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7 Bertal Road London SW17 0BX	73-75 Avenue Road Post Development Mock Network Unrestricted SW Run-Off Rates	
Date 12.02.15 File	Designed by MDS Checked by MDS	
XP Solutions	Network 2014.1.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.600	Minimum Backdrop Height (m)	0.200
Ratio R	0.438	Maximum Backdrop Height (m)	1.500
Maximum Rainfall (mm/hr)	50	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	500
Volumetric Runoff Coeff.	0.750		

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.080	4-8	0.025

Total Area Contributing (ha) = 0.105

Total Pipe Volume (m³) = 1.414

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	10.000	0.100	100.0	0.105	5.00	0.0	0.600	o	300
1.001	10.000	0.100	100.0	0.000	0.00	0.0	0.600	o	300

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	5.11	10.000	0.105	0.0	0.0	0.0	1.57	111.1	14.2
1.001	50.00	5.21	9.900	0.105	0.0	0.0	0.0	1.57	111.1	14.2

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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Foul Sewage per hectare (l/s)	0.000
Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start Level (mm)	0	Run Time (mins)	60
Manhole Headloss Coeff (Global)	0.500	Output Interval (mins)	1
Number of Input Hydrographs		0	
Number of Online Controls		0	
Number of Offline Controls		0	
Number of Storage Structures		0	
Number of Time/Area Diagrams		0	

Synthetic Rainfall Details


Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.600	Storm Duration (mins)	30
Ratio R	0.438		

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Summary of Results for 15 minute 2 year Winter (Storm)

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


PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	10.103	-0.197	0.000	0.26	0.0	20.2	OK
1.001	2	10.003	-0.197	0.000	0.25	0.0	19.9	OK

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Summary of Results for 15 minute 30 year Winter (Storm)

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

PN	US/MH Name	Water Surcharged Flooded			Pipe			Status
		Level (m)	Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	
1.000	1	10.148	-0.152	0.000	0.48	0.0	38.1	OK
1.001	2	10.048	-0.152	0.000	0.48	0.0	37.9	OK

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Summary of Results for 15 minute 100 year Winter (Storm)

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	10.208	-0.092	0.000	0.81	0.0	64.3	OK
1.001	2	10.109	-0.091	0.000	0.81	0.0	64.1	OK