

Section:	Prepared By: JCB
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SUMMARY OF CALCULATIONS

critical design rainfall duration 't _{crit} ' =	120	min
required storage volume 'V _{req} ' =	1.66	m ³
provided storage volume 'V _{prov} ' =	1.80	m ³
utilisation factor =	0.92	.OK
required time to discharge 50% 't ₅₀ ' =	4.55	hours
utilisation factor =	0.19	.OK

GENERAL DATA

site location:	England and Wales
soakaway type:	infilled pit or trench
impermeable area drained to soakaway 'A' [m ²] =	67.89
60 min rainfall depth of 5 year return period 'R' [mm] =	20
M5-60 to M5-2d rainfall ratio 'r' =	0.40
allowance for climate change:	1%

SOAKAWAY DATA

soakaway width 'W' [m] =	3.00
soakaway length 'L' [m] =	2.00
total depth from ground level 'D _g ' [m] =	1.60
depth to drain invert level 'D _d ' [m] =	0.60
soakaway effective depth 'D _{eff} ' [m] =	1.00
free volume in infill aggregate [%] =	30

SOIL INFILTRATION DATA

allowance for infiltration through soakaway base:	100%
available on-site infiltration test results:	<input type="radio"/> Yes <input checked="" type="radio"/> No
soil infiltration rate 'f' [m/s] =	5.00E-06

REQUIRED STORAGE CAPACITY PER RAINFALL DURATION

rainfall duration [min]	rainfall factor Z1	M5-D rainfalls [mm]	M10-D			ignore			ignore			outflow from soakaway [m ³]	required storage [m ³]
			Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]		
5	0.37	7.47	1.20	9.12	0.62							0.02	0.60
10	0.52	10.47	1.22	12.96	0.88							0.03	0.85
15	0.63	12.67	1.23	15.80	1.07							0.05	1.02
30	0.80	16.07	1.24	20.19	1.37							0.10	1.27
60	1.00	20.00	1.24	25.13	1.71							0.20	1.51
120	1.21	24.13	1.24	30.33	2.06							0.40	1.66
240	1.45	28.93	1.22	35.90	2.44							0.79	1.65
360	1.60	32.07	1.21	39.45	2.68							1.19	1.49
600	1.79	35.87	1.20	43.71	2.97							1.98	0.99
1440	2.24	44.80	1.18	53.60	3.64							4.75	0.00

* Z2 is a growth factor from M5 rainfalls