

1. Project & Site Details	Project / Site Name (including sub-catchment / stage / phase where appropriate)	Priests Bridge
	Address & post code	26-28 Priests Bridge, SW14 8TA, Barnes, London
	OS Grid ref. (Easting, Northing)	E 521492
		N 175545
	LPA reference (if applicable)	
	Brief description of proposed work	Demolition of the existing buildings currently on the site. Erection of a three storey mixed-use building and a part-one, part-two storey mixed-use building in the interior of the site.
	Total site Area	1011 m ²
	Total existing impervious area	936 m ²
	Total proposed impervious area	1011 m ²
	Is the site in a surface water flood risk catchment (ref. local Surface Water Management Plan)?	Catchment RO6/WO1 - Putney
	Existing drainage connection type and location	Combined sewer in Priests Bridge
	Designer Name	N/A
	Designer Position	N/A
	Designer Company	Thames Water

2. Proposed Discharge Arrangements	2a. Infiltration Feasibility		
	Superficial geology classification	Supeficial deposits of alluvium overlying Kempton Park gravels	
	Bedrock geology classification	London Clay formation	
	Site infiltration rate	N/A	m/s
	Depth to groundwater level	3.10-3.50	m below ground level
	Is infiltration feasible?	No	
	2b. Drainage Hierarchy		
		<i>Feasible (Y/N)</i>	<i>Proposed (Y/N)</i>
	1 store rainwater for later use	Y	Y
	2 use infiltration techniques, such as porous surfaces in non-clay areas	N	N
	3 attenuate rainwater in ponds or open water features for gradual release	N	N
	4 attenuate rainwater by storing in tanks or sealed water features for gradual release	Y	Y
	5 discharge rainwater direct to a watercourse	Y	Y
	6 discharge rainwater to a surface water sewer/drain	Y	N
	7 discharge rainwater to the combined sewer.	Y	Y
	2c. Proposed Discharge Details		
	Proposed discharge location	Water tank and green roof. Beverly Brook River.	
	Has the owner/regulator of the discharge location been consulted?	Yes	

3a. Discharge Rates & Required Storage				
	Greenfield (GF) runoff rate (l/s)	Existing discharge rate (l/s)	Required storage for GF rate (m ³)	Proposed discharge rate (l/s)
Q _{bar}	0.15	 	 	
1 in 1	0.13	13.1	17	6.5
1 in 30	0.35	28.7	32	14.4
1 in 100	0.48	35.8	40	17.9
1 in 100 + CC	 	 	62	17.9
Climate change allowance used		40%		
3b. Principal Method of Flow Control		Surface Water pump chamber / hydrobrake		
3c. Proposed SuDS Measures				
	Catchment area (m ²)	Plan area (m ²)	Storage vol. (m ³)	
Rainwater harvesting	0	 	0	
Infiltration systems	0	 	0	
Green roofs	346.4	0	2	
Blue roofs	0	0	0	
Filter strips	0	0	0	
Filter drains	0	0	0	
Bioretention / tree pits	0	0	0	
Pervious pavements	0	0	0	
Swales	0	0	0	
Basins/ponds	0	0	0	
Attenuation tanks	664.6	 	10	
Total	1011	0	12	

4a. Discharge & Drainage Strategy	Page/section of drainage report
Infiltration feasibility (2a) – geotechnical factual and interpretive reports, including infiltration results	Refer to Patrick Parsons Phase II Geo-Environmental Site Investigation Ref. L18064G
Drainage hierarchy (2b)	Refer to WP FRA June 2022
Proposed discharge details (2c) – utility plans, correspondence / approval from owner/regulator of discharge location	Discharge rate to public sewer limited to 50% of existing rate (17.9l/s) in accordance with London Plan. Attenuation tank/green roof storage 12m ³ .
Discharge rates & storage (3a) – detailed hydrologic and hydraulic calculations	Refer to Microdrainage Calculations
Proposed SuDS measures & specifications (3b)	Green roofs and attenuation tank
4b. Other Supporting Details	Page/section of drainage report
Detailed Development Layout	To be confirmed
Detailed drainage design drawings, including exceedance flow routes	To be confirmed
Detailed landscaping plans	N/A
Maintenance strategy	To be confirmed
Demonstration of how the proposed SuDS measures improve:	
a) water quality of the runoff?	Refer to WP FRA June 2022
b) biodiversity?	Refer to WP FRA June 2022
c) amenity?	Refer to WP FRA June 2022

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Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:

Site name:

Site location:

Site Details

Latitude:

Longitude:

Reference:

Date:

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Runoff estimation approach

Site characteristics

Total site area (ha):

Methodology

Q_{BAR} estimation method:

SPR estimation method:

Soil characteristics

Default Edited

SOIL type:

HOST class:

SPR/SPRHOST:

Hydrological characteristics

Default Edited

SAAR (mm):

Hydrological region:

Growth curve factor 1 year:

Growth curve factor 30 years:

Growth curve factor 100 years:

Growth curve factor 200 years:

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?


Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates	Default	Edited
Q _{BAR} (l/s):	<input type="text" value="0.15"/>	<input type="text" value="0.15"/>
1 in 1 year (l/s):	<input type="text" value="0.13"/>	<input type="text" value="0.13"/>
1 in 30 years (l/s):	<input type="text" value="0.35"/>	<input type="text" value="0.35"/>
1 in 100 year (l/s):	<input type="text" value="0.48"/>	<input type="text" value="0.48"/>
1 in 200 years (l/s):	<input type="text" value="0.56"/>	<input type="text" value="0.56"/>

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

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48-50 Scrutton Street London EC2A 4HH	Priests Bridge Existing Flow Rates	
Date 30/06/2022 File Existing Rates.MDX	Designed by AGD Checked by	

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Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.071	4-8	0.023

Total Area Contributing (ha) = 0.094


Total Pipe Volume (m³) = 0.265

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1
Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Storm Duration (mins)	30
Ratio R	0.400		

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48-50 Scrutton Street London EC2A 4HH	Priests Bridge Existing Flow Rates	
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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 0
Number of Online Controls 0 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.407
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.000 Cv (Winter) 0.840


Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s)

Duration(s) (mins) Summer and Winter
15, 30, 60, 120, 180, 240, 360, 480, 600,
720, 960, 1440, 2160, 2880, 4320, 5760, 7200,
8640, 10080
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	1	+0%	30/15 Summer				99.098
1.001	2	15 Winter	1	+0%	30/15 Summer				98.981

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	-0.052	0.000	0.73			13.0	OK	
1.001	2	-0.044	0.000	0.84			13.1	OK	

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48-50 Scrutton Street London EC2A 4HH	Priests Bridge Existing Flow Rates	
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 0
Number of Online Controls 0 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.407
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.000 Cv (Winter) 0.840


Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s)

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600,
720, 960, 1440, 2160, 2880, 4320, 5760, 7200,
8640, 10080
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	30	+0%	30/15 Summer				99.503
1.001	2	15 Winter	30	+0%	30/15 Summer				99.165

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	0.353	0.000	1.61		28.4	SURCHARGED	
1.001	2	0.140	0.000	1.82		28.7	SURCHARGED	

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48-50 Scrutton Street London EC2A 4HH	Priests Bridge Existing Flow Rates	
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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 0
Number of Online Controls 0 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.407
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 20.000 Cv (Winter) 0.840


Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s)

Duration(s) (mins) Summer and Winter
15, 30, 60, 120, 180, 240, 360, 480, 600,
720, 960, 1440, 2160, 2880, 4320, 5760, 7200,
8640, 10080
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Winter	100	+0%	30/15 Summer				99.809
1.001	2	15 Winter	100	+0%	30/15 Summer				99.280

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	0.659	0.000	2.02		35.8	FLOOD RISK	
1.001	2	0.255	0.000	2.28		35.8	SURCHARGED	

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48-50 Scrutton Street London EC2A 4HH	Required Storage 1 in 1	
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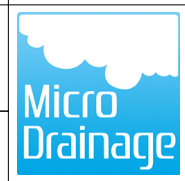
Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	98.815	0.315	0.1	5.4	O K
30 min Summer	98.907	0.407	0.1	6.9	O K
60 min Summer	99.007	0.507	0.1	8.6	O K
120 min Summer	99.110	0.610	0.1	10.4	O K
180 min Summer	99.170	0.670	0.1	11.4	O K
240 min Summer	99.212	0.712	0.1	12.1	O K
360 min Summer	99.261	0.761	0.1	12.9	O K
480 min Summer	99.286	0.786	0.1	13.4	O K
600 min Summer	99.299	0.799	0.1	13.6	O K
720 min Summer	99.304	0.804	0.1	13.7	O K
960 min Summer	99.302	0.802	0.1	13.6	O K
1440 min Summer	99.289	0.789	0.1	13.4	O K
2160 min Summer	99.259	0.759	0.1	12.9	O K
2880 min Summer	99.224	0.724	0.1	12.3	O K
4320 min Summer	99.148	0.648	0.1	11.0	O K
5760 min Summer	99.072	0.572	0.1	9.7	O K
7200 min Summer	99.000	0.500	0.1	8.5	O K
8640 min Summer	98.933	0.433	0.1	7.4	O K
10080 min Summer	98.872	0.372	0.1	6.3	O K
15 min Winter	98.853	0.353	0.1	6.0	O K
30 min Winter	98.958	0.458	0.1	7.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	31.170	0.0	5.5	26
30 min Summer	20.279	0.0	7.1	41
60 min Summer	12.800	0.0	9.0	70
120 min Summer	7.915	0.0	11.2	128
180 min Summer	5.945	0.0	12.6	188
240 min Summer	4.848	0.0	13.7	246
360 min Summer	3.615	0.0	15.3	366
480 min Summer	2.926	0.0	16.5	484
600 min Summer	2.483	0.0	17.5	602
720 min Summer	2.172	0.0	18.3	720
960 min Summer	1.758	0.0	19.5	858
1440 min Summer	1.305	0.0	20.5	1110
2160 min Summer	0.970	0.0	24.6	1500
2880 min Summer	0.785	0.0	26.6	1912
4320 min Summer	0.582	0.0	29.6	2728
5760 min Summer	0.472	0.0	31.9	3520
7200 min Summer	0.400	0.0	33.9	4320
8640 min Summer	0.350	0.0	35.6	5024
10080 min Summer	0.313	0.0	37.1	5760
15 min Winter	31.170	0.0	6.1	26
30 min Winter	20.279	0.0	7.9	40

48-50 Scrutton Street
London
EC2A 4HH

Required Storage
1 in 1



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Summary of Results for 1 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
60 min Winter	99.070	0.570	0.1	9.7	O K
120 min Winter	99.189	0.689	0.1	11.7	O K
180 min Winter	99.259	0.759	0.1	12.9	O K
240 min Winter	99.308	0.808	0.1	13.7	O K
360 min Winter	99.369	0.869	0.1	14.8	O K
480 min Winter	99.403	0.903	0.1	15.3	O K
600 min Winter	99.423	0.923	0.1	15.7	O K
720 min Winter	99.434	0.934	0.1	15.9	O K
960 min Winter	99.440	0.940	0.1	16.0	O K
1440 min Winter	99.418	0.918	0.1	15.6	O K
2160 min Winter	99.376	0.876	0.1	14.9	O K
2880 min Winter	99.320	0.820	0.1	13.9	O K
4320 min Winter	99.197	0.697	0.1	11.9	O K
5760 min Winter	99.075	0.575	0.1	9.8	O K
7200 min Winter	98.961	0.461	0.1	7.8	O K
8640 min Winter	98.859	0.359	0.1	6.1	O K
10080 min Winter	98.769	0.269	0.1	4.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
60 min Winter	12.800	0.0	10.1	70
120 min Winter	7.915	0.0	12.5	126
180 min Winter	5.945	0.0	14.1	184
240 min Winter	4.848	0.0	15.3	242
360 min Winter	3.615	0.0	17.1	358
480 min Winter	2.926	0.0	18.4	474
600 min Winter	2.483	0.0	19.4	588
720 min Winter	2.172	0.0	20.2	700
960 min Winter	1.758	0.0	21.2	920
1440 min Winter	1.305	0.0	20.7	1190
2160 min Winter	0.970	0.0	27.6	1632
2880 min Winter	0.785	0.0	29.7	2088
4320 min Winter	0.582	0.0	33.1	2984
5760 min Winter	0.472	0.0	35.7	3808
7200 min Winter	0.400	0.0	37.9	4608
8640 min Winter	0.350	0.0	39.8	5288
10080 min Winter	0.313	0.0	41.5	5960

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 1



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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)	20.000	Shortest Storm (mins)	15
Ratio R	0.407	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

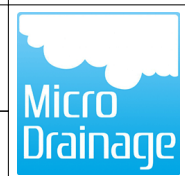
Time Area Diagram

Total Area (ha) 0.094

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.031	4	8	0.031
				8	12
					0.031

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 1



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Model Details

Storage is Online Cover Level (m) 100.000

Tank or Pond Structure

Invert Level (m) 98.500

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	17.0	1.000	17.0	1.001	0.0

Pump Outflow Control

Invert Level (m) 98.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.1300	0.900	0.1300	1.700	0.1300	2.500	0.1300
0.200	0.1300	1.000	0.1300	1.800	0.1300	2.600	0.1300
0.300	0.1300	1.100	0.1300	1.900	0.1300	2.700	0.1300
0.400	0.1300	1.200	0.1300	2.000	0.1300	2.800	0.1300
0.500	0.1300	1.300	0.1300	2.100	0.1300	2.900	0.1300
0.600	0.1300	1.400	0.1300	2.200	0.1300	3.000	0.1300
0.700	0.1300	1.500	0.1300	2.300	0.1300		
0.800	0.1300	1.600	0.1300	2.400	0.1300		

48-50 Scrutton Street
London
EC2A 4HH

Required Storage
1 in 30



Date 30/06/2022
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Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	98.909	0.409	0.4	13.1	O K
30 min Summer	99.027	0.527	0.4	16.9	O K
60 min Summer	99.143	0.643	0.4	20.6	O K
120 min Summer	99.249	0.749	0.4	24.0	O K
180 min Summer	99.301	0.801	0.4	25.6	O K
240 min Summer	99.329	0.829	0.4	26.5	O K
360 min Summer	99.353	0.853	0.4	27.3	O K
480 min Summer	99.356	0.856	0.4	27.4	O K
600 min Summer	99.347	0.847	0.4	27.1	O K
720 min Summer	99.335	0.835	0.4	26.7	O K
960 min Summer	99.310	0.810	0.4	25.9	O K
1440 min Summer	99.258	0.758	0.4	24.3	O K
2160 min Summer	99.183	0.683	0.4	21.8	O K
2880 min Summer	99.111	0.611	0.4	19.6	O K
4320 min Summer	98.980	0.480	0.4	15.4	O K
5760 min Summer	98.868	0.368	0.4	11.8	O K
7200 min Summer	98.776	0.276	0.4	8.8	O K
8640 min Summer	98.704	0.204	0.4	6.5	O K
10080 min Summer	98.652	0.152	0.4	4.9	O K
15 min Winter	98.959	0.459	0.4	14.7	O K
30 min Winter	99.093	0.593	0.4	19.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	76.481	0.0	13.5	26
30 min Summer	49.648	0.0	17.5	41
60 min Summer	30.811	0.0	21.7	70
120 min Summer	18.560	0.0	26.2	128
180 min Summer	13.654	0.0	28.9	188
240 min Summer	10.935	0.0	30.8	246
360 min Summer	7.976	0.0	33.7	364
480 min Summer	6.374	0.0	35.9	482
600 min Summer	5.354	0.0	37.7	590
720 min Summer	4.641	0.0	39.2	632
960 min Summer	3.702	0.0	41.7	758
1440 min Summer	2.689	0.0	45.4	1012
2160 min Summer	1.951	0.0	49.5	1416
2880 min Summer	1.553	0.0	52.5	1820
4320 min Summer	1.125	0.0	57.1	2600
5760 min Summer	0.894	0.0	60.5	3344
7200 min Summer	0.748	0.0	63.3	4040
8640 min Summer	0.646	0.0	65.6	4680
10080 min Summer	0.571	0.0	67.7	5352
15 min Winter	76.481	0.0	15.1	26
30 min Winter	49.648	0.0	19.6	40

Webb Yates Engineers Ltd		Page 2
48-50 Scrutton Street London EC2A 4HH	Required Storage 1 in 30	
Date 30/06/2022 File 1IN30.SRCX	Designed by Andrew G Dushyan... Checked by	
Innovyze	Source Control 2020.1	

Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
60 min Winter	99.225	0.725	0.4	23.2	O K
120 min Winter	99.348	0.848	0.4	27.1	O K
180 min Winter	99.410	0.910	0.4	29.1	O K
240 min Winter	99.445	0.945	0.4	30.2	O K
360 min Winter	99.481	0.981	0.4	31.4	O K
480 min Winter	99.492	0.992	0.4	31.8	O K
600 min Winter	99.490	0.990	0.4	31.7	O K
720 min Winter	99.480	0.980	0.4	31.4	O K
960 min Winter	99.444	0.944	0.4	30.2	O K
1440 min Winter	99.376	0.876	0.4	28.0	O K
2160 min Winter	99.265	0.765	0.4	24.5	O K
2880 min Winter	99.156	0.656	0.4	21.0	O K
4320 min Winter	98.955	0.455	0.4	14.6	O K
5760 min Winter	98.790	0.290	0.4	9.3	O K
7200 min Winter	98.668	0.168	0.4	5.4	O K
8640 min Winter	98.602	0.102	0.4	3.3	O K
10080 min Winter	98.590	0.090	0.3	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
60 min Winter	30.811	0.0	24.3	68
120 min Winter	18.560	0.0	29.3	126
180 min Winter	13.654	0.0	32.3	184
240 min Winter	10.935	0.0	34.5	242
360 min Winter	7.976	0.0	37.8	356
480 min Winter	6.374	0.0	40.3	470
600 min Winter	5.354	0.0	42.3	582
720 min Winter	4.641	0.0	44.0	690
960 min Winter	3.702	0.0	46.7	882
1440 min Winter	2.689	0.0	50.7	1098
2160 min Winter	1.951	0.0	55.4	1548
2880 min Winter	1.553	0.0	58.8	1988
4320 min Winter	1.125	0.0	63.9	2772
5760 min Winter	0.894	0.0	67.8	3472
7200 min Winter	0.748	0.0	70.9	4104
8640 min Winter	0.646	0.0	73.5	4504
10080 min Winter	0.571	0.0	75.8	5152

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 30



Date 30/06/2022
 File 1IN30.SRCX

Designed by Andrew G Dushyan...
 Checked by

Innovyze Source Control 2020.1

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.407	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.094

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.031	4	8	0.031
				8	12
					0.031

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 30



Date 30/06/2022
 File 1IN30.SRCX

Designed by Andrew G Dushyan...
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Innovyze Source Control 2020.1

Model Details

Storage is Online Cover Level (m) 100.000

Tank or Pond Structure


Invert Level (m) 98.500

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	32.0	1.000	32.0	1.001	0.0

Pump Outflow Control

Invert Level (m) 98.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.3500	0.900	0.3500	1.700	0.3500	2.500	0.3500
0.200	0.3500	1.000	0.3500	1.800	0.3500	2.600	0.3500
0.300	0.3500	1.100	0.3500	1.900	0.3500	2.700	0.3500
0.400	0.3500	1.200	0.3500	2.000	0.3500	2.800	0.3500
0.500	0.3500	1.300	0.3500	2.100	0.3500	2.900	0.3500
0.600	0.3500	1.400	0.3500	2.200	0.3500	3.000	0.3500
0.700	0.3500	1.500	0.3500	2.300	0.3500		
0.800	0.3500	1.600	0.3500	2.400	0.3500		

Webb Yates Engineers Ltd		Page 1
48-50 Scrutton Street London EC2A 4HH	Required Storage 1 in 100	
Date 30/06/2022 File 1IN100.SRCX	Designed by Andrew G Dushyan... Checked by	
Innovyze	Source Control 2020.1	

Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	98.924	0.424	0.5	17.0	O K
30 min Summer	99.051	0.551	0.5	22.0	O K
60 min Summer	99.175	0.675	0.5	27.0	O K
120 min Summer	99.284	0.784	0.5	31.4	O K
180 min Summer	99.334	0.834	0.5	33.3	O K
240 min Summer	99.357	0.857	0.5	34.3	O K
360 min Summer	99.373	0.873	0.5	34.9	O K
480 min Summer	99.368	0.868	0.5	34.7	O K
600 min Summer	99.352	0.852	0.5	34.1	O K
720 min Summer	99.336	0.836	0.5	33.4	O K
960 min Summer	99.303	0.803	0.5	32.1	O K
1440 min Summer	99.240	0.740	0.5	29.6	O K
2160 min Summer	99.151	0.651	0.5	26.0	O K
2880 min Summer	99.069	0.569	0.5	22.7	O K
4320 min Summer	98.924	0.424	0.5	17.0	O K
5760 min Summer	98.806	0.306	0.5	12.2	O K
7200 min Summer	98.717	0.217	0.5	8.7	O K
8640 min Summer	98.653	0.153	0.5	6.1	O K
10080 min Summer	98.614	0.114	0.5	4.5	O K
15 min Winter	98.976	0.476	0.5	19.0	O K
30 min Winter	99.120	0.620	0.5	24.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	99.281	0.0	17.5	26
30 min Summer	64.990	0.0	22.9	41
60 min Summer	40.510	0.0	28.5	70
120 min Summer	24.391	0.0	34.4	128
180 min Summer	17.887	0.0	37.8	186
240 min Summer	14.269	0.0	40.2	246
360 min Summer	10.347	0.0	43.7	364
480 min Summer	8.237	0.0	46.4	482
600 min Summer	6.896	0.0	48.6	564
720 min Summer	5.962	0.0	50.4	614
960 min Summer	4.735	0.0	53.4	732
1440 min Summer	3.417	0.0	57.8	994
2160 min Summer	2.461	0.0	62.5	1396
2880 min Summer	1.949	0.0	65.9	1796
4320 min Summer	1.400	0.0	71.0	2556
5760 min Summer	1.106	0.0	74.9	3288
7200 min Summer	0.921	0.0	77.9	3960
8640 min Summer	0.793	0.0	80.5	4592
10080 min Summer	0.698	0.0	82.7	5240
15 min Winter	99.281	0.0	19.6	26
30 min Winter	64.990	0.0	25.6	40

Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
60 min Winter	99.260	0.760	0.5	30.4	O K
120 min Winter	99.388	0.888	0.5	35.5	O K
180 min Winter	99.448	0.948	0.5	37.9	O K
240 min Winter	99.479	0.979	0.5	39.2	O K
360 min Winter	99.703	1.203	0.5	40.2	Flood Risk
480 min Winter	99.840	1.340	0.5	40.4	Flood Risk
600 min Winter	99.499	0.999	0.5	40.0	O K
720 min Winter	99.481	0.981	0.5	39.2	O K
960 min Winter	99.435	0.935	0.5	37.4	O K
1440 min Winter	99.351	0.851	0.5	34.0	O K
2160 min Winter	99.220	0.720	0.5	28.8	O K
2880 min Winter	99.095	0.595	0.5	23.8	O K
4320 min Winter	98.878	0.378	0.5	15.1	O K
5760 min Winter	98.712	0.212	0.5	8.5	O K
7200 min Winter	98.612	0.112	0.5	4.5	O K
8640 min Winter	98.591	0.091	0.4	3.6	O K
10080 min Winter	98.580	0.080	0.4	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
60 min Winter	40.510	0.0	32.0	68
120 min Winter	24.391	0.0	38.5	126
180 min Winter	17.887	0.0	42.4	184
240 min Winter	14.269	0.0	45.0	242
360 min Winter	10.347	0.0	49.0	356
480 min Winter	8.237	0.0	52.0	470
600 min Winter	6.896	0.0	54.4	580
720 min Winter	5.962	0.0	56.5	686
960 min Winter	4.735	0.0	59.8	786
1440 min Winter	3.417	0.0	64.7	1082
2160 min Winter	2.461	0.0	69.9	1524
2880 min Winter	1.949	0.0	73.8	1940
4320 min Winter	1.400	0.0	79.6	2724
5760 min Winter	1.106	0.0	83.8	3360
7200 min Winter	0.921	0.0	87.3	3888
8640 min Winter	0.793	0.0	90.1	4416
10080 min Winter	0.698	0.0	92.6	5144

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 100



Date 30/06/2022
 File 1IN100.SRCX

Designed by Andrew G Dushyan...
 Checked by

Innovyze Source Control 2020.1

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.407	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.094

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.031	4	8	0.031
				8	12
					0.031

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 100



Date 30/06/2022
 File 1IN100.SRCX

Designed by Andrew G Dushyan...
 Checked by

Innovyze

Source Control 2020.1

Model Details

Storage is Online Cover Level (m) 100.000

Tank or Pond Structure

Invert Level (m) 98.500

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	40.0	1.000	40.0	1.001	0.0

Pump Outflow Control

Invert Level (m) 98.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.4800	0.900	0.4800	1.700	0.4800	2.500	0.4800
0.200	0.4800	1.000	0.4800	1.800	0.4800	2.600	0.4800
0.300	0.4800	1.100	0.4800	1.900	0.4800	2.700	0.4800
0.400	0.4800	1.200	0.4800	2.000	0.4800	2.800	0.4800
0.500	0.4800	1.300	0.4800	2.100	0.4800	2.900	0.4800
0.600	0.4800	1.400	0.4800	2.200	0.4800	3.000	0.4800
0.700	0.4800	1.500	0.4800	2.300	0.4800		
0.800	0.4800	1.600	0.4800	2.400	0.4800		

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 100 + CC%



Date 30/06/2022
 File 1IN100 + CC%.SRCX


Designed by Andrew G Dushyan...
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Innovyze Source Control 2020.1

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	98.886	0.386	0.5	24.0	O K
30 min Summer	99.003	0.503	0.5	31.2	O K
60 min Summer	99.120	0.620	0.5	38.4	O K
120 min Summer	99.228	0.728	0.5	45.2	O K
180 min Summer	99.282	0.782	0.5	48.5	O K
240 min Summer	99.313	0.813	0.5	50.4	O K
360 min Summer	99.346	0.846	0.5	52.4	O K
480 min Summer	99.359	0.859	0.5	53.3	O K
600 min Summer	99.361	0.861	0.5	53.4	O K
720 min Summer	99.356	0.856	0.5	53.1	O K
960 min Summer	99.334	0.834	0.5	51.7	O K
1440 min Summer	99.290	0.790	0.5	49.0	O K
2160 min Summer	99.227	0.727	0.5	45.1	O K
2880 min Summer	99.168	0.668	0.5	41.4	O K
4320 min Summer	99.058	0.558	0.5	34.6	O K
5760 min Summer	98.961	0.461	0.5	28.6	O K
7200 min Summer	98.875	0.375	0.5	23.2	O K
8640 min Summer	98.801	0.301	0.5	18.7	O K
10080 min Summer	98.740	0.240	0.5	14.9	O K
15 min Winter	98.934	0.434	0.5	26.9	O K
30 min Winter	99.065	0.565	0.5	35.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	138.993	0.0	24.3	26
30 min Summer	90.986	0.0	31.5	41
60 min Summer	56.713	0.0	40.0	70
120 min Summer	34.148	0.0	48.1	130
180 min Summer	25.042	0.0	52.9	188
240 min Summer	19.977	0.0	56.3	248
360 min Summer	14.486	0.0	61.2	366
480 min Summer	11.532	0.0	64.9	484
600 min Summer	9.655	0.0	67.7	602
720 min Summer	8.347	0.0	70.1	722
960 min Summer	6.629	0.0	73.5	874
1440 min Summer	4.783	0.0	75.5	1104
2160 min Summer	3.446	0.0	87.4	1492
2880 min Summer	2.728	0.0	92.3	1904
4320 min Summer	1.960	0.0	99.5	2688
5760 min Summer	1.549	0.0	104.8	3464
7200 min Summer	1.289	0.0	109.1	4192
8640 min Summer	1.110	0.0	112.6	4928
10080 min Summer	0.977	0.0	115.7	5560
15 min Winter	138.993	0.0	27.2	26
30 min Winter	90.986	0.0	34.9	41

Webb Yates Engineers Ltd		Page 2
48-50 Scrutton Street London EC2A 4HH	Required Storage 1 in 100 + CC%	
Date 30/06/2022 File 1IN100 + CC%.SRCX	Designed by Andrew G Dushyan... Checked by	

Innovyze Source Control 2020.1

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
60 min Winter	99.197	0.697	0.5	43.2	O K
120 min Winter	99.322	0.822	0.5	50.9	O K
180 min Winter	99.385	0.885	0.5	54.9	O K
240 min Winter	99.423	0.923	0.5	57.2	O K
360 min Winter	99.465	0.965	0.5	59.8	O K
480 min Winter	99.486	0.986	0.5	61.1	O K
600 min Winter	99.494	0.994	0.5	61.6	O K
720 min Winter	99.494	0.994	0.5	61.6	O K
960 min Winter	99.478	0.978	0.5	60.6	O K
1440 min Winter	99.419	0.919	0.5	57.0	O K
2160 min Winter	99.336	0.836	0.5	51.9	O K
2880 min Winter	99.250	0.750	0.5	46.5	O K
4320 min Winter	99.086	0.586	0.5	36.3	O K
5760 min Winter	98.939	0.439	0.5	27.2	O K
7200 min Winter	98.813	0.313	0.5	19.4	O K
8640 min Winter	98.711	0.211	0.5	13.1	O K
10080 min Winter	98.637	0.137	0.5	8.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
60 min Winter	56.713	0.0	44.8	70
120 min Winter	34.148	0.0	53.9	128
180 min Winter	25.042	0.0	59.3	186
240 min Winter	19.977	0.0	63.0	244
360 min Winter	14.486	0.0	68.3	360
480 min Winter	11.532	0.0	72.2	474
600 min Winter	9.655	0.0	75.1	590
720 min Winter	8.347	0.0	77.1	702
960 min Winter	6.629	0.0	78.7	922
1440 min Winter	4.783	0.0	76.5	1184
2160 min Winter	3.446	0.0	97.9	1624
2880 min Winter	2.728	0.0	103.4	2076
4320 min Winter	1.960	0.0	111.4	2908
5760 min Winter	1.549	0.0	117.4	3696
7200 min Winter	1.289	0.0	122.1	4400
8640 min Winter	1.110	0.0	126.2	5096
10080 min Winter	0.977	0.0	129.6	5640

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 100 + CC%



Date 30/06/2022
 File 1IN100 + CC%.SRCX

Designed by Andrew G Dushyan...
 Checked by

Innovyze Source Control 2020.1

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.407	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

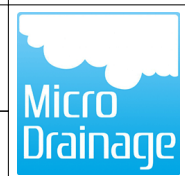
Time Area Diagram

Total Area (ha) 0.094

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.031	4	8	0.031
				8	12
					0.031

48-50 Scrutton Street
 London
 EC2A 4HH

Required Storage
 1 in 100 + CC%



Date 30/06/2022
 File 1IN100 + CC%.SRCX

Designed by Andrew G Dushyan...
 Checked by

Innovyze Source Control 2020.1

Model Details

Storage is Online Cover Level (m) 100.000

Tank or Pond Structure


Invert Level (m) 98.500

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	62.0	1.000	62.0	1.001	0.0

Pump Outflow Control

Invert Level (m) 98.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.4800	0.900	0.4800	1.700	0.4800	2.500	0.4800
0.200	0.4800	1.000	0.4800	1.800	0.4800	2.600	0.4800
0.300	0.4800	1.100	0.4800	1.900	0.4800	2.700	0.4800
0.400	0.4800	1.200	0.4800	2.000	0.4800	2.800	0.4800
0.500	0.4800	1.300	0.4800	2.100	0.4800	2.900	0.4800
0.600	0.4800	1.400	0.4800	2.200	0.4800	3.000	0.4800
0.700	0.4800	1.500	0.4800	2.300	0.4800		
0.800	0.4800	1.600	0.4800	2.400	0.4800		

48-50 Scrutton Street London EC2A 4HH	Proposed Storage	
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Date 30/06/2022 File 50% Betterment	Designed by AGD Checked by	
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Innovyze	Source Control 2020.1
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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	98.991	0.491	17.9	4.9	O K
30 min Summer	99.162	0.662	17.9	6.6	O K
60 min Summer	99.086	0.586	17.9	5.9	O K
120 min Summer	98.725	0.225	17.9	2.3	O K
180 min Summer	98.593	0.093	16.7	0.9	O K
240 min Summer	98.578	0.078	14.0	0.8	O K
360 min Summer	98.560	0.060	10.8	0.6	O K
480 min Summer	98.549	0.049	8.8	0.5	O K
600 min Summer	98.543	0.043	7.7	0.4	O K
720 min Summer	98.537	0.037	6.6	0.4	O K
960 min Summer	98.530	0.030	5.3	0.3	O K
1440 min Summer	98.522	0.022	3.9	0.2	O K
2160 min Summer	98.516	0.016	2.8	0.2	O K
2880 min Summer	98.513	0.013	2.3	0.1	O K
4320 min Summer	98.509	0.009	1.7	0.1	O K
5760 min Summer	98.508	0.008	1.4	0.1	O K
7200 min Summer	98.507	0.007	1.2	0.1	O K
8640 min Summer	98.505	0.005	0.9	0.1	O K
10080 min Summer	98.505	0.005	0.9	0.1	O K
15 min Winter	99.174	0.674	17.9	6.7	O K
30 min Winter	99.341	0.841	17.9	8.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	138.993	0.0	24.7	19
30 min Summer	90.986	0.0	32.8	28
60 min Summer	56.713	0.0	41.4	44
120 min Summer	34.148	0.0	50.2	72
180 min Summer	25.042	0.0	55.3	98
240 min Summer	19.977	0.0	58.9	128
360 min Summer	14.486	0.0	64.2	188
480 min Summer	11.532	0.0	68.2	248
600 min Summer	9.655	0.0	71.3	308
720 min Summer	8.347	0.0	74.0	370
960 min Summer	6.629	0.0	78.3	490
1440 min Summer	4.783	0.0	84.7	740
2160 min Summer	3.446	0.0	91.2	1076
2880 min Summer	2.728	0.0	95.9	1468
4320 min Summer	1.960	0.0	102.7	2180
5760 min Summer	1.549	0.0	107.6	2920
7200 min Summer	1.289	0.0	111.1	3560
8640 min Summer	1.110	0.0	113.4	4296
10080 min Summer	0.977	0.0	115.0	4936
15 min Winter	138.993	0.0	27.8	20
30 min Winter	90.986	0.0	37.0	29

48-50 Scrutton Street London EC2A 4HH	Proposed Storage	
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Date 30/06/2022 File 50% Betterment	Designed by AGD Checked by	
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Innovyze	Source Control 2020.1
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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
60 min Winter	99.112	0.612	17.9	6.1	O K
120 min Winter	98.600	0.100	17.9	1.0	O K
180 min Winter	98.577	0.077	13.7	0.8	O K
240 min Winter	98.563	0.063	11.2	0.6	O K
360 min Winter	98.547	0.047	8.4	0.5	O K
480 min Winter	98.538	0.038	6.8	0.4	O K
600 min Winter	98.532	0.032	5.7	0.3	O K
720 min Winter	98.528	0.028	5.0	0.3	O K
960 min Winter	98.522	0.022	4.0	0.2	O K
1440 min Winter	98.516	0.016	2.9	0.2	O K
2160 min Winter	98.512	0.012	2.1	0.1	O K
2880 min Winter	98.509	0.009	1.7	0.1	O K
4320 min Winter	98.507	0.007	1.2	0.1	O K
5760 min Winter	98.506	0.006	1.0	0.1	O K
7200 min Winter	98.505	0.005	0.9	0.1	O K
8640 min Winter	98.504	0.004	0.8	0.1	O K
10080 min Winter	98.504	0.004	0.7	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
60 min Winter	56.713	0.0	46.6	46
120 min Winter	34.148	0.0	56.4	68
180 min Winter	25.042	0.0	62.2	98
240 min Winter	19.977	0.0	66.2	128
360 min Winter	14.486	0.0	72.1	188
480 min Winter	11.532	0.0	76.6	248
600 min Winter	9.655	0.0	80.2	316
720 min Winter	8.347	0.0	83.2	362
960 min Winter	6.629	0.0	88.1	490
1440 min Winter	4.783	0.0	95.2	750
2160 min Winter	3.446	0.0	102.6	1060
2880 min Winter	2.728	0.0	108.0	1432
4320 min Winter	1.960	0.0	115.7	2168
5760 min Winter	1.549	0.0	121.5	2952
7200 min Winter	1.289	0.0	125.2	3768
8640 min Winter	1.110	0.0	129.6	4264
10080 min Winter	0.977	0.0	130.7	4752

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Innovyze	Source Control 2020.1
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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.407	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.067

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.022	4 8	0.022	8 12	0.022

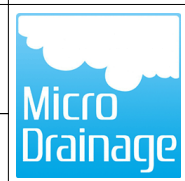
Green Roof

Area (m ³)	346	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	0.006288	32 36	0.001269	64 68	0.000256	96 100	0.000052
4 8	0.005148	36 40	0.001039	68 72	0.000210	100 104	0.000042
8 12	0.004215	40 44	0.000851	72 76	0.000172	104 108	0.000035
12 16	0.003451	44 48	0.000697	76 80	0.000141	108 112	0.000028
16 20	0.002825	48 52	0.000570	80 84	0.000115	112 116	0.000023
20 24	0.002313	52 56	0.000467	84 88	0.000094	116 120	0.000019
24 28	0.001894	56 60	0.000382	88 92	0.000077		
28 32	0.001550	60 64	0.000313	92 96	0.000063		

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Model Details

Storage is Online Cover Level (m) 100.000

Tank or Pond Structure

Invert Level (m) 98.500

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	10.0	1.000	10.0	1.001	0.0

Pump Outflow Control

Invert Level (m) 98.500

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	17.9000	0.900	17.9000	1.700	17.9000	2.500	17.9000
0.200	17.9000	1.000	17.9000	1.800	17.9000	2.600	17.9000
0.300	17.9000	1.100	17.9000	1.900	17.9000	2.700	17.9000
0.400	17.9000	1.200	17.9000	2.000	17.9000	2.800	17.9000
0.500	17.9000	1.300	17.9000	2.100	17.9000	2.900	17.9000
0.600	17.9000	1.400	17.9000	2.200	17.9000	3.000	17.9000
0.700	17.9000	1.500	17.9000	2.300	17.9000		
0.800	17.9000	1.600	17.9000	2.400	17.9000		