

STORM WATER - PROPOSED SITE RUN-OFFS

Document B

(Using guidance from BRE 365)

Job No.: 393579
Job Name: Yachthaven

Total site Area		28569	m2	2.86	Hec
Surface	Area (m2)	Run-off coeff	Eff Area (m2)		
Upper access road	612	1.00	612	Tarmac	
Top access Road	350	1.00	350	Tarmac	
Middle access Road	375	1.00	375	Tarmac	
Access road to boat yard	530	1.00	530	Tarmac	
Boat yard hardstanding	2142	1.00	2142	Tarmac	
New building roofs	1589	1.00	1589	Works shop and office roof areas	
Slip way	400	1.00	400	Concrete	
New building driveways	367.2	0.00	0	Permeable block surface	
Remainder soft landscaping	22203.8	0.00	0	Permeable surface	

1 in 100 year event + 30% climate change + 10% urban creep

Eff Area 5998 m2

100 year return period + climate change		Storm duration (Min.)	T	N	r	Climate allowance 30%
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 698.376 m3 Flow 32.332 L/s

Total run off from 6hr event on existing site Flow in Ltrs / second during event existing site

I360 366.520 m3 Flow 16.969 L/s

1 in 1 year event

Eff Area 5998 m2

1 year return period + climate change		Storm duration (Min.)	T	N	r	Climate allowance 30%
R5	0.01416 m	5	0.08 hrs	0.083333	1	0.010892
R10	0.01792 m	10	0.17 hrs	0.166667	1	0.013788
R15	0.02049 m	15	0.25 hrs	0.25	1	0.015764
R30	0.02562 m	30	0.50 hrs	0.5	1	0.01971
R60	0.03186 m	60	1.00 hrs	1	1	0.024508
R120	0.03944 m	120	2.00 hrs	2	1	0.03034
R240	0.04866 m	240	4.00 hrs	4	1	0.037429
R360	0.05494 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

I360 329.560 m3 Flow 15.257 L/s

The above run-off volumes will be contained on site and not run-off , see below:

Attenuation check for proposed site to retain existing run off for 1in100 yr + 30% climate change 6 hour event

Whole site

Inflow to soakaway system

I360 698.376 m3

Outflow from Tank

f 1.697E-02 m3/s

Existing site run off during same event

Attenuation dims required

L 24.0 m

No. of Attenuation 1 No.

W 15.0 m

Depth 1.0 m (below invert depth of inlet pipe)

Void ratio 1.0

95.0 %

Outflow from Tanks:

O360 366.52 m3

Storage required:

S360 331.86 m3

Time to drain:

ts50 2.72 hours

Storage provided 342.0 m3

Critical storm = S360

Storage required = 331.86

Time to discharge= 2.72 Hours

Attenuation tank size proposed is satisfactory