Civil Engineering Report

Aura Early Learning Centre
Nirimba Drive, Nirimba

Date 11 November 2024

Prepared by **MPN Consulting Pty Ltd**
Level 4, Building 3, Kings Row Office Park
42 McDougall Street, Milton, Qld, 4064

mpnc.au

Revision Status

MPN Reference No:	10209
Client:	Griffith Group
Site Address:	Nirimba Drive, Nirimba
Report Title:	Civil Engineering Report

Document Control

Version	Date	Author	Reviewer	Approved	RPEQ
Issue A	12/09/2024	Roné van Zyl	Matthew Hendle		19730
Issue B	8/11/2024	Sam Rowen	Matthew Hendle		19730
Issue C	11/11/2024	Rone Van Zyl	Sam Rowen		32198

Contents

1 > Executive Summary 5

2 > Purpose 6

3 > Introduction 6

3.1 Project Description 6

4 > Site Characteristics 7

4.1 Site Location 7

4.2 Topography and Existing Site 7

5 > Site Data 8

6 > Stormwater 8

7 > Water Supply 8

8 > Sewer 9

9 > Roadworks 9

10 > Earthworks 10

11 > Electricity and Telecommunications 10

12 > Gas 10

13 > Codes 11

14 > Conclusion 12

15 > Limitations of Report 12

Table of Figures

Figure 1 – Proposed Development 6
Figure 2 – Site Location 7

Table of Appendices

Appendix A. Architectural Plans 13
Appendix B. MPN Plans 14
Appendix C. SCRC Codes 15

1 > Executive Summary

This report has been commissioned by Griffith Group in support of the Development Application for the proposed Early Learning Centre located in Nirimba Drive, Nirimba.

This report addresses the following Engineering aspects of the proposed development:

- Topography
- Earthworks
- Water supply
- Sewerage
- Electricity and Telecommunications
- Roadworks
- Codes.

2 > Purpose

This Civil Engineering Report has been prepared in support of the Development Application for the proposed early learning centre at Nirimba Drive, Nirimba.

3 > Introduction

3.1 Project Description

The current proposal involves the construction of a new 2 storey early learning centre with outdoor recreational areas, landscape and on grade car parking.

The proposed development is depicted on the architectural plans prepared by Elevation Architects attached in Appendix A, with excerpt below.



Figure 1 – Proposed Development

4 > Site Characteristics

4.1 Site Location

The site is located in Nirimba Drive, Nirimba and is part of the Aura community development that is being completed by others.

The site is bounded by residential developments to the east, south and west, and a neighbourhood centre to the north.



Figure 2 – Site Location

4.2 Topography and Existing Site

The existing site has been cleared of vegetation and generally levelled as part of the Aura development.

The site grades down from a high RL of approximately 10m AHD in the south-west to a low RL of approximately 9m AHD in the north-east. The site is relatively flat with an average grade of 1%.

Stormwater runoff from the existing site overland flows to the north-east. The site is part of the Aura community development in Nirimba and falls within Catchment 11 of the Approved Stormwater Quality Management Plan.

5 > Site Data

Site data has been obtained from the following sources of information:

- Sunshine Coast Regional Council
- Bureau of Meteorology
- Before You Dig Australia (BYDA)
- Discussions with Relevant Authorities
- Relevant Reports
- Satellite Imagery

6 > Stormwater

A site-based Stormwater Management Plan has been completed for the site and will be lodged under separate cover.

7 > Water Supply

There are no existing water mains in and around the site. New water mains will be constructed as part of the Aura community development by others.

A new water connection will be constructed to service the proposed early learning centre. The size of the new connection will be confirmed in consultation with the hydraulic consultant and Unitywater during the detailed design stage of the development.

The location of the proposed water connection is shown on MPN Plan 10209 -DA.03 attached in Appendix B.

8 > Sewer

There are no existing sewer mains in and around the site. New sewer mains will be constructed as part of the Aura community development by others.

A new sewer property connection will be constructed to service the proposed early learning centre. The size and arrangement of the new connection will be confirmed in consultation with the hydraulic consultant and Unitywater during the detailed design stage of the development.

The location of the proposed sewer connection is shown on MPN Plan 10209 -DA.03 attached in Appendix B.

9 > Roadworks

Access to the development will be provided via a new crossover located near the centre of the southern boundary. External roadworks and footpaths will be constructed as part of the Aura community development by others.

The proposed internal car parking layout is shown on the architectural plans prepared by Elevation Architects attached in Appendix A.

All roadworks and car parks will be designed and constructed in accordance with the relevant Sunshine Coast Regional Council and Australian Standards.

10 > Earthworks

The proposed development will involve earthworks to construct the new internal carpark, building pads, landscape and outdoor recreational areas along with trenching for underground utilities and services.

The site will be levelled as part of the Aura community development by others and retaining walls are unlikely to be required along the external site boundaries.

The design and construction of earthworks will be in accordance with the recommendations of the geotechnical report along with AS 3798 – Guidelines on Earthworks for Commercial and Residential Developments.

Any excavated material not suitable for fill will be removed from the site and disposed of appropriately in an approved landfill.

All filling operations will be completed under Level 1 geotechnical supervision.

A preliminary bulk earthworks layout is shown on MPN Plan 10209 – DA.01 attached in Appendix B.

11 >Electricity and Telecommunications

The proposed development will be serviced for electricity and telecommunications from future overhead and underground infrastructure to be constructed as part of the Aura community development by others. All works will be undertaken in accordance with the appropriate authority and Australian Standards.

12 > Gas

There are no existing gas mains located in the vicinity of the site. If gas is required to service the proposed development, APA will need to be contacted to arrange a connection to the site.

13 > Codes

The following Sunshine Coast Regional Council Planning Codes have been addressed as part of this development. These code responses are attached in Appendix C.

- Works, Services and Infrastructure Code; and
- Stormwater Management Code.

14 > Conclusion

A new water connection will be constructed to service the proposed early learning centre. The size of the new water connection will be confirmed in consultation with the hydraulic consultant and Unitywater during the detailed design stage of the development.

A new sewer property connection will be constructed to service the proposed development. The size and arrangement of the new connection will be confirmed in consultation with the hydraulic consultant and Unitywater during the detailed design stage of the development.

Access to the development will be provided via a new crossover located near the centre of the southern boundary. All roadworks and car parks will be designed and constructed in accordance with the relevant Sunshine Coast Regional Council and Australian Standards.

Earthworks will be undertaken on site to construct the building platform, landscape areas, and carparking, along with trenching for underground services. The design and construction of the earthworks will be undertaken in accordance with AS 3798 – Guidelines on Earthworks for Commercial and Residential Developments.

The proposed development will be serviced for electricity and telecommunications from future overhead and underground infrastructure to be constructed as part of the Aura community development by others.

There is no gas mains located in the vicinity of the site. If gas is required to service the development, APA will need to be contacted to arrange a connection to the site.

15 > Limitations of Report

MPN have prepared this report for the proposed early learning centre in Nirimba Drive, Nirimba in accordance with MPN's proposal to Griffith Group. This report is provided for the exclusive use of Griffith Group for this specific project and its requirements. It should not be used by or relied upon by a third party and MPN accept no responsibility for the use of this report by any party other than Griffith Group.

Appendix A. Architectural Plans

FLOOR PLAN LEGEND

Steel Studs - 92mm typical

BAL-1	Balustrade type
CHS	Circular Hollow Section
FE	Fire Extinguisher,
FW	Floor Waste
HR	Handrail
LBO	Line of Building Over
LRO	Line of Roof Over
LSO	Line of Slab Over
MRS-1	Metal Roof Sheeting
TIL-1	Tiles
RB	Roof Beam
TOW	Top Of Wall
USAB	UniverSal Accessible Bathroom
WH	Window Hood
WS	WheelStop - (concrete) to comply with AS.2890.1

Brand Colour

Brand Colour

Brand Colour

Brand Colour

Indicative Boundary

Outdoor Play (9%)
Area: 1,004.60
Occupancy: 130
Age: 2+ yrs

6m SETBACK

Ext Store

Sleep Room

Classroom 1 (0%)
Age: 0-24 mnths
Area: 39.20
Occupancy: 12

Bathroom 1

Food Prep 1

Store

Classroom 2 (0%)
Age: 0-24 mnths
Area: 39.20
Occupancy: 12

Ext Store

Sleep Room

Sleep Room

Yoga Room / Classroom

Bathroom 2

Food Prep 2

Classroom 4 (0%)
Age: 2-3 yrs
Area: 65.60
Occupancy: 20

Bed Bed

Classroom 5 (0%)
Age: 2-3 yrs
Area: 65.60
Occupancy: 20

Bathroom 3

Food Prep 3

Classroom 6 (0%)
Age: 3-5 yrs
Area: 72.00
Occupancy: 22

Ext Store

Bed

Classroom 7 (0%)
Age: 3-5 yrs
Area: 72.00
Occupancy: 22

Bathroom 4

Food Prep 4

Classroom 8 (0%)
Age: 3-5 yrs
Area: 72.00
Occupancy: 22

Bed

Bed

Brand Colour

Indicative Boundary

6m SETBACK

Deep Landscape 16.8 m²

3,000

Secure Entry

Manager

Kitchen

PWD

Laundry

Bin Store

Store

Bike House

4 x Secure Bike Store

Pedestrian Link

Public Footpath Connection

15,000L Subgrade Rainwater Tank

Deep Landscaping 47.6 m²

Carpark
38 Spaces

Crossover to SCC Requirements

600mm low height vegetation (Carpark Nose)

Deep Landscaping 47 m²

Indicative Boundary

Brand Colour

elevation architecture

Contact
(07) 3251 6900
20 Prospect St, Fortitude Valley QLD 4006
info@elevationarchitecture.com.au

Revision

G	Consultant Coordination Issue	19/09/2024
H	Consultant Coordination Issue	1/10/2024
I	Consultant Coordination Issue	3/10/2024
J	Consultant Coordination Issue	25/10/2024
K	Consultant Coordination Issue	30/10/2024

Project
Aura Early Learning Centre
Nirimba Drive, Nirimba

Client
Griffith Group

Stage
Development Application

Status
Preliminary
NOT FOR CONSTRUCTION

Architect
BL

Drawn
AM

Project No.
1149-33

Scale
1:100 at A1

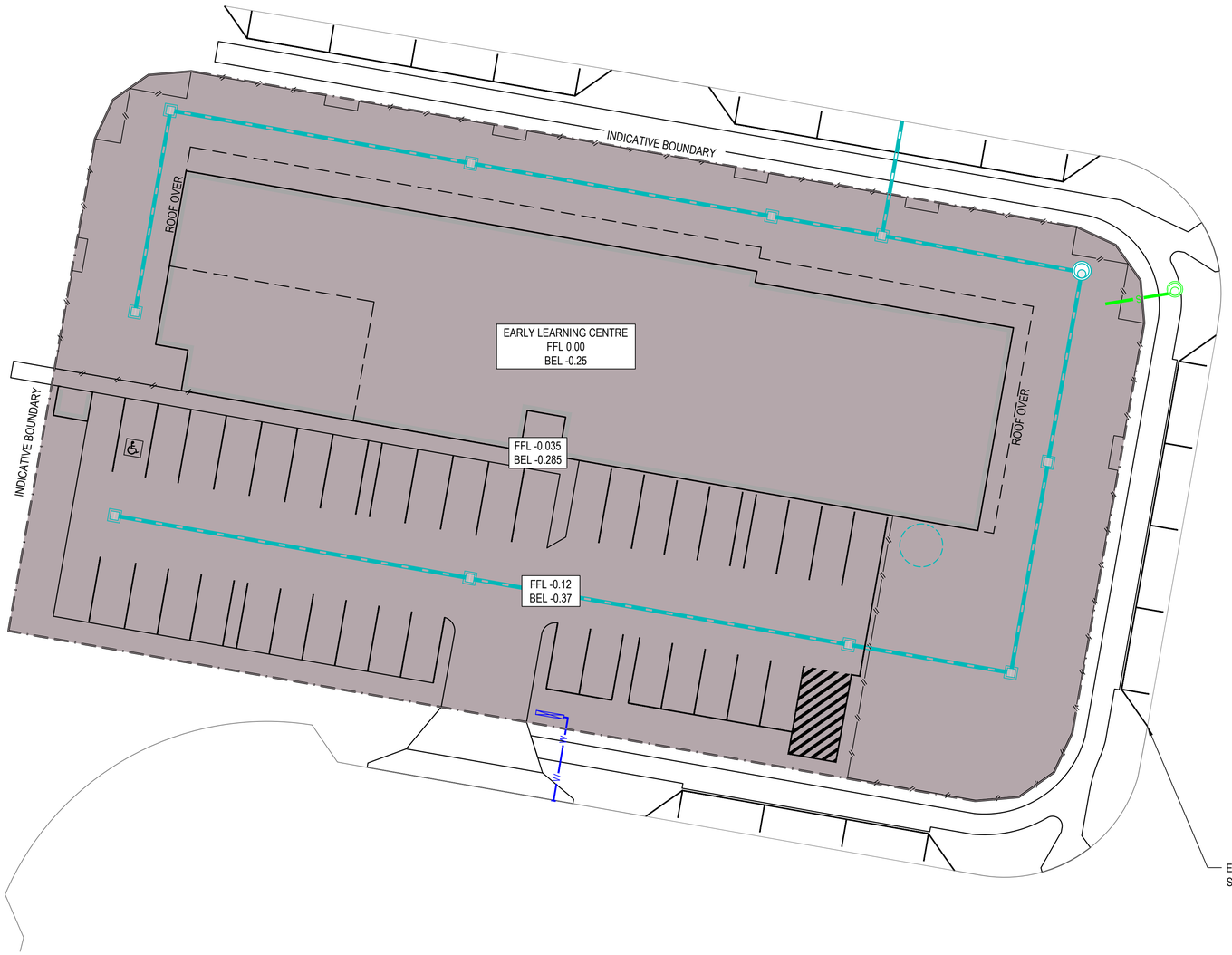
Floor Plan - Ground

A-DA-03.01 K

Elevation Architecture Pty Ltd ACN 606 170 807 © Copyright reserved this document is and shall remain the property of Elevation Architecture. Unauthorised use of this document in any form whatsoever is prohibited. All information to be printed in colour. Figured dimensions take precedence over scale dimensions. Contractors must verify all dimensions on site before commencing any work or making shop drawings.

P:\Data 1\1149-33 Aura Early Learning Centre\5.2 Development Application\1149-33_Master DA 27 - Verandah.pln

Appendix B. MPN Plans

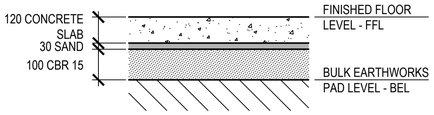


N

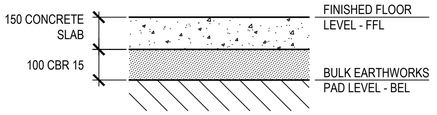
LEGEND

EXISTING		PROPOSED
	PROPERTY BOUNDARY	
	EASEMENT BOUNDARY	
5.00	CONTOUR	5.00
	BUILDING	
	CONCRETE	
	EDGE OF BITUMEN	
	KERB	
	KERB AND CHANNEL	
	FLUSH KERB	
SW	STORM WATER MAIN	
S S	SEWER MAIN	S S
W W	WATER MAIN	W W
G G	GAS MAIN	
T T	TELECOMMUNICATIONS	
OF	OPTIC FIBRE	
E E	U/G ELECTRICITY	
	O/H ELECTRICITY	
	FENCE	
	RETAINING WALL	RET WALL
WM	WATER METER	WM
FH	FIRE HYDRANT	
X	VALVE	
	CUT AREA	
	FILL AREA	

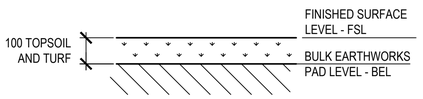
NOTE
EARTHWORKS TO BE DESIGNED TO SUIT EXTERNAL SUBDIVISION ROAD LEVELS.



BUILDING WORKING PLATFORM DETAIL
N.T.S.



CAR PARK WORKING PLATFORM DETAIL
N.T.S.



LANDSCAPE AREAS WORKING PLATFORM DETAIL
N.T.S.

FOR APPROVAL

NOT FOR CONSTRUCTION

0 2 4 6 8 10
SCALE 1:200 (A1) 1:400 (A3)

ISSUE	DATE	AMENDMENT	BY	APP
C	11.11.24	FOR APPROVAL	MA	SR
B	08.11.24	FOR APPROVAL	MA	SR
A	10.09.24	FOR APPROVAL	RvZ	SR

AURA EARLY LEARNING CENTRE
NIRIMBA DRIVE
NIRIMBA

SCALES: AS SHOWN
DESIGN: RvZ
DRAWN: RvZ
CHKD:
APPRD:
DATE:

CLIENT:
GRIFFITH GROUP

BULK EARTHWORKS PLAN

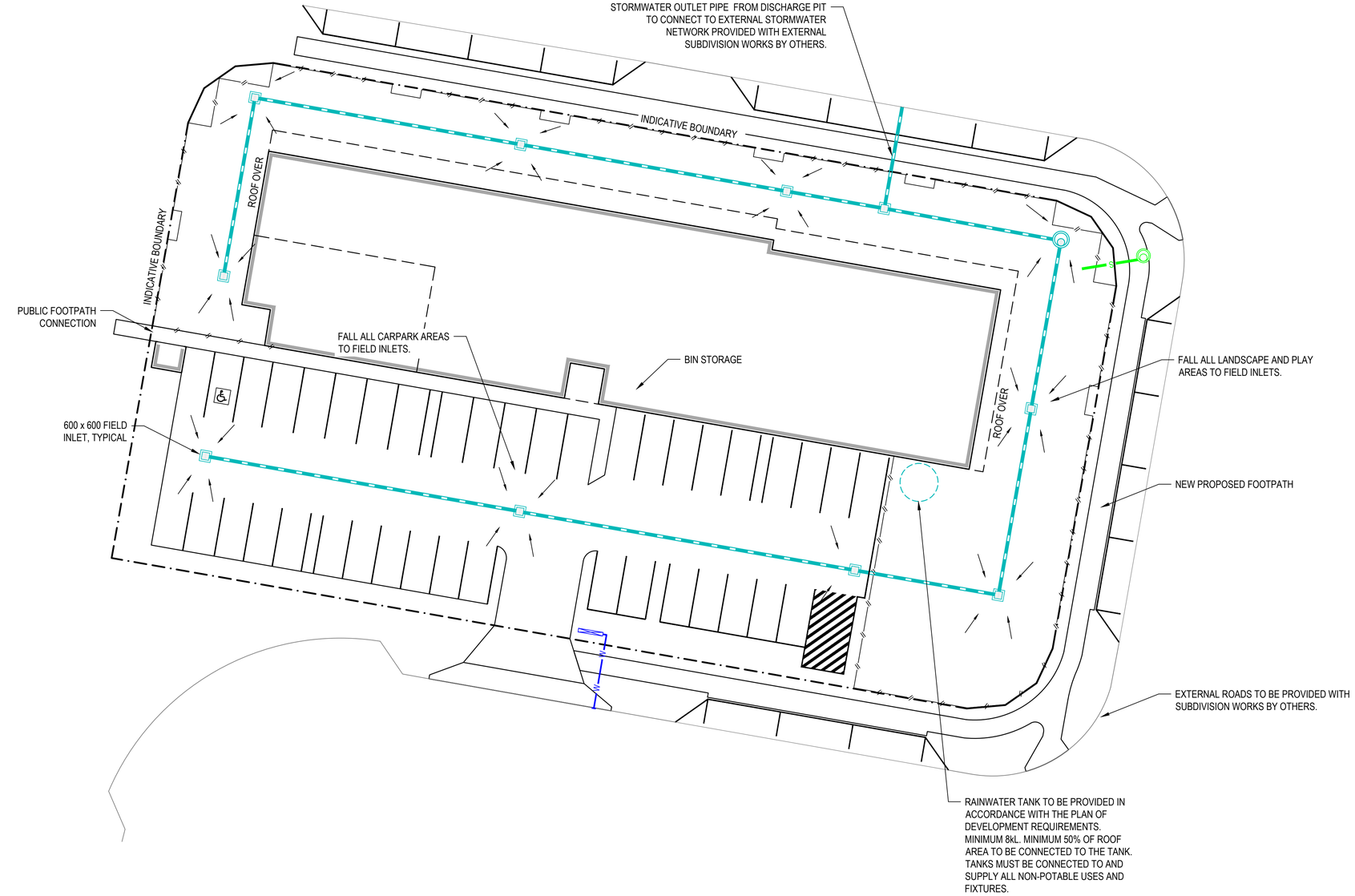
MPN CONSULTING
ABN: 39 062 191 799
P: 61 7 3335 4555
E: solutions@mpnc.au
Level 4, Building 3,
Kings Row Office Park,
42 McDougall Street, Milton, QLD, 4064

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2023 ©

mpn JOB
10209

DRAWING No.
DA.01

REV
C



N

LEGEND

EXISTING		PROPOSED
	PROPERTY BOUNDARY	
	EASEMENT BOUNDARY	
5.00	CONTOUR	5.00
	BUILDING	
	CONCRETE	
	EDGE OF BITUMEN	
	KERB	
	KERB AND CHANNEL	
	FLUSH KERB	
SW	STORM WATER MAIN	
S S	SEWER MAIN	S S
W W	WATER MAIN	W W
G G	GAS MAIN	
T T	TELECOMMUNICATIONS	
OF	OPTIC FIBRE	
E E	U/G ELECTRICITY	
	O/H ELECTRICITY	
	FENCE	
	RETAINING WALL	RET WALL
	WATER METER	
FH	FIRE HYDRANT	
X	VALVE	

NOTE
OCEAN PROTECT OCEANGUARDS TO BE PROVIDED TO ALL STORMWATER PITS.

NOTE
ROOFWATER CONNECTIONS TO BE PROVIDED TO STORMWATER PITS IN CONSULTATION WITH THE NOMINATED HYDRAULICS CONSULTANT DURING DETAILED DESIGN.

0 2 4 6 8 10
SCALE 1:200 (A1) 1:400 (A3)

ISSUE	DATE	AMENDMENT	BY	APP
C	11.11.24	FOR APPROVAL	MA	SR
B	08.11.24	FOR APPROVAL	MA	SR
A	10.09.24	FOR APPROVAL	RvZ	SR

AURA EARLY LEARNING CENTRE
NIRIMBA DRIVE
NIRIMBA

SCALES: AS SHOWN
DESIGN: RvZ
DRAWN: RvZ
CHKD:
APPRD:
DATE:

CLIENT:
GRIFFITH GROUP

STORMWATER LAYOUT PLAN

MPN CONSULTING
ABN: 39 062 191 799
P: 61 7 3335 4555
E: solutions@mpnc.au
Level 4, Building 3, Kings Row Office Park, 42 McDougall Street, Milton, QLD, 4064

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2023 ©

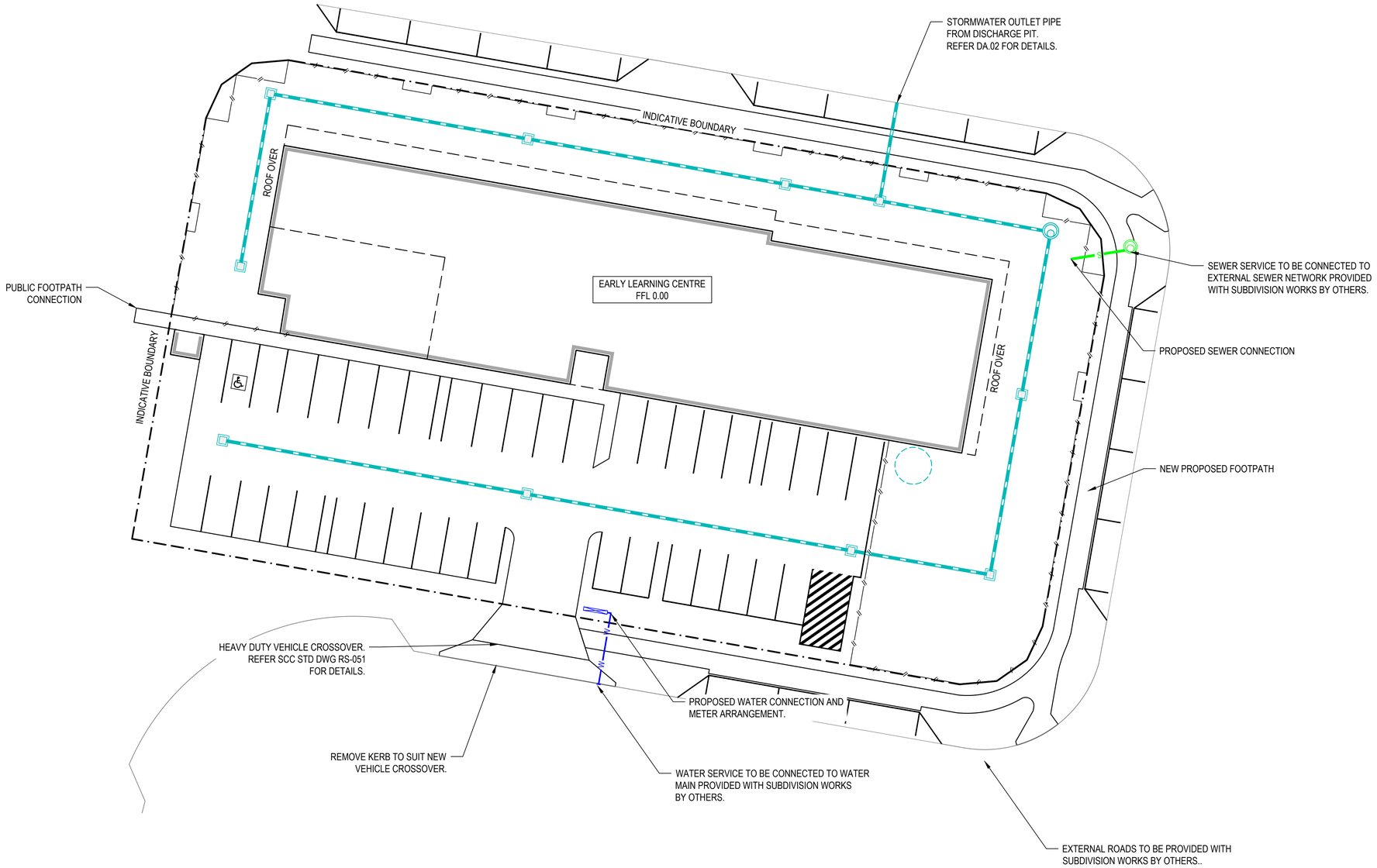
mpn JOB
10209

DRAWING No.
DA.02

REV
C

FOR APPROVAL

NOT FOR CONSTRUCTION



LEGEND

EXISTING		PROPOSED
	PROPERTY BOUNDARY	
	EASEMENT BOUNDARY	
5.00	CONTOUR	5.00
	BUILDING	
	CONCRETE	
	EDGE OF BITUMEN	
	KERB	
	KERB AND CHANNEL	
	FLUSH KERB	
SW	STORM WATER MAIN	
S S	SEWER MAIN	S S
W W	WATER MAIN	W W
G G	GAS MAIN	
T T	TELECOMMUNICATIONS	
OF	OPTIC FIBRE	
E E	U/G ELECTRICITY	
	O/H ELECTRICITY	
	FENCE	
	RETAINING WALL	RET WALL
	WATER METER	
FH	FIRE HYDRANT	
X	VALVE	

0 2 4 6 8 10

SCALE 1:200 (A1) 1:400 (A3)

ISSUE	DATE	AMENDMENT	BY	APP
C	11.11.24	FOR APPROVAL	MA	SR
B	08.11.24	FOR APPROVAL	MA	SR
A	10.09.24	FOR APPROVAL	RvZ	SR

AURA EARLY LEARNING CENTRE

NIRIMBA DRIVE
NIRIMBA

SCALES: AS SHOWN
DESIGN: RvZ
DRAWN: RvZ
CHKD:
APPRD:
DATE:

CLIENT:
GRIFFITH GROUP

SERVICES LAYOUT PLAN

MPN CONSULTING
ABN: 39 062 191 799
P: 61 7 3335 4555
E: solutions@mpnc.au
Level 4, Building 3,
Kings Row Office Park,
42 McDougall Street, Milton, QLD, 4064

COPYRIGHT: THIS DESIGN AND PLANS ARE NOT TO BE USED OR REPRODUCED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION OF MPN CONSULTING PTY LIMITED 2023 ©

mpn JOB
10209

DRAWING No.
DA.03

REV
C

FOR APPROVAL

NOT FOR CONSTRUCTION

Appendix C. SCRC Codes

STORMWATER MANAGEMENT CODE
Performance Criteria and Acceptable Solution
Aura Early Learning Centre
Nirimba Drive - Nirimba
11 November 2024

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
Development Design		
PO1 Development design, including but not limited to layout, scale, intensity and staging, is based on a thorough assessment of: a) site characteristics; b) potential environmental risks; and c) the likely effectiveness and limitations of available erosion and sediment control and stormwater drainage measures to achieve protection of the environmental values of water and the functioning of stormwater infrastructure, both during and post construction.	**AO1** No acceptable outcome provided.	**RO1** Complies – The proposed development design has provided due consideration to site characteristics and potential environmental risks resulting from the construction and long term use of the development.
Stormwater Drainage Systems		
PO2 Development is provided with a stormwater drainage system which: a) incorporates allowance for climate change; and b) ensures the development is adequately drained, and stormwater is managed and lawfully discharged without altering	**AO2.1** Development is provided with a stormwater drainage system which is designed and constructed in accordance with the standards specified in the Planning scheme policy for development works.	**RO2.1** Complies – The proposed stormwater drainage system will be designed and constructed in accordance with the Planning Scheme Policy for development works.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
stormwater drainage characteristics external to the site.		
	AO2.2 The stormwater drainage system connects to a lawful point of discharge in accordance with the Planning scheme policy for development works.	**RO2.2** Complies – The stormwater drainage system connects to a lawful point of discharge in accordance with the Planning scheme policy for development works. Refer to the Stormwater Management Plan for further information.
	AO2.3 Stormwater flows discharged from the development are either within the capacity of the downstream drainage system such that non-worsening occurs, or are mitigated to pre-development characteristics.	**RO2.3** Complies – The Stormwater flows discharging from the north east catchment will be limited to the pre-development flows. The flows from the balance site area will discharge to the rural zone and no detention is proposed. Refer to the Stormwater Management Plan for further information.
	AO2.4 Development provides for the management of stormwater to incorporate appropriate allowance for climate change impacts (including rainfall intensity and sea level rise), in accordance with the Planning scheme policy for development works.	**RO2.4** Not applicable – The development does not involve the design of coastal and waterfront structures.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO3 Development is provided with stormwater conveyance channels which use natural channel design principles to convey external catchment stormwater through development and support landscape, passive recreation, and ecological values.	**AO3.1** Development is provided with stormwater conveyance channels designed in accordance with the standards specified in the Planning scheme policy for development works.	**RO3.1** Not applicable – No stormwater conveyance channels are proposed as part of the development as runoff from the development does not pass through or drain to natural channels, non-tidal waterways or wetlands.
	AO3.2 Landscape and ecological features (e.g. plant species and habitat types) used in stormwater conveyance channels are complementary to the local context, including natural waterways.	**RO3.2** Not applicable – No stormwater conveyance channels are proposed as part of the development as runoff from the development does not pass through or drain to natural channels, non-tidal waterways or wetlands.
	AO3.3 Bank and bed stability and planting densities result in a stable channel over the long term and minimal potential for invasive weed growth.	**RO3.3** Not applicable – No stormwater conveyance channels are proposed as part of the development as runoff from the development does not pass through or drain to natural channels, non-tidal waterways or wetlands.
PO4 Stormwater infrastructure is designed to minimise maintenance costs and the requirement for specialised equipment or maintenance techniques.	**AO4** Stormwater infrastructure is designed and constructed in accordance with the standards specified in the Planning scheme policy for development works.	**RO4** Complies – The proposed stormwater infrastructure has been designed and will be constructed to minimise maintenance costs and techniques in accordance with the Planning Scheme Policy for development works.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO5 Development avoids stormwater inflow and infiltration to the sewer infrastructure network.	**AO5** No acceptable outcome provided.	**RO5** Complies – The development will avoid stormwater inflow and infiltration to the sewer infrastructure network.
Hydrology and Waterway Stability		
PO6 Development prevents increased channel bed and bank erosion in waterways by limiting changes in flow rate and flow duration within receiving waters.	**AO6** Stormwater discharges are mitigated to achieve the waterway stability objective specified in the Planning scheme policy for development works.	**RO6** Complies – Stormwater discharges will be mitigated to achieve the waterway stability objective specified in the Planning scheme policy for development works.
PO7 Development protects in-stream ecology by maintaining predevelopment low flow discharge regimes.	**AO7** Frequent stormwater discharges are captured and managed to achieve the frequent flow management objective specified in the Planning scheme policy for development works.	**RO7** Complies – Bioretention basins are proposed which will assist in achieving the development's frequent flow objectives.
PO8 Development ensures adequate surface and sub-surface water to maintain the environmental values of water dependent ecosystems, including downstream in stream and off stream aquatic, riparian, wetland and terrestrial ecosystems.	**AO8** Stormwater harvesting (excluding roof water harvesting) and the location and form of stormwater discharge points do not compromise the pre-development hydrology of receiving waters.	**RO8** Complies – The location and form of stormwater discharge points will not compromise the pre-development hydrology of receiving waters.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO9 Development protects or enhances the environmental values and water quality objectives of receiving waters or buffer areas within or downstream of a site.	**AO9.1** Stormwater discharges achieve the pollutant load reduction objectives specified in the Planning scheme policy for development works.	**RO9.1** Complies – The proposed stormwater discharges will achieve the stormwater quality management objectives in the Planning Scheme Policy for development works. Refer to the Stormwater Management Plan for further information.
	AO9.2 Where a development includes or adjoins a constructed waterbody or a buffer to a waterway or wetland, the pollutant load reduction targets are met prior to the discharge entering that buffer or waterbody.	**RO9.2** Not applicable – The development does not adjoin or include a constructed waterbody or buffer to a waterway or wetland.
PO10 Treatment systems that use natural processes and materials are integrated into the development, wherever practicable, taking into account the whole of life cycle cost to enhance biodiversity and landscape benefits.	**AO10** No acceptable outcome provided.	**RO10** Complies – Bioretention basins are proposed to achieve the development's stormwater quality objectives. Refer to the Stormwater Management Plan for further information.
PO11 Treatment systems are designed to eliminate or minimise health, safety and aesthetic hazards.	**AO11** Risks associated with insect breeding, odour and public safety are minimised by designing treatment systems in accordance with the Planning scheme policy for development works.	**RO11** Complies – The stormwater management system will be designed in accordance with the Planning scheme policy for development works.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO12 Treatment systems are designed to minimise maintenance, renewal and adaptation costs and the requirement for specialised equipment or maintenance techniques.	**AO12** Design achieves acceptable maintenance, renewal and adaptation costs for the project life20 in accordance with the Planning scheme policy for development works.	**RO12** Complies – The design achieves acceptable maintenance, renewal and adaptation costs for the project life in accordance with the Planning scheme policy for development works.
Stormwater Harvesting and Re-use		
PO13 Development provides for stormwater capture, in addition to roof water capture.	**AO13** Stormwater harvesting systems are designed in accordance with the standards specified in the Planning scheme policy for development works.	**RO13** Performance criteria applies – Rainwater harvesting devices may be provided as part of the building works however this does not form part of the stormwater treatment train.
PO14 Stormwater capture for the purpose of substituting for potable water use does not create a health, safety or aesthetic hazard.	**A014.1** Stormwater harvesting systems are designed in accordance with the standards specified in the Planning scheme policy for development works.	**RO14.1** Performance criteria applies – Rainwater harvesting devices may be provided as part of the building works however this does not form part of the stormwater treatment train.
	AO14.2 Water quality treatment is designed, established and monitored to human health standards appropriate for the intended use.	**RO14.2** Performance criteria applies – Rainwater harvesting devices may be provided as part of the building works however this does not form part of the stormwater treatment train.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO15 Stormwater harvesting systems are designed to minimise maintenance costs and the requirement for specialised equipment or maintenance techniques and are provided with an ongoing funding source.	**AO15.1** For systems that are to be dedicated to Council as public assets, there is an overriding community benefit resulting from the stormwater harvesting system.	**RO15.1** Not applicable – No stormwater infrastructure is proposed to be dedicated to Council as part of the development.
	AO15.2 A detailed operations and maintenance budget is prepared for the project life and financial assurances are in place to operate and maintain the system for the project life.	**RO15.2** Performance criteria applies – Rainwater harvesting devices may be provided as part of the building works however this does not form part of the stormwater treatment train.
Construction and Establishment of Stormwater Management Systems		
PO16 Construction methods and materials minimise environmental impacts and minimise the risk of asset failure.	**AO16.1** Construction methods are undertaken in accordance with the standards specified in the Planning scheme policy for development works.	**RO16.1** Complies – The proposed construction methods and materials will minimise environmental impacts and minimise the risk of asset failure in accordance with the provisions of the Planning Scheme Policy for development works.
	AO16.2 Construction timing is co-ordinated with civil and other landscape works to minimise risks to stormwater infrastructure and the environment.	**RO16.2** Complies – The construction timing will be co-ordinated with civil and other landscape works to minimise risks to stormwater infrastructure and the environment.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO17 Vegetated stormwater management systems proposed to be dedicated as public assets are established and maintained during the maintenance period to ensure optimal vegetation growth and that the functional elements of the system achieve the design function at the end of the maintenance period.	**AO17** Establishment and maintenance of stormwater management systems is undertaken in accordance with the standards specified in the Planning scheme policy for development works.	**RO17** Not applicable – The treatment devices will remain private property.
Constructed Waterbodies		
PO18 Constructed waterbodies which are proposed to be dedicated as public assets are avoided, unless there is an overriding need in the public interest.	**AO18** Where a constructed waterbody is proposed to be dedicated as a public asset, an overriding need for the waterbody is demonstrated in accordance with the requirements of the Planning scheme policy for development works.	**RO18** Not applicable – No constructed waterbodies are proposed as part of the development.
PO19 Constructed waterbodies are designed and constructed to achieve environmental values and water quality objectives which correlate to their intended function, use and receiving waters.	**AO19** Constructed waterbodies are designed and constructed in accordance with standards specified in the Planning scheme policy for development works.	**RO19** Not applicable – No constructed waterbodies are proposed as part of the development.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO20 Constructed waterbodies are designed, constructed and established to minimise maintenance and decommissioning costs and the requirement for specialised maintenance equipment and techniques, and are provided with an on-going funding source.	**AO20** A detailed maintenance and decommissioning costing is prepared for the project life in accordance with the Planning scheme policy for development works and financial assurances are in place to provide for maintenance for the project life and, if required, decommissioning.	**RO20** Not applicable – No constructed waterbodies are proposed as part of the development.
PO21 Constructed waterbodies are not used as stormwater quality treatment devices.	**AO21** Stormwater discharges achieve the pollutant load reduction objectives specified in the Planning scheme policy for development works, prior to entering the constructed waterbody.	**RO21** Not applicable – No constructed waterbodies are proposed as part of the development.
PO22 Constructed waterbodies support landscape, passive recreation and ecological values, and do not pose a health, safety or aesthetic risk.	**AO22** Constructed waterbodies are designed and constructed in accordance with the standards specified in the Planning scheme policy for development works.	**RO22** Not applicable – No constructed waterbodies are proposed as part of the development.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
Development Design		
PO1 Air emissions, noise or lighting arising from construction activities and works do not adversely impact on surrounding areas.	**AO1.1** Dust emissions do not extend beyond the boundary of the site.	**RO1.1** Complies – The erosion and sediment control program will control dust emissions so that they do not extend beyond the boundary of the site.
	AO1.2 Air emissions, including odours, are not detectable at the boundary of the site.	**RO1.2** Complies – Air emissions, including odours, will be managed such that they are not detectable at the boundary of the site.
	AO1.3 Works are only carried out between 7:00am to 6:00pm Monday to Saturday inclusive.	**RO1.3** Complies – Development works will be restricted to between the hours of 7.00am to 6.00pm Monday to Saturday inclusive.
	AO1.4 Noise generating equipment is enclosed, shielded or acoustically treated in a manner which ensures the equipment does not create environmental harm.	**RO1.4** Complies – Noise will be managed such as to not exceed EPA limits.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
	AO1.5 Outdoor lighting complies with AS4282-1997 Control of the Obtrusive Effects of Outdoor Lighting.	**RO1.5** Complies – If any outdoor lighting is required as part of the proposed development works it will comply with the requirements of AS4282-1997 - Control of the Obtrusive Effects of Outdoor Lighting.
PO2 Construction activities and works provide for: a) the protection of the aesthetic and ecological values of retained vegetation; and b) impacts on fauna to be minimised.	**AO2.1** The health and stability of retained vegetation is maintained or enhanced during construction activities by: a) clearly marking vegetation to be retained with temporary fencing and flagging tape; b) installing temporary barrier fencing around the outer drip line and critical root zone of the vegetation; c) preventing any filling, excavation, stockpiling, storage of chemicals, fuel or machinery within the fenced protection area; d) using low impact construction techniques in the vicinity of vegetation to minimise interference with the vegetation; and e) removing all declared noxious weeds and environmental weeds from the site.	**RO2.1** Complies – The health and stability of any retained vegetation will be maintained during construction activities and works.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
	AO2.2 All works carried out in the vicinity of retained vegetation comply with AS4970 Protection of Trees on Development Sites and AS4687 Temporary Fencing and Hoarding.	**RO2.2** Complies – All works carried out in the vicinity of any retained vegetation will comply with AS4970 Protection of Trees on Development Sites and AS4687 Temporary Fencing and Hoarding.
	AO2.3 Where construction activities will result in adverse impacts upon fauna and/or the clearing and/or removal of fauna habitat: a) a suitably qualified professional fauna spotter and catcher undertakes a fauna management report, pre-clearing inspections and is present for all clearing activities; b) all vacant hollows and nests are relocated or rendered unusable to prohibit fauna return during clearing works; c) all fauna is suitably relocated or humanely dealt with during the preclearing inspections or during clearing; and d) 'offset' nesting hollows/nest boxes are provided in adjoining vegetation at least 1 month prior to the clearing.	**RO2.3** Complies – If it is determined construction activities will result in adverse impacts upon fauna and/or the clearing and/or removal of fauna habitat, a fauna management report will be prepared and implemented to the satisfaction of Sunshine Coast City Council. It is noted however that this is unlikely.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO3 Vegetation cleared from a site is disposed of in a manner that: a) maximises reuse and/or recycling; and b) minimises impacts on public health and safety.	**AO3** Where vegetation is cleared, vegetation waste is appropriately disposed of in the following order of preference: a) milling for commercial timber products, landscaping or firewood; b) on-site chipping or mulching; c) transportation off-site and disposal in an approved green waste disposal facility; and d) use for forest floor habitat in adjoining bushland and revegetation areas.	**RO3** Complies – Vegetation waste will be disposed of via milling for commercial timber products, where suitable. Unsuitable vegetation waste will be chipped or mulched on-site. significant vegetation removal from site is not likely from this proposed development.
PO4 Construction activities and works are managed such that all reasonable and practicable measures are taken to protect the environmental values of water and the functionality of stormwater infrastructure from the impacts of erosion, turbidity and sedimentation, both on and downstream of the development site.	**AO4** Development is located, designed and constructed in accordance with an erosion and sediment control plan, prepared in accordance with the requirements specified in the Planning scheme policy for development works.	**RO4** Complies – The development will be located, designed and constructed in accordance with an erosion and sediment control plan, prepared in accordance with the requirements specified in the Sunshine Coast City Council's Planning Scheme Policy for Development Works.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO5 Construction activities and works are undertaken such that existing utilities, road and drainage infrastructure: a) continue to function efficiently; and b) can be accessed by the relevant authority for maintenance purposes.	**AO5.1** Existing utilities, road and drainage infrastructure are protected or relocated in accordance with the standards specified in the Planning scheme policy for development works.	**RO5.1** Complies – Where required, existing utilities, road and drainage infrastructure will be protected and/or relocated in accordance with the standards specified in the Sunshine Coast City Council's Planning Scheme Policy for Development Works.
	AO5.2 The costs of any alterations or repairs to utilities, road and drainage infrastructure are met by the applicant.	**RO5.2** Complies – Where required, the costs of any alterations or repairs to utilities, road and drainage infrastructure will be paid for by the developer.
PO6 Traffic and parking generated during construction activities and works is managed to minimise impacts on the amenity of the surrounding area.	**AO6** No acceptable outcome provided.	**RO6** Complies – The traffic and parking generated during construction activities and works will be managed to minimise impacts on the amenity of the surrounding area.
PO7 Construction activities and works provide for: a) minimisation of waste material; b) separation of recyclable material; c) storage of waste and recyclable material; and	**AO7** No acceptable outcome provided. Editor's note—Section 9.4.10 (Waste management code) sets out requirements for waste management.	**RO7** Complies – The construction activities and works will aim to minimise and manage any waste generated to the satisfaction of the Sunshine Coast City Council.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
d) collection of waste and recyclable material; e) in a manner that minimises adverse impacts on the amenity and safety of surrounding areas.		
Infrastructure, Services and Utilities		
PO8 Development is provided with infrastructure, services and utilities appropriate to its setting and commensurate with its needs.	**AO8.1** Where development is located in an urban zone, appropriate connection is provided to reticulated sewerage, water supply, stormwater drainage, electricity, gas (where available in the street) and telecommunications services at no cost to the Council, including provision by way of dedicated road, public reserve or as a minimum by way of easements to ensure continued access is available to these services in accordance with the standards specified in the Planning scheme policy for development works, or where applicable, the requirements of the service provider.	**RO8.1** Complies – The proposed development will be adequately connected to reticulated sewerage, water supply, stormwater drainage, electricity and telecommunications services in accordance with the requirements of the Sunshine Coast City Council's Planning Scheme Policy for Development Works and/or the relevant service authority at the developer's cost.
	AO8.2 Where development is located in a nonurban zone and reticulated sewerage is not available, an on-site treatment and disposal system is provided that complies with the requirements of the Plumbing and Drainage Act 2003.	**RO8.2** Not Applicable.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
	AO8.3 Where development is located in a nonurban zone and reticulated water supply is not available, development is provided with appropriate on-site rainwater collection in accordance with the relevant use code. Editor's note—Section 9.4.6 (Stormwater management code) sets out requirements for stormwater management. Editor's note—the provision of telecommunication infrastructure is regulated in accordance with Federal Government legislation.	**RO8.3** Not Applicable.
PO9 Development provides for infrastructure, services and utilities that are planned, designed and constructed in a manner which: a) ensures appropriate capacity to meet the current and planned future needs of the development; b) is integrated with and efficiently extends existing networks;	**AO9.1** Infrastructure is planned, and appropriate contributions made, in accordance with the Local Government Infrastructure Plan or any other applicable infrastructure charging instrument.	**RO9.1** Complies – Where required, Infrastructure contributions will be made in accordance with Sunshine Coast City Council's and Unitywater's Infrastructure Charge Framework.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
c) minimises risk to life and property; d) avoids, or where avoidance is not practicable minimises and mitigates, adverse impacts on ecologically important areas; e) minimises risk of environmental harm; f) achieves acceptable maintenance, renewal and adaptation costs; g) can be easily and efficiently maintained; h) minimises potable water demand and wastewater production; i) ensures the ongoing construction or operation of the development is not disrupted; j) where development is staged, each stage is fully serviced before a new stage is released; k) ensures adequate clearance zones are maintained between utilities and dwellings to protect residential amenity and health; l) preserves visual amenity in key areas (i.e. in centres or along scenic routes); and	**AO9.2** Infrastructure is planned, designed and constructed in accordance with Council's Local Government Infrastructure Plan, and the Planning scheme policy for development works, or where applicable, the requirements of the service provider.	**RO9.2** Complies – Infrastructure will be planned, designed and constructed in accordance with Council's Planning Scheme Policy for development works and/or the requirements of service authorities.
	AO9.3 Compatible public utility services are co-located in common trenching in order to minimise the land required and the costs for underground services.	**RO9.3** Complies – Where possible, compatible public utility services will be co-located in common trenching.
	AO9.4 Stormwater drainage, sewerage and sullage systems are designed so that overflows do not enter residences.	**RO9.4** Complies – The proposed stormwater drainage, sewerage and sullage systems will be designed so that overflows do not enter residences.
	AO9.5 Infrastructure, services and utilities are located and aligned so as to: a) avoid disturbance of ecologically important areas; b) minimise earthworks; and c) avoid crossing waterways or wetlands.	**RO9.5** Complies – The proposed infrastructure, service and utilities have been located and aligned to avoid disturbance of ecologically important areas, minimise earthworks and avoid crossing waterways and wetlands.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
m) minimises interference with the passage of pedestrians in areas of high pedestrian traffic.	OR Where the provision of infrastructure has adverse impacts upon an ecologically important area which cannot reasonably be avoided, development provides for a biodiversity offset for the area of an ecologically important area, in accordance with the following: a) The biodiversity offset requirements specified in Table 9.4.9.3.2 (Biodiversity offset requirements) of Section 9.4.9 (Vegetation management code); and b) The standards specified in the Planning scheme policy for biodiversity offsets.	
	AO9.6 Where the crossing of a waterway or wetland cannot be avoided, tunnel boring techniques are used to minimise disturbance and disturbed areas are reinstated and revegetated on completion of works.	**RO9.6** Not Applicable.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
	AO9.7 The selection of materials used in the construction of infrastructure is suitable, durable, easy to maintain and cost effective, taking into account the whole of life cycle cost, and achieves best practice environmental management and energy savings.	**RO9.7** Complies – The materials used in the construction of the proposed development infrastructure will be suitable, durable, easy to maintain and cost effective, taking into account the whole of life cycle cost and achieving best practice environmental management and energy savings.
	AO9.8 Except where in the Rural zone, electrical and telecommunications reticulation infrastructure is provided underground in: a) greenfield developments; b) development involving the creation of more than 5 lots; c) development in centre zones; and d) development in areas of high scenic amenity.	**RO9.8** Complies – Electrical and telecommunications reticulation infrastructure will be provided underground.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
Works Over or Near Sewerage, Water and Stormwater Drainage Infrastructure		
PO10 Building or operational work near or over the Council's stormwater infrastructure and/or sewerage and water infrastructure: a) protects the infrastructure from physical damage; and b) allows ongoing necessary access for maintenance purposes.	**AO10** Building or operational work near or over the Council's stormwater infrastructure and/or sewerage and water infrastructure complies with the Planning scheme policy for development works and the requirements of the water and sewerage service provider.	**RO10** Complies – Works in the vicinity of stormwater, water and sewerage infrastructure will comply with the Planning Scheme Policy for development works and the requirements of Unitywater.
Works Over or Near Sewerage, Water and Stormwater Drainage Infrastructure		
PO11 Filling or excavation: a) does not cause environmental harm; b) does not impact adversely on visual amenity or privacy; c) maintains natural landforms as far as possible; d) provides for remediated soil conditions to support the e) successful establishment of landscapes; and f) is stable in both the short and long term.	**AO11** Development provides that: a) on sites:- (i) with a slope of 15% or more, or as identified in the Planning scheme policy for development works, the extent of excavation (cut) and fill does not involve a total change of more than 1.5 metres relative to the natural ground level at any point; or (ii) in other areas, the extent of excavation (cut) and fill does not involve a total change of more than	**RO11** Complies – Filling and excavation works will comply with the Planning scheme policy for development works.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
	1.0m relative to the natural ground level at any point; b) no part of any cut or fill batter is within 1.5 metres of any property boundary, except cut and fill involving a change in ground level of less than 200mm that does not necessitate the removal of any vegetation; c) retaining walls are no greater than 1.0 metre high; d) retaining walls are constructed a minimum 150mm from property boundaries; e) all stored material is: (i) contained wholly within the site; (ii) located in a single manageable area that does not exceed 50m2; and (iii) located at least 10 metres from any property boundary; f) topsoil is harvested, stockpiled, remediated and reused in a manner that supports achievement of site specific vegetation performance objectives; and a. any batter or retaining wall is structurally adequate.	

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO12 Filling or excavation does not result in any contamination of land or water, or pose a health or safety risk to users and neighbours of the site.	**AO12** Development provides that: a) no contaminated material is used as fill; b) for excavation, no contaminated material is excavated or contaminant disturbed; and c) waste materials are not used as fill, including: (i) commercial waste; (ii) construction/demolition waste; (iii) domestic waste; (iv) garden/vegetation waste; and (v) industrial waste.	**RO12** Complies – Filling and excavation works will not result in any contamination of land or water, or pose a health or safety risk to users and neighbours of the site.
PO13 The location and extent of filling or excavation is consistent with the intended use of the site.	**AO13** The extent of filling or excavation is in accordance with an existing development approval for a material change of use, reconfiguring a lot or building work (which has not lapsed).	**RO13** Complies – The location and extent of filling and excavation will be consistent with the intended use of the site.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	RESPONSE
PO14 Filling or excavation does not prevent or create difficult access to the property.	**AO14** Driveways are able to be constructed and maintained in accordance with the requirements of the Planning scheme policy for development works.	**RO14** Complies – Driveways proposed as part of the development will be maintained in accordance with the requirements of the Planning scheme policy for development works.
PO15 Filling or excavation does not cause significant impacts through truck movements, dust or noise, on the amenity of the locality in which the works are undertaken or along routes taken to transport the material.	**AO15** Filling or excavation is undertaken in accordance with the requirements of the Planning scheme policy for development works.	**RO15** Complies – Filling and excavation works will be undertaken in accordance with the requirements of the Planning Scheme Policy for development works.
PO16 The transportation of materials in association with filling or excavation activities minimises adverse impacts on the road system.	**AO16** Material is transported in accordance with the requirements of the Planning scheme policy for development works.	**RO16** Complies – Material in association with filling and excavation activities will be transported in accordance with the requirements of the Planning Scheme Policy for development works.