
Stormwater Quality Management Plan

for

Devcon Investments Pty Ltd

Proposed 32 Units Development

at

Lot 8006 Aura Bvd, Baringa

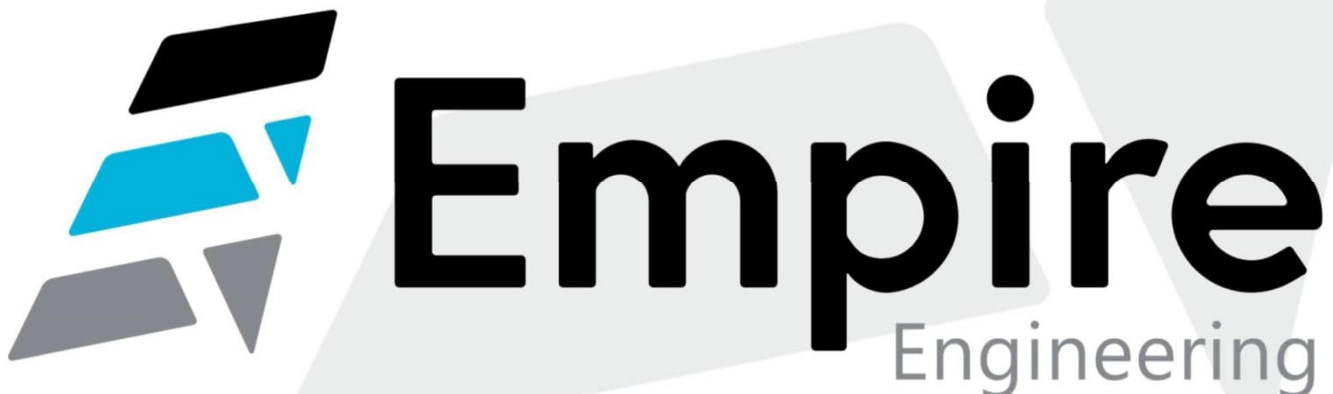
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PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV-2026-CAS-4471

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EMPIRE ENGINEERING PTY LTD

www.empireengineering.com.au

ABN: 21 112 761 510

ACN: 112 614 510

Coral Coast Office

Street Address: 9 Princess Street, Bundaberg Qld 4670

Postal Address: PO Box 2052, Bundaberg Qld 4670

Phone: (07) 4154 4984

Email: admin.cc@empireengineering.com.au

Sunshine Coast Office

Street Address: 13 Norval Court, Maroochyhore Qld 4556

Postal Address: PO Box 102, Mooloolaba Qld 4557

Phone: (07) 5477 6437

Email: admin.sc@empireengineering.com.au

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AUTHORSHIP INFORMATION

REPORT TITLE	Stormwater Quality Management Plan
Affected Properties	
Street Address	Lot 8006 Aura Bvd, Baringa
RP Description	8006SP357729
Prepared For	Devcon Investments Pty Ltd
Report Status	For DA Approval
Prepared By	
Name	Sean Dwyer
Qualifications	BE (Civil) CPEng RPEQ
Phone Number	07 5477 6437
Reviewed By	
Name	Troy Paulsen
Qualifications	RPEQ 6990
Phone Number	07 5477 6437
Certified By	
Name	Troy Paulsen
Qualifications	RPEQ 6990
Phone Number	07 5477 6437

REVISION	DATE	Signature
A	13/02/2026	
B	02/04/2026	

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INTRODUCTION

1.1. Background

This report is to accompany and be considered part of an application to Economic Development Queensland (EDQ) to gain a Development Approval for a proposed Residential (32) Unit development on Lot 8006 Aura Bvd, Baringa. This application seeks a PDA Development Permit for a Material Change of Use.

1.2. Scope

Empire Engineering Pty Ltd was commissioned by Devcon Investments Pty Ltd to develop a Stormwater Quality Management Plan to outline stormwater management strategies for the proposed development in accordance with the relevant Local and State Government standards. A stormwater quality management strategy has been developed in accordance with relevant Sunshine Coast Council (SCC) guidelines and the State Planning Policy (SPP, 2017) and PDA Guideline No. 13 Engineering standards - Stormwater quality. The requirements are met through modelling the pollutant export generated by the proposed development and appropriately implementing stormwater quality improvement devices (SQID's).

1.3. Proposed Development

Preliminary architectural drawings prepared by Sprout Architects depict a proposed 31 Unit residential development with associated ground floor parking and access driveways.

2.0 SITE CHARACTERISTICS

2.1. Location

The subject site is rectangular in shape, has an area of 0.4011 Ha with direct road frontage access off Olivia Cres.

2.2. Topography and Drainage

The site has previously been filled to approximately RL9.5mAH. Earthworks for the site were completed as part of the Aura Estate, as such the site is generally cleared of large vegetation with low growing grass coverage and is relatively flat.

The downstream receiving environment is Council's drainage network in Central Avenue. This road reserve has a developed storm water system in the form of an underground piped drainage system in accordance with *QUDM*. An existing stormwater connection have been identified, to the corner of Central Ave / Aura Bvd. This connection is DN525 pipe (IL approx. 6.99), designed to convey the storm water minor event run-off from the development to the larger downstream drainage network. These is the lawful point of discharge established for the site at the time of the estate subdivision.

There are no upslope external catchments traversing the subject site.

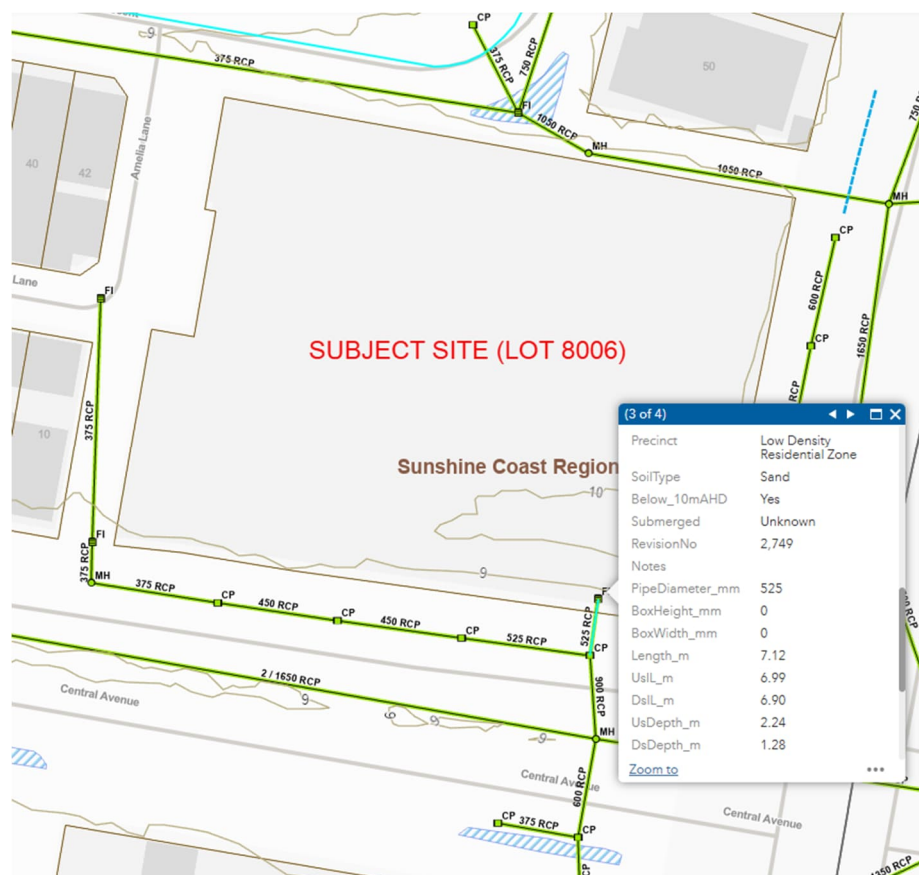


Figure 1.0 – Subject Site

(courtesy MyMaps)

2.3. Design Objectives

Design objectives for stormwater quality management are that the development protects or enhances the environmental value and water quality of receiving waters within or downstream of the site prior to discharge. Triggers for development of lots exceeding 2,500m² or for urban purposes within population centres greater than 3000 persons require the application of Water Sensitive Urban Design (WSUD) load reduction targets. The scope typically encompasses the operational 'post construction' phase of the development however 'construction phase' water quality is briefly addressed in this report.

Development must incorporate the principles of Water Sensitive Urban Design (WSUD) in accordance with 'Urban Stormwater - Queensland Best Practice Environmental Management Guidelines' and current industry standards (e.g. Environmental Protection (Water) Policy, Queensland State Planning Policy 2017 – water quality).

Erosion and Sediment Control must be designed in accordance with the recommendations contained within the Environment Protection Agency's (EPA) 'Best Practice Urban Stormwater Management – Erosion and Sediment Control', International Erosion Control Association's (IECA) – 'Best Practice Erosion & Sediment Control' and 'Queensland Urban Drainage Manual' (QUDM).

3.0 STORMWATER QUALITY MANAGEMENT

3.1. Construction Phase

Table 3.1 has been adapted from Table C4.1 of Brisbane City Council's (BCC) *Stormwater Best Management Practices 2000* and details the typical stormwater pollutants which may be generated during the construction phase of the development.

Pollutant	Sources
Litter	Paper, construction packaging, food packaging, cement bags and off-cuts
Sediment	Unprotected exposed soils and stockpiles during earthworks and building
Hydrocarbons	Fuel and oil spills, leaks from construction equipment
Toxic Materials	Cement slurry, solvents, cleaning agents, wash waters
pH Altering Substances	Cement slurry, wash waters

Table 3.1 - Typical Construction Phase Pollutants

The following ESC measures should typically be implemented prior to the commencement of construction:

- Education of all site workers in sediment and erosion procedures;
- Specified storage areas for construction materials and plant that are bunded to prevent any spillages from escaping.

Table 3.2 illustrates the State Planning Policy objectives for construction phase stormwater quality that the erosion and sediment control plan to be submitted with the operational works approval is required to achieve.

Issue		Design objectives
Drainage control	Temporary drainage works	- Design life and design storm for temporary drainage works: - Disturbed area open for <12 months—1 in 2-year ARI event - Disturbed area open for 12–24 months—1 in 5-year ARI event - Disturbed area open for > 24 months—1 in 10-year ARI event - Design capacity excludes minimum 150 mm freeboard - Temporary culvert crossing—minimum 1 in 1-year ARI hydraulic capacity
Erosion control	Erosion control measures	- Minimise exposure of disturbed soils at any time - Divert water run-off from undisturbed areas around disturbed areas - Determine the erosion risk rating using local rainfall erosivity, rainfall depth, soil-loss rate or other acceptable methods - Implement erosion control methods corresponding to identified erosion risk rating
Sediment control	Sediment control measures Design storm for sediment control basins Sediment basin dewatering	- Determine appropriate sediment control measures using: - Potential soil loss rate, or - Monthly erosivity, or - Average monthly rainfall - Collect and drain stormwater from disturbed soils to sediment basin for design storm event: - Design storm for sediment basin sizing is 80th% five-day event or similar - Site discharge during sediment basin dewatering: - TSS < 50 mg/L TSS, and - Turbidity not >10% receiving waters turbidity, and - pH 6.5–8.5
Water quality	Litter and other waste, hydrocarbons and other contaminants	- Avoid wind-blown litter; remove gross pollutants - Ensure there is no visible oil or grease sheen on released waters - Dispose of waste containing contaminants at authorised facilities
Waterway stability and flood flow management	Changes to the natural waterway hydraulics and hydrology	For peak flow for the 1-year and 100-year ARI event, use constructed sediment basins to attenuate the discharge rate of stormwater from the site

Table 3.2 - Construction Phase Stormwater Quality Objectives

3.2. Operational Phase

During the operational stage of the development, the following impacts have been identified in relation to stormwater runoff and water quality of the receiving waterways:

- Gross pollutants which include human derived litter, coarse sediment and vegetation
- Sediment and suspended solids
- Nutrients such as phosphorous and nitrogen

To target these potential pollutants stormwater quality improvement devices (SQID's) are proposed to be incorporated within the design.

3.2.1. Water Quality Objectives

The water quality objectives (WQO's) for this site were determined in accordance with State Planning Policy (SPP, 2017) as follows

Pollutant	Minimum Reduction Targets
Total Suspended Sediments (TSS)	80%
Total Phosphorus (TP)	60%
Total Nitrogen (TN)	45%
Gross Pollutants (>5mm)	90%

Table 3.3 - Water Quality Objectives

3.2.2. Pollutant Export Modelling

A compliant MUSIC model was generated to calculate pollutant loads from the proposed development and predict performance characteristics of the proposed treatment train. Modelling parameters used were adopted from the *Water by Design "Music Modelling Guidelines for South-East Queensland"*.

3.2.3. Treatment Nodes

The following devices have been used in the treatment train to reduce these pollutant loads to achieve WQO's for this site. Refer to Appendix B for MUSIC modelling results.

Atlan Filter – an underground cartridge filter system that incorporates an upflow treatment process that maximises surface treatment area. Flow through the filter cartridges utilises a self-regulating siphon which results in low maintenance and high performance stormwater treatment. The design proposed is:

- o 6 x 850mm Tall Cartridges;

Atlan Stormsack GPT Baskets – A number of baskets installed to the top of field inlets to trap coarse sediment prior to entering the drainage system was modelled in line with the cartridge system. The design proposed is:

- o 6 x Baskets;

Roofwater Harvesting / Re-use – Design Standard DS4.7 for all Multiple Residential (other than Duplex) buildings, rainwater tanks are to be installed to ensure minimum 50% roof capture and reuse. Tanks are to be sized at 1KL per dwelling. must be connected to and supply water to all external hosecocks, irrigation and bin wash taps only.

- o 2 x 20,000L Underground Tanks;

3.2.4. Effectiveness in Pollution Reduction

The water quality development model was set up with the incorporation of the above devices to reduce pollutant export to WQO levels. Table 3.4 indicates the predicted pollutant mean values of stormwater discharged from the site as calculated by MUSIC:

Pollutant	Percentage Load Reduction
	Catchment 'A'
Total Suspended Solids (TSS)	81.2
Total Phosphorus (TP)	73.0
Total Nitrogen (TN)	53.1
Gross Pollutants (>5mm)	100

Table 3.4 – Annual Load Based Pollutant Reduction

The MUSIC modelling results above indicate the proposed treatment train will adequately treat pollutants generated by stormwater runoff in accordance with the targets required of the Water Quality Objectives.

4.0 FLOODING

The development is proposed on land that is not subject to flooding during a 1% AEP Drainage/Overland or Regional flood event. All lot levels and proposed Finish Floor levels are sufficiently above the 300mm (minimum) freeboard requirements of the Flood levels provided by the Sunshine Coast Council Flood Search Certificate Cer26/01596, Refer appendix C.

5.0 CONCLUSION

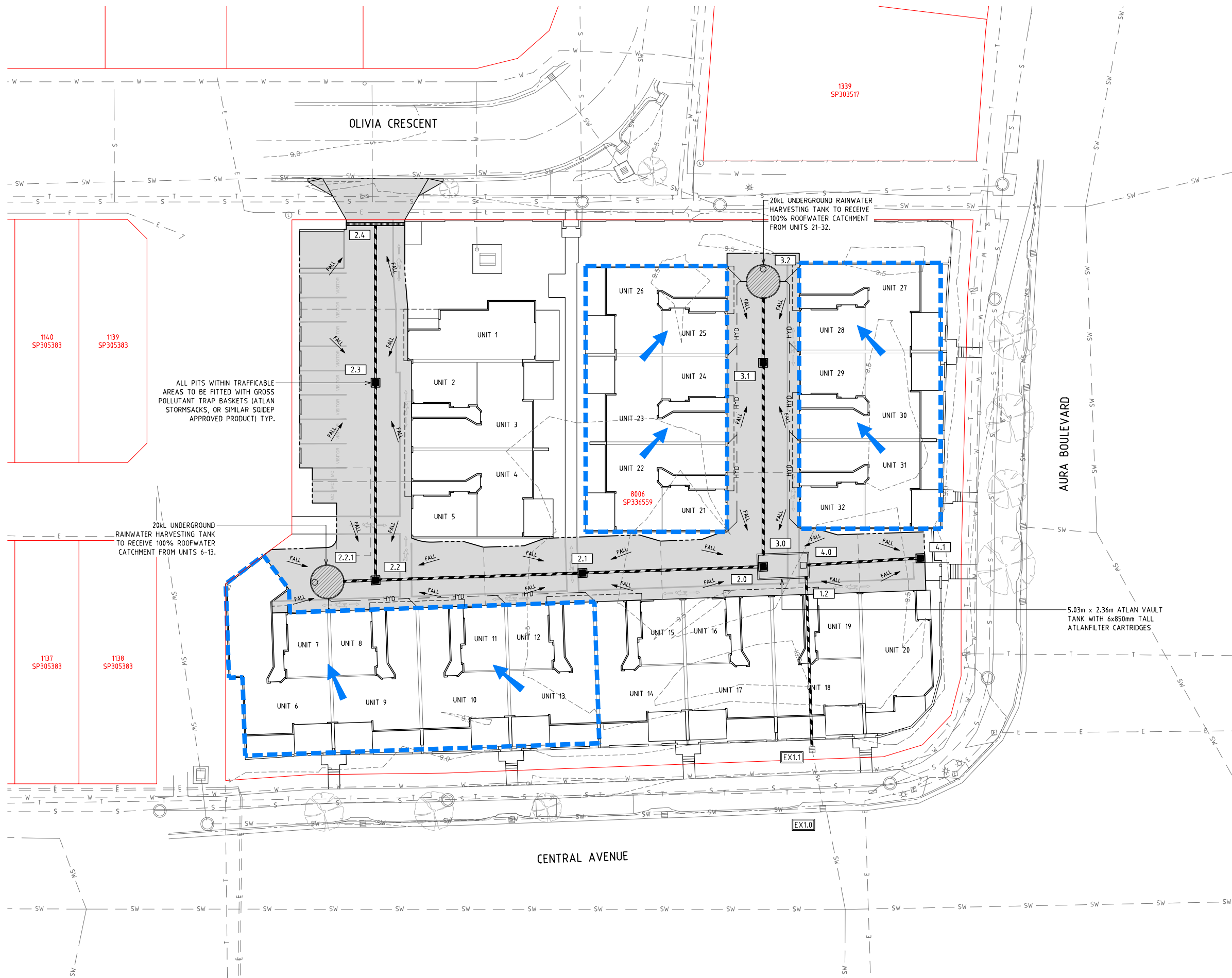
This report has outlined the stormwater management strategies to be adopted in the construction and operational works phase of the development which satisfies the State Planning Policy (SPP, 2017) and PDA Guideline No. 13 Engineering standards - Stormwater quality.

An existing stormwater lawful point of discharge has been identified at the corner of Central Ave / Aura Bvd.

Primary and Tertiary water quality improvement devices are proposed including proprietary filter cartridges and gross pollutant baskets to satisfy the Water Quality Objectives.

The development satisfies the Flood Overlay Code requirements of the Sunshine Coast Council Planning Scheme.

APPENDIX A – CONCEPT STORMWATER MANAGEMENT PLAN

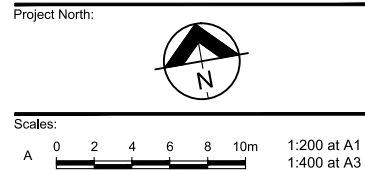


LEGEND

EXISTING	PROPOSED	PROPERTY BOUNDARY
---	---	KERB AND CHANNEL
---	---	KERB ONLY
---	---	EDGE OF CONCRETE
---	---	ROAD CROWN
---	---	DRAINAGE
---	---	HYDRAULICS DRAINAGE
---	---	CATCHMENT BOUNDARY
---	---	SEWER
---	---	WATER
---	---	TELSTRA
---	---	UNDERGROUND ELECT.
---	---	CONTOURS
---	---	FENCE
---	---	CONCRETE PAVEMENT.
---	---	STRUCTURE NUMBER
---	---	DIRECTION OF FALL
---	---	600x600 TYPE 2 FIELD INLET U.N.O.
---	---	STD. CONC. Ø1050 MANHOLE U.N.O.
---	---	DIRECTION CATCHMENT FLOW

PROVIDE 1KL RAINWATER HARVESTING PER DWELLING, CONNECTED TO MIN. 50% TOTAL ROOF CATCHMENT AREAS. TO SUPPLY EXTERNAL NON-POTABLE USES ONLY (32kl TOTAL)

CONCEPT STORMWATER MANAGEMENT PLAN
SCALE A



Status: **PRELIMINARY**
NOT FOR CONSTRUCTION

Date: FEBRUARY 2026	Scale: AS NOTED
Job Ref No: SC-10612	Drawing No: SKC01
Issue: -	

Issue	Amendment	Date	Dt

NOTES

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2. Figure dimensions take precedence over scaled.
3. Verify all dimensions on site.

Empire Engineering
ACN 112761510 ABN 21112761510

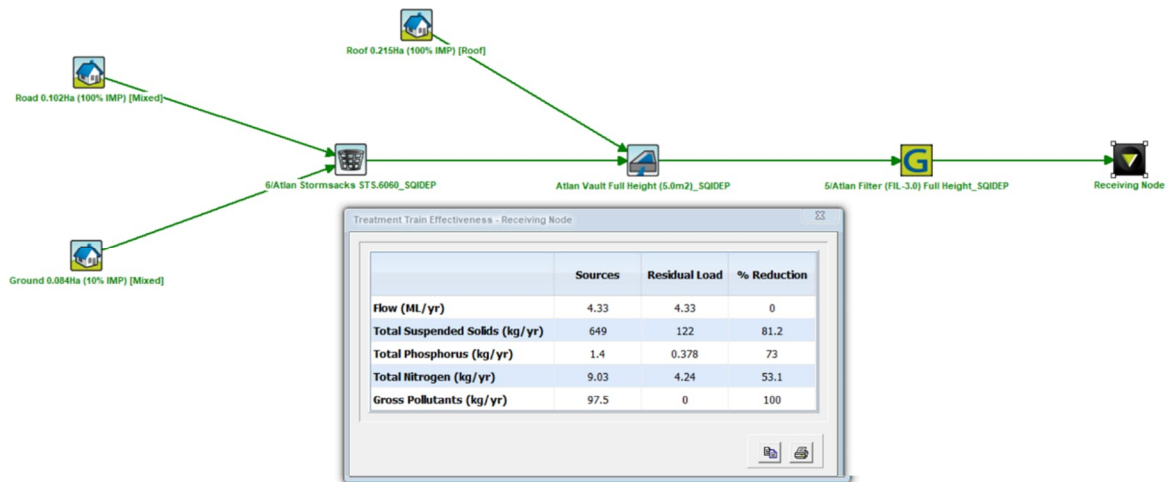
Sunshine Coast Office
L2, 13 Norval Court, Maroochydore Q 4558
PO Box 102, Mooloolaba Q 4557
P: 07 5477 6437
E: admin.sc@empireengineering.com.au

Bundaberg Office
9 Princess Street, Bundaberg Q 4670
PO Box 2052, Bundaberg Q 4670
P: 07 4154 4894
E: admin.cb@empireengineering.com.au

Client: DEVCON INVESTMENTS PTY. LTD.	Designed: SFD	Drawn: ACR	Title: CONCEPT STORMWATER MANAGEMENT PLAN
Project: PROPOSED UNIT DEVELOPMENT LOT 8006 CENTRAL AVENUE, NIRIMBA	Approved:		
		TROY PAULSEN / RPEQ: 6990	

CONCEPT STORMWATER MANAGEMENT PLAN

APPENDIX B – MUSIC WATER QUALITY MODELLING



APPENDIX C – SCC FLOOD SEARCH CERTIFICATE

Request Type

- ☐ Self-Assessable Dwelling
- ☒ All Other

Flood Information Search

This search is issued in response to an information request for a property which is located within the geographical boundaries of Sunshine Coast Council. This search is valid for 6 months from date of issue.

Applicant's Name	Empire Engineering Pty Ltd	Issue Date	01 April 2026
Applicant's Address	PO Box 102 MOOLOOLABA QLD 4557	Land Number	1552121
		Property Description	Lot 8006 SP 357729
		Address	Aura Bvd BARINGA QLD 4551
		Our Reference	Cer26/01596
Email Address	admin.sc@empireengineering.com.au	Issuing Officer	db042
		Your Reference	SC-10612

ENQUIRY DATE:

10/02/2026

REGISTERED OWNER(S) NAME:

Devcon Capital 8 Pty Ltd Tte

TABLE 1 - APPLICABLE VALUES REQUIRED TO COMPLY WITH BUILDING REGULATIONS:

Flood Hazard Area for Building Regulation Purposes – Minimum Design Floor Level			
For the purposes of the QDC MP 3.5 (2012) & The Building Regulations S8.1 (2021). levels provided in this table for new buildings are a declaration of the Finished Floor Level requirements for Class 1 buildings built in all or part of the Flood Hazard Area			
Minimum Design Floor Level	Please contact Development Services for development that is not Self-Assessable (refer to interpretative note 2)		
Source of Data	Refer Fig. 2		
Maximum Flow Velocity	Not Available	Backwater or inactive flow area	Velocity Not provided
Drainage Deficiency Area	No	Drainage Deficient Area Not Filled (Refer Note 10)	N/A

TABLE 2 - LEVELS RELEVANT TO THIS LOT:

Refer Figure 2

NOTES SPECIFIC TO THIS SEARCH

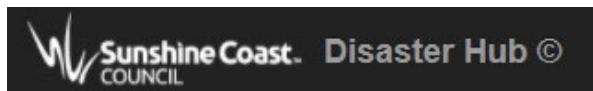
None Applicable

CLIMATE ASSUMPTIONS

The advice provided in this search is based upon standards relating to current and year 2100 climatic conditions and historically recorded flood events only. Year 2100 estimates include allowances for future climate conditions which specifically include increased rainfall intensity (20%) and higher mean sea level (0.8m).

Are you flood ready? Prepare with Council's award-winning Disaster Hub, now including Council's network of rainfall & water level gauges.

- Review Flood Mapping that shows how flood hazard changes as events get larger.
- Prepare your emergency plan and kit.
- Keep current with water levels, emergency warnings and road closure information.



Legend

Flood Hazard Area for Building Regulation Purposes

- Defined Event Flood Hazard Area
- Additional Flood Hazard Area Buffer



Figure 1 - Flood Hazard Area for Building Regulation Purposes Map

The flood hazard area for building regulation purposes map is based on the defined flood event, but also includes additional buffer flood hazard areas which incorporate freeboard allowance, overland flow paths and street drainage. This map triggers the request for a flood information search from council, to obtain the flood level, floor level and velocity information relevant to the property. If building works are proposed within the Flood Hazard Area for Building Regulation Purposes (including the additional buffer area), then the declared flood level, velocity and finished floor level is required to comply with MP3.5.

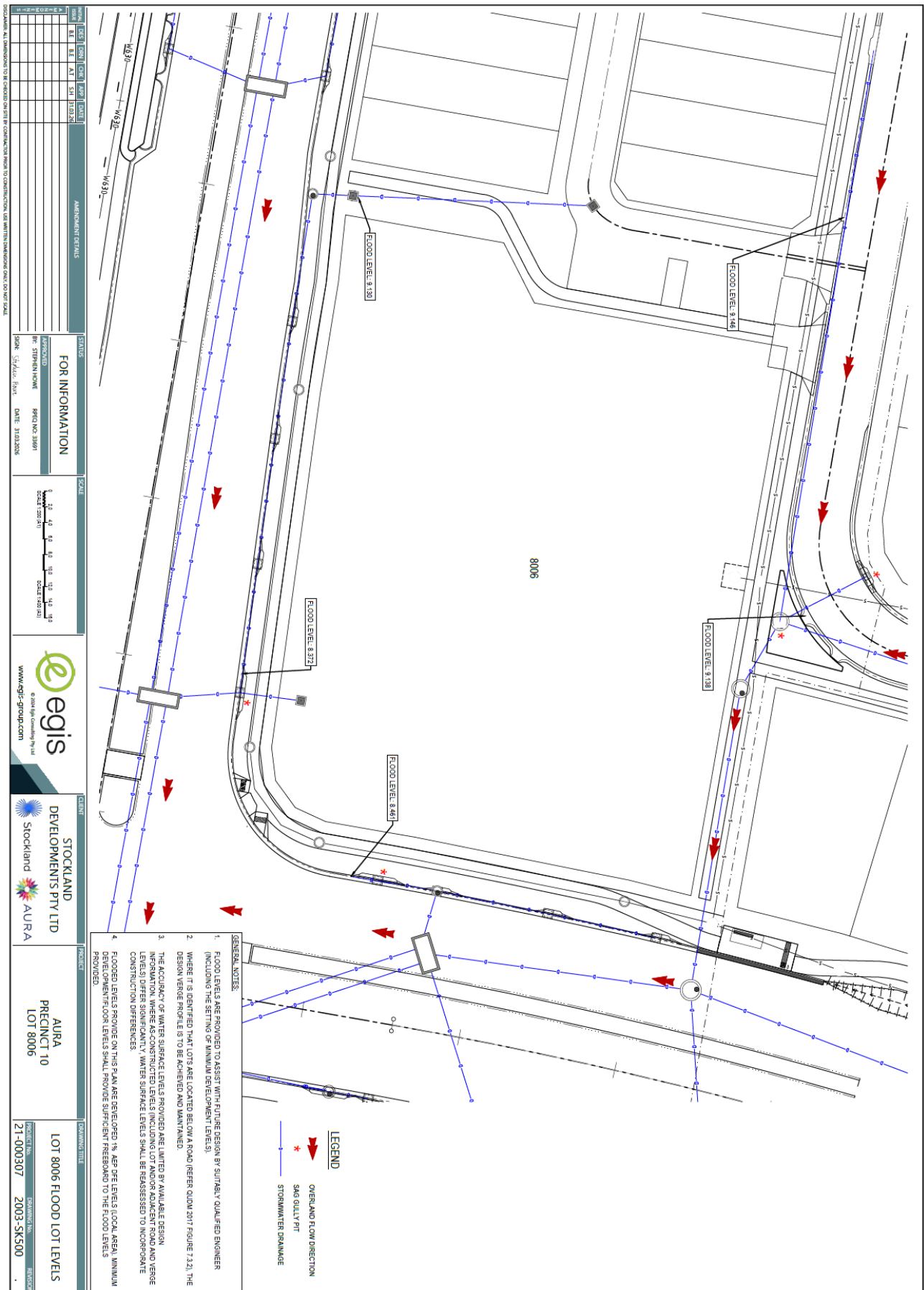


Figure 2 -Flood Lot Levels Dwg supplied by Egis Group

INTERPRETATION NOTES FOR THIS SEARCH

1. Minimum finished floor levels are provided for residential land uses only in accordance with the criteria for self-assessable development in the Sunshine Coast Planning Scheme, 2014, Flood Overlay Code. For other types of development the flood overlay code of the planning scheme may assign a different event probability to the Defined Flood Event and specify different freeboard requirements. Refer to Table 8.2.7.3.3 of the Flood Overlay Code. In such instances a development application should already be lodged and the Development Services staff assisting with this application will provide guidance on the determination of minimum finished floor levels.
2. This search has not been prepared with knowledge of the date of construction or approval for development. It is incumbent upon the applicant, or the agent representing the applicant, in a purchasing situation to determine the date of approval for development in order to ascertain which of the minimum floor levels provided on this search are appropriate.
3. The absence of local flood mapping does not imply that the above property is not subject to localised stormwater flooding. Please be aware of the natural topography in your area and the location of drainage infrastructure. Water runoff which exceeds the capacity of the drainage system (if present) and/or concentrates in surface depressions and gullies can cause localised stormwater flooding which may not be identified in this search.
4. The MINIMUM DESIGN FLOOR LEVEL as required by the Flood Overlay Code of the Sunshine Coast Council Planning Scheme, 2014, is calculated as whichever is greater of either:
 - (a) 500mm freeboard added to the Defined Flood Event Level (Regional, Riverine or Storm Tide) for the site; or
 - (b) 300mm freeboard added to the Defined Flood Event Level (Drainage/Overland Flow) for the site as per the Queensland Urban Drainage Manual.
5. Surface water should be managed according to the requirements of the National Construction Code (Volume 2 and the ABCB Housing Provisions). In order to meet these requirements, the Floor Level may need to be higher than specified in this search.
6. Construction of all internal stormwater drainage must comply with the relevant sections of Australian Standard AS/NZS 3500.3 – *Plumbing and Drainage*.
7. Building certifiers should be aware that their certification requires them to ensure no unacceptable off-site or on-site impacts associated with the drainage of buildings or land.
8. If the property is located within a declared Drainage Deficient Area as shown on Figure 8.27 Drainage Deficient Areas of the Sunshine Coast Planning Scheme (2014) Flood Overlay Code the MINIMUM DESIGN FLOOR LEVEL may be returned as 'DDA Survey Required'. If so, refer Drainage Deficient Area requirements attachment for details.
9. If marked as "DDA Not Filled", Council advises that no record exists of this property previously satisfying DDA requirements of the Sunshine Coast Planning Scheme (2014) Flood Overlay Code or the relevant prior planning scheme(s). An attachment will be included with this search that provides detail on the filling and survey requirements.
10. For properties located adjacent to Lake Weyba or within 200m of the Pumicestone Passage, when calculating MINIMUM FINISHED FLOOR LEVEL an additional 300mm allowance for wave setup is added to the 500mm freeboard for properties. This results in a total freeboard of 800mm above the Defined Flood Level.
11. All buildings shall conform to the relevant Planning Scheme Code in the Sunshine Coast Regional Council, 2014.
12. Flood modelling is based on periodic aerial laser survey of the ground surface which filters out buildings and fences. Flow diversions caused by solid obstructions may not be identified in this search. Changes to surface levels and drainage may have altered the overland flow and flood behaviour within this property.
13. Council advises that if there are openings to basements these openings require a minimum level at least equal to the minimum finished floor level.
14. The levels and velocities provided on this search are derived from information relating to the flood hazard that is deemed most current and reliable at the time of search provision. This information may supersede flood information contained on the Sunshine Coast Regional Council Planning Scheme Flood Overlay (2014) which requires planning scheme amendment to maintain currency.
15. Section 8 of Building Regulations defines an inactive flow or backwater area to mean *all or part of a flood hazard area where the maximum flow velocity of water is not likely to be greater than 1.5m/s*. Council advises that velocity in some waterways, floodways and overland flow paths is less than 1.5m/s and would therefore meet this definition. Obstructing such flow paths is inherently problematic and likely to cause adverse impact. The declaration of a backwater area or inactive flow path should not be interpreted as acceptable to obstruct.
16. Additional information on the frequency and extent of flooding within this property can be found on Council's online mapping at: <https://www.sunshinecoast.qld.gov.au/Development/Development-Tools-and-Guidelines/Sunshine-Coast-Mapping-MyMaps>

DISCLAIMERS

Flood information provided by Council represents the best information available to Council. It should only be used as a guide to the extent of flooding on the property. This information may be inaccurate or incomplete and it is recommended that purchasers make their own local enquiries with regard to the flooding and drainage history of the site.

The flood level information supplied does not represent the highest possible flood level that could occur on this property. Statistics indicate that a flood of equivalent or greater magnitude than the defined flood event is possible and has a 1% chance of occurring in any given year and similarly a 50% chance of occurring within 70 years.

The absence of flood information does not imply that the property is not subject to flooding, simply that Council has no information for this property flooding. If the property has a history of flooding or drainage problems, Council recommends you seek professional advice on this matter.

GLOSSARY OF TERMS

Term	Definition
<i>Applicant</i>	The individual(s) requesting a flood search to be completed for a specified property.
<i>Registered Owners</i>	The individual(s) that are registered by Council as owning the property for which a flood search is requested.
<i>AHD</i>	The Australian Height Datum (AHD) is the reference level for defining reduced levels adopted by the National Mapping Council of Australia. The level of 0.0 m AHD is approximately mean sea level.
<i>Defined Flood Event Level</i>	A water level derived through mathematical modelling of the Defined Flood Event.
<i>Defined Flood Event</i>	Terminology consistent with Single State Planning Policy (SPP, 2013) which states "Defined Flood Event is the flood event adopted by a local government for the management of development in a particular area". This may also be the defined storm tide event where the flood level of the storm tide exceeds the flood level of the freshwater flood event (at the AEP of the defined flood event).
<i>Source of Information</i>	Is a reference to the document summarising the results of the anticipated flooding relevant to this location.
<i>Minimum Finished Floor Level</i>	The minimum finished floor level calculated in accordance with the planning scheme flood overlay through the addition of the relevant freeboard to the Defined Flood Event Level. The minimum finished floor level on this search relates to a flooding requirement. In some instances town planning notation may also specify a minimum finished floor level. The applicant should ensure that a town planning notation search is also undertaken. The minimum finished floor level is the higher of the level provided on this search and a minimum finished floor level from a town planning notation.
<i>AEP</i>	Annual Exceedance Probability. The 1% AEP has a 1% chance of exceedance in any year.
<i>Rainfall Intensity</i>	The amount of rainfall occurring in a unit of time, usually expressed in millimetres/hour.
<i>Mean Sea Level</i>	A tidal datum; the arithmetic mean of hourly heights of the sea at the tidal station observed over a period of time (preferably 19 years). Source: BOM This is approximately 0.0 m AHD
<i>Storm Tide</i>	The elevation of water generated by a severe weather event such as an east coast low pressure system or tropical cyclone above the normal astronomical tide.
<i>Tropical Cyclone</i>	A tropical cyclone is a low-pressure system which is sufficiently intense to produce sustained winds of at least 63 km/h or greater and gusts in excess of 90 km/h near the centre.
<i>Freeboard</i>	A factor of safety usually expressed as a height above the adopted Defined Flood Level. A freeboard tends to compensate for factors such as wave action and historical and modelling uncertainties.
<i>Flood Hazard Area</i>	An area, whether or not mapped, designated by a local government as a natural hazard area (flood) in the Building Regulation 2021, section 8.
<i>Drainage Flood</i>	This flood type has a flood level derived from a stormwater drainage study with rainfall as the source of flooding. This is normally a local area study that incorporates elements of the stormwater network in the assessment. These studies can provide flood levels associated with overland flow beyond the flood extent shown derived from a Riverine/Creek flood study
<i>Regional/Riverine</i>	This flood type has a flood level derived from a Regional (Riverine or Creek) flood study with rainfall as the source of flooding. As these studies are for larger areas they only consider surface flows and not the sub surface drainage network. Often flows will be input into the flood model at 'source points' and thus overland flows are not represented for the whole catchment area.
<i>Storm Tide Flood</i>	This flood type has a flood level derived from a Storm Tide flood study with the ocean condition as the source of flooding.