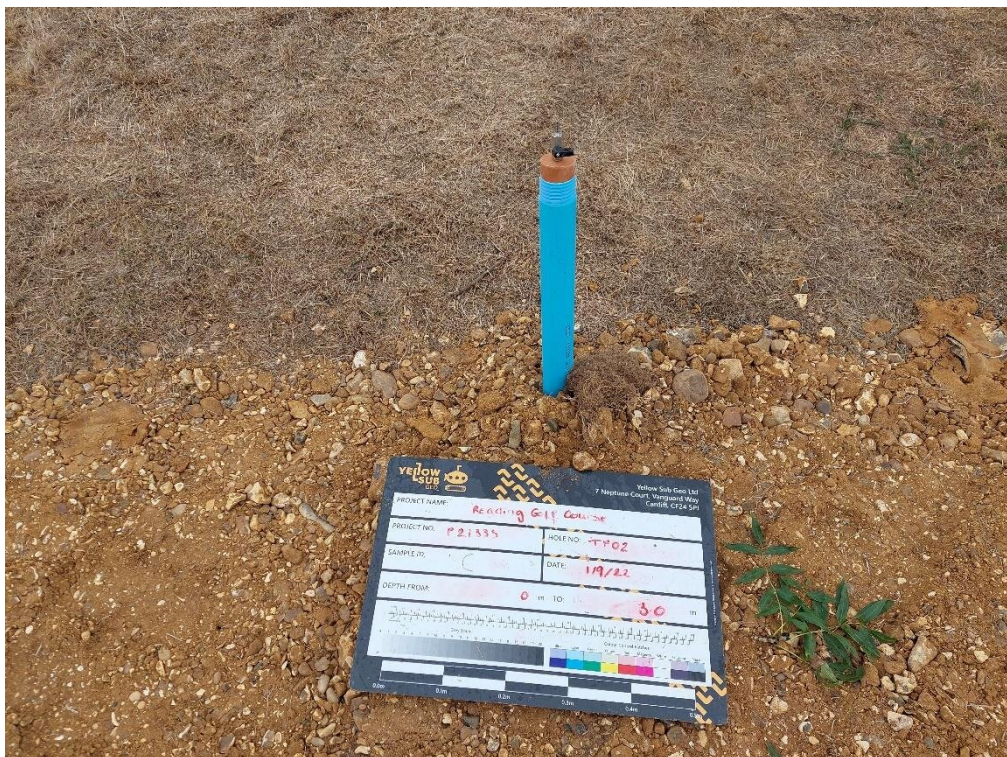




TP02 reinstated



TP03 0-0.3m bgl

Project	Reading Golf Course	 AQUA TERRA CONSULTING
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	



TP03 0.3-3m bgl



TP03 trial pit

Project	Reading Golf Course	 AQUA TERRA CONSULTING
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	



TP03 reinstated



TP04 trial pit

Project	Reading Golf Course	 AQUA TERRA CONSULTING
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	



TP04 0-3m bgl



TP04 reinstated

Project	Reading Golf Course	 AQUA TERRA CONSULTING
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	



TP05 trial pit



TP05 0-3m bgl

Project	Reading Golf Course	 AQUA TERRA CONSULTING
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	



TP05 reinstated

TP06 0-3m bgl

Project	Reading Golf Course	 AQUA TERRA CONSULTING
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	



TP06 reinstated

Looking across Site towards Cucumber Woods

Project	Reading Golf Course	 AQUA TERRA CONSULTING
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	



Looking east across Site

Looking west across Site

Project	Reading Golf Course	
Project No.	P25033_R2	
Client	Fairfax (Reading) Limited and RGC (SODC) Limited	

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	30	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	x
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Depth (m)
✓ Attenuation basin		5.00	79.528	Manhole	1200	0.800
✓ Swale input 1			79.345	Junction		0.796
✓ Western swale		5.00	78.678	Junction		0.800
✓ Swale input 3			78.673	Junction		0.800
✓ Eastern swale		5.00	77.299	Manhole	1200	0.600
✓ Dummy 2			77.133	Manhole	1200	0.833
✓ Basin input 1			79.663	Manhole	1350	0.855
✓ 8	0.437	5.00	80.000	Manhole	1350	0.900
✓ Depth/Area 1	0.305	5.00	80.000	Manhole	1350	1.150
✓ Swale input 2			79.345	Junction		0.617

Links (Results)

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
2.000	0.630	22.3	0.0	0.650	0.550	0.480	0.000	0.0	0	0.000
3.000	0.235	8.3	0.0	0.650	0.650	0.604	0.000	0.0	0	0.000
Dummy out	2.040	16.0	0.0	0.500	0.733	0.500	0.000	0.0	0	0.000
1.000	3.158	502.3	59.2	0.450	0.350	-0.038	0.437	0.0	103	2.148
3.000_1	2.283	363.2	41.3	0.700	0.167	0.167	0.305	0.0	102	1.537

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	x	Check Discharge Rate(s)	x
Rainfall Events	Singular	Drain Down Time (mins)	240	Check Discharge Volume	x
Summer CV	0.750	Additional Storage (m³/ha)	20.0		
Analysis Speed	Normal	Starting Level (m)			

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	35	0	0
100	40	0	0

Node Attenuation basin Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	24.150
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	78.728	Main Channel Slope (1:X)	300.0
Safety Factor	2.0	Time to half empty (mins)	36	Main Channel n	0.035

Inlets

Basin input 1

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	143.0	90.2	0.800	262.8	230.2

Node Western swale Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	63.120
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	77.878	Main Channel Slope (1:X)	94.0
Safety Factor	2.0	Time to half empty (mins)	51	Main Channel n	0.050

Inlets

Swale input 1

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	167.0	167.0	0.800	295.0	1159.8

Node Eastern swale Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.19400	Porosity	1.00	Main Channel Length (m)	84.620
Side Inf Coefficient (m/hr)	0.19400	Invert Level (m)	76.699	Main Channel Slope (1:X)	62.0
Safety Factor	5.0	Time to half empty (mins)	90	Main Channel n	0.035

Inlets

Swale input 3

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	725.0	2053.2	0.600	907.0	2407.3

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	58.735	16.620
1 year 30 minute summer	37.849	10.710
1 year 60 minute summer	24.974	6.600
1 year 120 minute summer	20.115	5.316
1 year 180 minute summer	17.182	4.422
1 year 240 minute summer	14.373	3.798
1 year 360 minute summer	11.574	2.978
1 year 480 minute summer	9.331	2.466
1 year 600 minute summer	7.735	2.116
1 year 720 minute summer	6.941	1.860
1 year 960 minute summer	5.736	1.510
1 year 1440 minute summer	4.188	1.123

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year +35% CC 15 minute summer	416.138	117.753
30 year +35% CC 30 minute summer	270.494	76.540
30 year +35% CC 60 minute summer	179.821	47.521
30 year +35% CC 120 minute summer	108.657	28.715
30 year +35% CC 180 minute summer	82.272	21.172
30 year +35% CC 240 minute summer	64.223	16.972
30 year +35% CC 360 minute summer	47.930	12.334
30 year +35% CC 480 minute summer	36.987	9.775
30 year +35% CC 600 minute summer	29.758	8.140
30 year +35% CC 720 minute summer	26.113	6.999
30 year +35% CC 960 minute summer	20.897	5.503
30 year +35% CC 1440 minute summer	14.588	3.910
100 year +40% CC 15 minute summer	557.523	157.760
100 year +40% CC 30 minute summer	367.080	103.871
100 year +40% CC 60 minute summer	245.553	64.892
100 year +40% CC 120 minute summer	144.700	38.240
100 year +40% CC 180 minute summer	108.496	27.920
100 year +40% CC 240 minute summer	84.239	22.262
100 year +40% CC 360 minute summer	62.487	16.080
100 year +40% CC 480 minute summer	48.097	12.711
100 year +40% CC 600 minute summer	38.628	10.566
100 year +40% CC 720 minute summer	33.846	9.071
100 year +40% CC 960 minute summer	27.003	7.111
100 year +40% CC 1440 minute summer	18.744	5.024

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	Attenuation basin	22	78.825	0.097	26.9	0.1092	0.0000	OK
30 minute summer	Swale input 1	23	78.586	0.036	16.3	0.0000	0.0000	OK
240 minute summer	Western swale	140	78.082	0.204	11.9	0.0000	0.0000	SURCHARGED
240 minute summer	Swale input 3	140	78.074	0.201	10.5	0.0000	0.0000	OK
240 minute summer	Eastern swale	156	76.717	0.018	12.3	0.0199	0.0000	OK
15 minute summer	Dummy 2	1	76.300	0.000	0.0	0.0000	0.0000	OK
15 minute summer	Basin input 1	11	78.840	0.031	30.9	0.0449	0.0000	OK
15 minute summer	8	10	79.182	0.082	31.4	0.9109	0.0000	OK
15 minute summer	Depth/Area 1	10	78.927	0.077	21.9	0.5170	0.0000	OK
15 minute summer	Swale input 2	10	78.802	0.074	21.7	0.0000	0.0000	OK
	US Node	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)	
	Attenuation basin	Swale input 1	16.3	0.740	0.731	0.4569		
	Swale input 1	Western swale	19.7	0.205	0.002	17.0598		
	Western swale	Swale input 3	10.5	0.299	1.269	0.3008		
	Swale input 3	Eastern swale	12.3	0.153	0.000	8.9544		
	Eastern swale	Dummy 2	0.0	0.000	0.000	0.0000	0.0	
	Eastern swale		7.8					
	Basin input 1	Attenuation basin	30.7	0.148	0.004	8.4593		
	8	Basin input 1	30.9	1.681	0.062	0.1816		
	Depth/Area 1	Swale input 2	21.7	1.247	0.060	0.1680	9.5	

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	Attenuation basin	24	79.194	0.466	121.3	0.5271	0.0000	SURCHARGED
15 minute summer	Swale input 1	12	78.611	0.061	46.6	0.0000	0.0000	OK
60 minute summer	Western swale	57	78.221	0.343	47.8	0.0000	0.0000	SURCHARGED
60 minute summer	Swale input 3	58	78.083	0.210	43.5	0.0000	0.0000	OK
120 minute summer	Eastern swale	126	76.871	0.172	42.1	0.1949	0.0000	SURCHARGED
15 minute summer	Dummy 2	1	76.300	0.000	0.0	0.0000	0.0000	OK
30 minute summer	Basin input 1	24	79.193	0.385	198.6	0.5506	0.0000	OK
15 minute summer	8	10	79.358	0.258	222.6	2.8798	0.0000	OK
15 minute summer	Depth/Area 1	10	79.072	0.222	155.4	1.4986	0.0000	OK
15 minute summer	Swale input 2	10	78.929	0.201	154.6	0.0000	0.0000	OK

US Node	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
Attenuation basin	Swale input 1	48.3	1.373	2.169	0.7179	
Swale input 1	Western swale	50.4	0.307	0.006	33.2771	
Western swale	Swale input 3	43.5	1.236	5.244	0.3008	
Swale input 3	Eastern swale	43.4	0.242	0.001	62.9628	
Eastern swale	Dummy 2	0.0	0.000	0.000	0.0000	0.0
Eastern swale		23.0				
Basin input 1	Attenuation basin	121.3	0.154	0.017	74.5569	
8	Basin input 1	220.6	2.682	0.439	0.8237	
Depth/Area 1	Swale input 2	154.6	2.108	0.426	0.7101	67.3

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	Attenuation basin	42	79.338	0.610	124.7	0.6897	0.0000	FLOOD RISK
15 minute summer	Swale input 1	11	78.614	0.064	52.9	0.0000	0.0000	OK
60 minute summer	Western swale	60	78.271	0.393	55.6	0.0000	0.0000	SURCHARGED
60 minute summer	Swale input 3	62	78.085	0.212	50.6	0.0000	0.0000	OK
120 minute summer	Eastern swale	140	76.966	0.267	48.5	0.3025	0.0000	SURCHARGED
15 minute summer	Dummy 2	1	76.300	0.000	0.0	0.0000	0.0000	OK
60 minute summer	Basin input 1	42	79.338	0.529	198.2	0.7570	0.0000	OK
15 minute summer	8	10	79.417	0.317	298.3	3.5353	0.0000	OK
15 minute summer	Depth/Area 1	10	79.117	0.267	208.2	1.7968	0.0000	OK
15 minute summer	Swale input 2	10	78.967	0.239	207.1	0.0000	0.0000	OK

US Node	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
Attenuation basin	Swale input 1	55.6	1.580	2.497	0.7242	
Swale input 1	Western swale	52.7	0.298	0.006	37.4883	
Western swale	Swale input 3	50.6	1.436	6.094	0.3008	
Swale input 3	Eastern swale	50.5	0.241	0.001	97.2778	
Eastern swale	Dummy 2	0.0	0.000	0.000	0.0000	0.0
Eastern swale		23.6				
Basin input 1	Attenuation basin	124.7	0.139	0.018	105.9291	
8	Basin input 1	295.6	2.847	0.589	1.1845	
Depth/Area 1	Swale input 2	207.1	2.261	0.570	0.8869	90.1

