


Clarke Nicholls Marcel		Page 1
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

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)	1	PIMP (%)	100
M5-60 (mm)	20.600	Add Flow / Climate Change (%)	0
Ratio R	0.440	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits



Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.098	4-8	0.004

Total Area Contributing (ha) = 0.102


Total Pipe Volume (m<sup>3</sup>) = 1.378

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)	Section Type	Auto Design
1.000	9.500	0.100	95.0	0.072	4.00	0.0	0.600	o	300	Pipe/Conduit	
1.001	10.000	0.100	100.0	0.030	0.00	0.0	0.600	o	300	Pipe/Conduit	

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	4.10	18.000	0.072	0.0	0.0	0.0	1.61	114.0	9.7
1.001	50.00	4.20	16.400	0.102	0.0	0.0	0.0	1.57	111.1	13.8

Clarke Nicholls Marcel		Page 2
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Online Controls for Storm


Hydro-Brake® Optimum Manhole: 2, DS/PN: 1.001, Volume (m³): 6.8

Unit Reference	MD-SHE-0094-6000-2650-6000
Design Head (m)	2.650
Design Flow (l/s)	6.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	94
Invert Level (m)	16.400
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.650	6.0
Flush-Flo™	0.411	4.4
Kick-Flo®	0.841	3.5
Mean Flow over Head Range	-	4.5

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.0	1.200	4.1	3.000	6.3	7.000	9.5
0.200	4.0	1.400	4.4	3.500	6.8	7.500	9.8
0.300	4.3	1.600	4.7	4.000	7.3	8.000	10.1
0.400	4.4	1.800	5.0	4.500	7.7	8.500	10.4
0.500	4.4	2.000	5.2	5.000	8.1	9.000	10.7
0.600	4.3	2.200	5.5	5.500	8.4	9.500	11.0
0.800	3.7	2.400	5.7	6.000	8.8		
1.000	3.8	2.600	5.9	6.500	9.1		


Clarke Nicholls Marcel		Page 3
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Storage Structures for Storm

Cellular Storage Manhole: 2, DS/PN: 1.001

Invert Level (m) 16.450 Safety Factor 2.0  
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95  
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
0.000	12.0	0.0	5.200	0.0	0.0
0.400	12.0	0.0	5.600	0.0	0.0
0.800	12.0	0.0	6.000	0.0	0.0
1.200	12.0	0.0	6.400	0.0	0.0
1.600	12.0	0.0	6.800	0.0	0.0
2.400	12.0	0.0	7.200	0.0	0.0
2.401	0.0	0.0	7.600	0.0	0.0
2.800	0.0	0.0	8.000	0.0	0.0
3.200	0.0	0.0	8.400	0.0	0.0
3.600	0.0	0.0	8.800	0.0	0.0
4.000	0.0	0.0	9.200	0.0	0.0
4.400	0.0	0.0	9.600	0.0	0.0
4.800	0.0	0.0	10.000	0.0	0.0

Clarke Nicholls Marcel		Page 4
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 15 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	20	18.091	-0.209	0.000	0.20	16.0	OK
1.001	2	39	16.870	0.170	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 5
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 30 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	22	18.084	-0.216	0.000	0.17	13.6	OK
1.001	2	38	16.897	0.197	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 6
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 60 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	26	18.070	-0.230	0.000	0.12	9.8	OK
1.001	2	40	16.863	0.163	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 7
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 120 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000    Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0    MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1    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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)    300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status    OFF  
DVD Status    OFF  
Inertia Status    OFF

Profile(s)    Summer and Winter  
Duration(s) (mins)    15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	34	18.057	-0.243	0.000	0.08	6.4	OK
1.001	2	43	16.758	0.058	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 8
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018	Designed by MDF	
File 10360-10 EXTERNALS.MDX	Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 180 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000    Additional Flow - % of Total Flow 0.000  
Hot Start (mins)    0    MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1    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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    20.600 Cv (Winter) 0.840  
  
Margin for Flood Risk Warning (mm)    300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status    OFF  
DVD Status    OFF  
Inertia Status    OFF

Profile(s)    Summer and Winter  
Duration(s) (mins)    15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    40, 40, 40

PN	US/MH Name	Storm Rank	Water    Surcharged    Flooded				Pipe		
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
1.000	1	38	18.048	-0.252	0.000	0.06		4.9	OK
1.001	2	48	16.671	-0.029	0.000	0.05		4.3	OK



Clarke Nicholls Marcel		Page 9
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 240 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded				Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)		
1.000	1	45	18.043	-0.257	0.000	0.05	4.0	OK	
1.001	2	51	16.609	-0.091	0.000	0.05	4.1	OK	

Clarke Nicholls Marcel		Page 10
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 360 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded				Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)		
1.000	1	53	18.037	-0.263	0.000	0.04	3.0	OK	
1.001	2	57	16.536	-0.164	0.000	0.05	3.7	OK	

Clarke Nicholls Marcel		Page 11
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 480 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded				Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)		
1.000	1	58	18.034	-0.266	0.000	0.03	2.4	OK	
1.001	2	58	16.507	-0.193	0.000	0.04	3.2	OK	

Clarke Nicholls Marcel		Page 12
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 600 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
Hot Start Level (mm)	0	Inlet Coeffiecient	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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	62	18.032	-0.268	0.000	0.03		2.0	OK	
1.001	2	63	16.492	-0.208	0.000	0.03		2.8	OK	

Clarke Nicholls Marcel		Page 13
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 720 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	64	18.030	-0.270	0.000	0.02		1.7	OK	
1.001	2	64	16.482	-0.218	0.000	0.03		2.4	OK	

Clarke Nicholls Marcel		Page 14
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018	Designed by MDF	
File 10360-10 EXTERNALS.MDX	Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 960 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)      0      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)      20.600 Cv (Winter) 0.840  
  
Margin for Flood Risk Warning (mm)      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status      OFF  
DVD Status      OFF  
Inertia Status      OFF

Profile(s)      Summer and Winter  
Duration(s) (mins)      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)      1, 30, 100  
Climate Change (%)      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	68	18.025	-0.275	0.000	0.02		1.4	OK	
1.001	2	68	16.470	-0.230	0.000	0.03		2.0	OK	

Clarke Nicholls Marcel		Page 15
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 1440 minute 1 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	70	18.019	-0.281	0.000	0.01		1.0	OK	
1.001	2	70	16.458	-0.242	0.000	0.02		1.5	OK	

Clarke Nicholls Marcel		Page 16
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 15 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe	Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)	
1.000	1	15	18.149	-0.151	0.000	0.50	39.3	OK	
1.001	2	23	17.799	1.099	0.000	0.06	4.4	SURCHARGED	



Clarke Nicholls Marcel		Page 17
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 30 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000    Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0    MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1    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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)    300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status    OFF  
DVD Status    OFF  
Inertia Status    OFF

Profile(s)    Summer and Winter  
Duration(s) (mins)    15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	17	18.136	-0.164	0.000	0.42	33.2	OK
1.001	2	17	17.992	1.292	0.000	0.06	4.7	SURCHARGED

Clarke Nicholls Marcel		Page 18
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 60 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	18	18.111	-0.189	0.000	0.30	23.4	OK
1.001	2	16	18.002	1.302	0.000	0.06	4.7	SURCHARGED

Summary Wizard of 120 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region England and Wales	Cv (Summer)		0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5	Second Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	21	18.088	-0.212	0.000	0.19	14.9		OK	
1.001	2	20	17.875	1.175	0.000	0.06	4.6		SURCHARGED	

Clarke Nicholls Marcel		Page 20
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 180 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	24	18.075	-0.225	0.000	0.14	11.2	OK
1.001	2	24	17.729	1.029	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 21
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 240 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	27	18.067	-0.233	0.000	0.11	9.0	OK
1.001	2	27	17.583	0.883	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 22
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 360 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	32	18.057	-0.243	0.000	0.08	6.5	OK
1.001	2	30	17.301	0.601	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 23
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 480 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                                  20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                                  300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status    OFF  
DVD Status    OFF  
Inertia Status    OFF

Profile(s)    Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	37	18.050	-0.250	0.000	0.07	5.2	OK
1.001	2	34	16.986	0.286	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 24
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 600 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000    Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1    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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water    Surcharged    Flooded			Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status
			Storm Level (m)	Depth (m)	Volume (m <sup>3</sup> )				
1.000	1	43	18.045	-0.255	0.000	0.05	4.3	OK	
1.001	2	41	16.803	0.103	0.000	0.06	4.4	SURCHARGED	



Clarke Nicholls Marcel		Page 25
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 720 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	47	18.042	-0.258	0.000	0.05		3.8	OK	
1.001	2	47	16.688	-0.012	0.000	0.05		4.3	OK	

Clarke Nicholls Marcel		Page 26
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 960 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded				Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)		
1.000	1	52	18.037	-0.263	0.000	0.04	3.0	OK	
1.001	2	52	16.569	-0.131	0.000	0.05	3.9	OK	

Clarke Nicholls Marcel		Page 27
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 1440 minute 30 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	60	18.033	-0.267	0.000	0.03		2.1	OK	
1.001	2	60	16.501	-0.199	0.000	0.04		3.0	OK	

Clarke Nicholls Marcel		Page 28
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 15 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                    0    MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)    300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status    OFF  
DVD Status    OFF  
Inertia Status    OFF

Profile(s)    Summer and Winter  
Duration(s) (mins)                    15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)    1, 30, 100  
Climate Change (%)    40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	11	18.214	-0.086	0.000	0.65	51.1	OK
1.001	2	11	18.212	1.512	0.000	0.06	5.0	SURCHARGED

Clarke Nicholls Marcel		Page 29
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 30 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	6	18.508	0.208	0.000	0.55	43.5	SURCHARGED
1.001	2	6	18.505	1.805	0.000	0.07	5.4	SURCHARGED

Clarke Nicholls Marcel		Page 30
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 60 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	4	18.575	0.275	0.000	0.39	30.8	SURCHARGED
1.001	2	4	18.573	1.873	0.000	0.07	5.5	SURCHARGED

Clarke Nicholls Marcel		Page 31
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 120 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	7	18.448	0.148	0.000	0.25	19.6	SURCHARGED
1.001	2	7	18.446	1.746	0.000	0.07	5.3	SURCHARGED

Clarke Nicholls Marcel		Page 32
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 180 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)      0      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status      OFF  
DVD Status      OFF  
Inertia Status      OFF

Profile(s)      Summer and Winter  
Duration(s) (mins)      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)      1, 30, 100  
Climate Change (%)      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	9	18.291	-0.009	0.000	0.18	14.6	OK
1.001	2	9	18.289	1.589	0.000	0.06	5.1	SURCHARGED



Clarke Nicholls Marcel		Page 33
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 240 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe	Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)	
1.000	1	16	18.144	-0.156	0.000	0.15	11.7	OK	
1.001	2	14	18.141	1.441	0.000	0.06	4.9	SURCHARGED	

Clarke Nicholls Marcel		Page 34
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 360 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	28	18.065	-0.235	0.000	0.11	8.5	OK
1.001	2	21	17.869	1.169	0.000	0.06	4.5	SURCHARGED

Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018	Designed by MDF	
File 10360-10 EXTERNALS.MDX	Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 480 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	31	18.058	-0.242	0.000	0.08	6.7	OK
1.001	2	26	17.610	0.910	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 36
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 600 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	36	18.052	-0.248	0.000	0.07	5.6	OK
1.001	2	29	17.368	0.668	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 37
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 720 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	40	18.048	-0.252	0.000	0.06	4.8	OK
1.001	2	32	17.054	0.354	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 38
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 960 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	46	18.042	-0.258	0.000	0.05	3.8	OK
1.001	2	44	16.746	0.046	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 39
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 1440 minute 100 year Summer I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	56	18.036	-0.264	0.000	0.03		2.7	OK	
1.001	2	54	16.547	-0.153	0.000	0.05		3.7	OK	

Clarke Nicholls Marcel		Page 40
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 15 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	19	18.091	-0.209	0.000	0.20	16.0	OK
1.001	2	36	16.939	0.239	0.000	0.06	4.4	SURCHARGED



Clarke Nicholls Marcel		Page 41
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 30 minute 1 year Winter I+40% 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 0.000  
 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 1  
 Number of Online Controls 1 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 0.440  
 Region England and Wales Cv (Summer) 0.750  
 M5-60 (mm) 20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0  
 Analysis Timestep 2.5 Second Increment (Extended)  
 DTS Status OFF  
 DVD Status OFF  
 Inertia Status OFF

Profile(s) Summer and Winter  
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600,  
 720, 960, 1440  
 Return Period(s) (years) 1, 30, 100  
 Climate Change (%) 40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Flow / Cap.	Pipe		Status
			Level (m)	Depth (m)	Volume (m³)		Flow / Overflow (l/s)	Flow (l/s)	
1.000	1	23	18.077	-0.223	0.000	0.15	11.8	OK	
1.001	2	35	16.969	0.269	0.000	0.06	4.4	SURCHARGED	

Clarke Nicholls Marcel		Page 42
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 60 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5	Second Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Flow / Cap.	Overflow (l/s)	Pipe	Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )			Flow (l/s)	
1.000	1	30	18.062	-0.238	0.000	0.10	7.7	OK	
1.001	2	37	16.905	0.205	0.000	0.06	4.4	SURCHARGED	

Clarke Nicholls Marcel		Page 43
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 120 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe	Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)	
1.000	1	41	18.047	-0.253	0.000	0.06	4.8	OK	
1.001	2	46	16.733	0.033	0.000	0.06	4.4	SURCHARGED	

Clarke Nicholls Marcel		Page 44
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 180 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe			Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)		
1.000	1	49	18.041	-0.259	0.000	0.04	3.6	OK	
1.001	2	50	16.615	-0.085	0.000	0.05	4.1	OK	

Clarke Nicholls Marcel		Page 45
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 240 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	54	18.037	-0.263	0.000	0.04		2.9	OK	
1.001	2	55	16.547	-0.153	0.000	0.05		3.7	OK	

Clarke Nicholls Marcel		Page 46
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 360 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	61	18.033	-0.267	0.000	0.03		2.1	OK	
1.001	2	61	16.499	-0.201	0.000	0.04		3.0	OK	

Clarke Nicholls Marcel		Page 47
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 480 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	65	18.030	-0.270	0.000	0.02		1.7	OK	
1.001	2	65	16.482	-0.218	0.000	0.03		2.4	OK	

Clarke Nicholls Marcel		Page 48
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 600 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	67	18.026	-0.274	0.000	0.02		1.5	OK	
1.001	2	67	16.472	-0.228	0.000	0.03		2.0	OK	



Clarke Nicholls Marcel		Page 49
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 720 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	69	18.023	-0.277	0.000	0.02		1.3	OK	
1.001	2	69	16.466	-0.234	0.000	0.02		1.8	OK	

Clarke Nicholls Marcel		Page 50
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018	Designed by MDF	
File 10360-10 EXTERNALS.MDX	Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 960 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded				Pipe		
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status
1.000	1	71	18.018	-0.282	0.000	0.01		1.0	OK
1.001	2	71	16.457	-0.243	0.000	0.02		1.4	OK

Clarke Nicholls Marcel		Page 51
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 1440 minute 1 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	72	18.013	-0.287	0.000	0.01		0.7	OK	
1.001	2	72	16.448	-0.252	0.000	0.01		1.1	OK	

Clarke Nicholls Marcel		Page 52
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 15 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	14	18.149	-0.151	0.000	0.50	39.3	OK
1.001	2	18	17.985	1.285	0.000	0.06	4.7	SURCHARGED

Clarke Nicholls Marcel		Page 53
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 30 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	13	18.195	-0.105	0.000	0.36	28.9	OK
1.001	2	13	18.193	1.493	0.000	0.06	5.0	SURCHARGED

Clarke Nicholls Marcel		Page 54
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 60 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	12	18.213	-0.087	0.000	0.23	18.5	OK
1.001	2	12	18.211	1.511	0.000	0.06	5.0	SURCHARGED

Clarke Nicholls Marcel		Page 55
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 120 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	25	18.074	-0.226	0.000	0.14	11.1	OK
1.001	2	15	18.061	1.361	0.000	0.06	4.8	SURCHARGED

Clarke Nicholls Marcel		Page 56
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 180 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	29	18.064	-0.236	0.000	0.10	8.2	OK
1.001	2	22	17.853	1.153	0.000	0.06	4.5	SURCHARGED



Clarke Nicholls Marcel		Page 57
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 240 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	33	18.057	-0.243	0.000	0.08	6.5	OK
1.001	2	25	17.634	0.934	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 58
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 360 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	42	18.047	-0.253	0.000	0.06	4.7	OK
1.001	2	31	17.147	0.447	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 59
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 480 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	48	18.042	-0.258	0.000	0.05	3.8	OK
1.001	2	42	16.780	0.080	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 60
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 600 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000  
Hot Start (mins) 0 MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1 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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm) 20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm) 300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status OFF  
DVD Status OFF  
Inertia Status OFF

Profile(s) Summer and Winter  
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years) 1, 30, 100  
Climate Change (%) 40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded				Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)		
1.000	1	51	18.038	-0.262	0.000	0.04	3.1	OK	
1.001	2	49	16.620	-0.080	0.000	0.05	4.1	OK	

Clarke Nicholls Marcel		Page 61
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 720 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	57	18.036	-0.264	0.000	0.03		2.7	OK	
1.001	2	56	16.546	-0.154	0.000	0.05		3.7	OK	

Clarke Nicholls Marcel		Page 62
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 960 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.600	Cv (Winter)	0.840
Margin for Flood Risk Warning (mm)			300.0
Analysis Timestep	2.5 Second	Increment (Extended)	
DTS Status			OFF
DVD Status			OFF
Inertia Status			OFF

Profile(s)		Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600,	720, 960, 1440
Return Period(s) (years)		1, 30, 100
Climate Change (%)		40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded				Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)		
1.000	1	59	18.033	-0.267	0.000	0.03	2.2	OK	
1.001	2	59	16.502	-0.198	0.000	0.04	3.0	OK	

Clarke Nicholls Marcel		Page 63
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 1440 minute 30 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	66	18.028	-0.272	0.000	0.02		1.6	OK	
1.001	2	66	16.476	-0.224	0.000	0.03		2.2	OK	

Clarke Nicholls Marcel		Page 64
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 15 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840  
Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	8	18.440	0.140	0.000	0.65	51.1	SURCHARGED
1.001	2	8	18.438	1.738	0.000	0.07	5.3	SURCHARGED



Clarke Nicholls Marcel		Page 65
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 30 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	2	18.807	0.507	0.000	0.48	37.8	SURCHARGED
1.001	2	2	18.804	2.104	0.000	0.07	5.7	SURCHARGED

Clarke Nicholls Marcel		Page 66
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 60 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	1	19.110	0.810	0.000	0.31	24.3	SURCHARGED
1.001	2	1	19.107	2.407	0.000	0.08	6.0	SURCHARGED

Clarke Nicholls Marcel		Page 67
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 120 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	3	18.743	0.443	0.000	0.18	14.6	SURCHARGED
1.001	2	3	18.741	2.041	0.000	0.07	5.6	SURCHARGED

Clarke Nicholls Marcel		Page 68
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 180 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	5	18.510	0.210	0.000	0.13	10.7	SURCHARGED
1.001	2	5	18.507	1.807	0.000	0.07	5.4	SURCHARGED

Clarke Nicholls Marcel		Page 69
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 240 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                    0    MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)    300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status    OFF  
DVD Status    OFF  
Inertia Status    OFF

Profile(s)    Summer and Winter  
Duration(s) (mins)                    15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                    1, 30, 100  
Climate Change (%)                    40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	10	18.279	-0.021	0.000	0.11	8.5	OK
1.001	2	10	18.277	1.577	0.000	0.06	5.1	SURCHARGED

Clarke Nicholls Marcel		Page 70
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 360 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	35	18.055	-0.245	0.000	0.08	6.1	OK
1.001	2	19	17.888	1.188	0.000	0.06	4.6	SURCHARGED

Clarke Nicholls Marcel		Page 71
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage Network 2017.1.2		

Summary Wizard of 480 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe Flow (l/s)	Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)		
1.000	1	39	18.048	-0.252	0.000	0.06	4.9	OK	
1.001	2	28	17.508	0.808	0.000	0.06	4.4	SURCHARGED	

Clarke Nicholls Marcel		Page 72
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 600 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	44	18.043	-0.257	0.000	0.05	4.0	OK
1.001	2	33	17.008	0.308	0.000	0.06	4.4	SURCHARGED



Clarke Nicholls Marcel		Page 73
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 720 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                    0    MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)    20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)    300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status    OFF  
DVD Status    OFF  
Inertia Status    OFF

Profile(s)    Summer and Winter  
Duration(s) (mins)                    15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                    1, 30, 100  
Climate Change (%)                    40, 40, 40

PN	US/MH Name	Storm Rank	Water    Surcharged    Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	50	18.040	-0.260	0.000	0.04	3.5	OK
1.001	2	45	16.743	0.043	0.000	0.06	4.4	SURCHARGED

Clarke Nicholls Marcel		Page 74
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage	Network 2017.1.2	

Summary Wizard of 960 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /ha Storage	0.000
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	1
Number of Online Controls	1	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	0.440
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)		20.600 Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years)	1, 30, 100
Climate Change (%)	40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged			Flooded		Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (l/s)	Flow (l/s)		
1.000	1	55	18.036	-0.264	0.000	0.03		2.8	OK	
1.001	2	53	16.557	-0.143	0.000	0.05		3.8	OK	

Clarke Nicholls Marcel		Page 75
Glen House 22-24 Glenthorne Road Hammersmith W6 ONG	10360-10 150 Holborn Externals	
Date 02/07/2018 File 10360-10 EXTERNALS.MDX	Designed by MDF Checked by	
Micro Drainage		Network 2017.1.2

Summary Wizard of 1440 minute 100 year Winter I+40% for Storm

Simulation Criteria

Areal Reduction Factor 1.000      Additional Flow - % of Total Flow 0.000  
Hot Start (mins)                      0                      MADD Factor \* 10m<sup>3</sup>/ha Storage 0.000  
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 1  
Number of Online Controls 1      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 0.440  
Region England and Wales Cv (Summer) 0.750  
M5-60 (mm)                      20.600 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)                      300.0  
Analysis Timestep 2.5 Second Increment (Extended)  
DTS Status                      OFF  
DVD Status                      OFF  
Inertia Status                      OFF

Profile(s)                      Summer and Winter  
Duration(s) (mins)                      15, 30, 60, 120, 180, 240, 360, 480, 600,  
720, 960, 1440  
Return Period(s) (years)                      1, 30, 100  
Climate Change (%)                      40, 40, 40

PN	US/MH Name	Storm Rank	Water Surcharged Flooded			Pipe		Status
			Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Overflow Cap. (l/s)	Flow (l/s)	
1.000	1	63	18.032	-0.268	0.000	0.02	2.0	OK
1.001	2	62	16.493	-0.207	0.000	0.04	2.8	OK