Abbey Park
Humber Road
Coventry
CV3 4AQ
UK

Telephone: +44 (0)24 7650 5600
Fax: +44 (0)24 7650 1417
www.rsk.co.uk

20th August 2015

Our reference: 132487

LAWN ROAD, BELSIZE PARK, CAMDEN - DRAINAGE STATEMENT
Revision A

1.1 General

In accordance with the instruction from Fairview New Homes, RSK Land & Development Engineering has undertaken a drainage design for the proposed development at Lawn Road, Camden, London,

1.2 Site Details

The site, located in Hampstead is currently a former Community Centre building, Offices, and associated hardstandings, in total is approximately 0.25Ha in size and is located to the east of Lawn Road. The National Grid Reference: Easting: 527560, Northing: 185351.

The Geo-Environment Assessment (GEA-MER00507-13.56 rev A, 14 October 2013) confirmed that Soakaways are not suitable due to the presence of made ground overlaying cohesive soils of the London clay formation.

2.1 Existing Sewers

The public sewer records from Thames Water show a 1168 x 787 brick built combined sewer in Lawn Road and a 1168 x 762 brick built combined sewer in Upper Park Road. Existing site drainage pipes were proved by CCTV survey to be connected to the Upper Park Road sewer.

2.2 Pre-development Enquiry

Please see attached in Appendix A, Thames Water (TW) response to the pre-development enquiry.

Summarised as follows:

> Foul Water : TW accept a like for like discharge rate from this development.
> Surface Water : TW cited The London Plan and require discharge to equate to 50% reduction of existing discharge to local sewer where disposal methods of Soakaways and Watercourses are unavailable.

2.3 Proposed Drainage Design

On site surface water drainage has been designed to not to surcharge for a 1 in 1 year rainfall event and designed to contain runoff generated from all storm events up to and including a peak 1 in 100 year return period storm, plus an allowance of 30% for climate change.
See attached drainage drawing and calculations. (Appendix B and C)

A flow control device (Hydrobrake) has been incorporated ahead of the final outfall to the existing adopted sewer system with addition flows diverted to an underground attenuation tank.

The 14.5 l/sec restricted discharge rate does not exceed 50% of the former discharge rate for the site during a 1 in 100 year return period storm, plus 30% for climate change.

For RSK Land & Development Engineering Limited

Pete Walsh
Infrastructure Design Engineer

Appendix A. Thames Water Document.
Appendix B. Private Drainage drawing (Exceedance flows added)
Appendix C. WinDes calculations

Total site area (ha)	0.2557
Existing permeable area (ha)	0.0612
Existing impermeable area (ha)	0.1945
Proposed permeable area (ha)	0.0664
Proposed impermeable area (ha)	0.1893

Return Period (critical duration)	Existing run off rate (l/s)	Proposed (l/s)	% reduction
1 in 1	29.4	9.2	68.3
1 in 30	58.7	6.9	88.2
1 in 100	72.5	8.4	88.5
1 in 100 + 30% CC	76.8	14.2	81.5

The total discharge run off through the control chamber and hydrobrake unit for a 1 in 100 year + 30% (Climate change) is 69.05 m3.

Amount of volume in Attenuation facility	38.76 m3
Amount of volume in network pipes and MH's	12.50 m3
Amount of volume in green features	0.40 m3

Note: For the purposes of drainage calculations water butts are considered to be full at the start of any rainfall event.

Abbey Park
Humber Road
Coventry
CV3 4AQ
UK

Telephone: +44 (0)24 7650 5600
Fax: +44 (0)24 7650 1417
www.rsk.co.uk

Appendix A – Thames water document

Kemal Toraman

From: DEVELOPER.SERVICES@THAMESWATER.CO.UK
Sent: 05 May 2015 11:32
To: Kemal Toraman
Subject: IRef:1012796470 REF: PREDEV Belsize Park Lawn Road NW3 2XR, 1012796470, 50059334

Dear Mr Toroman,

Thank you for your pre development enquiry.

In light of the fact that you are not increasing the existing foul discharge, you may proceed with your development.

Regarding surface water discharge, under the London plan 5.13, all proposed developments should achieve a 50% reduction in surface water discharge from the existing discharge.

Please note that discharging surface water to the public sewer network should only be considered after all other methods of disposal have been investigated and proven to be not viable. In accordance with the Building Act 2000 Clause H3.3, positive connection to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. The disposal hierarchy being: 1st Soakaways; 2nd Watercourses; 3rd Sewers.

All connection requests are subject to a full Section 106 (Water Industry Act 1991) application before the Company can confirm approval to the connection itself. Please also note that capacity in the public sewerage system cannot be reserved.

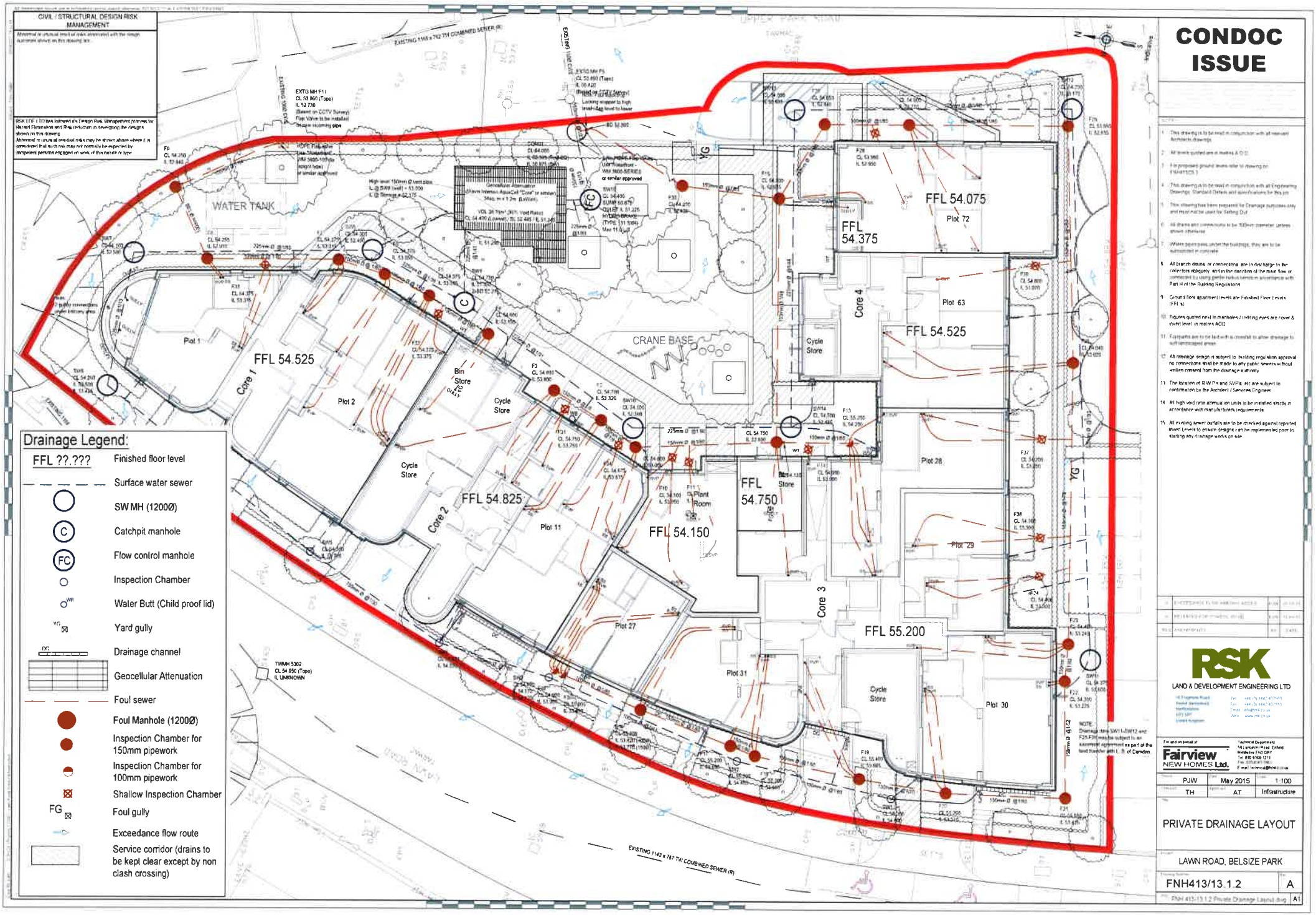
Please note that the views expressed by Thames Water in this letter are in response to this pre development enquiry at this time and do not represent our final views on any future planning applications made in relation to this site.

We reserve the right to change our position in relation to any such planning applications.

Yours faithfully

Shaun Picart
Development Engineer

Appendix B – Private drainage drawing


CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT
CONDOC ISSUE
WATER TANK
CRANE BASE
Core 1
Core 2
Core 3
Core 4
FFL 54.525
FFL 54.825
FFL 54.150
FFL 54.750
FFL 54.375
FFL 54.075
FFL 55.200
Plot 1
Plot 2
Plot 11
Plot 27
Plot 31
Plot 30
Plot 29
Plot 28
Plot 63
Plot 72
Bin Store
Cycle Store
Plant Room
EXISTING 1143 x 767 TW COMBINED SEWER (R)
Drainage Legend:
FFL ??.???
Finished floor level
Surface water sewer
SW MH (1200Ø)
Catchpit manhole
Flow control manhole
Inspection Chamber
Water Butt (Child proof lid)
Yard gully
Drainage channel
Geocellular Attenuation
Foul sewer
Foul Manhole (1200Ø)
Inspection Chamber for 150mm pipework
Inspection Chamber for 100mm pipework
Shallow Inspection Chamber
Foul gully
Exceedance flow route
Service corridor (drains to be kept clear except by non clash crossing)
RSK
LAND & DEVELOPMENT ENGINEERING LTD
Fairview NEW HOMES Ltd.
PJW
May 2015
1:100
TH
AT
Infrastructure
PRIVATE DRAINAGE LAYOUT
LAWN ROAD, BELSIZE PARK
FNH413/13.1.2
A

Appendix C – Windes Calculations

RSK Ltd		Page 1
18 Frogmore Road Hemel Hempstead Herts, HP3 9RT	Fairview New Homes Ltd. Lawn Road, Belsize Park Camden	
Date 29/06/2015 11:17 File 132487 SWS.mdx	Designed By P.J.Walsh Checked By	
Micro Drainage	Network W.12.5	

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)	5	Add Flow / Climate Change (%)	0
M5-60 (mm)	21.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.439	Maximum Backdrop Height (m)	1.500
Maximum Rainfall (mm/hr)	100	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	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

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	9.800	0.135	72.6	0.009	5.00	0.0	0.600	o	100
1.001	12.902	0.295	43.7	0.010	0.00	0.0	0.600	o	100
1.002	7.200	0.090	80.0	0.015	0.00	0.0	0.600	o	150
1.003	9.904	0.325	30.5	0.002	0.00	0.0	0.600	o	150
1.004	16.400	0.205	80.0	0.010	0.00	0.0	0.600	o	150
1.005	8.400	0.835	10.1	0.022	0.00	0.0	0.600	o	225
1.006	14.990	0.190	78.9	0.000	0.00	0.0	0.600	o	225
1.007	6.000	0.185	32.4	0.000	0.00	0.0	0.600	o	225
2.000	34.100	0.430	79.3	0.056	5.00	0.0	0.600	o	225
2.001	17.200	0.235	73.2	0.000	0.00	0.0	0.600	o	225
2.002	19.100	0.450	42.4	0.039	0.00	0.0	0.600	o	225

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ Area (ha)	Σ DWF (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	98.60	5.18	54.600	0.009	0.0	0.0	0.0	0.90	7.1	2.4
1.001	97.08	5.36	54.465	0.019	0.0	0.0	0.0	1.17	9.2	5.0
1.002	96.22	5.47	54.120	0.034	0.0	0.0	0.0	1.12	19.9	8.9
1.003	95.52	5.56	54.030	0.036	0.0	0.0	0.0	1.83	32.3	9.3
1.004	93.66	5.80	53.705	0.046	0.0	0.0	0.0	1.12	19.9	11.7
1.005	93.41	5.84	53.425	0.068	0.0	0.0	0.0	4.15	165.0	17.2
1.006	92.17	6.01	52.590	0.068	0.0	0.0	0.0	1.47	58.6	17.2
1.007	91.86	6.05	52.400	0.068	0.0	0.0	0.0	2.31	91.7	17.2
2.000	96.90	5.39	53.600	0.056	0.0	0.0	0.0	1.47	58.4	14.7
2.001	95.42	5.57	53.170	0.056	0.0	0.0	0.0	1.53	60.8	14.7
2.002	94.20	5.73	52.935	0.095	0.0	0.0	0.0	2.01	80.1	24.2

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
2.003	9.700	0.125	77.6	0.000	0.00	0.0	0.600	o	225
2.004	13.000	0.145	89.7	0.026	0.00	0.0	0.600	o	225
1.008	4.400	0.110	40.0	0.000	0.00	0.0	0.600	o	225
1.009	2.000	0.025	80.0	0.000	0.00	0.0	0.600	o	225
1.010	3.085	0.250	12.3	0.000	0.00	0.0	0.600	o	225
1.011	3.600	0.275	13.1	0.000	0.00	0.0	0.600	o	225

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ Area (ha)	Σ DWF (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
2.003	93.39	5.84	52.485	0.095	0.0	0.0	0.0	1.49	59.1	24.2
2.004	92.24	6.00	52.360	0.121	0.0	0.0	0.0	1.38	54.9	30.2
1.008	91.61	6.09	51.360	0.189	0.0	0.0	0.0	2.07	82.5	46.9
1.009	91.45	6.11	51.250	0.189	0.0	0.0	0.0	1.46	58.2	46.9
1.010	91.35	6.12	51.225	0.189	0.0	0.0	0.0	3.75	148.9	46.9
1.011	91.24	6.14	50.975	0.189	0.0	0.0	0.0	3.64	144.6	46.9

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	55.300	0.700	450	1.000	54.600	100				
2	55.300	0.835	450	1.001	54.465	100	1.000	54.465	100	
3	54.870	0.750	450	1.002	54.120	150	1.001	54.170	100	
4	54.870	0.840	450	1.003	54.030	150	1.002	54.030	150	
5	54.500	0.795	450	1.004	53.705	150	1.003	53.705	150	
6	54.250	0.825	1200	1.005	53.425	225	1.004	53.500	150	
7	54.100	1.510	1200	1.006	52.590	225	1.005	52.590	225	
8	54.300	1.900	1200	1.007	52.400	225	1.006	52.400	225	
9	54.370	0.770	1200	2.000	53.600	225				
10	54.230	1.060	1200	2.001	53.170	225	2.000	53.170	225	
11	54.000	1.065	1200	2.002	52.935	225	2.001	52.935	225	
12	54.500	2.015	1200	2.003	52.485	225	2.002	52.485	225	
13	54.500	2.140	1200	2.004	52.360	225	2.003	52.360	225	
14	54.800	3.440	1200	1.008	51.360	225	1.007	52.215	225	855
							2.004	52.215	225	855
15	54.620	3.370	1200	1.009	51.250	225	1.008	51.250	225	
16	54.235	3.010	1200	1.010	51.225	225	1.009	51.225	225	
18	53.890	2.915	1200	1.011	50.975	225	1.010	50.975	225	
	53.890	3.190	150		OUTFALL		1.011	50.700	225	

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.000	o	100	1	55.300	54.600	0.600	450
1.001	o	100	2	55.300	54.465	0.735	450
1.002	o	150	3	54.870	54.120	0.600	450
1.003	o	150	4	54.870	54.030	0.690	450
1.004	o	150	5	54.500	53.705	0.645	450
1.005	o	225	6	54.250	53.425	0.600	1200
1.006	o	225	7	54.100	52.590	1.285	1200
1.007	o	225	8	54.300	52.400	1.675	1200
2.000	o	225	9	54.370	53.600	0.545	1200
2.001	o	225	10	54.230	53.170	0.835	1200
2.002	o	225	11	54.000	52.935	0.840	1200
2.003	o	225	12	54.500	52.485	1.790	1200
2.004	o	225	13	54.500	52.360	1.915	1200
1.008	o	225	14	54.800	51.360	3.215	1200
1.009	o	225	15	54.620	51.250	3.145	1200
1.010	o	225	16	54.235	51.225	2.785	1200
1.011	o	225	18	53.890	50.975	2.690	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.000	9.800	72.6	2	55.300	54.465	0.735	450
1.001	12.902	43.7	3	54.870	54.170	0.600	450
1.002	7.200	80.0	4	54.870	54.030	0.690	450
1.003	9.904	30.5	5	54.500	53.705	0.645	450
1.004	16.400	80.0	6	54.250	53.500	0.600	1200
1.005	8.400	10.1	7	54.100	52.590	1.285	1200
1.006	14.990	78.9	8	54.300	52.400	1.675	1200
1.007	6.000	32.4	14	54.800	52.215	2.360	1200
2.000	34.100	79.3	10	54.230	53.170	0.835	1200
2.001	17.200	73.2	11	54.000	52.935	0.840	1200
2.002	19.100	42.4	12	54.500	52.485	1.790	1200
2.003	9.700	77.6	13	54.500	52.360	1.915	1200
2.004	13.000	89.7	14	54.800	52.215	2.360	1200
1.008	4.400	40.0	15	54.620	51.250	3.145	1200
1.009	2.000	80.0	16	54.235	51.225	2.785	1200
1.010	3.085	12.3	18	53.890	50.975	2.690	1200
1.011	3.600	13.1		53.890	50.700	2.965	150

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.011		53.890	50.700	0.000	150	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Foul Sewage per hectare (l/s)	0.000
PIMP (% impervious)	100	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Run Time (mins)	60
Manhole Headloss Coeff (Global)	0.500	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0		

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	5	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	21.000	Storm Duration (mins)	30
Ratio R	0.439		

Online Controls for Storm

Hydro-Brake® Manhole: 16, DS/PN: 1.010, Volume (m³): 3.4

Design Head (m)	1.250	Diameter (mm)	131
Design Flow (l/s)	11.0	Invert Level (m)	51.225
Hydro-Brake® Type	Md6 SW Only		

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.3	1.200	10.8	3.000	17.0	7.000	25.9
0.200	8.7	1.400	11.6	3.500	18.3	7.500	26.8
0.300	9.4	1.600	12.4	4.000	19.6	8.000	27.7
0.400	9.0	1.800	13.1	4.500	20.8	8.500	28.5
0.500	8.7	2.000	13.8	5.000	21.9	9.000	29.4
0.600	8.6	2.200	14.5	5.500	23.0	9.500	30.2
0.800	9.1	2.400	15.2	6.000	24.0		
1.000	9.9	2.600	15.8	6.500	25.0		

Storage Structures for Storm

Tank or Pond Manhole: 15, DS/PN: 1.009

Invert Level (m) 51.250

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	32.3	0.700	32.3	1.400	0.0	2.100	0.0
0.100	32.3	0.800	32.3	1.500	0.0	2.200	0.0
0.200	32.3	0.900	32.3	1.600	0.0	2.300	0.0
0.300	32.3	1.000	32.3	1.700	0.0	2.400	0.0
0.400	32.3	1.100	32.3	1.800	0.0	2.500	0.0
0.500	32.3	1.200	32.3	1.900	0.0		
0.600	32.3	1.300	0.0	2.000	0.0		

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%	100/15 Summer				
1.001	15 Winter	1	0%	100/15 Summer				
1.002	15 Winter	1	0%	100/15 Summer				
1.003	15 Winter	1	0%	100/15 Summer				
1.004	15 Winter	1	0%	100/15 Summer				
1.005	15 Winter	1	0%					
1.006	15 Winter	1	0%	100/30 Winter				
1.007	15 Winter	1	0%	100/15 Winter				
2.000	15 Winter	1	0%					
2.001	15 Winter	1	0%					
2.002	15 Winter	1	0%	100/15 Winter				
2.003	15 Winter	1	0%	100/15 Summer				
2.004	15 Winter	1	0%	100/15 Summer				
1.008	30 Winter	1	0%	30/15 Summer				
1.009	30 Winter	1	0%	1/15 Winter				
1.010	30 Winter	1	0%	1/15 Winter				
1.011	15 Winter	1	0%					

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	54.631	-0.069	0.000	0.21	0.0	1.4	OK
1.001	2	54.503	-0.062	0.000	0.30	0.0	2.6	OK
1.002	3	54.173	-0.097	0.000	0.27	0.0	4.5	OK
1.003	4	54.071	-0.109	0.000	0.17	0.0	4.8	OK
1.004	5	53.765	-0.090	0.000	0.33	0.0	6.1	OK
1.005	6	53.464	-0.186	0.000	0.07	0.0	8.9	OK
1.006	7	52.653	-0.162	0.000	0.17	0.0	8.9	OK
1.007	8	52.457	-0.168	0.000	0.15	0.0	8.9	OK
2.000	9	53.659	-0.166	0.000	0.15	0.0	8.3	OK
2.001	10	53.229	-0.166	0.000	0.15	0.0	8.4	OK
2.002	11	53.000	-0.160	0.000	0.19	0.0	13.4	OK
2.003	12	52.565	-0.145	0.000	0.27	0.0	13.3	OK
2.004	13	52.452	-0.133	0.000	0.35	0.0	16.6	OK
1.008	14	51.495	-0.090	0.000	0.45	0.0	20.9	OK
1.009	15	51.489	0.014	0.000	0.32	0.0	9.6	SURCHARGED
1.010	16	51.493	0.043	0.000	0.13	0.0	9.2	SURCHARGED
1.011	18	51.028	-0.172	0.000	0.12	0.0	9.2	OK

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

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

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 30

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%	100/15 Summer				
1.001	15 Winter	30	0%	100/15 Summer				
1.002	15 Winter	30	0%	100/15 Summer				
1.003	15 Winter	30	0%	100/15 Summer				
1.004	15 Winter	30	0%	100/15 Summer				
1.005	15 Winter	30	0%					
1.006	15 Winter	30	0%	100/30 Winter				
1.007	15 Winter	30	0%	100/15 Winter				
2.000	15 Winter	30	0%					
2.001	15 Winter	30	0%					
2.002	15 Winter	30	0%	100/15 Winter				
2.003	15 Winter	30	0%	100/15 Summer				
2.004	15 Winter	30	0%	100/15 Summer				
1.008	30 Winter	30	0%	30/15 Summer				
1.009	30 Winter	30	0%	1/15 Winter				
1.010	480 Summer	30	0%	1/15 Winter				
1.011	480 Winter	30	0%					

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	54.651	-0.049	0.000	0.51	0.0	3.3	OK
1.001	2	54.536	-0.029	0.000	0.84	0.0	7.3	OK
1.002	3	54.220	-0.050	0.000	0.78	0.0	13.2	OK
1.003	4	54.104	-0.076	0.000	0.49	0.0	14.0	OK
1.004	5	53.823	-0.032	0.000	0.97	0.0	17.9	OK
1.005	6	53.494	-0.156	0.000	0.21	0.0	26.5	OK
1.006	7	52.705	-0.110	0.000	0.51	0.0	26.2	OK
1.007	8	52.504	-0.121	0.000	0.43	0.0	26.2	OK
2.000	9	53.696	-0.129	0.000	0.37	0.0	20.4	OK
2.001	10	53.267	-0.128	0.000	0.38	0.0	20.6	OK
2.002	11	53.048	-0.112	0.000	0.48	0.0	35.0	OK
2.003	12	52.629	-0.081	0.000	0.72	0.0	35.1	OK
2.004	13	52.535	-0.050	0.000	0.94	0.0	44.6	OK
1.008	14	52.080	0.495	0.000	1.12	0.0	52.4	SURCHARGED
1.009	15	52.074	0.599	0.000	0.37	0.0	10.9	SURCHARGED
1.010	16	52.468	1.018	0.000	0.10	0.0	7.3	SURCHARGED
1.011	18	51.031	-0.169	0.000	0.09	0.0	6.9	OK