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37 Brooke Road Oakham Rutland LE15 6HG	29 New End Camden Deep Bore Soakaway 10yr FOS 5	
Date Oct 2016 File deep bore soak 10yr fos5.srcx	Designed by RJF Checked by	
XP Solutions	Source Control 2016.1	

Summary of Results for 10 year Return Period

Half Drain Time : 896 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	115.726	11.726	0.3	9.9	O K
30 min Summer	115.674	11.674	0.3	5.7	O K
60 min Summer	115.715	11.715	0.3	9.0	O K
120 min Summer	115.783	11.783	0.3	14.5	O K
180 min Summer	115.812	11.812	0.3	16.7	O K
240 min Summer	115.822	11.822	0.3	17.5	O K
360 min Summer	115.843	11.843	0.3	19.3	O K
480 min Summer	115.850	11.850	0.3	19.8	O K
600 min Summer	115.850	11.850	0.3	19.8	O K
720 min Summer	115.974	11.974	0.3	29.7	O K
960 min Summer	115.966	11.966	0.3	29.1	O K
1440 min Summer	115.946	11.946	0.3	27.5	O K
2160 min Summer	115.918	11.918	0.3	25.2	O K
2880 min Summer	115.890	11.890	0.3	23.0	O K
4320 min Summer	115.837	11.837	0.3	18.8	O K
5760 min Summer	115.788	11.788	0.3	14.8	O K
7200 min Summer	115.744	11.744	0.3	11.4	O K
8640 min Summer	115.707	11.707	0.3	8.4	O K
10080 min Summer	115.676	11.676	0.3	5.9	O K
15 min Winter	115.642	11.642	0.3	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	64.272	0.0	180
30 min Summer	40.919	0.0	60
60 min Summer	24.968	0.0	82
120 min Summer	14.847	0.0	128
180 min Summer	10.869	0.0	186
240 min Summer	8.688	0.0	246
360 min Summer	6.325	0.0	364
480 min Summer	5.046	0.0	482
600 min Summer	4.233	0.0	602
720 min Summer	3.666	0.0	750
960 min Summer	2.921	0.0	952
1440 min Summer	2.119	0.0	1190
2160 min Summer	1.536	0.0	1580
2880 min Summer	1.222	0.0	1980
4320 min Summer	0.885	0.0	2772
5760 min Summer	0.704	0.0	3536
7200 min Summer	0.589	0.0	4272
8640 min Summer	0.510	0.0	4976
10080 min Summer	0.451	0.0	5664
15 min Winter	64.272	0.0	49

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Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	115.703	11.703	0.3	8.0	O K
60 min Winter	115.763	11.763	0.3	12.8	O K
120 min Winter	115.820	11.820	0.3	17.4	O K
180 min Winter	115.863	11.863	0.3	20.8	O K
240 min Winter	115.878	11.878	0.3	22.1	O K
360 min Winter	115.904	11.904	0.3	24.2	O K
480 min Winter	115.915	11.915	0.3	25.0	O K
600 min Winter	116.037	12.037	0.3	34.8	O K
720 min Winter	116.040	12.040	0.3	35.0	O K
960 min Winter	116.036	12.036	0.3	34.7	O K
1440 min Winter	116.009	12.009	0.3	32.6	O K
2160 min Winter	115.970	11.970	0.3	29.4	O K
2880 min Winter	115.928	11.928	0.3	26.1	O K
4320 min Winter	115.846	11.846	0.3	19.5	O K
5760 min Winter	115.771	11.771	0.3	13.5	O K
7200 min Winter	115.707	11.707	0.3	8.4	O K
8640 min Winter	115.656	11.656	0.3	4.3	O K
10080 min Winter	115.620	11.620	0.3	1.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	40.919	0.0	62
60 min Winter	24.968	0.0	84
120 min Winter	14.847	0.0	128
180 min Winter	10.869	0.0	184
240 min Winter	8.688	0.0	242
360 min Winter	6.325	0.0	358
480 min Winter	5.046	0.0	474
600 min Winter	4.233	0.0	652
720 min Winter	3.666	0.0	754
960 min Winter	2.921	0.0	964
1440 min Winter	2.119	0.0	1300
2160 min Winter	1.536	0.0	1700
2880 min Winter	1.222	0.0	2140
4320 min Winter	0.885	0.0	2980
5760 min Winter	0.704	0.0	3760
7200 min Winter	0.589	0.0	4464
8640 min Winter	0.510	0.0	5096
10080 min Winter	0.451	0.0	5608

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.800	Shortest Storm (mins)	15
Ratio R	0.438	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Pipe Network

Volume in Pipe Network (m ³)	13	Dia of Outfall Pipe (m)	0.1
Slope of Outfall Pipe (1:X)	500	Roughness of Outfall Pipe (mm)	0.600

Green Roof


Area (m ³)	240	Evaporation (mm/day)	3
Depression Storage (mm)	5	Decay Coefficient	0.050

Time (mins)		Area	Time (mins)		Area	Time (mins)		Area	Time (mins)		Area
From:	To:	(ha)	From:	To:	(ha)	From:	To:	(ha)	From:	To:	(ha)
0	4	0.004361	32	36	0.000881	64	68	0.000178	96	100	0.000036
4	8	0.003571	36	40	0.000721	68	72	0.000146	100	104	0.000029
8	12	0.002923	40	44	0.000590	72	76	0.000119	104	108	0.000024
12	16	0.002394	44	48	0.000483	76	80	0.000098	108	112	0.000020
16	20	0.001960	48	52	0.000396	80	84	0.000080	112	116	0.000016
20	24	0.001604	52	56	0.000324	84	88	0.000065	116	120	0.000013
24	28	0.001314	56	60	0.000265	88	92	0.000054			
28	32	0.001075	60	64	0.000217	92	96	0.000044			

Time Area Diagram

Total Area (ha) 0.116

Time (mins)		Area	Time (mins)		Area
From:	To:	(ha)	From:	To:	(ha)
0	4	0.058	4	8	0.058

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Model Details

Storage is Online Cover Level (m) 120.050

Deep Bore Soakaway Structure

Chamber Invert Level (m) 115.605
 Chamber Diameter/Width (m) 4.000
 Chamber Length (m) 20.000
 Borehole Diameter (m) 0.150
 Borehole Depth (m) 11.605
 Infiltration Coefficient Base (m/hr) 1.08000
 Safety Factor 5.0

Side		Side	
Depth	Infil.	Depth	Infil.
(m)	Coef.	(m)	Coef.
	(m/hr)		(m/hr)
0.000	1.08000	11.605	0.00000