATH GENERATED BY DEVELOPMENT SITE CATCHMENT ONLY
CC	DENOTES STORMWATER LINE CATCHMENT TO BE FINALISED AT CC STAGE DESIGN
C2	DENOTES STORMWATER LINE CONTINUATION REFERENCE DRAWING
GD	DENOTES 100 WD x 100 DP GRATED DRAIN. LEVELS TO BE FINALISED AT CC STAGE
(green hatch)	DENOTES 30mm DEEP DRAINAGE CELLS COVERED IN GEOTEXTILE UNDER GRASSED AREAS. DIRECT SEEPAGE TO STORMWATER SYSTEM



PIT SCHEDULE

PIT No.	TYPE	SIZE	TOP GRATE
P1	LD SOLID COVER	900 x 900	11.70
P3 TO P5	LD GRATED INLET	450 x 450	11.30
PROPOSED PIT SURFACE LEVELS AND INVERTS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION			

STORMWATER MANAGEMENT PLAN - GROUND FLOOR

SCALE - 1:100/A1, 1:200/A3

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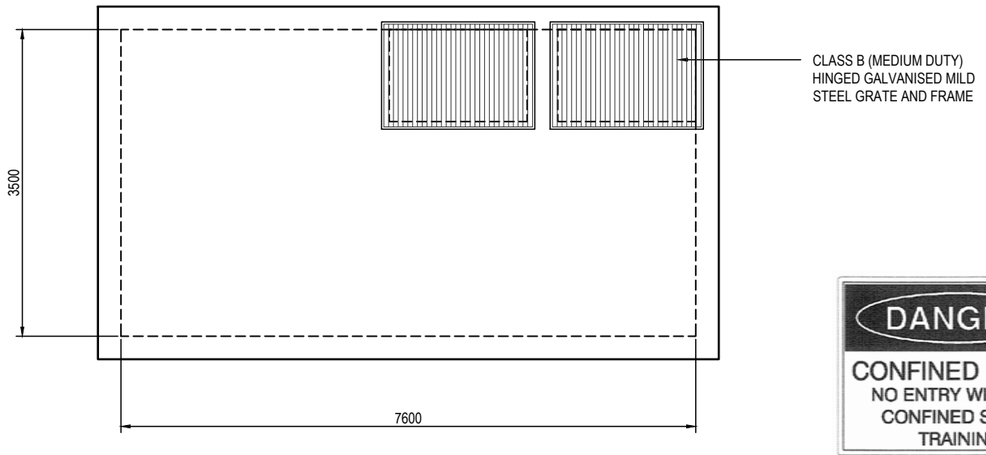
Project: PROPOSED COMMERCIAL DEVELOPMENT
No.60, 62 & 64 SHOWGROUND ROAD GOSFORD

Drawing Title: STORMWATER MANAGEMENT PLAN - GROUND FLOOR

Drawn	Date	Scale	Q.A. Check	Date
SJ	05.07.22	AS NOTED (A1)	-	-

Designed	Project No.	Dwg. No.	Issue
BK	CC220233	C5	C



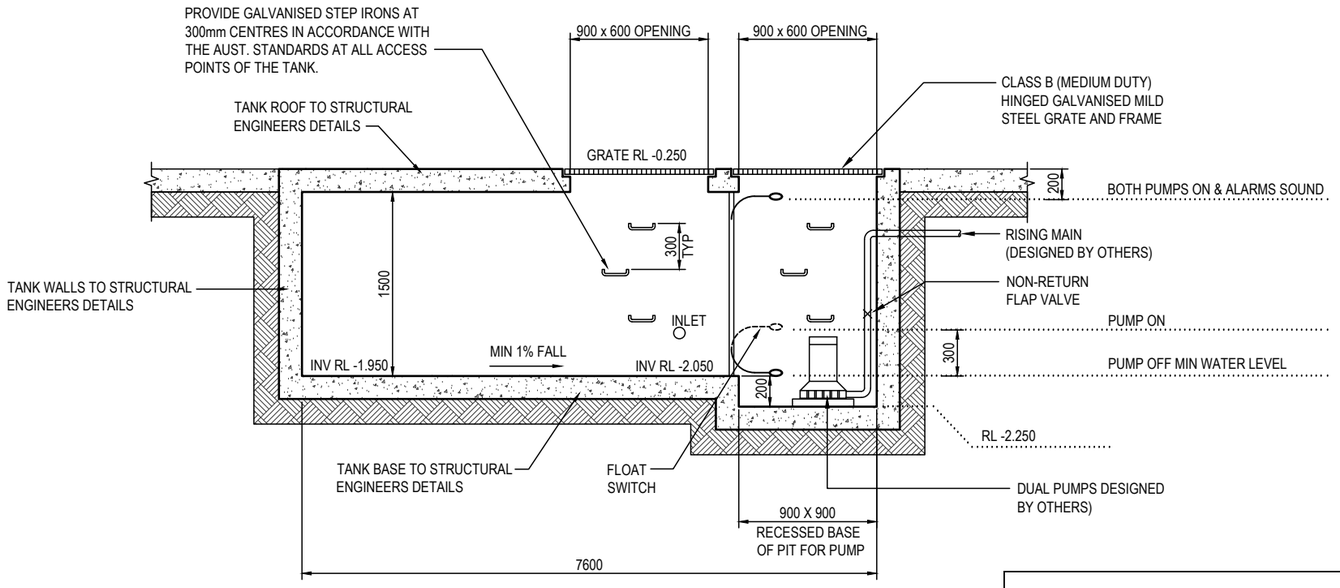
PUMP OUT TANK PLAN
SCALE 1:20/A1, 1:40/A3

INSTALL CONFINED SPACE WARNING SIGN

STANDARD PUMP OUT DESIGN NOTES

THE PUMP SYSTEM SHALL BE OPERATED IN THE FOLLOWING MANNER:-

1. THE PUMPS SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE
2. A FLOAT SHALL BE PROVIDED TO ENSURE THAT THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.
3. A SECOND FLOAT SHALL BE PROVIDED AT A HIGH LEVEL, WHICH IS APPROXIMATELY THE ROOF LEVEL OF THE BELOW GROUND TANK. THIS FLOAT SHALL START THE OTHER PUMP THAT IS NOT OPERATING AND ACTIVATE THE ALARM.
4. AN ALARM SYSTEM SHALL BE PROVIDED WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.
5. A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINTS TO THE PUMP OUT STORAGE TANK.



PUMP OUT TANK
AVERAGE HEIGHT = 1.5m
WIDTH = 3.5m
LENGTH = 7.60m
VOLUME PROVIDED = 40.0m^3

TYPICAL SECTION THROUGH PUMP OUT TANK
SCALE 1:20/A1, 1:40/A3

PUMP-OUT TANK MAINTENANCE SCHEDULE

MAINTENANCE CONTRACT

NOTE: A 24 HOUR X 12 MONTHLY EMERGENCY AND MAINTENANCE CONTRACT SHALL BE OBTAINED FROM A COMPANY CAPABLE OF EXECUTING THE WORK AND SHALL BE KEPT IN FORCE BY THE PROPERTY OWNER(S) FOR THE LIFE OF THE BUILDING.

THE MAINTENANCE CONTRACT SHALL BE CARRIED OUT EVERY THREE (3) MONTHS AND SHALL INCLUDE THE FOLLOWING ACTIVITIES:

1. CLEAN OUT ALL PITS OF SILT AND DEBRIS.
2. CHECK AND CLEAN OUT, IF NECESSARY, ALL PIPELINES.
3. CHECK:
   - 3.1. PUMPS FOR WEAR
   - 3.2. PUMP OIL SEALS
   - 3.3. PUMP STRAINER AND CLEAN
4. CARRY OUT ROUTINE MAINTENANCE TO PUMPS AS RECOMMENDED BY THE MANUFACTURER.
5. CHECK OPERATIONAL SEQUENCE OF LEVEL SWITCHES, PUMPS AND CONTROL PANEL.
6. THE EMERGENCY CONTRACT SHALL PROVIDE FOR A 24 HOUR X 7 DAY PER WEEK SERVICE.

THE CONTRACTOR SHALL PROVIDE A NAME PLATE STATING NAME, WORKING HOURS, TELEPHONE NUMBER AND OUT OF HOURS NUMBER AND SUCH NAME PLATE SHALL BE FIXED TO THE FRONT OF THE CONTROL PANEL.

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North

0 10m at full size 10m

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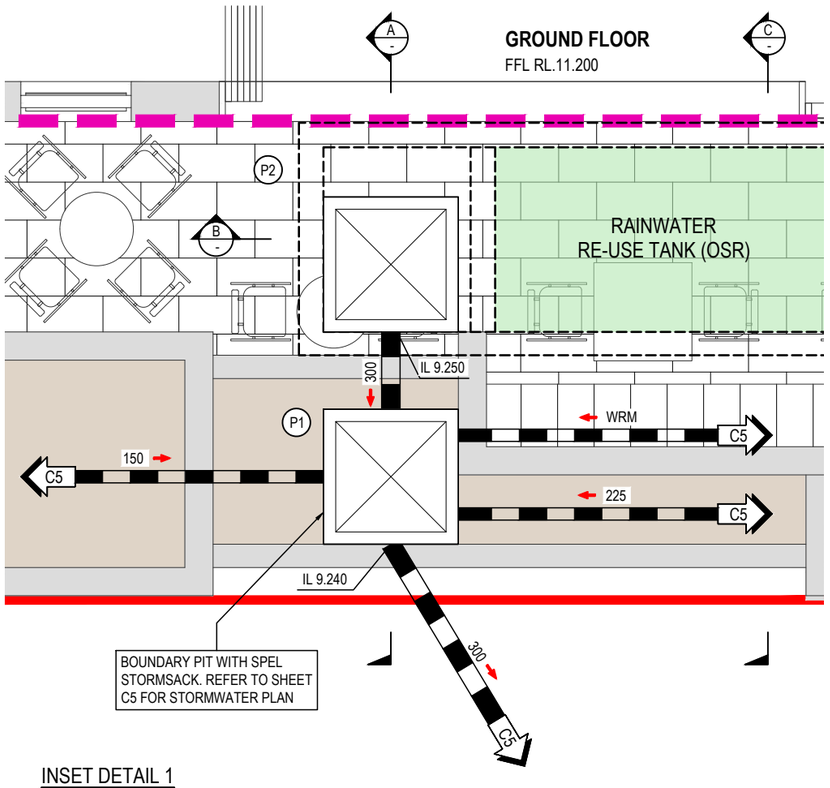
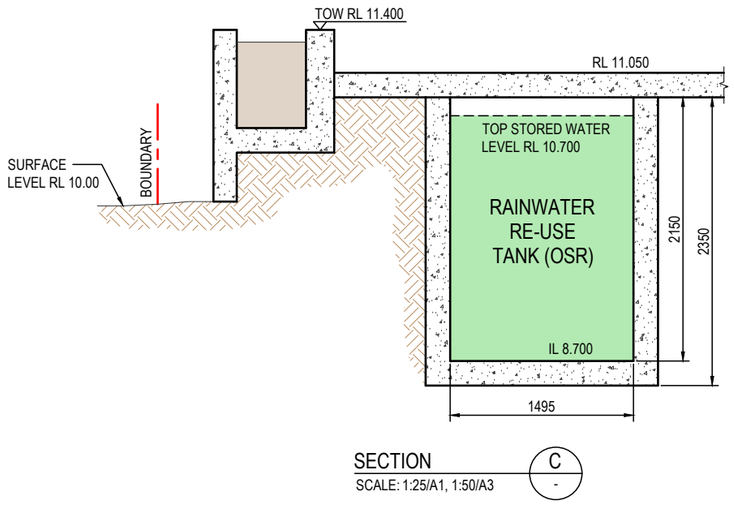
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: STORMWATER MANAGEMENT DETAILS SHEET No.1

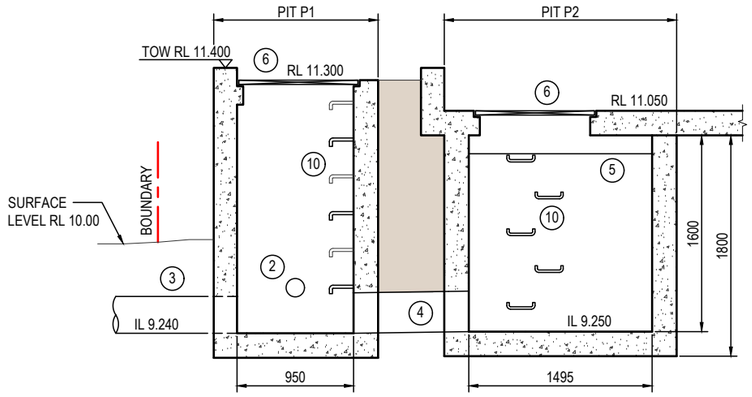
Drawn	Date	Scale A1	Q.A. Check	Date
SJ	05.07.22	AS NOTED	-	-
Designed	Project No.		Dwg. No.	Issue
BK	CC220233		C6	C



INSET DETAIL 1
SCALE - 1:50/A1, 1:100/A3



SECTION C
SCALE: 1:25/A1, 1:50/A3



SECTION A
SCALE: 1:25/A1, 1:50/A3

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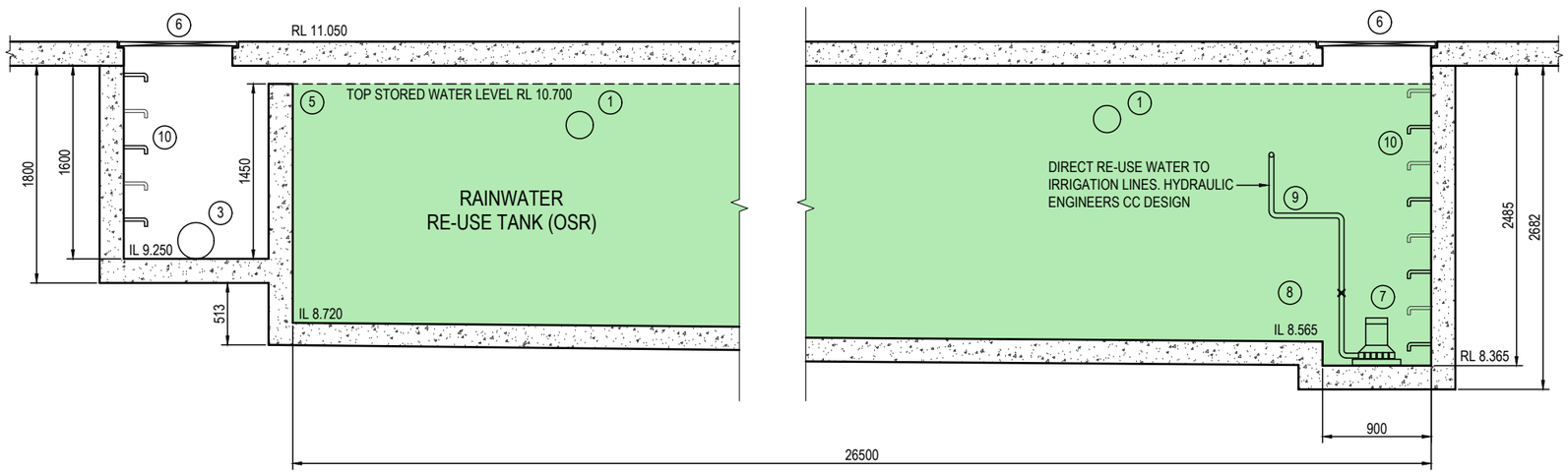

SECTION B
SCALE: 1:25/A1, 1:50/A3
C5

LEGEND

1	ROOFWATER INLET PIPE
2	SURFACE WATER INLET PIPE
3	300 DIA DISCHARGE PIPE
4	300 DIA LINK PIPE
5	OSR OVERFLOW WEIR
6	900 x 900 SOLID COVER BOLTED DOWN
7	RE-USE PUMP TO MANUFACTURERS SPECIFICATIONS
8	NON-RETURN VALVE
9	50 DIA PVC PIPE CLASS '16' RISING MAIN
10	PROVIDE GALVANISED STEP IRONS AT 300mm CENTRES WHERE DEPTH EXCEEDS 1100mm IN ACCORDANCE WITH THE AUST. STANDARDS AT ALL ACCESS POINTS OF THE TANK, TYP.
11	TANK STRUCTURE TO STRUCTURAL ENGINEERS DETAILS

PROVIDE CONFINED SPACE SIGNAGE
AT ENTRY POINTS INTO TANK.

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Project: PROPOSED COMMERCIAL DEVELOPMENT
No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

Drawing Title: STORMWATER MANAGEMENT DETAILS SHEET No.2

Drawn	Date	Scale A1	Q.A. Check	Date
SJ	05.07.22	AS NOTED	-	-

Designed	Project No.	Dwg. No.	Issue
BK	CC220233	C7	C

ON-SITE STORMWATER DETENTION REPORT

1.1. METHODOLOGY

1.1.1. THE DRAINS PROGRAM WAS ADOPTED AS AN APPROPRIATE MODEL FOR THIS PROJECT. PRE-DEVELOPED AND POST-DEVELOPED HYDROLOGICAL AND HYDRAULIC MODELS WERE DEVELOPED FOR THE 1, 2, 5, 10, 20, 50 AND 100 YEAR ARI DESIGN STORM EVENTS, ASSESSING STACKED RAINFALL PATTERNS RANGING FROM 5 MINUTES TO 2 HOURS. THE ADOPTED PRE & POST DEVELOPED FLOWS ARE THOSE ASSIGNED TO THEIR RESPECTIVE PEAKS.

1.2. PRE-DEVELOPED DRAINS MODEL

1.2.1. THE PRE-DEVELOPED DRAINS MODEL COMPRISED A SINGLE SUB-CATCHMENT DISCHARGING TO A DUMMY NODE. THE PARAMETERS INPUT TO THE DRAINS MODEL FOR THE SUB-CATCHMENT ARE IDENTIFIED IN THE DRAINS SUB-CATCHMENT DATA INPUT FILE. REFER TO DRAINS FILE "CC220233.drn"
THE CATCHMENT AREA ADOPTED IS 0.2438ha. THE PRE & POST DEVELOPED IMPERVIOUS AREAS ADOPTED IN THE MODEL ARE 0% AND 90% RESPECTIVELY.

1.2.2. THE PRE-DEVELOPED PEAK FLOWRATES CALCULATED BY THE DRAINS PROGRAM ARE SUMMARISED BELOW:

SITE AREA (m^2)	2438 (0% IMPERVIOUS)
ARI (YEARS)	PEAK FLOWRATE (PRE-DEVELOPED) (L/s)
1	36
2	56
5	76
10	88
20	103
50	113
100	128

1.3. POST-DEVELOPED MODEL

1.3.1. THE POST DEVELOPED DRAINS MODEL COMPRISES OF ONE SUB CATCHMENT FORMED BY THE POST DEVELOPED ROOF AREA WHICH DRAINS TO COMBINED OSD / OSR TANKS. REFER TO DRAINS MODEL "CC220233.drn" FOR DETAIL.

1.3.2. THE PARAMETERS INPUT INTO THE DRAINS MODEL FOR THE POST-DEVELOPED DETENTION TANKS ARE IDENTIFIED IN THE DRAINS SUB-CATCHMENT DATA. REFER TO DRAINS MODEL "CC220233.drn" FOR DETAILS.

1.3.3 THE OSD STORAGE/OUTFLOW PARAMETERS ADOPTED IN THE DRAINS MODEL ARE IDENTIFIED IN DRAINS MODEL "CC220233.drn"

1.3.4 THE PEAK STORAGE VOLUME CALCULATED BY THE DRAINS MODEL OCCURS DURING THE 100 YEAR ARI 25 MINUTE DESIGN STORM EVENT. THE VOLUMETRIC GRAPH FOR THIS STORM EVENT IS IDENTIFIED IN DRAINS MODEL "CC220233.drn".

1.3. POST-DEVELOPED MODEL (CONTINUED)

1.3.5. THE INFLOW AND OUTFLOW HYDROGRAPH FOR THIS STORM EVENT IS IDENTIFIED IN DRAINS MODEL "CC220233.drn"

1.3.6. THE PEAK FLOWRATES AND WATER SURFACE LEVELS DEVELOPED BY THE DRAINS MODEL FOR THE 100 YEAR ARI DESIGN STORM EVENT. REFER TO DRAINS MODEL "CC220233.drn" FOR DETAIL.

ARI (YEARS)	PRE - DEVELOPED FLOW RATE (L/s)	POST - DEVELOPED TOTAL FLOW RATE (L/s)	STORAGE VOLUME (m^3)
1	36	47	6
2	56	53	10
5	76	60	19
10	88	65	24
20	103	70	28
50	113	74	36
100	128	114	41

1.5 CONCLUSION

1.1.6. BASED ON THE FOREGOING AN OSD TANK OF 41 m^3 WILL ATTENUATE POST-DEVELOPED PEAK FLOWRATES TO EQUIVALENT FLOWRATES OR LESS THAN THE COMPARABLE PRE-DEVELOPED FLOWRATES. THE PEAK FLOWRATES FOR THE PRE & POST-DEVELOPED STORM EVENTS FOR THE ENTIRE CATCHMENT DISCHARGE TO THE EXISTING STORMWATER SYSTEM.

IN ACCORDANCE WITH CENTRAL COAST COUNCIL DCP SECTION 6.7.7.4.4, THE OSD REQUIREMENT OF 41 m^3 HAS BEEN OFFSET BY 50% OF THE RAINWATER RE-USE TANK PROVIDED. IN THIS REGARD 82 m^3 RAINWATER RE-USE IS PROPOSED AND SUBSEQUENTLY THE OSD REQUIREMENT IS OFFSET ENTIRELY BY THE PROVISION OF THE RAINWATER TANK.

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Drawing Title: STORMWATER DETENTION REPORT

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SJ	05.07.22	AS NOTED	-	-

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BK	CC220233	C8	C

WATER QUALITY REPORT

1. INTRODUCTION

A CATCHMENT BASED WATER QUALITY MODEL WAS DEVELOPED TO INVESTIGATE STORMWATER RUNOFF QUALITY FROM THE SUBJECT SITE IN ACCORDANCE WITH GOSFORD CITY COUNCIL'S DEVELOPMENT CONTROL PLAN 2013 PART 6.7 "WATER CYCLE MANAGEMENT." THE REQUIREMENTS ARE TABLED FOLLOWING AS EXTRACTED FROM CLAUSE 6.7.7.3.2:

POLLUTANT	% RETENTION OF THE ANNUAL AVERAGE LOAD (kg/ha/yr)
GROSS POLLUTANTS	90%
TOTAL SUSPENDED SOLIDS	80%
TOTAL PHOSPHORUS	45%
TOTAL NITROGEN	45%

1.1 ON - SITE RETENTION TARGET

THE TABLE BELOW IDENTIFIES THE REQUIRED STORMWATER RETENTION TARGET UNDER THE GOSFORD CITY COUNCIL DCP 2013.

Table 2 Stormwater Retention Volume Target (m^3)

Total Site Area (m^2) \ Fraction Impervious (%)	0	10	20	30	40	50	60	70	80	90	100
50000	0	20	80	180	320	500	720	980	1280	1620	2000
10000	0	4.0	16	36	64	100	144	196	256	324	400
5000	0	2.0	8.0	18	32	50	72	98	128	162	200
2000	0	0.8	3.2	7.2	13	20	29	39	51	65	80
1500	0	0.6	2.4	5.4	9.6	15	22	29	38	49	60
1000	0	0.4	1.6	3.6	6.4	10	14	20	26	32	40
900	0	0.4	1.4	3.2	5.8	9.0	13	18	23	29	36
800	0	0.3	1.3	2.9	5.1	8.0	12	16	20	26	32
700	0	0.3	1.1	2.5	4.5	7.0	10	14	18	23	28
600	0	0.2	1.0	2.2	3.8	6.0	8.6	12	15	19	24
500	0	0.2	0.8	1.8	3.2	5.0	7.2	9.8	13	16	20
400	0	0.2	0.6	1.4	2.6	4.0	5.8	7.8	10	13	16

RESPONSE: TOTAL RETENTION REQUIRED FOR SITE AREA OF 2438 m^2 WHICH IS 90% IMPERVIOUS EQUALS 79 m^3
TOTAL RETENTION PROVIDED FROM RAIN WATER TANK (82 m^3)

2. STUDY METHODOLOGY

THE OBJECTIVES OF THIS REPORT ARE TO:

- ASSESS THE STORMWATER QUALITY FOR THE POST DEVELOPMENT SCENARIO AND PROVIDE RECOMMENDATIONS TO ENSURE THE DEVELOPMENT MEETS FLOOD RUNOFF QUALITY STANDARDS WHERE REQUIRED.

THE REPORT IS BASED ON THE APPLICATION OF MUSIC (MODEL FOR URBAN STORMWATER IMPROVEMENT CONCEPTUALISATION) MODELLING WHICH INCLUDED THE FOLLOWING:

- A STORMWATER QUALITY MODEL TO CONVERT RAINFALL AND EVAPOTRANSPIRATION ON THE CATCHMENT INTO RUNOFF.
- ESTIMATE STORMWATER FLOW AND POLLUTION GENERATION BY SIMULATING THE PERFORMANCE OF STORMWATER TREATMENT DEVICES INDIVIDUALLY AND AS PART OF A TREATMENT TRAIN.

THE MODEL DEFINES WATER QUALITY PROFILES FOR THE POST DEVELOPED TREATED AND UNTREATED SCENARIOS. THE TREATED POST DEVELOPED MODEL INCLUDES POLLUTANT REDUCTION PERCENTAGES, WHICH REFLECT WORKS THAT ARE ESSENTIAL TO MEET THE RELEVANT REQUIREMENTS SCRIBED BY COUNCIL FOR A PROJECT OF THIS NATURE.

3. RAINFALL AND EVAPOTRANSPIRATION DATA

FOR THE PURPOSE OF THIS REPORT DATA HAS BEEN OBTAINED FROM CENTRAL COAST COUNCIL'S MUSIC LINK VERSION 6.34 FOR A SITE LOCATED WITHIN THE LOWLAND REGION.

4. STORMWATER QUALITY MODELLING

4.1 GENERAL

THE FOLLOWING PARAMETERS WERE ASSESSED IN THE HYDROLOGICAL MODELLING ASSOCIATED WITH THE CATCHMENT.

- RAINFALL/RUNOFF AND EVAPOTRANSPIRATION.
- SUB CATCHMENT DIVERSIONS.
- LAND USE (PERVIOUS AND IMPERVIOUS)

4.2 RAINFALL/RUNOFF AND EVAPOTRANSPIRATION

THE DEFAULT MONTHLY AVERAGE POTENTIAL EVAPOTRANSPIRATION PROVIDED BY CENTRAL COAST COUNCIL'S MUSIC LINK VERSION 6.34 WAS UTILISED IN THIS STUDY.

THE DETAILS ARE SUMMARISED IN TABLE 4.1 AND 4.2 FOLLOWING:

TABLE 4.1 - DETAILS OF DAILY RAINFALL DATA			
STATION	NAME	PERIOD	TIMESTEP
066062	SYDNEY OBSERVATORY HILL	01/01/1974-01/01/1994	6 min

TABLE 4.2 - SUMMARY OF POTENTIAL EVAPOTRANSPIRATION (PET)					
JAN	FEB	MAR	APR	MAY	JUN
180.11	134.96	128.03	84.90	57.97	42.90
JUL	AUG	SEP	OCT	NOV	DEC
43.09	57.97	87.90	127.10	152.10	163.06

4.3 CATCHMENT DEFINITION

THE CATCHMENT AREA UNDER POST DEVELOPMENT SCENARIO IS DIVIDED INTO THREE (4) SUB-CATCHMENTS, WHICH WERE DEFINED BASED ON FUNCTIONAL AREAS AND ANTICIPATED OVERLAND FLOW PATHS. THE DETAILS OF THE SUB-CATCHMENTS ARE SUMMARISED IN FOLLOWING TABLE 4.3.

TABLE 4.3 - POST DEVELOPMENT SUB CATCHMENT DETAILS			
SUB CATCHMENT ID	SUB CATCHMENT AREA (ha)	% IMPERVIOUS AREA	% PERVIOUS AREA
COMBINED ROOF TO RAINWATER TANK	0.138	100	0
FOOTPATHS AND LANDSCAPING	0.049	60	40
OPEN ROOFTOP PLANTER AREAS	0.032	0	100
ROOFTOP TERRACE AREA	0.025	100	0

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No.60, 62 & 64
SHOWGROUND ROAD
GOSFORD

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5. MUSIC MODEL

THE MUSIC MODEL WAS CREATED BASED ON A 6 min RAINFALL-RUNOFF MODEL IN CONJUNCTION WITH RESENTATIVE BASEFLOW AND STORMFLOW EVENT MEAN CONCENTRATION (EMCs).

5.1 WATER QUALITY PARAMETERS

THE ADOPTED VALUES OF VARIOUS MUSIC RAINFALL AND RUNOFF PARAMETERS ARE SUMMARISED IN TABLE 5.1.

TABLE 5.1 - ADOPTED MUSIC RAINFALL/RUNOFF PARAMETERS

PARAMETER	VALUE
IMPERVIOUS AREA PROPERTIES	
RAINFALL THRESHOLD (mm/DAY)	1.0
PERVIOUS AREA PROPERTIES	
SOIL STORAGE CAPACITY (mm)	200
SOIL INITIAL STORAGE (% OF CAPACITY)	30
FIELD CAPACITY (mm)	80
INFILTRATION CAPACITY COEFFICIENT - a	200
INFILTRATION CAPACITY EXPONENT - b	1
GROUNDWATER PROPERTIES	
INITIAL DEPTH (mm)	10
DAILY RECHARGE RATE (%)	0
DAILY BASEFLOW RATE (%)	0
DAILY DEEP SEEPAGE RATE (%)	2.0

STORMWATER QUALITY IS CHARACTERISED USING EVENT MEAN CONCENTRATION (EMCs) UNDER STORM AND BASE FLOW CONDITIONS. THE VALUE OF WATER QUALITY PARAMETERS ADOPTED IN THIS STUDY IS SUMMARISED IN TABLE 5.2

TABLE 5.2 - ADOPTED MUSIC WATER QUALITY PARAMETERS

LAND-USE CATEGORY		Log_{10} TSS (mg/L)		Log_{10} TP (mg/L)		Log_{10} TN (mg/L)	
		STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW
GENERAL URBAN	MEAN	2.15	1.20	-0.60	-0.85	0.30	0.11
	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12
ROADS	MEAN	2.43	*	-0.3	*	0.34	*
	STD DEV	0.32	*	0.25	*	0.19	*
ROOFS	MEAN	1.30	*	-0.89	*	0.30	*
	STD DEV	0.32	*	0.25	*	0.19	*

* BASE FLOWS ARE ONLY GENERATED FROM PERVIOUS AREAS; THEREFORE THESE PARAMETERS ARE NOT RELEVANT.

5.2 STORMWATER TREATMENT MEASURES

THE STORMWATER TREATMENT MEASURES THAT WERE ASSESSED USING MUSIC INCLUDED ONE OSR TANK (COMBINED FOR THE DEVELOPMENT) AND TWO SPEL STORMSACK INSERTS OR APPROVED EQUAL. THE CONCEPTUAL PLAN FOR THE PROPERTY IS SHOWN ON SHEET C9. THE ADOPTED WATER QUALITY TREATMENT TRAIN DEVICES ARE LISTED IN TABLE 5.3 AND THE PROPERTIES OF THE RAINWATER TANK AND RE-USE IS SHOWN IN FIGURE 5.1.

TABLE 5.3 - TREATMENT TRAIN DEVICES

	OSR VOLUME	OSD	SPEL STORMSACK
COMBINED ROOF FOR THE DEVELOPMENT	82 kL	OSD OFFSET BY RAINWATER TANK	2 X 600 SQ

5.3 MODEL DEFINITION

THE MODEL LAYOUT FOR THE AND POST DEVELOPED SCENARIOS IS DEPICTED ON THIS SHEET.

6. RESULTS & CONCLUSION

BASED ON THE FOREGOING THE PROPOSED NUTRIENT CONTROL MEASURES ACHIEVE THE REQUIRED NUTRIENT REMOVAL TARGET LEVELS. THE RESULTS OF MUSIC MODELLING ARE SUMMARISED IN TABLE 6.1 FOLLOWING. ALSO REFER MUSIC LINK REPORT REFERENCE CC220233 musicLink Report.pdf

TABLE 6.1 - SUMMARY OF MUSIC RESULTS

PARAMETER	SOURCE RUNOFF	DISCHARGE FROM SITE	REDUCTION	
POST-DEVELOPMENT NO TREATMENT				
FLOW (ML/y)	5.09	5.09	0%	
TSS (kg/y)	675	v	0%	
TP (kg/y)	1.27	1.27	0%	
TN (kg/y)	11.1	11.1	0%	
GROSS POLLUTANTS (kg/y)	54.4	54.4	0%	
POST-DEVELOPMENT				REDUCTION TARGET
FLOW (ML/y)	5.09	3.66	28.1%	
TSS (kg/y)	675	119	82.4%	80%
TP (kg/y)	1.27	0.513	59.6%	45%
TN (kg/y)	11.1	6.01	45.8%	45%
GROSS POLLUTANTS (kg/y)	54.4	0	100%	90%

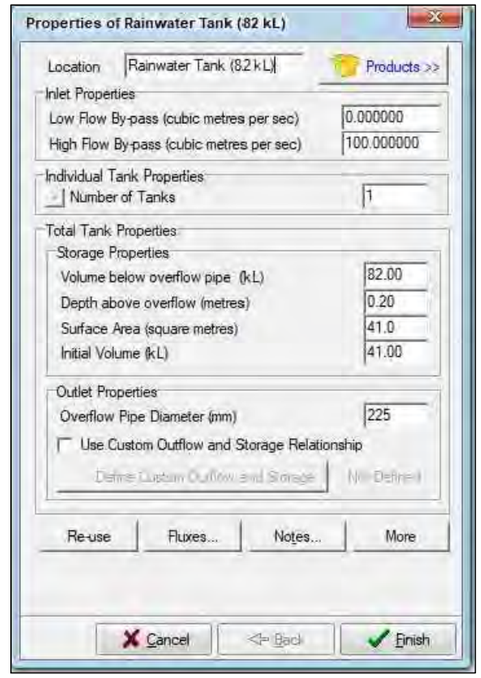

FIGURE 5.1 - RAINWATER TANK PROPERTIES

RAINWATER RE-USE HAS BEEN DETERMINED BASED ON ANTICIPATED IRRIGATION USAGE TO SERVICE THE GARDEN AND PLANTER AREAS WITH 20mm WATER PER WEEK.

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1cm at full size

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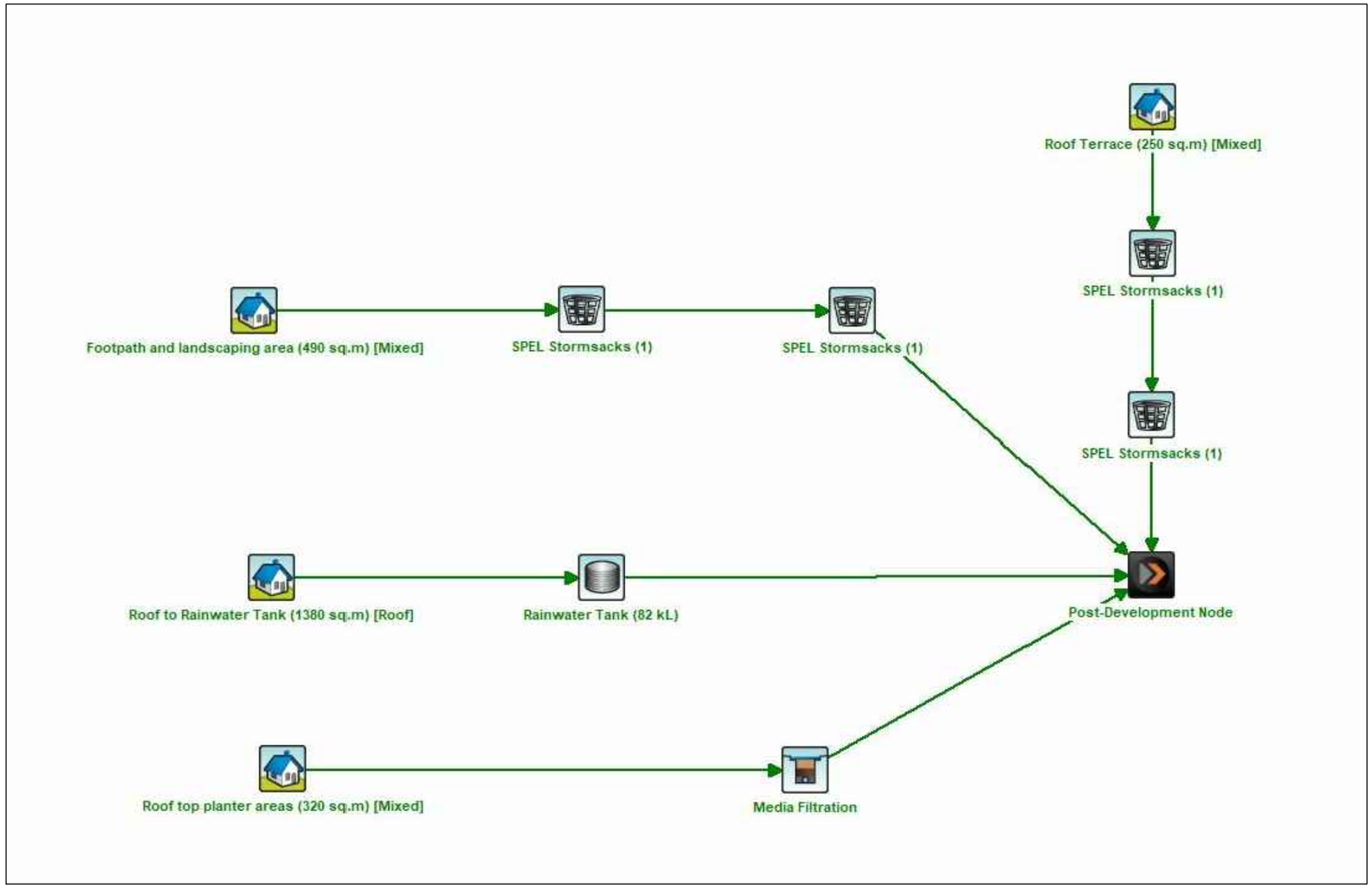

& POST-DEVELOPMENT MUSIC MODEL
SCALE - NTS

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FLOODING AND LOCAL OVERLAND DRAINAGE SUMMARY

1.1. LOCAL FLOOD BEHAVIOUR

THE SITE IS IMPACTED BY 1% AEP FLOODWATERS PONDING IN THE LOWPOINT IN SHOWGROUND ROAD. FLOOD BEHAVIOUR IN THE VICINITY OF THE SITE IS DESCRIBED IN 'GOSFORD CBD LOCAL OVERLAND FLOW FLOOD STUDY' PREPARED BY CARDNO, PROJECT No. W4816, VERSION 10, DATED 18 SEPTEMBER 2013. THE SAG WITHIN SHOWGROUND ROAD ADJACENT TO THE SITE HAS BEEN IDENTIFIED IN CARDNO 2013 AS REFERENCE LOCATION GC-1. TABLE A.1 IN CARDNO 2013 PROVIDES A SUMMARY OF PEAK FLOODWATER LEVELS IMPACTING THE SAG IN SHOWGROUND ROAD WHICH ARE APPLICABLE TO THE SUBJECT SITE. THESE LEVELS HAVE BEEN REPRODUCED IN TABLE 1 BELOW.

TABLE 1 - APPLICABLE FLOOD LEVELS AND FLOOD PLANNING LEVELS

FLOOD LEVEL INFORMATION FOR LOCATION GC-1 BASED ON INFORMATION DERIVED FROM GOSFORD CBD OVERLAND FLOW FLOOD STUDY.			
STORM EVENT	FLOOD LEVEL (m AHD)	FLOOD PLANNING LEVEL (COMMERCIAL LAND USE)	FLOOD PLANNING LEVEL (SENSITIVE LAND USE)
10% AEP	10.10	10.76 m AHD	11.9 m AHD
5% AEP	10.14		
2% AEP	10.17		
1% AEP	10.26		
PMF	11.9		

1.2. FLOOD RELATED DEVELOPMENT CONTROLS

1.2.1. THE FLOOD RELATED DEVELOPMENT CONTROLS APPLICABLE TO THE PROPOSED DEVELOPMENT ARE IDENTIFIED IN TABLE 4 - FLOOD CONTROL MATRIX IN CENTRAL COAST DCP 2013 PART 6.7.7.6.

IN THIS REGARD, THE FLOOD PLANNING LEVELS APPLICABLE TO THE PROPOSED DEVELOPMENT ARE LISTED IN TABLE 1 ABOVE.

1.3. PROPOSED FLOOR LEVEL COMPLIANCE

THE APPLICANT PROPOSES A GROUND FLOOR LEVEL COMPRISING COMMERCIAL DEVELOPMENT OF APPROXIMATELY 11.7 m AHD. THIS LEVEL PROVIDES 1.44 m FREEBOARD TO THE 1% AEP FLOOD LEVEL OF RL 10.26 m AHD WITHIN SHOWGROUND ROAD.

THE UPPER FLOOR LEVELS PROPOSED FOR SPECIALIST DISABILITY ACCOMMODATION PROVIDES A MINIMUM HABITBALE FLOOR LEVEL OF RL 16.5 m AHD. THIS LEVEL PROVIDES 4.6 m FREEBOARD TO THE PROBABLE MAXIMUM FLOOD LEVEL OR RL 11.9 m AHD WITHIN SHOWGROUND ROAD.

1.4 FLOOD IMPACTS

WE REFER TO FIGURE 4.21 OF CARDNO 2013 WHICH DEPICTS THE 1% AEP FLOODWATER EXTENTS AND HYDRAULIC CATEGORY WITHIN SHOWGROUND ROAD ADJACENT TO THE SITE. WE NOTE THAT THE EXTENT OF FLOOD STORAGE AREA IS GENERALLY CONTAINED WITHIN THE ROAD RESERVE. BASED ON THE FOREGOING, WE ANTICIPATE THE PROPOSED DEVELOPMENT WILL RESULT IN NEGLIGIBLE LOSS OF FLOOD STORAGE AND RESULT IN NEGLIGIBLE IMPACT TO EXISTING 1% AEP FLOOD BEHAVIOUR WITHIN SHOWGROUND ROAD.

1.5 EVACUATION

WE NOTE THAT THE PROPOSED HABITIABEL FLOORS ARE LOCATED ABOVE THE PMF FLOOD LEVEL OF RL 11.9 m AHD. IN THIS REGARD, OCCUPANTS OF THE PROPOSE DEVELOPMENT ARE ABLE TO REMAIN ON SITE DURING ALL FLOOD EVENTS.

1.6 CONCLUSION

BASED ON THE FOREGOING, WE HAVE FORMED THE VIEW THAT THE PROPOSED DEVELOPMENT WILL NOT RESULT IN SIGNIFICANT ADVERSE IMPACTS TO EXISTING 1% AEP FLOOD BEHAVIOUR AND GENERALLY COMPLIES WITH THE MINIMUM FLOOR LEVEL REQUIREMENTS OF CENTRAL COAST COUNCIL FOR A DEVELOPMENT OF THIS NATURE.

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