STORMWATER ASSESSMENT

48 Derwent Avenue

Margate

January 2026

Updated July 2026

GEO-ENVIRONMENTAL

SOLUTIONS

Investigation Details

Client:	EMAC Systembuilt Group
Site Address:	48 Derwent Avenue, Margate
Date of Inspection:	03/12/2025
Proposed Works:	New house
Investigation Method:	Geoprobe 540UD - Direct Push
Inspected by:	C. Cooper

Site Details

Certificate of Title (CT):	169532/4
Title Area:	Approx. 2955 m²
Applicable Planning Overlays:	Bushfire-prone areas, Waterway and Coastal Protection Areas, Coastal Erosion Hazard Area
Slope & Aspect:	Flat with no dominant aspect facing slope
Vegetation:	Grass & Weeds
Ground Surface:	Disturbed

Background Information

Geology Map:	MRT 1:250000
Geological Unit:	Tertiary Sediments
Climate:	Annual rainfall 750mm
Water Connection:	Mains
Sewer Connection:	Unserviced-On-site required
Testing and Classification:	AS2870:2011 & AS1726:2017

Investigation

A number of bore holes were completed to identify the distribution and variation of the soil materials at the site, bore hole locations are indicated on the site plan. See soil profile conditions presented below.

Soil Profile Summary

BH 1 Depth (m)	BH 2 Depth (m)	BH 3 Depth (m)	USCS	Description
0.00-0.20	0.00-0.20	0.00-0.20	SM	**Silty SAND**: Fine grained, brown-grey, slightly moist, medium dense.
0.20-1.30	0.20-1.10	0.20-0.80	CI	**Silty CLAY (CI)**: Medium plasticity, brown-grey, slightly moist, stiff.
1.30-2.10	1.10-1.40	0.80-1.00	CL	**Sandy CLAY (CL) with gravels**: Low plasticity, pale brown, slightly moist, very stiff, refusal on rock.

Site Notes

Soils on site are developing from Tertiary Sediments. The soils consist of silty sand topsoils on over clay dominant subsoils. The clay horizons will exhibit moderate ground surface movement with moisture fluctuations. A low permeability of 0.12m/day is expected.

GES have identified the following at the site:

- The site has only a slight fall and presents little to no risk to slope stability and landslip
- There are no proposals for cuts or change of grade which will impact on any proposed onsite stormwater absorption,
- The site soils have been identified as comprising of deep clay dominant soils.
- A water table was not identified during the investigation.
- There is no evidence to suggest saline water intrusion at the site
- Soil depth was variable and bedrock was encountered between 1 and 2.1 meters indicating the presence of boulders.

Soil Dispersion

The site soils have been identified as non dispersive (Emerson class 7).

Existing Conditions and Assumptions

The site covers an area of approximately 2955m^2 with a total shed and house roof area of approx. 614m^2 and gravel driveway area of approx. 650m^2. There is no roadside stormwater system the proposed building and driveway can connect to therefore onsite stormwater retention will be required. It is proposed that room and driveway overflow be directed to a below ground absorption trench.

The stormwater management report is prepared in accordance with the design criteria listed below:

- The stormwater drainage system is designed using Bureau of Meteorology (BOM) published rainfall Intensity Frequency Duration (IFD) data as a minor / major system to accommodate the 5% AEP / 20 min storm events.
- The flow rate of stormwater leaving the site shall be designed so that it does not exceed the pre-developed flow rate for both the minor and major rain events.
- The total site discharges are modelled as described in *Storm Drainage Design in Small Urban Catchments,* a handbook for Australian practice by *Australian Rainfall and Runoff (ARR2019)*, Book 9 – Runoff in Urban Areas.

Detention Calculations

Detention calculations area provided in Appendix A

Summary and Conclusions

- Detention design to be adopted as per design and documentation.
- The designed solution complies with the performance solution design check carried out.
- The 42.6m^2 base (14.2m x 3m x 1m) trench is designed over a 20-minute storm duration for the proposed development.
- DN100 slotted PVC pipe with geotextile covering on top of aggregate to be installed within the soakage trench

It is also recommended that regular inspection and maintenance is conducted to ensure the stormwater system is operating without obstruction. A schematic of recommended checks is attached.

GES Stormwater Maintenance Plan Checklist

Indicative frequency	Inspection and criteria	Maintenance activities (where required)
Annual	Check whether any tree branches overhang the roof or are likely to grow to overhang the roof	If safe and where permitted, consider pruning back any overhanging branches
	Check that access covers to storage tanks are closed	Secure any open access covers to prevent risk of entry
	Check that screens on inlets, overflows and other openings do not have holes and are securely fastened	Repair any defective screens to keep out mosquitoes
	Inspect tank water for presence of rats, birds, frogs, lizards or other vermin or insects	Remove any infestations, identify point of entry and close vermin and insect-proof mesh
	Inspect tank water for presence of mosquito larvae (inspect more frequently in sub-tropical and tropical northern Australia, based on local requirements)	Identify point of entry and close with insect-proof mesh with holes no greater than 1.6 mm in diameter
	Inspect gutters for leaf accumulation and ponding	Clean leaves from gutters-remove more regularly if required. If water is ponding, repair gutter to ensure water flows to downpipe
	Check signage at external roof water taps and that any removable handle taps are being properly used	Replace or repair the missing or damaged signage and fittings
	Check plumbing and pump connections are watertight/without leakage	Repair any leaks as necessary
	Check suction strainers, in-line strainers and pump location for debris	Clean suction strainers, in-line strainers or debris from pump location
	Check pump installation is adequate for reliable ongoing operation	Modify and repair as required
	Check first flush diverter, if present	Clean first flush diverter, repair and replace if necessary
	Check health of absorption trench area and surrounding grass or plants	Investigate any adverse impacts observed that might be due to irrigation
	Check condition of roof and coatings	Investigate and resolve any apparent changes to roof condition, such as loss of material coatings

Triennial	Drain, clean out and check the condition of the tank walls and roof to ensure no holes have arisen due to tank deterioration	Repair any tank defects
	Check sediment levels in the tank	Organise a suitable contractor to remove accumulated sediment if levels are approaching those that may block tank outlets
	Undertake a systematic review of operational control of risks to the system	Identify the reason for any problems during inspections and take actions to prevent failures occurring in future
After 20 years and then every 5 years	Monitor the effectiveness of the stormwater absorption area to assess for any clogging due to algal growth, or blocking due to tree roots/grass growth/trench failure.	Clean or replace clogged equipment
Ongoing	Inspect and follow up on any complaints or concerns raised that could indicate problems with the system	Repair or replace any problems that are notified

STORAGE TRENCH

Hydrology		
Total Catchment Area	1264	m^2
Runoff Coefficient	0.743	
Annunal Recurrence Interval (ARI)	20	yr
Ground Conditions		
Hydraulic conductivity (K)	0.12	m/day
	0.080	mm/min
Adjusted Rate (15% clogging factor)	0.068	mm/min
Trench Design		
Length	14.2	m
Width	3	m
Depth	1	m
Infiltration Area	42.6	m^2
Porosity	0.35	%
Trench Storage	14.91	m^3
	14910	L

Final Check			
Criteria	**Requirement**	**Design**	**Check**
Detention reqd	12730	14910	OK

Storm Duration	Intensity	Inflow Volume	Outflow Volume	Required Storage	Emptying time
	(mm/hr)	(m^3)	(L)	(L)	(hr)
1 min	**143**	2238	3	2235	12.89
2 min	**113**	3537	6	3532	20.37
3 min	**102**	4790	9	4781	27.57
4 min	**94.2**	5898	12	5886	33.95
5 min	**87.6**	6856	14	6841	39.45
10 min	**65.6**	10268	29	10239	59.05
15 min	**53.1**	12467	43	12424	71.65
20 min	**45**	14087	58	14029	80.91
25 min	**39.5**	15457	72	15385	88.72
30 min	**35.4**	16623	87	16536	95.36
45 min	**27.8**	19581	130	19451	112.18
1 hour	**23.5**	22070	173	21897	126.28
1.5 hour	**18.7**	26343	260	26083	150.42
2 hour	**16.1**	30241	347	29894	172.40
3 hour	**13.2**	37190	520	36670	211.48
4.5 hour	**11**	46488	780	45708	263.60
6 hour	**9.7**	54659	1040	53618	309.22
9 hour	**8.1**	68464	1561	66904	385.83
12 hour	**7.07**	79678	2081	77597	447.50
18 hour	**5.72**	96695	3121	93574	539.64
24 hour	**4.82**	108641	4162	104480	602.53
30 hour	**4.17**	117488	5202	112286	647.55
36 hour	**3.66**	123743	6242	117500	677.63
48 hour	**2.93**	132082	8323	123759	713.72
72 hour	**2.07**	139971	12485	127486	735.22
			Full volume	14875	735.22

Notes:

Inflow volume calculated using Equation 10.1 (WSUD Guidelines: Chapter 10)

Outflow volume calculated using Equation 10.2 (WSUD Guidelines: Chapter 10)

Required storage and emptying time is left blank when outflow volume exceeds inflow volume

Location

Label: 48 Derwent Avenue
Easting: 522243
Northing: 5234477
Zone: 55
Latitude: Nearest grid cell: 43.0375 (S)
Longitude: Nearest grid cell: 147.2625 (E)

IFD Design Rainfall Intensity (mm/h)

Issued: 22 January 2026

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).
FAQ for New ARR probability terminology

Table | Chart | Coefficients

Unit: mm/h

	Annual Exceedance Probability (AEP)						
Duration	**63.2%**	**50%#**	**20%***	**10%**	**5%**	**2%**	**1%**
1 min	62.3	70.8	99.3	120	143	174	200
2 min	53.6	60.5	82.5	97.7	113	133	148
3 min	47.4	53.6	73.8	87.9	102	121	136
4 min	42.7	48.4	67.1	80.5	94.2	113	128
5 min	39.0	44.3	61.8	74.5	87.6	106	121
10 min	28.2	32.1	45.2	55.1	65.6	80.7	93.4
15 min	22.8	25.9	36.5	44.6	53.1	65.4	75.8
20 min	19.5	22.1	31.1	37.9	45.0	55.4	64.1
25 min	17.2	19.6	27.4	33.3	39.5	48.4	55.8
30 min	15.6	17.7	24.7	29.9	35.4	43.2	49.7
45 min	12.5	14.1	19.7	23.7	27.8	33.5	38.2
1 hour	10.7	12.1	16.8	20.1	23.5	28.1	31.8
1.5 hour	8.64	9.81	13.5	16.1	18.7	22.2	25.0
2 hour	7.45	8.48	11.7	13.9	16.1	19.0	21.3
3 hour	6.08	6.95	9.65	11.5	13.2	15.6	17.3
4.5 hour	4.97	5.72	8.01	9.54	11.0	12.9	14.4
6 hour	4.31	4.97	7.02	8.38	9.70	11.4	12.8
9 hour	3.49	4.05	5.79	6.96	8.10	9.61	10.8
12 hour	2.99	3.48	5.01	6.05	7.07	8.44	9.50
18 hour	2.36	2.75	4.00	4.87	5.72	6.89	7.80
24 hour	1.97	2.30	3.35	4.09	4.82	5.84	6.64
30 hour	1.69	1.98	2.89	3.53	4.17	5.06	5.77
36 hour	1.49	1.74	2.54	3.10	3.66	4.45	5.08
48 hour	1.21	1.40	2.03	2.48	2.93	3.56	4.07
72 hour	0.877	1.01	1.45	1.76	2.07	2.50	2.85
96 hour	0.693	0.796	1.13	1.36	1.58	1.91	2.17
120 hour	0.576	0.659	0.923	1.11	1.29	1.54	1.74
144 hour	0.497	0.567	0.788	0.938	1.09	1.29	1.46
168 hour	0.439	0.501	0.692	0.821	0.946	1.12	1.26

Note:
The 50% AEP IFD **does not** correspond to the 2 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 1.44 ARI.
* The 20% AEP IFD **does not** correspond to the 5 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 4.48 ARI.

STORMWATER DETENTION V5.05

Geo-Environmental Solutions

Location: **Margate, Tas**
Site: **1264m² with tc = 20 and tcs = 15 mins.**
PSD: **AEP of 5%, Underground rectangular tank PSD = 4.74L/s**
Storage: **AEP of 5%, Underground rectangular tank volume = 12.73m³**

Design Criteria

(Custom AEP IFD data used)

Location = Margate, Tas
Method = E (A)RI 2001,A(E)P 2019

PSD annual exceedance probabiliy (APE) = 5 %
Storage annual exceedance probabiliy (APE) = 5 %

Storage method = U (A)bove,(P)ipe,(U)nderground,(C)ustom

Site Geometry

Site area (As) = 1264 m² = 0.1264 Ha
Pre-development coefficient (Cp) = 0.30
Post development coefficient (Cw) = 0.74

Total catchment (tc) = 20 minutes
Upstream catchment to site (tcs) = 15 minutes

Coefficient Calculations

Pre-development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	0	1.00	0
Gravel	0	0.50	0
Garden	1264	0.30	379
Total	1264 m²		379

Cp = ΣArea*C/Total = 0.300

Post development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	614	1.00	614
Gravel	650	0.50	325
Garden	0	0.30	0
Total	1264 m²		939

Cw = ΣArea*C/Total = 0.743

Permissible Site Discharge (PSD) (AEP of 5%)

PSD Intensity (I) = 45.3 mm/hr For catchment tc = 20 mins.
Pre-development (Qp = Cp*I*As/0.36) = 4.77 L/s
Peak post development (Qa = 2*Cw*I*As/0.36) = 23.61 L/s =(0.522 x I) Eq. 2.24

Storage method = U (A)bove,(P)ipe,(U)nderground,(C)ustom
Permissible site discharge (Qu = PSD) = 4.742 L/s

Above ground - Eq 3.8

$0 = PSD^2 - 2*Qa/tc*(0.667*tc*Qp/Qa + 0.75*tc+0.25*tcs)*PSD + 2*Qa*Qp$

Taking x as = PSD and solving

a = 1.0 b = -50.6 c = 225.1

$PSD = -b \pm \sqrt{(b^2-4ac)}/(2a)$

PSD = 4.925 L/s

Below ground pipe - Eq 3.3

$Qp = PSD*[1.6*tcs/\{tc*(1-2*PSD/(3*Qa))\}-0.6*tcs^{2\cdot67}/\{tc*(1-2*PSDp/(3*Qa))\}^{2\cdot67}]$

= 4.77

PSD = 4.873 L/s

Below ground rectangular tank - Eq 3.4

$t = tcs/(tc*(1-2*PSD/(3*Qa)))$ = 0.866

$Qp = PSD*[0.005-0.455*t+5.228*t^2-1.045*t^3-7.199*t^4+4.519*t^5]$

= 4.77

PSD = 4.742 L/s

Design Storage Capacity (AEP of 5%)

Above ground (Vs) = $[0.5*Qa*td-[(0.875*PSD*td)(1-0.917*PSD/Qa)+(0.427*td*PSD^2/Qa)]]*60/10^3$ m^3 Eq 4.23

Below ground pipe (Vs) = $[(0.5*Qa-0.637*PSD+0.089*PSD^2/Qa)*td]*60/10^3$ m^3 Eq 4.8

Below ground rect. tank (Vs) = $[(0.5*Qa-0.572*PSD+0.048*PSD^2/Qa)*td]*60/10^3$ m^3 Eq 4.13

td (mins)	I (mm/hr)	Qa (L/s)	Above Vs (m^3)	Pipe Vs (m^3)	B/G Vs (m^3)
5	88.0	45.9			6.08
20	45.3	23.6			10.97
28	37.1	19.3			11.79
35	32.4	16.9			12.20
43	28.7	15.0			12.49
50	26.2	13.7			12.63
58	24.1	12.6			12.71
65	22.6	11.8			12.73
73	21.1	11.0			12.69
80	20.1	10.5			12.63

Table 1 - Storage as function of time for AEP of 5%

Type	td (mins)	I (mm/hr)	Qa (L/s)	Vs (m^3)
Above				
Pipe				
B/ground	63.8	22.8	11.9	**12.73**

Table 2 - Storage requirements for AEP of 5%

Frequency of operation of Above Ground storage

Qop2 = 0.75 Cl 2.4.5.1

Qp2 =Qop2*Qp1 (where Qp1=PSD) = 3.69 L/s at which time above ground storage occurs

I = $360*Qp2/(2*Cw*As*10^3)$ = 7.1 mm/h Eq 4.24

Period of Storage

Time to Fill:

Above ground (tf) = $td*(1-0.92*PSD/Qa)$ Eq 4.27

Below ground pipe (tf) = $td*(1-2*PSD/(3*Qa))$ Eq 3.2

Below ground rect. tank (tf) = $td*(1-2*PSD/(3*Qa))$ Eq 3.2

Time to empty:

Above ground (te) = $(Vs+0.33*PSD^2*td/Qa*60/10^3)*(1.14/PSD)*(10^3/60)$ Eq 4.28

Below ground pipe (te) = $1.464/PSD*(Vs+0.333*PSD^2*td/Qa*60/10^3)*(10^3/60)$ Eq 4.32

Below ground rect. tank (te) = $2.653/PSD*(Vs+0.333*PSD^2*td/Qa*60/10^3)*(10^3/60)$ Eq 4.36

Storage period (Ps = tf + te) Eq 4.26

Type	td (mins)	Qa (L/s)	Vs (L/s)	tf (mins)	te (mins)	Ps (mins)
Above						
Pipe						
B/ground	63.8	11.9	12.7	46.8	141.2	188.0

Table 3 - Period of Storage requirements for AEP of 5%

Orifice

Permissible site discharge (Qu=PSD) = 4.74 L/s (Underground storage)

Orifice coefficient (CD) = 0.61 For sharp circular orifice

Gravitational acceration (g) = 9.81 m/s^2

Maximum storage depth above orifice (H) = 400 mm

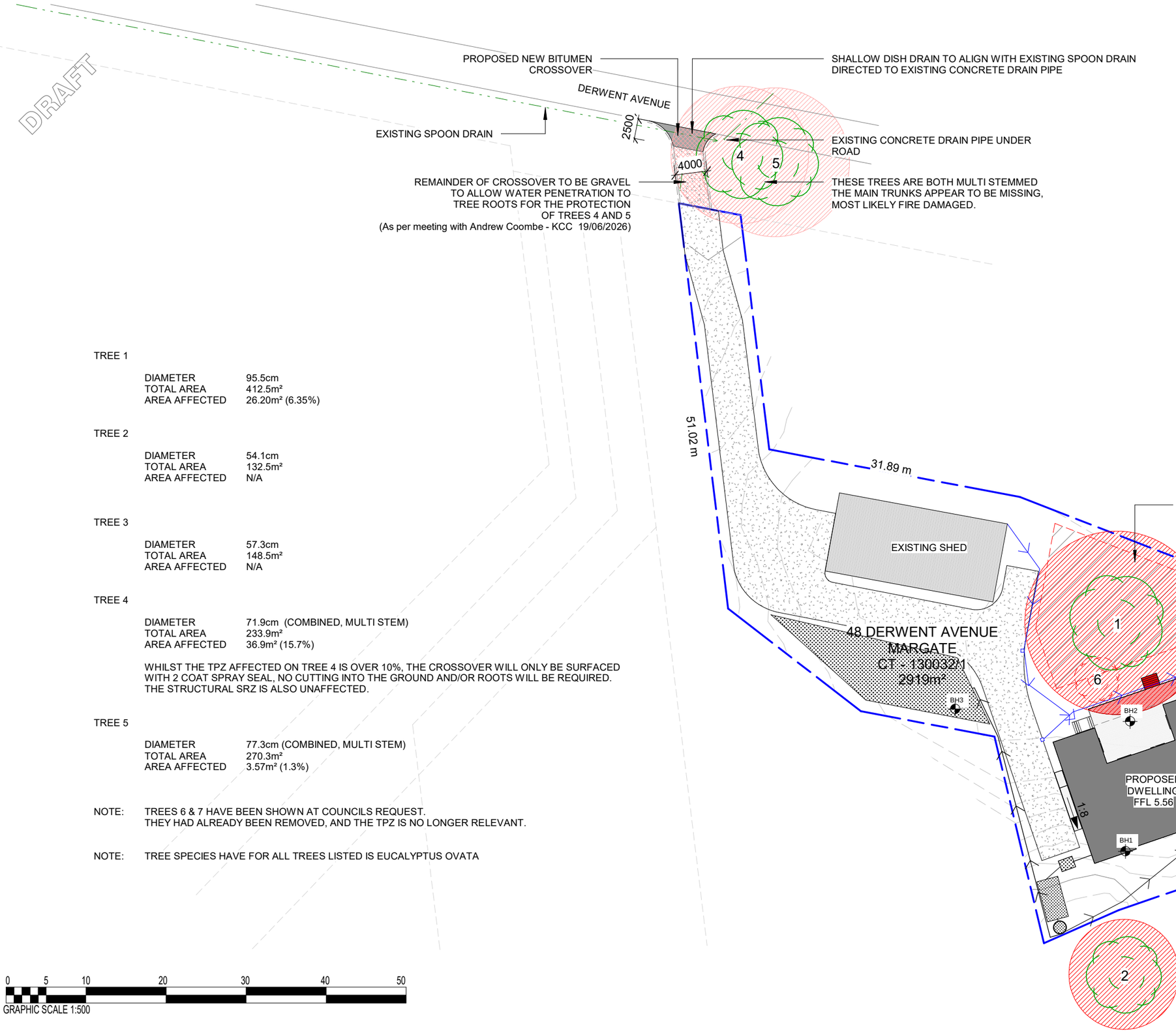
Orifice flow (Q) = $CD*Ao*\sqrt{(2*g*H)}$

Therefore:

Orifice area (Ao) = 2775 mm^2

Orifice diameter ($D = \sqrt{(4*Ao/\pi)}$) = 59.4 mm

Construction and materials in accordance with current NCC requirements and all relevant Australian Standards - See General Notes
Construction in accordance with AS3959 = BAL 19



TREE 1

DIAMETER	95.5cm
TOTAL AREA	412.5m²
AREA AFFECTED	26.20m² (6.35%)

TREE 2

DIAMETER	54.1cm
TOTAL AREA	132.5m²
AREA AFFECTED	N/A

TREE 3

DIAMETER	57.3cm
TOTAL AREA	148.5m²
AREA AFFECTED	N/A

TREE 4

DIAMETER	71.9cm (COMBINED, MULTI STEM)
TOTAL AREA	233.9m²
AREA AFFECTED	36.9m² (15.7%)

WHILST THE TPZ AFFECTED ON TREE 4 IS OVER 10%, THE CROSSOVER WILL ONLY BE SURFACED WITH 2 COAT SPRAY SEAL, NO CUTTING INTO THE GROUND AND/OR ROOTS WILL BE REQUIRED. THE STRUCTURAL SRZ IS ALSO UNAFFECTED.

TREE 5

DIAMETER	77.3cm (COMBINED, MULTI STEM)
TOTAL AREA	270.3m²
AREA AFFECTED	3.57m² (1.3%)

NOTE: TREES 6 & 7 HAVE BEEN SHOWN AT COUNCILS REQUEST.
THEY HAD ALREADY BEEN REMOVED, AND THE TPZ IS NO LONGER RELEVANT.

NOTE: TREE SPECIES HAVE FOR ALL TREES LISTED IS EUCALYPTUS OVATA

0 5 10 20 30 40 50
GRAPHIC SCALE 1:500

New Services

STORMWATER PIPE WITH FLOW DIRECTION

GRATED STORMWATER PIT 450x450 CLASS A ACO GALVANISED HEELGUARD OR SIMILAR ENGINEER APPROVED

Performance Solution Compliance Notes:

AS 3500.3 - CL 7.10
- 7.10.1 - OVERFLOW IS SAFE AND DOES NOT COMPROMISE FREEBOARD TO HABITABLE SPACES.

GENERAL
- AS/NZS 3500.3: PART 3 STORMWATER DRAINAGE AUSTRALIAN RAINFALL AND RUN-OFF VOLUME 8: URBAN STORMWATER MANAGEMENT
- AUSTRALIAN RUNOFF QUALITY - A GUIDE TO WATER SENSITIVE URBAN DESIGN
- STORM DRAINAGE DESIGN IN SMALL URBAN CATCHMENTS: A HANDBOOK FOR AUSTRALIAN PRACTICE
- WATER SENSITIVE URBAN DESIGN (WSUD) ENGINEERING PROCEDURE: STORMWATER
- WATER SERVICES ASSOCIATION OF AUSTRALIA CODE (WSAA)

Stormwater Services Notes:
1. ALL SITE SAFETY & MANAGEMENT PROCEDURES SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF STATE GROWTH SPECIFICATIONS: SECTION 168 OCCUPATIONAL HEALTH AND SAFETY & SECTION 176 ENVIRONMENTAL MANAGEMENT.
2. ALL PIPES UNDER TRAFFICABLE AREAS ARE TO BE BACKFILLED FULL DEPTH WITH 20 F.C.R. AND FULLY COMPACTED.
3. ALL STORMWATER PIPES TO BE PVC-U-SWJ CLASS "SN8" TO AS1254 UNO.
4. ALL DRAIN AND TRENCH CONSTRUCTION SHALL COMPLY WITH THE LGAT STANDARD DRG TSD G01.
5. ANY EXCAVATED TRENCHES IN EXCESS OF 1.5M IN DEPTH ARE TO BE ADEQUATELY SHORED TO PREVENT COLLAPSE DURING WORKS.

GES
GEO-ENVIRONMENTAL SOLUTIONS
29 Kirkaway Place Battery Point
T| 62231839 E| office@geosolutions.net.au

General Notes
Do not scale plans, use written dimensions only. The owner/builder subcontractor shall verify all dimensions, levels, setbacks and specifications prior to commencing works or ordering materials and shall be responsible for ensuring that all building works conform to the current NCC and Australian standards, building regulations and town planning requirements.
Report any discrepancies to this office.

systembuilt
designed for living
1063 Cambridge Road
Cambride, TAS 7170 (03) 6214 8888

Alan Braddock and Dinah Jones
48 Derwent Ave, Margate
Braddock / Jones Residence

SITE - TREES & ACCESS

Project number	7014	
Drawing Status	DA	
Current Revision	09/07/2026	R23

2 A-01.1

Scale on A3 1 : 500

9/07/2026 9:56:00 AM

Design notes:

1.Absorption bed dimensions of up to 21m long by 0.8m deep by 3m wide
– total storage volume calculated at average 35% porosity.
2.Base of bed to be excavated level and smearing and compaction avoided.
3.90-100mm slotted pipe should be placed in the top 100mm of the 20mm aggregate
4.Geotextile or filter cloth to be placed over the pipe to prevent clogging of the pipes and aggregate
5.All works on site to comply with AS3500 and Tasmanian Plumbing code.

GEO-ENVIRONMENTAL
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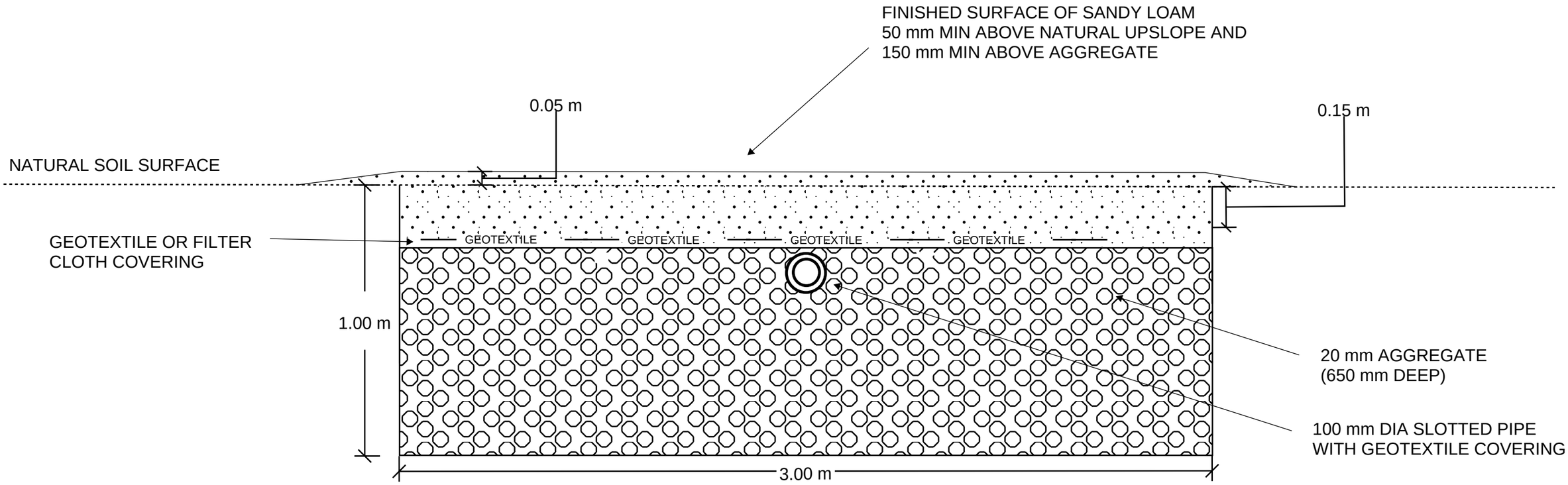

Do not scale from these drawings. Dimensions to take precedence over scale.	Geo-Environmental Solutions Stormwater trench			Stormwater Absorption Detail

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: EMAC Systembuilt Group *Owner name*
1063 Cambridge Road *Address*
Cambridge 7170 *Suburb/postcode*

Designer details:

Name: Vinamra Gupta
Category: Civil Engineer
Business name: Geo-Environmental Solutions
Phone No: 03 6223 1839
Business address: 29 Kirksway Place
Battery Point 7004
Fax No: N/A
Licence No: 685982720
Email address: office@geosolutions.net.au

Details of the proposed work:

Owner/Applicant EMAC Systembuilt Group
Designer's project reference No. J12460
Address: 48 Derwent Avenue
Lot No: 169532/4
Margate 7054

Type of work: Building work ☐ Plumbing work ☒ *(X all applicable)*

Description of work:
On-Site stormwater system - design

(new building / alteration / addition / repair / removal / re-erection water / sewerage / stormwater / on-site wastewater management system / backflow prevention / other)

Description of the Design Work (Scope, limitations or exclusions): *(X all applicable certificates)*

Certificate Type:	Certificate	Responsible Practitioner
	☐ Building design	Architect or Building Designer
	☐ Structural design	Engineer or Civil Designer
	☐ Fire Safety design	Fire Engineer
	☒ Civil design	Civil Engineer or Civil Designer
	☐ Hydraulic design	Building Services Designer
	☐ Fire service design	Building Services Designer
	☐ Electrical design	Building Services Designer
	☐ Mechanical design	Building Service Designer
	☐ Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	☐ Other (specify)	

Deemed-to-Satisfy: ☐ Performance Solution: ☒ *(X the appropriate box)*

Other details:

Stormwater Absorption Trench

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: Geo-Environmental Solutions	Date: Jul-26
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Geo-Environmental Solutions	Date: Jul-26
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by: Geo-Environmental Solutions	Date: Jul-26
Test reports:	Prepared by: Geo-Environmental Solutions	Date: Jul-26

Standards, codes or guidelines relied on in design process:

AS3500 (Parts 0-5)-2013 Plumbing and drainage set.

Any other relevant documentation:

Stormwater Assessment - 48 Derwent Avenue Margate - Jul-26

Attribution as designer:

I Vinamra Gupta, am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	Name: (print)	*Signed*	*Date*
Designer:	Vinamra Gupta		24/07/2026
Licence No:	685982720		

Assessment of Certifiable Works: (TasWater)

Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.

If you cannot check ALL of these boxes, LEAVE THIS SECTION BLANK.

TasWater must then be contacted to determine if the proposed works are Certifiable Works.

I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

- [x] The works will not increase the demand for water supplied by TasWater
- [x] The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- [x] The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- [x] The works will not damage or interfere with TasWater's works
- [x] The works will not adversely affect TasWater's operations
- [x] The work are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- [x] I have checked the LISTMap to confirm the location of TasWater infrastructure
- [x] If the property is connected to TasWater's water system, a water meter is in place, or has been applied for to TasWater.

Certification:

I ..... Vinamra Gupta..... being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008,* that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: www.taswater.com.au

	Name: (print)	*Signed*	*Date*
Designer:	Vinamra Gupta		24/07/2026