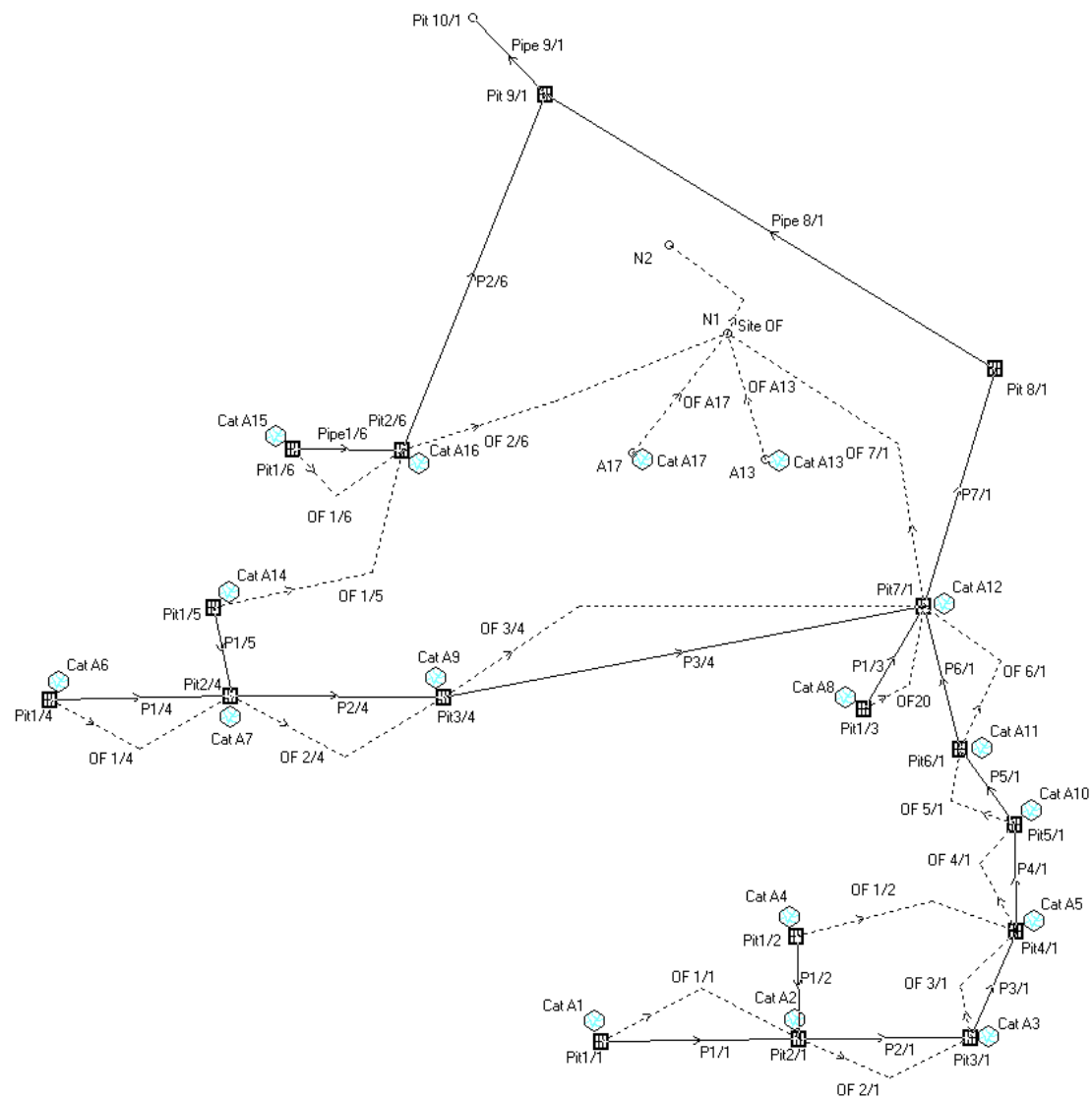


NODE DIAGRAM



RIVERWOOD NORTH PROJECT

PIT / NODE DETAILS			Version 9		Pressure Change Coeff. Ku	Surface Elev (m)	Max Pond Depth (m)	Base Inflow (cu.m/s)	Blocking Factor			Bolt-down lid	
Name	Type	Family	Size	Ponding Volume (cu.m)									
N1	Node					10.45		0					
Pit1/6	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	11.67			0	0.3			No	
Pit2/6	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	11.56			0	0.3			No	
Pit 9/1	OnGrade	900x900 SIP	900x900 SIP	1.5	10.683			0	0			Yes	
Pit 10/1	Node					10.188		0					
Pit1/4	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	15.36			0	0			No	
Pit2/4	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	13.78			0	0			No	
Pit3/4	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	12.74			0	0			No	
Pit7/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	12.31			0	0			No	
Pit 8/1	OnGrade	900x900 SIP	900x900 SIP	1.5	11.108			0	0			Yes	
Pit1/5	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	13.73			0	0			No	
Pit1/3	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	12.31			0	0			No	
Pit1/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	16.46			0	0			No	
Pit2/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	15.66			0	0			No	
Pit3/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	15.36			0	0			No	
Pit4/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	14.68			0	0			No	
Pit5/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	13.4			0	0			No	
Pit6/1	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	12.78			0	0			No	
Pit1/2	OnGrade	NSW Dept. of Housing RM10 Inlet, 3% crossfall, all grades	1.68 m lintel (all grades)	1.5	15.66			0	0			No	
A17	Node					12		0					
A13	Node					12		0					
N2	Node					10		0					
SUB-CATCHMENT DETAILS													
Name	Pit or Node	Total Area (ha)	Paved Area (%)	Grass Area (%)	Supp Area (%)	Paved Time (min)	Grass Time (min)	Supp Time (min)					
Cat A15	Pit1/6	0.2164	25.5	74.5	0	5	5	5					
Cat A16	Pit2/6	0.2526	20.7	79.3	0	5	5	5					
Cat A6	Pit1/4	0.4825	27.8	72.1	0	5	5	5					
Cat A7	Pit2/4	0.3788	13.7	86.3	0	5	5	5					
Cat A9	Pit3/4	0.1117	64.7	35.3	0	5	5	5					
Cat A12	Pit7/1	0.1129	66	34	0	5	5	5					
Cat A14	Pit1/5	0.0387	100	0	0	5	5	5					
Cat A8	Pit1/3	0.3752	43.8	56.2	0	5	5	5					
Cat A1	Pit1/1	0.322	5.8	94.2	0	5	5	5					
Cat A2	Pit2/1	0.2822	6.8	93.2	0	5	5	5					
Cat A3	Pit3/1	0.3042	7.5	92.5	0	5	5	5					
Cat A5	Pit4/1	0.0482	100	0	0	5	5	5					
Cat A10	Pit5/1	0.1695	46.9	53.1	0	5	5	5					
Cat A11	Pit6/1	0.1073	53.7	46.3	0	5	5	5					
Cat A4	Pit1/2	0.155	100	0	0	5	5	5					
Cat A17	A17	1.2295	20	80	0	5	5	5					
Cat A13	A13	0.4075	26.7	73.3	0	5	5	5					
PIPE DETAILS													
Name	From	To	Length (m)	U/S IL (m)	D/S IL (m)	Slope (%)	Type	Dia (mm)	I.D. (mm)	Rough	Pipe Is	No. Pipes	Chg From
Pipe1/6	Pit1/6	Pit2/6	10.83	10.67	10.5	1.57	Concrete, under roads	375	375	0.3	New	1	Pit1/6
P2/6	Pit2/6	Pit 9/1	45.99	10.44	9.73	1.54	Concrete, under roads	375	375	0.3	New	1	Pit2/6
Pipe 9/1	Pit 9/1	Pit 10/1	38	9.282	8.942	0.89	Concrete, under roads	900	900	0.3	New	1	Pit 9/1
P1/4	Pit1/4	Pit2/4	51.178	14.44	12.59	3.61	Concrete, under roads	375	375	0.3	New	1	Pit1/4
P2/4	Pit2/4	Pit3/4	30.648	12.52	11.62	2.94	Concrete, under roads	375	375	0.3	New	1	Pit2/4
P3/4	Pit3/4	Pit7/1	27.535	11.55	10.99	2.03	Concrete, under roads	450	450	0.3	New	1	Pit3/4
P7/1	Pit7/1	Pit 8/1	51.86	10.81	10.13	1.31	Concrete, under roads	600	600	0.3	New	1	Pit7/1
Pipe 8/1	Pit 8/1	Pit 9/1	82	10.058	9.432	0.76	Concrete, under roads	750	750	0.3	New	1	Pit 8/1
P1/5	Pit1/5	Pit2/4	6.776	12.7	12.52	2.66	Concrete, under roads	375	375	0.3	New	1	Pit1/5
P1/3	Pit1/3	Pit7/1	6.561	11.33	11.07	3.96	Concrete, under roads	375	375	0.3	New	1	Pit1/3
P1/1	Pit1/1	Pit2/1	39.241	15.26	14.61	1.66	Concrete, under roads	375	375	0.3	New	1	Pit1/1

RIVERWOOD NORTH PROJECT

P2/1	Pit2/1	Pit3/1	21.057	14.5	14.13	1.76	Concrete, under roads	375	375	0.3	New	1	Pit2/1
P3/1	Pit3/1	Pit4/1	22.011	14.13	13.35	3.54	Concrete, under roads	375	375	0.3	New	1	Pit3/1
P4/1	Pit4/1	Pit5/1	26.541	13.35	12.14	4.56	Concrete, under roads	375	375	0.3	New	1	Pit4/1
P5/1	Pit5/1	Pit6/1	23.736	12.14	11.69	1.9	Concrete, under roads	450	450	0.3	New	1	Pit5/1
P6/1	Pit6/1	Pit7/1	30.841	11.69	11	2.24	Concrete, under roads	450	450	0.3	New	1	Pit6/1
P1/2	Pit1/2	Pit2/1	10.277	14.72	14.5	2.14	Concrete, under roads	375	375	0.3	New	1	Pit1/2
OVERFLOW ROUTE DETAILS													
Name	From	To	Travel Time (min)	Spill Level (m)	Crest Length (m)	Weir Coeff. C	Cross Section	Safe Depth Major Storms (m)	SafeDepth Minor Storms (m)	Safe DxV (sq.m/sec)	Bed Slope (%)	D/S Area Contributing %	
Site OF	N1	N2	5				Dummy	0.2	0.05	0.6	1	0	
OF 1/6	Pit1/6	Pit2/6	3				Dummy	0.2	0.05	0.6	1	0	
OF 2/6	Pit2/6	N1	3				Dummy	0.2	0.05	0.6	1	0	
OF 1/4	Pit1/4	Pit2/4	3				Dummy	0.2	0.05	0.6	1	0	
OF 2/4	Pit2/4	Pit3/4	3				Dummy	0.2	0.05	0.6	1	0	
OF 3/4	Pit3/4	Pit7/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 7/1	Pit7/1	N1	3				Dummy	0.2	0.05	0.6	1	0	
OF 1/5	Pit1/5	Pit2/6	3				Dummy	0.2	0.05	0.6	1	0	
OF20	Pit1/3	Pit7/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 1/1	Pit1/1	Pit2/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 2/1	Pit2/1	Pit3/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 3/1	Pit3/1	Pit4/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 4/1	Pit4/1	Pit5/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 5/1	Pit5/1	Pit6/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 6/1	Pit6/1	Pit7/1	3				Dummy	0.2	0.05	0.6	1	0	
OF 1/2	Pit1/2	Pit4/1	3				Dummy	0.2	0.05	0.6	1	0	
OF A17	A17	N1	5				Dummy	0.2	0.05	0.6	1	0	
OF A13	A13	N1	5				Dummy	0.2	0.05	0.6	1	0	

DATA

The diagram is a complex network of nodes and edges. Nodes are represented by different shapes and colors: blue squares, red circles, green hexagons, and yellow diamonds. Each node is associated with a numerical value, color-coded to match the node's color. The edges are either solid lines with arrows or dashed lines with arrows, indicating the direction of the relationship. The values range from 0.001 to 0.309. The network shows a high degree of connectivity, with many nodes having multiple incoming and outgoing edges. The overall structure suggests a complex system of interactions, possibly representing a psychological or social network.

10 YEAR RESULTS

RIVERWOOD NORTH PROJECT

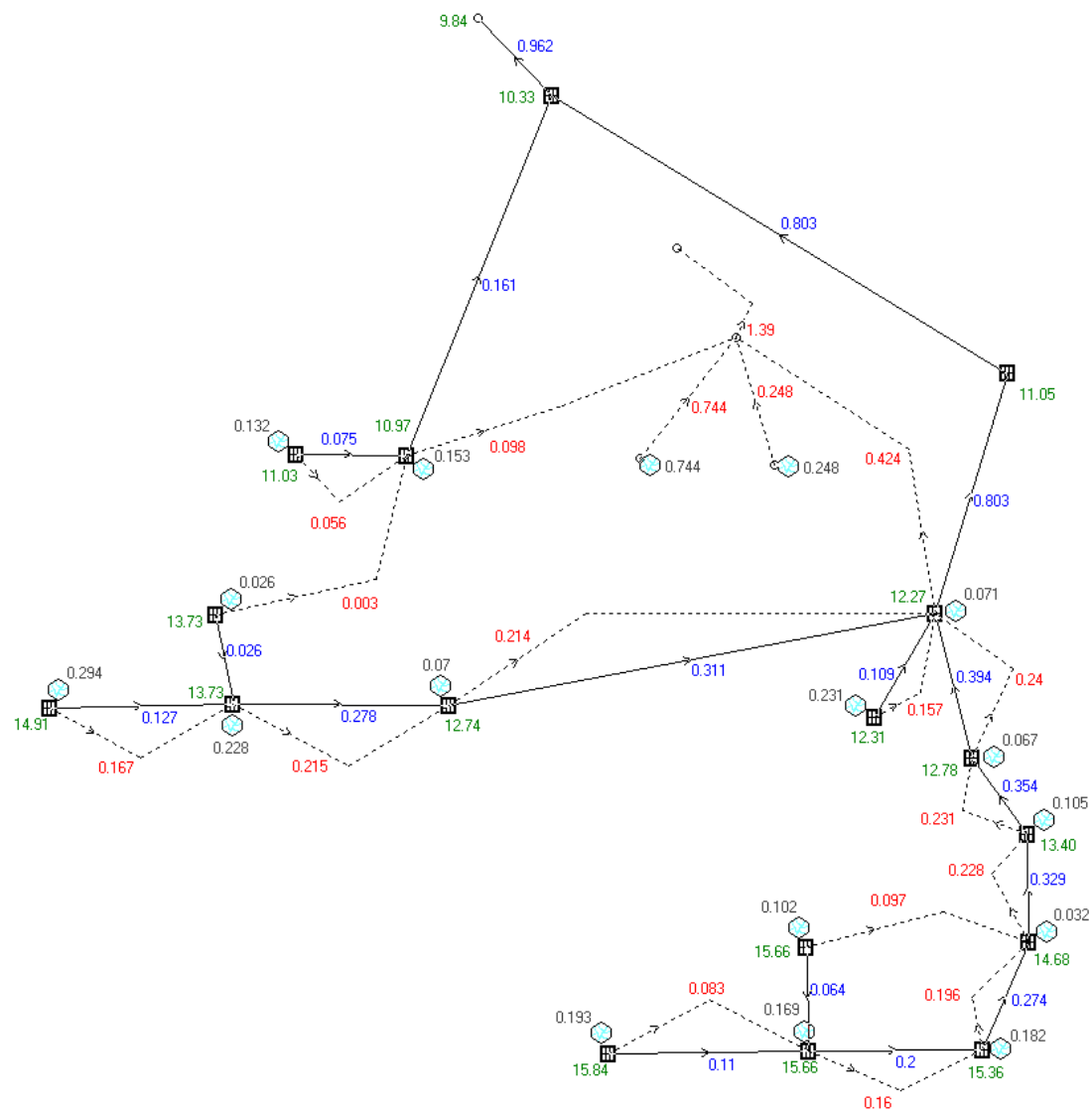
DRAINS results prepared 01 February, 2011 from Version 2011.03							
PIT / NODE DETAILS							
Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit1/6	10.98		0.091		0.69	0.028	Inlet Capacity
Pit2/6	10.92		0.122		0.64	0.05	Inlet Capacity
Pit 9/1	10.33		0		0.36		None
Pit 10/1	9.7		0				
Pit1/4	14.89		0.204		0.47	0.091	Inlet Capacity
Pit2/4	13.52		0.22		0.26	0.104	Inlet Capacity
Pit3/4	12.74		0.13		0	0.041	Outlet System
Pit7/1	12.26		0.235		0.05	0.117	Inlet Capacity
Pit 8/1	11.05		0		0.06		None
Pit1/5	13.52		0.018		0.21	0	None
Pit1/3	12.31		0.163		0	0.072	Outlet System
Pit1/1	15.78		0.131		0.68	0.041	Inlet Capacity
Pit2/1	15.66		0.139		0	0.068	Outlet System
Pit3/1	15.36		0.144		0	0.05	Outlet System
Pit4/1	14.68		0.13		0	0.051	Outlet System
Pit5/1	13.4		0.074		0	0.041	Outlet System
Pit6/1	12.78		0.064		0	0.103	Outlet System
Pit1/2	15.66		0.073		0	0.068	Outlet System
SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Cat A15	0.091	0.026	0.065	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A16	0.106	0.025	0.081	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A6	0.204	0.063	0.14	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A7	0.156	0.024	0.132	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A9	0.05	0.034	0.016	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A12	0.051	0.035	0.015	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A14	0.018	0.018	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A8	0.163	0.077	0.085	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A1	0.131	0.009	0.122	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A2	0.115	0.009	0.106	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A3	0.124	0.011	0.114	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A5	0.023	0.023	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A10	0.074	0.037	0.036	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A11	0.047	0.027	0.02	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A4	0.073	0.073	0	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A17	0.513	0.116	0.397	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Cat A13	0.172	0.051	0.121	5	5	5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Outflow Volumes for Total Catchment (1.40 impervious + 3.59 pervious = 4.99 total ha)							
Storm	Total Rainfall cu.m	Total Runoff cu.m (Runoff %)	Impervious Runoff cu.m (Runoff %)	Pervious Runoff cu.m (Runoff %)			
AR&R 10 year, 5 minutes storm, average 168 mm/h, Zone 1	699.12	375.57 (53.7%)	181.87 (92.9%)	193.70 (38.5%)			
AR&R 10 year, 10 minutes storm, average 131 mm/h, Zone 1	1090.29	690.24 (63.3%)	291.46 (95.4%)	398.79 (50.8%)			
AR&R 10 year, 15 minutes storm, average 110 mm/h, Zone 1	1373.26	908.83 (66.2%)	370.73 (96.4%)	538.10 (54.4%)			
AR&R 10 year, 20 minutes storm, average 97 mm/h, Zone 1	1614.63	1096.27 (67.9%)	438.35 (96.9%)	657.92 (56.6%)			
AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1	1810.21	1234.02 (68.2%)	493.14 (97.2%)	740.87 (56.9%)			
AR&R 10 year, 30 minutes storm, average 79 mm/h, Zone 1	1972.51	1345.59 (68.2%)	538.61 (97.5%)	806.98 (56.8%)			
AR&R 10 year, 45 minutes storm, average 64 mm/h, Zone 1	2396.97	1652.68 (68.9%)	657.53 (97.9%)	995.16 (57.7%)			
AR&R 10 year, 1 hour storm, average 55 mm/h, Zone 1	2746.53	1908.79 (69.5%)	755.46 (98.2%)	1153.34 (58.3%)			
AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1	3220.93	2232.13 (69.3%)	888.36 (98.4%)	1343.77 (58.0%)			
AR&R 10 year, 2 hours storm, average 35.9 mm/h, Zone 1	3585.47	2474.64 (69.0%)	990.49 (98.6%)	1484.16 (57.5%)			
AR&R 10 year, 3 hours storm, average 27.9 mm/h, Zone 1	4179.72	2872.66 (68.7%)	1156.96 (98.8%)	1715.69 (57.0%)			
AR&R 10 year, 4.5 hours storm, average 21.6 mm/h, Zone 1	4853.86	3254.70 (67.1%)	1345.84 (99.0%)	1908.86 (54.6%)			

RIVERWOOD NORTH PROJECT

PIPE DETAILS								
Name	Max Q	Max V	Max U/S	Max D/S	Due to Storm			
	(cu.m/s)	(m/s)	HGL (m)	HGL (m)				
Pipe1/6	0.063	0.76	10.934	10.925	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P2/6	0.135	2.44	10.627	10.328	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 9/1	0.931	1.95	9.915	9.702	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P1/4	0.113	3.18	14.574	13.52	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P2/4	0.247	2.24	13.137	12.74	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P3/4	0.309	1.94	12.462	12.256	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
P7/1	0.798	2.82	11.65	11.049	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
Pipe 8/1	0.798	2.25	10.62	10.328	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P1/5	0.018	0.17	13.521	13.52	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P1/3	0.099	0.89	12.266	12.256	AR&R 10 year, 1.5 hours storm, average 43 mm/h, Zone 1			
P1/1	0.091	0.82	15.731	15.66	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P2/1	0.2	1.81	15.485	15.36	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P3/1	0.275	2.49	14.97	14.68	AR&R 10 year, 2 hours storm, average 35.9 mm/h, Zone 1			
P4/1	0.329	2.97	14.003	13.4	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1			
P5/1	0.354	2.22	13.022	12.78	AR&R 10 year, 20 minutes storm, average 97 mm/h, Zone 1			
P6/1	0.37	2.32	12.494	12.256	AR&R 10 year, 2 hours storm, average 35.9 mm/h, Zone 1			
P1/2	0.06	0.55	15.66	15.66	AR&R 10 year, 5 minutes storm, average 168 mm/h, Zone 1			
OVERFLOW ROUTE DETAILS								
Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
Site OF	0.796	0.796	0.256	0.079	0.07	19.9	0.9	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1/6	0.028	0.028	0.256	0.022	0.01	7.33	0.35	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 2/6	0.05	0.05	0.256	0.027	0.01	9.13	0.4	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1/4	0.091	0.091	0.256	0.034	0.02	10.74	0.48	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 2/4	0.104	0.104	0.256	0.035	0.02	11.09	0.5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 3/4	0.041	0.041	0.256	0.026	0.01	8.53	0.38	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 7/1	0.117	0.117	0.256	0.037	0.02	11.45	0.51	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1/5	0	0	0.256	0	0	0	0	
OF20	0.072	0.072	0.256	0.031	0.01	10.2	0.45	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1/1	0.041	0.041	0.256	0.026	0.01	8.53	0.37	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 2/1	0.068	0.068	0.256	0.03	0.01	10.02	0.45	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 3/1	0.05	0.05	0.256	0.027	0.01	9.13	0.4	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 4/1	0.051	0.051	0.256	0.027	0.01	9.13	0.41	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 5/1	0.041	0.041	0.256	0.026	0.01	8.53	0.37	AR&R 10 year, 2 hours storm, average 35.9 mm/h, Zone 1
OF 6/1	0.103	0.103	0.256	0.035	0.02	11.09	0.5	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF 1/2	0.068	0.068	0.256	0.03	0.01	10.02	0.45	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF A17	0.513	0.513	0.256	0.066	0.05	17.2	0.8	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
OF A13	0.172	0.172	0.256	0.043	0.03	12.53	0.59	AR&R 10 year, 25 minutes storm, average 87 mm/h, Zone 1
Upwelling occurred at Pit6/1								
Freeboard was less than 0.15m at Pit1/2, Pit2/1, Pit3/1, Pit4/1, Pit5/1, Pit1/3, Pit7/1, Pit3/4								

10 YEAR RESULTS

100 YEAR RESULTS



RIVERWOOD NORTH PROJECT

DRAINS results prepared 01 February, 2011 from Version 2011.03							
PIT / NODE DETAILS							
Name	Max HGL	Max Pond HGL	Max Surface Flow Arriving (cu.m/s)	Version 8 Max Pond Volume (cu.m)	Min Freeboard (m)	Overflow (cu.m/s)	Constraint
Pit1/6	11.03		0.132		0.64	0.056	Inlet Capacity
Pit2/6	10.97		0.184		0.59	0.098	Inlet Capacity
Pit 9/1	10.33		0		0.35		None
Pit 10/1	9.84		0				
Pit1/4	14.91		0.294		0.45	0.167	Inlet Capacity
Pit2/4	13.73		0.346		0.05	0.215	Inlet Capacity
Pit3/4	12.74		0.259		0	0.214	Outlet System
Pit7/1	12.27		0.556		0.04	0.424	Inlet Capacity
Pit 8/1	11.05		0		0.06		None
Pit1/5	13.73		0.026		0	0.003	Outlet System
Pit1/3	12.31		0.231		0	0.157	Outlet System
Pit1/1	15.84		0.193		0.62	0.083	Inlet Capacity
Pit2/1	15.66		0.217		0	0.16	Outlet System
Pit3/1	15.36		0.279		0	0.196	Outlet System
Pit4/1	14.68		0.307		0	0.228	Outlet System
Pit5/1	13.4		0.256		0	0.231	Outlet System
Pit6/1	12.78		0.248		0	0.24	Outlet System
Pit1/2	15.66		0.102		0	0.097	Outlet System
SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	Paved Max Q (cu.m/s)	Grassed Max Q (cu.m/s)	Paved Tc (min)	Grassed Tc (min)	Supp. Tc (min)	Due to Storm
Cat A15	0.132	0.036	0.096	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A16	0.153	0.034	0.119	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A6	0.294	0.086	0.207	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A7	0.228	0.033	0.195	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A9	0.07	0.047	0.023	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A12	0.071	0.048	0.023	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A14	0.026	0.026	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat A8	0.231	0.106	0.126	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A1	0.193	0.012	0.181	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A2	0.169	0.012	0.157	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A3	0.182	0.015	0.168	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A5	0.032	0.032	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat A10	0.105	0.051	0.054	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A11	0.067	0.037	0.03	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A4	0.102	0.102	0	5	5	5	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1
Cat A17	0.744	0.158	0.586	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Cat A13	0.248	0.07	0.178	5	5	5	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Outflow Volumes for Total Catchment (1.40 impervious + 3.59 pervious = 4.99 total ha)							
Storm	Total Rainfall cu.m	Total Runoff cu.m (Runoff %)	Impervious Runoff cu.m (Runoff %)	Pervious Runoff cu.m (Runoff %)			
AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1	1040.35	714.57 (68.7%)	277.47 (95.2%)	437.11 (58.4%)			
AR&R 100 year, 10 minutes storm, average 195 mm/h, Zone 1	1622.95	1219.84 (75.2%)	440.68 (96.9%)	779.16 (66.7%)			
AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1	2072.38	1602.90 (77.3%)	566.59 (97.6%)	1036.31 (69.5%)			
AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1	2430.26	1902.64 (78.3%)	666.85 (97.9%)	1235.79 (70.6%)			
AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1	2725.72	2141.06 (78.6%)	749.63 (98.2%)	1391.44 (70.9%)			
AR&R 100 year, 30 minutes storm, average 120 mm/h, Zone 1	2996.21	2362.41 (78.8%)	825.40 (98.3%)	1537.01 (71.3%)			
AR&R 100 year, 45 minutes storm, average 98 mm/h, Zone 1	3670.36	2915.95 (79.4%)	1014.27 (98.6%)	1901.69 (72.0%)			
AR&R 100 year, 1 hour storm, average 84 mm/h, Zone 1	4194.7	3345.84 (79.8%)	1161.16 (98.8%)	2184.68 (72.4%)			
AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1	4943.75	3946.34 (79.8%)	1371.02 (99.0%)	2575.33 (72.4%)			
AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1	5493.06	4372.55 (79.6%)	1524.91 (99.1%)	2847.64 (72.0%)			
AR&R 100 year, 3 hours storm, average 42.4 mm/h, Zone 1	6351.97	5012.14 (78.9%)	1765.54 (99.2%)	3246.59 (71.0%)			
AR&R 100 year, 4.5 hours storm, average 32.7 mm/h, Zone 1	7348.21	5720.12 (77.8%)	2044.62 (99.3%)	3675.50 (69.5%)			

RIVERWOOD NORTH PROJECT

PIPE DETAILS								
Name	Max Q	Max V	Max U/S	Max D/S	Due to Storm			
	(cu.m/s)	(m/s)	HGL (m)	HGL (m)				
Pipe1/6	0.075	0.76	10.985	10.971	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
P2/6	0.161	2.59	10.645	10.328	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
Pipe 9/1	0.962	2	9.919	9.842	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
P1/4	0.127	3.25	14.584	13.726	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
P2/4	0.278	2.52	13.241	12.74	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
P3/4	0.311	1.95	12.472	12.272	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
P7/1	0.803	2.84	11.66	11.052	AR&R 100 year, 30 minutes storm, average 120 mm/h, Zone 1			
Pipe 8/1	0.803	2.24	10.624	10.328	AR&R 100 year, 30 minutes storm, average 120 mm/h, Zone 1			
P1/5	0.026	0.23	13.727	13.726	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
P1/3	0.109	0.99	12.279	12.272	AR&R 100 year, 5 minutes storm, average 250 mm/h, Zone 1			
P1/1	0.11	0.99	15.763	15.66	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1			
P2/1	0.2	1.81	15.486	15.36	AR&R 100 year, 10 minutes storm, average 195 mm/h, Zone 1			
P3/1	0.274	2.48	14.97	14.68	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1			
P4/1	0.329	2.97	14.003	13.4	AR&R 100 year, 2 hours storm, average 55 mm/h, Zone 1			
P5/1	0.354	2.22	13.022	12.78	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1			
P6/1	0.394	2.48	12.503	12.272	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1			
P1/2	0.064	0.58	15.66	15.66	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1			
OVERFLOW ROUTE DETAILS								
Name	Max Q U/S	Max Q D/S	Safe Q	Max D	Max DxV	Max Width	Max V	Due to Storm
Site OF	1.395	1.395	7.665	0.1	0.1	24.03	1.04	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 1/6	0.056	0.056	7.665	0.028	0.01	9.43	0.42	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 2/6	0.098	0.098	7.665	0.035	0.02	10.91	0.5	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 1/4	0.167	0.167	7.665	0.043	0.02	12.53	0.57	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 2/4	0.215	0.215	7.665	0.046	0.03	13.25	0.63	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 3/4	0.214	0.214	7.665	0.046	0.03	13.25	0.63	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 7/1	0.424	0.424	7.665	0.062	0.05	16.3	0.75	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 1/5	0.003	0.003	7.665	0.009	0	3.14	0.18	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1
OF20	0.157	0.157	7.665	0.042	0.02	12.35	0.56	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 1/1	0.083	0.083	7.665	0.033	0.02	10.56	0.46	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF 2/1	0.16	0.16	7.665	0.042	0.02	12.35	0.57	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 3/1	0.196	0.196	7.665	0.045	0.03	13.07	0.6	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 4/1	0.228	0.228	7.665	0.048	0.03	13.61	0.63	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 5/1	0.231	0.231	7.665	0.048	0.03	13.61	0.64	AR&R 100 year, 25 minutes storm, average 131 mm/h, Zone 1
OF 6/1	0.24	0.24	7.665	0.049	0.03	13.79	0.64	AR&R 100 year, 20 minutes storm, average 146 mm/h, Zone 1
OF 1/2	0.097	0.097	7.665	0.035	0.02	10.91	0.49	AR&R 100 year, 15 minutes storm, average 166 mm/h, Zone 1
OF A17	0.744	0.744	7.665	0.077	0.07	19.36	0.89	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
OF A13	0.248	0.248	7.665	0.049	0.03	13.79	0.66	AR&R 100 year, 1.5 hours storm, average 66 mm/h, Zone 1
Upwelling occurred at Pit6/1								
Freeboard was less than 0.15m at Pit1/2, Pit2/1, Pit3/1, Pit4/1, Pit5/1, Pit1/3, Pit7/1, Pit3/4, Pit2/4, Pit1/5								

100 YEAR RESULTS