

STORM WATER - PROPOSED SITE RUN-OFFS

Document B

Job No.: 405000
Job Name: 5-7 Station Road

Total site Area	1895	m2
Surface	Area (m2)	Run-off coeff
Building	330	1.00
Island tyres	76	1.00
Cycle store	37	1.00
Bin store	139	1.00
Soft landscaping	410	1.00
Hardstanding	447	1.00
New flats roof	456	1.00
Permeable paving		
Sum	1895	

Existing site brownfield run off rates (From previous page)

1 year 3.52 L/s
Q 30 years 4.874 L/s
Q 100 years 6.927 L/s

1 in 100 year event + 40% climate change

Eff Area	1895	m2					
100 year return period + climate change			Storm duration (Min.)	T	N	r	Climate allowance 40%
R5	0.03242	m	5	0.08 hrs	0.083333	0.1	0.023154
R10	0.04017	m	10	0.17 hrs	0.166667	0.1	0.028694
R15	0.04546	m	15	0.25 hrs	0.25	0.1	0.032473
R30	0.05603	m	30	0.50 hrs	0.5	0.1	0.040022
R60	0.06888	m	60	1.00 hrs	1	0.1	0.0492
R120	0.08450	m	120	2.00 hrs	2	0.1	0.060356
R240	0.10348	m	240	4.00 hrs	4	0.1	0.073917
R360	0.11643	m	360	6.00 hrs	6	0.1	0.083168
Run-off from site during 6 Hour event							
Volume of total run-off			Flow in Ltrs / second during event				
i360	220.644	m3	Flow	10.215	L/s		

1 in 30 year event + 40% climate change

Eff Area	1895	m2				
1 year return period + climate change	Storm duration (Min.)	T	N	r	Climate allowance 40%	
R5	0.02207 m	5	0.08 hrs	0.083333	0.333333	0.015764
R10	0.02759 m	10	0.17 hrs	0.166667	0.333333	0.01971
R15	0.03136 m	15	0.25 hrs	0.25	0.333333	0.022402
R30	0.03889 m	30	0.50 hrs	0.5	0.333333	0.02778
R60	0.04805 m	60	1.00 hrs	1	0.333333	0.034318
R120	0.05917 m	120	2.00 hrs	2	0.333333	0.042265
R240	0.07270 m	240	4.00 hrs	4	0.333333	0.051926
R360	0.08192 m	360	6.00 hrs	6	0.333333	0.058516
Run-off from site during 6 Hour event						
Volume of total run-off		Flow in Ltrs / second during event				
1360	155.244	m3	Flow	7.187	L/s	

1 in 1 year event + 40% climate change

Eff Area	1895	m2					
1 year return period + climate change		Storm duration (Min.)	T	N	r	Climate allowance 40%	
R5	0.01525	m	5	0.08 hrs	0.083333	1	0.010892
R10	0.01930	m	10	0.17 hrs	0.166667	1	0.013788
R15	0.02207	m	15	0.25 hrs	0.25	1	0.015764
R30	0.02759	m	30	0.50 hrs	0.5	1	0.01971
R60	0.03431	m	60	1.00 hrs	1	1	0.024508
R120	0.04248	m	120	2.00 hrs	2	1	0.03034
R240	0.05240	m	240	4.00 hrs	4	1	0.037429
R360	0.05917	m	360	6.00 hrs	6	1	0.042265
Run-off from site during 6 Hour event							
Volume of total run-off		Flow in Ltrs / second during event					
1360	112.130	m3	Flow	5.191 L/s			

Attenuation tank design 1 in 100 year + 40% climate change					
Inflow to storm system					
I360	220.644	m3			
Outflow from Tank	6.93E-03	m3/s			From existing site run off during 1in100 year event
f	6.927	L/s			
Storage media dims:					
Area	480.0	m2		No. of tanks	1 No.
Depth	0.5	m (below invert depth of inlet pipe)			
Void ratio	30.0	%			
Outflow from Tank:					
O360	149.62	m3			
Storage required:				Time to drain:	
S360	71.02	m3		ts50	1.42 hours
	Storage provided	72.0	m3		
	Critical storm =	S360			
	Storage required =	71.02			
	Time to discharge=	1.42	Hours		
Attenuation size proposed is satisfactory					

Attenuation tank design 1 in 1 year + 40% climate change				
Inflow to soakaway system				
O360	155.244	m3		
Outflow from Tank	4.87E-03	m3/s	From existing site run off during 1in30 year event	
f	4.874	L/s		
Soakaway dims:				
Area	480.0	m2	No. of tanks	1 No.
Depth	0.5	m (below invert depth of inlet pipe)		
Void ratio	30.0	%		
Outflow from Tank:				
O360	105.28	m3		
Storage required:			Time to drain:	
S360	49.97	m3	ts50	1.00 hours
Storage provided	72.0	m3		
Critical storm =	S360			
Storage required =	49.97			
Time to discharge=	1.00	Hours		
Attenuation size proposed is satisfactory				

Attenuation tank design 1 in 1 year + 40% climate change				
Inflow to soakaway system				
1360	112.130	m3		
Outflow from Tank	3.52E-03	m3/s	From existing site run off during 1in1 year event	
f	3.52	L/s		
Soakaway dims:				
Area	480.0	m2	No. of tanks	1 No.
Depth	0.5	m (below invert depth of inlet pipe)		
Void ratio	30.0	%		
Outflow from Tank:				
O360	76.03	m3		
Storage required:			Time to drain:	
S360	36.10	m3	ts50	0.72 hours
Storage provided	72.0	m3		
Critical storm =	S360			
Storage required =	36.10			
Time to discharge=	0.72	Hours		
Attenuation size proposed is satisfactory				