

Furness Partnership					Page 1	
20 Britton Street London EC1M 5TX			PRE-DEVELOPMENT RUNOFF RATE 1 IN 1 YEAR RETURN PERIOD PALMER PARK			
Date 27/07/2021 File PRE-DEVELOPMENT RUNOFF ...			Designed by MH Checked by MK			
Micro Drainage			Source Control 2020.1			
Summary of Results for 1 year Return Period						
Storm Event		Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer		98.167	0.167	13.8	0.4	O K
30 min Summer		98.171	0.171	14.3	0.4	O K
60 min Summer		98.153	0.153	12.7	0.4	O K
120 min Summer		98.128	0.128	10.0	0.3	O K
180 min Summer		98.106	0.106	7.9	0.2	O K
240 min Summer		98.101	0.101	7.4	0.2	O K
360 min Summer		98.082	0.082	5.5	0.1	O K
480 min Summer		98.073	0.073	4.4	0.1	O K
600 min Summer		98.067	0.067	3.7	0.1	O K
720 min Summer		98.063	0.063	3.3	0.1	O K
960 min Summer		98.056	0.056	2.6	0.1	O K
1440 min Summer		98.048	0.048	2.0	0.1	O K
2160 min Summer		98.041	0.041	1.5	0.1	O K
2880 min Summer		98.036	0.036	1.2	0.0	O K
4320 min Summer		98.030	0.030	0.9	0.0	O K
5760 min Summer		98.027	0.027	0.8	0.0	O K
7200 min Summer		98.025	0.025	0.6	0.0	O K
8640 min Summer		98.024	0.024	0.6	0.0	O K
10080 min Summer		98.022	0.022	0.5	0.0	O K
15 min Winter		98.184	0.184	15.9	0.5	O K
30 min Winter		98.179	0.179	15.4	0.5	O K
Storm Event		Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min Summer		29.381	0.0	10.5	13	
30 min Summer		19.105	0.0	13.7	22	
60 min Summer		12.084	0.0	17.3	38	
120 min Summer		7.489	0.0	21.5	64	
180 min Summer		5.634	0.0	24.2	94	
240 min Summer		4.599	0.0	26.3	130	
360 min Summer		3.448	0.0	29.6	184	
480 min Summer		2.794	0.0	32.0	244	
600 min Summer		2.373	0.0	34.0	306	
720 min Summer		2.077	0.0	35.7	364	
960 min Summer		1.683	0.0	38.6	490	
1440 min Summer		1.252	0.0	43.0	718	
2160 min Summer		0.932	0.0	48.1	1096	
2880 min Summer		0.756	0.0	52.0	1456	
4320 min Summer		0.562	0.0	57.9	2128	
5760 min Summer		0.455	0.0	62.6	2872	
7200 min Summer		0.387	0.0	66.5	3552	
8640 min Summer		0.339	0.0	69.9	4256	
10080 min Summer		0.303	0.0	72.9	4968	
15 min Winter		29.381	0.0	11.8	13	
30 min Winter		19.105	0.0	15.3	21	
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Micro Drainage		Source Control 2020.1			
Summary of Results for 1 year Return Period					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	98.157	0.157	12.7	0.4	O K
120 min Winter	98.111	0.111	8.4	0.2	O K
180 min Winter	98.094	0.094	6.4	0.2	O K
240 min Winter	98.086	0.086	5.5	0.2	O K
360 min Winter	98.068	0.068	3.9	0.1	O K
480 min Winter	98.062	0.062	3.2	0.1	O K
600 min Winter	98.056	0.056	2.7	0.1	O K
720 min Winter	98.053	0.053	2.4	0.1	O K
960 min Winter	98.048	0.048	1.9	0.1	O K
1440 min Winter	98.040	0.040	1.4	0.0	O K
2160 min Winter	98.033	0.033	1.1	0.0	O K
2880 min Winter	98.029	0.029	0.9	0.0	O K
4320 min Winter	98.025	0.025	0.7	0.0	O K
5760 min Winter	98.023	0.023	0.5	0.0	O K
7200 min Winter	98.022	0.022	0.5	0.0	O K
8640 min Winter	98.021	0.021	0.4	0.0	O K
10080 min Winter	98.020	0.020	0.4	0.0	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
60 min Winter	12.084	0.0	19.4	36	
120 min Winter	7.489	0.0	24.0	64	
180 min Winter	5.634	0.0	27.1	98	
240 min Winter	4.599	0.0	29.5	124	
360 min Winter	3.448	0.0	33.2	188	
480 min Winter	2.794	0.0	35.9	250	
600 min Winter	2.373	0.0	38.1	306	
720 min Winter	2.077	0.0	40.0	364	
960 min Winter	1.683	0.0	43.2	486	
1440 min Winter	1.252	0.0	48.2	724	
2160 min Winter	0.932	0.0	53.8	1108	
2880 min Winter	0.756	0.0	58.2	1472	
4320 min Winter	0.562	0.0	64.9	2136	
5760 min Winter	0.455	0.0	70.1	2800	
7200 min Winter	0.387	0.0	74.5	3680	
8640 min Winter	0.339	0.0	78.3	4400	
10080 min Winter	0.303	0.0	81.7	4992	
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Micro Drainage Source Control 2020.1		

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.191

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4 0.064	4	8 0.064	8	12 0.063

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<u>Model Details</u> Storage is Online Cover Level (m) 100.000 <u>Pipe Structure</u> Diameter (m) 0.300 Length (m) 10.000 Slope (1:X) 100.000 Invert Level (m) 98.000 <u>Pipe Outflow Control</u> Diameter (m) 0.300 Entry Loss Coefficient 0.500 Slope (1:X) 100.0 Coefficient of Contraction 0.600 Length (m) 1.000 Upstream Invert Level (m) 98.000 Roughness k (mm) 0.600		
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