

BY	DATE	DATUM: A.H.D	BISSETT &	WRIGHT	SCALE :- 1:1000 @ A1	
		CAD DATABASE FILE		ACN 001 312 812	GRID :- MGA	
		FILE REFERENCE :- 15346	SURVEYING, ENGINEE	ring and planning.	CONTOUR INTERVAL : 0.5m	C
		COMPUTER FILE:- 15346DET		PHONE: 02 43 243799		
		DRAWING FILE:- 15346DET.DWG	EAST GOSFORD NSW 2250	EMAIL: bwsurvey@optusnet.com.au	DATE OF SURVEY :- 19/05/2021	

# Integrated Medical Office Building and Specialist Disability Accommodation

# **Development Numbers**

Street Address: Property Description:	60, 62 and 64 Showground Road, Gosford Lots 1-4 on SP 20095 and Lots 1-6 on SP 20058
Site Area:	2437sqm
Proposal Description:	Mixed use development consisting of an integrate disability accommodation. Retail and medical lan

Mixed use development consisting of an integrated health hub facility and disability accommodation. Retail and medical land uses such as GP clinic, pharmacy, radiology, pathology on the ground level; with 4 levels of medical suites above. Level 5 will provide seven specialist disability accommodation units

# **Carparking Numbers**

Basement 1
5 Car spaces
Accessible Car spaces
SDA Drop off space
2 Van spaces
Motorcycle Bay

Basement 2

68 Car spaces 2 Accessible Car spaces 68 Car spaces 2 Accessible Car spaces 1 Motorcycle Bay

Basement 4 35 Car spaces

Basement 3

Total Carparking Numbers216 Car spaces6 Accessible Car spaces3 Motorcycle Bays1 SDA Drop off space2 Van spaces



elevition	Revision           A         Updated D           B         DA Drawin           C         DA RFI Arr           D         DA GFA C	Drawing Set         27/01/2022           ngs         4/03/2022           mendments         9/12/2022           Calculations         12/12/2022	Project Integrated Medical Office Building and Specialist Disability Accommodation 60, 62 & 64 Showground Road Gosford NSW Client CHP	Architect GA Drawn DS	Stage Concept Status DA (NOT FOR CONSTRUCTION)	Project No. 1174-03 Scale 1:142.857 at A3
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# **Drawing List**

Drawing No.	Drawing Name
00.01	Context & Locality Plans
00.02	GFA Calculations
01.01	Site Plan
01.02	Existing Survey
01.03	Demolition Plan
01.04	Excavation Plan
03.01	Floor Plan - Basement 4
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
03.10	Floor Plan - Fifth Floor
04.01	Roof Plan
09.01	Elevations - North
09.02	Elevations - East
09.03	Elevations - South
09.04	Elevations - West
09.05	Showground Road Site Elevation
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

# **GFA Calculations**

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

Storey	Calculated Area
Ground Floor	1030.6
First Floor	1639.8
Second Floor	1639.8
Third Floor	1639.8
Fourth Floor	1608.1
Fifth Floor	651.3
TOTAL	8209.4m <sup>2</sup>



Context & Locality Plans





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# **GFA Calculations**

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

Storey	Calculated Area
Ground Floor	1030.6
First Floor	1639.8
Second Floor	1639.8
Third Floor	1639.8
Fourth Floor	1608.1
Fifth Floor	651.3
TOTAL	8209.4m <sup>2</sup>



















DA GFA Calculations Additional DA RFI Amendments

Revision

12/12/2022 22/12/2022	Project Integrated Medical Office Building and Specialist Disability Accommodation 60, 62 & 64 Showground Road Gosford NSW	Architect GA	Stage Concept	<b>Project No.</b> 1174-03
	Client	Drawn	Status	<b>Scale</b>
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# GFA - Fifth Floor













27/01/2022 4/03/2022

Project Integrated Medical Office Building and Specialist Disability Accommodation 60. 62 & 64 Showground Road Gosford NSW	Architect GA	Stage Concept	Project No. 1174-03
Client	Drawn	Status	Scale
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	F	DA Drawings	4/03/2022	60, 62 & 64 Showground Road Gosford NSW			
	G	DA RFI Amendments	9/12/2022	Client	Drawn	Status	Scale
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Proposed contiguous wall shoring system

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Issued under the Environmental Planning and Assessment Act 1979 Approved Application No: DA 22/11444

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Floor Plan - Basement 4

Revision 



	Revision			Project	Architect	Stage	Project No.
aloution	В	Updated Drawing Set	19/08/2021	Integrated Medical Office Building and Specialist Disability Accommodation	GA	Concept	1174-03
	C	Updated Drawing Set	1/12/2021	60, 62 & 64 Showground Road Gosford NSW			
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Floor Plan - Basement 3





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Integrated Medical Office Building and Specialist Disability Accommodation	GA	Concept
60, 62 & 64 Showground Road Gosford NSW		
Client	Drawn	Status
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Floor Plan - Basement 2





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1/12/2021 14/01/2022 18/01/2022 20/01/2022 4/03/2022

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aloution	С	Updated Ground Level	29/11/2021	Integrated Medical Office Building and Specialist Disability Accommodation	GA	Concept	1174-03
	D	Updated Drawing Set	1/12/2021	60, 62 & 64 Showground Road Gosford NSW			
	E	Updated Drawing Set	14/01/2022	Client	Drawn	Status	Scalo
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Floor Plan - First Floor





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20	В	Updated Drawing Set	19/08/2021	Integrated Medical Office Building and Specialist Disability Accommodation	GA	Concept	1174-03
	С	Updated Drawing Set	1/12/2021	60, 62 & 64 Showground Road Gosford NSW			
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Floor Plan - Second Floor



Revision

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	Revision			Project	Architect	Stage	Project No.
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	С	Updated Drawing Set	1/12/2021	60, 62 & 64 Showground Road Gosford NSW			
	D	Updated Drawing Set	14/01/2022	Client	Drawn	Statuc	Scalo
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Floor Plan - Third Floor

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	Revision			Project	Architect	Stage	Project No.
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	С	Updated Drawing Set	1/12/2021	60, 62 & 64 Showground Road Gosford NSW			
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Floor Plan - Fourth Floor





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Floor Plan - Fifth Floor

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Updated Drawing Set	27/01/2022	60, 62 & 64 Showground Road Gosford NSW			
DA Drawings	4/03/2022	Client	Drown	Statua	Socia
DA RFI Amendments	9/12/2022	Client	Diawii	Status	Scale
Additional DA RFI Amendments	22/12/2022	CHP	DS	DA (NOT FOR CONSTRUCTION)	1:200 at A3
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**PF-02** Paint Finish Dulux Teahouse







**CONC-01** Exposed dark daoncrete finish North, East & West elevations





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Approved on: 24 May 2023

Signed: AW Sheet No: 19 of 49



 C
 Updated Drawing :

 D
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 DA Drawings

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 G
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1/12/2021 27/01/2022

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Project
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60, 62 & 64 Showground Road Gosford NSW
Client
CHP

Stage Concept
Status DA (NOT FOR CONSTRUCTION)

Architect

GA

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Drawn

Project No. 1174-03



**BRK-01** Austral Bricks Nubrik Pressed Bricks range - Spencer Tan

**BRK-02** Austral Bricks La Paloma range - Castellana



**CONC-02** Slab extension & expressed columns Eastern elevation only



SCR-01 50 x 50 Aluminium Battens (powdercoated PF-01) @100ctrs



**ST-01** Sandstone tiles Northern & Eastern elevation only



34.100 Roof

\_\_\_\_\_ 27.300 Fourth Floor

\_\_\_\_\_ . \_\_\_\_ 23.700 Third Floor

> \_\_\_\_\_\_20.100 \_\_\_\_\_\_ Second Floor



Elevations - North





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**PF-02** Paint Finish Dulux Teahouse

Austral Bricks Nubrik Pressed Bricks range - Spencer Tan





Timber-look aluminium cladding Australian Beech

CLD-02



CONC-01 Exposed dark daoncrete finish North, East & West elevations







BRK-02 Austral Bricks La Paloma range - Castellana



CONC-02 Slab extension & expressed columns Eastern elevation only



SCR-01 50 x 50 Aluminium Battens (powdercoated PF-01) @100ctrs



ST-01 Sandstone tiles Northern & Eastern elevation only











**PF-02** Paint Finish Dulux Teahouse

**BRK-01** Austral Bricks Nubrik Pressed Bricks range - Spencer Tan







CONC-01 Exposed dark daoncrete finish North, East & West elevations



-11/1/2 Department of Planning NSW and Environment

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elevnt RCHITECTURE (07) 3251 6900 info@elevationarchitecture.com.au

Revision DA Drawings DA RFI Amendments Α

Additional DA RFI Amendments

4/03/2022

9/12/2022

22/12/2022

Project Integrated Medical Office Building and Specialist Disability Accommodation 60, 62 & 64 Showground Road Gosford NSW Client CHP

Concept Status DA (NOT FOR CONSTRUCTION)

Stage

Architect

GA

DS

Drawn

Project No. 1174-03

Scale 1:200, 1:1.429 at A3



**BRK-02** Austral Bricks La Paloma range - Castellana



**CONC-02** Slab extension & expressed columns Eastern elevation only



SCR-01 50 x 50 Aluminium Battens (powdercoated PF-01) @100ctrs



ST-01 Sandstone tiles Northern & Eastern elevation only

34.100 Roof

30.900 Fifth Floor

27.300 Fourth Floor

20.100 Second Floor

16.500 First Floor

\_\_\_\_\_\_Ground Floor



Elevations - South









elevitior RCHITECTURE (07) 3251 6900 info@elevationarchitecture.com.au







SCR-01 50 x 50 Aluminium Battens (powdercoated PF-01) @100ctrs



Sandstone tiles Northern & Eastern elevation only



**Elevations - West** 



A-DA-09.04





RCHITECTURE

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Revision			Project	Architect	Stage	Project No.		
С	Updated Drawing Set	1/12/2021	Integrated Medical Office Building and Specialist Disability Accommodation	GA	Concept	1174-03		
D	Updated Drawing Set	27/01/2022	60, 62 & 64 Showground Road Gosford NSW					
E	DA Drawings	4/03/2022	Client	Descure	Chatura	Casla		
F	Additional DA RFI Amendments	22/12/2022	Client	Drawn	Status	Scale		
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Section A





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G Additional DA RFI Amendments 22/12/2022	Status
H DA RFI Amendments to Roof 2/02/2023 CHP DS	DA (NOT FOR CONSTRUCTION)

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Project No. 1174-03









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	Revision			Project	Architect	Stage	Project No.
aloution	С	Updated Drawing Set	1/12/2021	Integrated Medical Office Building and Specialist Disability Accommodation	GA	Concept	1174-03
	D	Updated Drawing Set	27/01/2022	60, 62 & 64 Showground Road Gosford NSW			
	E	DA Drawings	4/03/2022	Client	Drawn	Status	Scale
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Section C





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Signed: AW Sheet No: 26 of 49

# Concept design ground floor





North 09.01



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

paved area around the building

Garden bed to provide soft barrier between carpark and site

07/03/21 REV DATE

COMMENTS

PROJECT: Showground Road Integrated Medical Office Building

SITE: 60, 62 & 64 Showground Road Gosford NSW



# Concept design ground floor retaining wall







philodendron xanadu

Zamia furfuracea

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



Dicksonia antarctica









COMMENTS

PROJECT: Showground Road Integrated Medical Office Building

SITE: 60, 62 & 64 Showground Road Gosford NSW





# Concept design first floor



planter to create a green creeper wall of bougainvillea or star jasmine



DZ





COMMENTS

PROJECT: Showground Road Integrated Medical Office Building

SITE: 60, 62 & 64 Showground Road Gosford NSW



# Concept palette creeper wall



Green facade: Wire mesh & climber from planter





# **06** march 2022



COMMENTS

PROJECT: Showground Road Integrated Medical Office Building

SITE: 60, 62 & 64 Showground Road Gosford NSW





# **07** march 2022

F	07/03/21	
REV	DATE	CC

COMMENTS

PROJECT: Showground Road Integrated Medical Office Building

SITE:

60, 62 & 64 Showground Road Gosford NSW





08 march 2022



PROJECT: Showground Road Integrated Medical Office Building

SITE: 60, 62 & 64 Showground Road Gosford NSW









# Concept palette Podium roof garden

Tre	e options				
No.	Botanical Name	Common Name	Height	Width	
01	Magnolia grandiflora 'Exmouth	Bull Bay Magnolia	8	5.0	
Ma	ss 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	F 07/03/21 REV DATE COMMENTS
					PROJECT: Showground Road Integrated Medical Office Building SITE: 60, 62 & 64 Showground Road Gosford NS CLIENT: CHP
Lomai 'Katrin	ndra longifolia Myoporum us	parvifolium			DRAWN: DATE: SCALE:
					JOB NO. PHASE: DWG No: REV: 13922.5 DA F







Dietes iridioides



Magnolia grandiflora 'Exmouth

Planting palette

11 march 2022

> 412 king street newcastle nsw2300 ph: 49 294 926 fax: 49 263 069 www.terras.com.au



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

## GENERAL INSTRUCTIONS

- SITE MAINTENANCE INSTRUCTIONS
- THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ 7. IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT
- 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)
- ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL FROSION AND POLITION TO DOWNSLOPE AREAS

## LAND DISTURBANCE INSTRUCTIONS

- 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.
- 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.
- ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH
- WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE: INSTALL ALL BARRIER AND SEDIMENT FENCING A)
  - WHERE SHOWN ON THE PLAN. CONSTRUCT THE STABILISED SITE ACCESS.
  - CONSTRUCT DIVERSION DRAINS AS REQUIRED. INSTALL MESH AND GRAVEL INLETS FOR ANY D)
  - ADJACENT KERB INLETS. INSTALL GEOTEXTILE INLET FILTERS AROUND ANY E)
  - ON-SITE DROP INLET PITS. CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN F)
  - LOCATIONS SHOWN ON THE PLAN. UNDERTAKE ALL ESSENTIAL CONSTRUCTION G)
  - WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE
  - GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
- REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED
- ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 5 METRES WHERE PRACTICABLE, SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING
- ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL I ATFR

- THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO: ENSURE THAT DRAINS OPERATE PROPERLY AND
- A) 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
- ENSURE REHABILITATED LANDS HAVE D) EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY
- CONSTRUCT ADDITIONAL FROSION AND/OF E) 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.
- MAINTAIN EROSION AND SEDIMENT CONTROL F) STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED. THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY
- BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE THE VOLUME AND INTENSITY OF ANY RAINFALL A)
- EVENTS B) THE CONDITION OF ANY SOIL AND WATER
- MANAGEMENT WORKS THE CONDITION OF VEGETATION AND ANY NEED TO C) IRRIGATE
- THE NEED FOR DUST PREVENTION STRATEGIES. D) 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

CHP FUND

CONCLUSION OF THE WORKS.

- SEDIMENT CONTROL INSTRUCTIONS
- SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE 9. PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE
- SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS 10 EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES
- SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL 11 BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR
- STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES 12. OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS PAVED AREAS AND DRIVEWAYS.
- WATER WILL BE PREVENTED FROM DIRECTLY ENTERING 13. THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE.
- TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE 14 UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
- 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
- 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.
- STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A 19. MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
- ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, 20. 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.

- EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A 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

- ACCEPTABLE BINS WILL BE PROVIDED FOR ANY 25. CONCRETE AND MORTAR SI URRIES 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
- ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE 27 INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
- ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY 28 MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
- PROVIDE DESIGNATED VEHICULAR WASHDOWN AND 29. MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS

## PROCEDURE FOR DE-WATERING

- ENSURE PERMISSION FOR DE-WATERING IS RECEIVED FROM AUTHORITIES BEFORE PUMPING OUT.
- AN ON-SITE TREATMENT PROCESS DISCHARGING TO THE STORMWATER SYSTEM 2. 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.
- WHERE LABORATORY ANALYSIS IS REQUIRED AS INDICATED BY IN-SITU TESTING 4 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
- A FURTHER INSPECTION WILL BE CARRIED OUT DURING A STORM EVENT (DURING 5. WORK HOURS WHERE POSSIBLE) TO ENSURE CONTROLS ARE COPING WITH THE EVENT THIS APPLIES TO ANY RAIN EVENT AS WELL
- 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.
- 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

ACOR Consultants (CC) Pty Ltd Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia

PROPOSED CC

T +61 2 4324 3499 DEVELOPMEN

No.60, 62 & 64 SHOWGROUND ROAD

GOSFORD

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## SHEET INDEX

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





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# PROPOSED DEVELOPMENT No.60, 62 & 64 SHOWGROUND ROAD, GOSFORD STO **EPORT**





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	STORMWATER & WATER (	CYCLE M	ANAGEMENT REPORT	
	GENERAL NOTES		RAINWATER RE-USE SYSTEM N	OTES
1.	THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF	1.	RAINWATER SUPPLY PLUMBING TO BE CONNECTED WHERE REQUIRED BY BASIX CERTIFICATE (BY OTH	TO OUTLETS ERS)
	DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS. WHERE DISCREPANCIES ARE FOUND ACOR CONSULTANTS (CC) MUST BE CONTACTED IMMEDIATELY FOR VERIFICATION	2.	TOWN WATER CONNECTION TO RAINWATER TANK T SATISFACTION OF THE REGULATORY AUTHORITY. REQUIRE PROVISION OF: 2.1. PERMANENT AIR GAP	TO BE TO THE THIS MAY
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.	NO DIRECT CONNECTION BETWEEN TOWN WATER S RAIN WATER SUPPLY	SUPPLY AND THE
3.	SUBSOIL DRAINAGE SHALL BE DESIGNED AND DETAILED BY THE STRUCTURAL ENGINEER. SUBSOIL DRAINAGE SHALL NOT BE	4.	AN APPROVED STOP VALVE AND/OR PRESSURE LIN THE RAINWATER TANK	1ITING VALVE AT
	CONNECTED INTO THE STORMWATER SYSTEM IDENTIFIED ON THESE PLANS UNLESS APPROVED BY ACOR CONSULTANTS (CC)	5.	PROVIDE AT LEAST ONE EXTERNAL HOSE COCK ON WATER SUPPLY FOR FIRE FIGHTING	THE TOWN
	STORMWATER CONSTRUCTION NOTES	6.	PROVIDE APPROPRIATE FLOAT VALVES AND/OR SO TO CONTROL TOWN WATER SUPPLY INLET TO TANK ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL I	LENOID VALVES ( IN ORDER TO DETAIL
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	7.	ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY PLUMBERS IN ACCORDANCE WITH AS/NZS3500.1 NA AND DRAINAGE CODE	( Licensed Tional Plumbing
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	8.	PRESSURE PUMP ELECTRICAL CONNECTION TO BE A LICENSED ELECTRICIAN	CARRIED OUT BY
3.	AUTHORITY THE MINIMUM GRADIENT OF STORMWATER DRAINS SHALL BE 1%,	9.	ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE R SURFACE WATER INLETS ARE NOT TO BE CONNECT	AINWATER TANK . Ted
4.	UNLESS NOTED OTHERWISE COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO. NO TREES SHALL BE REMOVED UNTIL PERMIT IS OBTAINED	10.	PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBIN APPROVED MATERIALS TO AS/NZS3500 PART 1 SEC CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINW BE ACHIEVED FOR BELOW GROUND PIPES USING ID TAPE (MADE IN ACCORDANCE WITH AS2648) OR FOR	NG ARE TO BE TION 2 AND TO BE VATER'. THIS MAY DENTIFICATION R ABOVE GROUND
5.	PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY AT THE CLIENT'S EXPENSE		PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN WITH AS1345)	N ACCORDANCE
6.	ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP	11.	EVERY RAINWATER SUPPLY OUTLET POINT AND TH TANK ARE TO BE LABELED 'RAINWATER' ON A META ACCORDANCE WITH AS1319	E RAINWATER LLIC SIGN IN
7.	MAKE SMOOTH JUNCTION WITH ALL EXISTING WORK	12.	ALL INLETS AND OUTLETS TO THE RAINWATER TAN SUITABLE MEASURES PROVIDED TO PREVENT MOS	K ARE TO HAVE QUITO AND
8.	VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION		VERMIN ENTRY	
9.	SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM			
	INVESTIGATIONS AND ARE NOT GUARANTEED COMPLETE NOR			
	CORRECT. IT IS THE CLIENT & CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION	00		SHEET C1
		510		SHEET C2
10.	ANY VARIATION TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY ACOR CONSULTANTS (CC)	510		SHEET CA
	PRIOR TO THEIR COMMENCEMENT	510		SHEET CE
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ISSUED FOR CLIENT REVIEW	05.07.22	SJ	BK		
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FLOOD SUMMARY

ACOR Consultants (CC) Pty Ltd Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia PROPOSED COMME T +61 2 4324 3499 DEVELOPMENT <del>\_</del> @ @ No.60, 62 & 64 SHOWGROUND ROAD GOSFORD

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PROPOSED PIT SURFACE LEVELS AND INVERTS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION



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# **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.dm" 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 <sup>2</sup> )	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.dm
- 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 <sup>3</sup> )
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.

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

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BASED ON THE FOREGOING AN OSD TANK OF 41 m<sup>3</sup> 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.

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# WATER QUALITY REPORT

# 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%

### **ON - SITE RETENTION TARGET** 1.1

Table 2

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

Stormwater Retention Volume Target (m<sup>3</sup>)

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

Fraction Impervious (%)

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

## STUDY METHODOLOGY 2.

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.

### RAINFALL AND EVAPOTRANSPIRATION DATA 3.

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.

### STORMWATER QUALITY MODELLING 4.

# 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.	2 -
JAN	
180.11	
JUL	
43.09	

# 4.3 CATCHMENT DEFINITION

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	Client Architect ACOR Consultants (CC) Pty Ltd Project									Project
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1	0 1cm at full size 10cm		<u> </u>		1			CONSULTANTS =	NGINEERS MANAGERS INFRASTRUCTURE PLANNERS DEVELOPMENT CONSULTANTS	GUSFURD

BLE 4.1 - DETAILS OF DAILY RAINFALL DATA						
NAME	PERIOD	TIMESTEP				
SYDNEY BSERVATORY HILL	01/01/1974-01/01/1994	6 min				

SUMMARY OF POTENTIAL EVAPOTRANSPIRATION (PET)										
FEB	MAR	APR	MAY	JUN						
134.96	128.03	84.90	57.97	42.90						
AUG	SEP	OCT	NOV	DEC						
57.97	57.97 87.90 127.10 152.10 163.06									

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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## MUSIC MODEL 5.

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 PROPERTI	<u>ES</u>					
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 PROPERTI	ES					
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

TAB	LE 5.2 - AI	ATER QU	ALITY F	ARAMETE	ERS			
LAND	I AND-USE		Log <sub>10</sub> TSS (mg/L)		Log₀TP (mg/L)		Log₀ TN (mg/L)	
CATE	GORY	STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW	
GENERAL	MEAN	2.15	1.20	-0.60	-0.85	0.30	0.11	
URBAN	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12	
	MEAN	2.43	*	-0.3	*	0.34	*	
ROADS	STD DEV	0.32	*	0.25	*	0.19	*	
	MEAN	1.30	*	-0.89	*	0.30	*	
ROOFS	STD DEV	0.32	*	0.25	*	0.19	*	

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

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# 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.

### **RESULTS & CONCLUSION** 6.

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

TA				
PARAMETER	SOURCE RUNOFF	DISCHARGE FROM SITE	REDUCTION	
POST-D				
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-DEVELO	PMENT	-	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%

Location	Rainwater Tank (82 kL	Products >
Inlet Properti	es	
Low Flow By	-pass (cubic metres per	sec) 0.000000
High Flow B	y-pass (cubic metres per	sec) 100.000000
Individual Ta	nk Properties	
Number	of Tanks	1
Total Tank P	roperties	
Storage Pr	operties	
Volume be	low overflow pipe (kL)	82.00
Depth abo	we overflow (metres)	0.20
Surface A	rea (square metres)	41.0
Initial Volu	me (kL)	41.00
Outlet Prop	erties	
Overflow I	Pipe Diameter (mm)	225
T Use Cu	istom Outflow and Stora	ge Relationship
Diete	sa Custian Onthree Sun -	Northerne Mar Deliced
- Count	in the former in the second	The states of
Re-use	Fluxes	Notes More
	Y Canadi	Endi Daibi

# 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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	Designed	Project No.	Dwg. No.	Issue				
	BK	CC2202	233	C12	В			



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					North	СНР
В	ISSUED FOR DEVELOPMENT APPLICATION	06.07.22	SJ	BK		
A	ISSUED FOR CLIENT REVIEW	05.07.22	SJ	BK		
Issue	Description	Date	Drawn	Approved		
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)	SJ Design	ed	05.07.22 Project No.	AS NOTED	- Dwg. No.	- Issue
	ВК		CC220	233	C13	В

# 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 EVENTFLOOD LEVEL (m AHD)FLOOD PLANNING LEVEL (COMMERCIAL LAND USE)FLOOD PLANNING LEVEL (SENSITIVE LAND USE)								
10% AEP	10.10							
5% AEP	10.14							
2% AEP	10.17	10.76 m AHD	11.9 m AHD					
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.

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						Client
					North	
В	ISSUED FOR DEVELOPMENT APPLICATION	06.07.22	SJ	BK		
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**Department of Planning** 

Issued under the Environmental Planning and Assessment Act 1979 Approved Application No: DA 22/11444

and Environment

NSW

Approved on: 24 May 2023

Signed: AW Sheet No: 49 of 49

# ELEVATION ARCHITECTURE



ACOR Consultants (CC) Pty Ltd Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499 DEVELOPMENT <del>\_\_</del>@@

# 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 NOTE 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.

PROPOSED COMMERCIAL	FLOOD SUMMARY							
DEVELOPMENT	Drawn	Date	Scale A1	Q.A. Check	Date			
No.60, 62 & 64	SJ	05.07.22	AS NOTED	-	-			
SHOWGROUND ROAD	Designed	Project No.		Dwg. No.	Issue			
GOSFORD	BK	CC2202	233	C14	В			