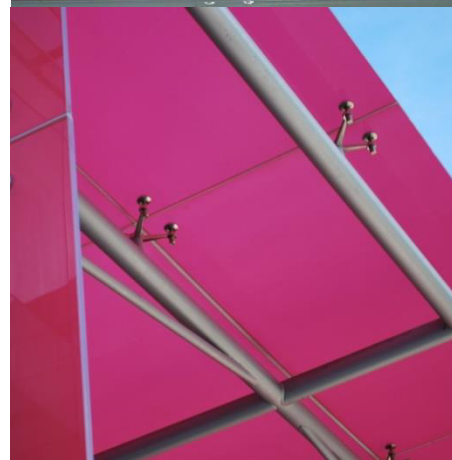
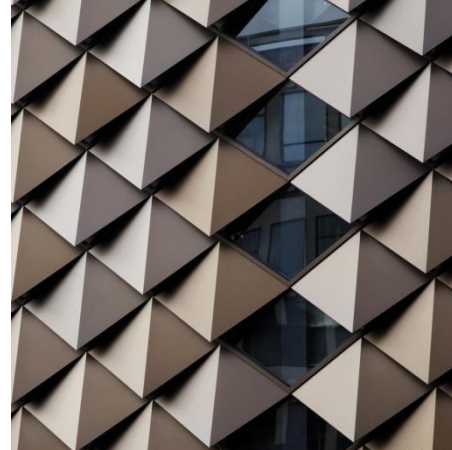


Spinningfields – Plot 408

Planning Condition Response

Curtins Ref: 065286.200-CUR-00-XX-RP-D-72001
Revision: P02
Issue Date: 22 May 2020

Client Name:
Castlewood Commercial Properties Ltd



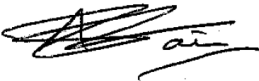
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Rev	Description	Issued by	Checked	Date
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P02	Final Issue	AR	DE	29/05/2020

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Figure 1.1 – Site Location Plan

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Appendix A.1

Spinningfields Masterplan – Drainage Network Drawings

- The site wide foul water network – Drawing Ref S016352 – 003
- The site wide surface water network – Drawing Ref S016352 – 002
- Combine surface water and foul water network included the apportioned surface water catchment areas – Drawing Ref S016352 – 001

Appendix A.2

Spinningfields Masterplan – Drainage Network Calculations and Manchester Ship Canal Flood Level Information

- 1 in 1 year
- 1 in 30 year
- 1 in 100 year plus a climate change allowance of 20%
- Details of the surcharge details for the Manchester Ship Canal for the 1 in 100year event to allow accurate surcharging of the outfall from the development to be accounted for.

1.0 Introduction

1.1 Brief

1.1.1 Curtins have been commissioned by Allied London Properties to provide drainage design information to allow the discharge of the following planning conditions:

- Planning condition 8 – Surface Water Drainage Strategy
- Planning condition 9 – Drainage Maintenance Strategy
- Planning condition 16 – Details of the proposed separate drainage networks.

The above conditions have been set for the Plot 408 development located within the Spinningfields district of Manchester, M3 3AN. The site is centred around National Grid Reference 383299, 398268. The development is a single storey building with a part-mezzanine for use as a multi-functional space to accommodate creative exhibitions, presentations and networking events. The development extent includes the provision of a suitable access and landscaping.

1.2 Site Location

1.2.1 The site forms part of the wider Spinningfields masterplan development and the area is currently in a temporary state finished with grass awaiting development. The hardscaping for the development has already been installed to all three sides of the boundary. The site is bordered by New Court Street to the northwest, New Court Street to the South and the CJC building to the east.

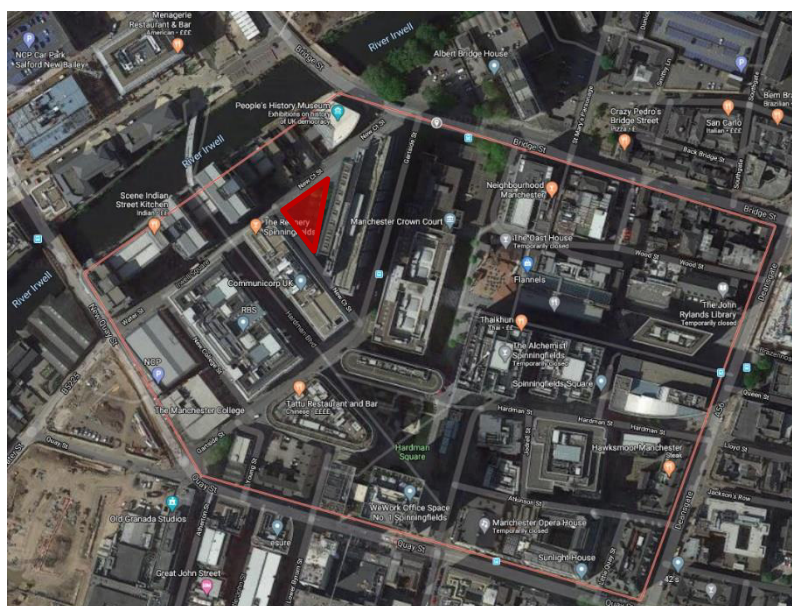


Figure 1.1 – Site Location Plan

2.0 Planning Condition 8 and Condition 16

Condition 8 – Surface Water Strategy

- 2.1.1 The Spinningfields development totals circa 7ha and is now a premier destination in Manchester for office space and has provision for commercial and restaurant facilities.
- 2.1.2 Prior to the development of Spinningfields the area was run-down, providing a mix of office space and light industrial units with large car parking capacity. At this point in time the initial proposal of the future Spinningfields development was positively drained via numerous connections into the lattice of existing United Utilities combined sewers which ran around and through the proposed development area.
- 2.1.3 As part of the master planning strategy for the development, a simple, site wide private separate foul and surface water sewer network was developed. The foul water sewer discharges via a single connection into the combined network in Quay Street. The Surface Water discharges via an unrestricted outfall into the Manchester Ship Canal in the vicinity of Quay Street Bridge.
- 2.1.4 In line with the surface water discharge hierarchy:
- Discharge to ground was not feasible due to the prevailing ground conditions in Manchester City Centre which prohibits infiltration;
 - Discharge to water course has been achieved via an unrestricted outfall into the Manchester Ship Canal which has been agreed and consented to by the Manchester Ship Canal Company; and,
 - Discharge into the sewer network is now no longer required for the area which has removed in excess of 1000l/s of surface water from entering the United Utilities combined sewer network.
- 2.1.5 The United Utilities network in the location of Spinningfields is defined as Critical Drainage Network and is noted as part of the Core Conurbation.
- 2.1.6 In agreement with Manchester City Council the development of a site wide drainage strategy removed the requirement for other types of SuDS to be installed throughout the development. This includes no restriction of flows from specific building within the development and the removal of the requirement for attenuation.
- 2.1.7 Details of the following are provided in Appendix A.1
- The site wide foul water network – Drawing Ref S016352 – 003
 - The site wide surface water network – Drawing Ref S016352 – 002
 - Combined surface water and foul water network included the apportioned surface water catchment areas – Drawing Ref S016352 - 001

- 2.1.8 Provision for Plot 408 is included within the Spinningfields surface water network and 2No x 225mm pipe stubs have been installed into the Manhole ref: MHS1 which sits within New Court Street to allow for the future connection of this development.
- 2.1.9 Appendix A.2 provides details of the operation of the site wide drainage model for the Spinningfields development for the following storm events:
- 1 in 1 year;
 - 1 in 30 year;
 - 1 in 100 year plus a climate change allowance of 20%; and,
 - Details of the surcharge for the Manchester Ship Canal for the 1 in 100year event to allow accurate surcharging of the outfall from the development to be accounted for.

Condition 16 - Use of Separate Pipe Networks

- 2.1.10 As noted on the drawings provided within Appendix A.1 the Spinningfields drainage network operates using separate foul water and surface water sewer networks. This allows for the disposal of surface water from the development to be discharged to the Manchester Ship Canal with an agreed free discharge.
- 2.1.11 The foul and surface water drainage connection from the proposed connect will remain separate and individual points of connection onto the foul water and surface water networks have been provided to future proof the system.

3.0 Planning Condition 9 – Drainage System, Maintenance and Management

3.1 General Requirements

- 3.1.1 A suitable maintenance strategy should be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.
- 3.1.2 It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event. Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.
- 3.1.3 It is assumed that the maintenance of the drainage network will be the responsibility of an on-site facilities management team.
- 3.1.4 This section is intended to give an overview of the operation and maintenance for the drainage features included with the drainage strategy and in relation to typical details. Where proprietary products are specified, the manufacturer's instructions and recommendations should be followed in priority to this document unless specifically noted otherwise due to project constraints.
- 3.1.5 The recommended operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.
- 3.1.6 The surface water network has been designed to accommodate the 1 in 100-year storm rainfall event plus an allowance for climate change particular to the requirements of the site. It may be that the exceedance flows above the 1 in 30-year storm rainfall event are stored partially above ground, on external landscaping, parking or other space. Although the flows are not being attenuated there will be a period after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48hrs appropriate action should be taken as noted in this section.
- 3.1.7 Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.
- 3.1.8 Long-term management practices include monthly sweeping of external paved areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.
- 3.1.9 During the winter months, drainage features such as gullies and channels should be cleared of ice, snow, debris or litter

- 3.1.10 Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

3.2 Inspection, Manhole and Catchpit Chambers

- 3.2.1 Access points have been located at the head of each run, at a change in direction and at a change of pipe size in accordance with Building Regulations Part H.
- 3.2.2 The appropriate health and safety equipment must be used when accessing manholes. Confined space certificates must be held by any personnel entering a manhole and the appropriate permits should be obtained from the Maintenance Manager prior to any access.

3.3 Pipes

- 3.3.1 Pipes are proprietary products and the materials can vary across the site and as such where used the manufacture's recommendations should be followed. Regardless of the product used the pipes will be fully compliant with the Curtins drainage specification.
- 3.3.2 Pipes are intended to be the main conveyance across the development and where oversized they form the attenuation volume required by the limitation of the discharge rate. They are intended to be dry except for during rainfall events. These have been designed to be self-cleaning where possible for smaller diameter pipes, and for larger diameters the risk is reduced due to the overall pipe size.
- 3.3.3 Access for maintenance is provided through access chambers and manholes.
- 3.3.4 Regular inspection and maintenance are important to identify areas which may have been obstructed/clogged and may not be draining correctly thus exposing the development to a greater level of flood risk.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Initial Inspection should be provided as post construction CCTV survey.	N/A
Regular maintenance\ inspection	Inspect for evidence of poor operation via water level in chambers. If required, take remedial action.	3-monthly, 48 hours after large storms.

Maintenance Schedule	Required Action	Frequency
Regular maintenance\ inspection	Check and remove large vegetation growth near pipe runs.	Monthly or as required
Remedial Action	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

3.4 Drainage Channels and Gullies

- 3.4.1 Channels and gullies should be inspected and cleaned in accordance with the manufacturer's details. Channel units can be cleaned through the use of a high-pressure hose; this can be fed into the channel system through access units strategically placed along the channel run. The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of surface water into the drainage channel and any debris within the throat should be removed.
- 3.4.2 Locking bolts should be replaced and sufficiently tightened, taking care that the bolt heads do not stand above the top surface of the cover or grate. If covers are allowed to move within their frame, this may cause damage to the frame or seating.
- 3.4.3 Sediment\material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas such as the car park channels.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Initial Inspection including channel outlet boxes.	Half yearly and after large storms.
Regular maintenance\ inspection	Litter and debris removal	Monthly or as required.
	Check and remove large vegetation growth near channel runs.	Monthly or as required
	Inspect for evidence of poor operation and/or weed growth. If required take remedial action. Inspect silt accumulation rates and establish appropriate brushing frequencies. Silt can also be caused by adjacent landscaping areas which should be reprofiled to provide a flat area or berm adjacent to the paving.	3-monthly, 48 hours after large storms.
Remedial Action	Inspect access/outlet boxes and rod through poorly performing channels and outlets as initial remediation.	As required.

Appendix A.1

Spinningfields Masterplan – Drainage Network Drawings

- The site wide foul water network – Drawing Ref S016352 – 003
- The site wide surface water network – Drawing Ref S016352 – 002
- Combine surface water and foul water network included the apportioned surface water catchment areas – Drawing Ref S016352 - 001

GENERAL NOTES

DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.

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ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.

SOURCE INFORMATION REFERENCES

SURFACE WATER DRAINAGE, PLOT 101 - CONSTRUCTION INFORMATION

PLOT 101 SWMHS1, PLOT 101 SWMHS2, PLOT 101 SWMHS3, PLOT 101 SWMHS4 EXISTING 4109 WATERMANS DRAWINGS 8530432 & 433

SURFACE WATER DRAINAGE, PLOT 202 - CONSTRUCTION INFORMATION

PLOT 202 MHS2, PLOT 202 MHS3, WATERMANS DRAWINGS 8530444 & 445

SURFACE WATER DRAINAGE, HARDMAN STREET - CONSTRUCTION INFORMATION

S18, S20, S20A WATERMANS DRAWINGS 8530456 & 457

FOUL & SURFACE WATER DRAINAGE, CROWN SQUARE - AS BUILT INFORMATION

S27, S17B, S17A, S18B, S17, S18A EWCEL 1 (WATERMANS DRAWING FRAME)

4209, F16B, F16A, F16, F17, 4102 EWCEL 2 (WATERMANS DRAWING FRAME)

C01 C01a EWCEL 3 (WATERMANS DRAWING FRAME)

FOUL & SURFACE WATER DRAINAGE, HARDMAN SQUARE - AS BUILT INFORMATION

F12B, F12C, S13A, S13B ARUP 114219/C5010 REV C1

FOUL & SURFACE WATER DRAINAGE, GARTSIDE STREET PHASE 2 - AS CONSTRUCTED INFORMATION

F12A, F13, S12A, S14 WATERMANS DRAWING 8530426 REV C

FOUL & SURFACE WATER DRAINAGE, GARTSIDE STREET PHASE 1 & SWSR - CONSTRUCTION INFORMATION

S5, S8, S9, S10, S11, S12, S13, F2, F3, F4, F5, F6, F7, F8, F9, F10, F12 WATERMANS DRAWING 8530401 REV G WATERMANS DRAWING 8530411 REV B WATERMANS DRAWING 8530412 REV D WATERMANS DRAWING 8530417 REV A

SURFACE WATER DRAINAGE, LEFTBANK - CONSTRUCTION INFORMATION

S1A, S1B, S1, S2, S3, S3A, S4 WATERMANS DRAWING 8530402 REV H WATERMANS DRAWING 8530403 REV G WATERMANS DRAWING 8530410 REV E

SURFACE WATER DRAINAGE, RIVER IRWELL OUTFALL - CONSTRUCTION INFORMATION

S5, S7 WATERMANS DRAWING 8530406 WATERMANS DRAWING 8530408 WATERMANS DRAWING 8530418

KEY:

FOUL SEWERS

COMBINED SEWERS

SURFACE WATER SEWERS

EXISTING DEVELOPMENT CATCHMENT BOUNDARIES

PROPOSED DEVELOPMENT CATCHMENT BOUNDARIES

FOUL SEWER MANHOLES

COMBINED SEWER MANHOLES

SURFACE WATER MANHOLES

FOUL WATER CONNECTION POINTS

SURFACE WATER CONNECTION POINTS

Client: ALP

Project: SPINNINGFIELDS DRAINAGE

Title: DEVELOPMENT WIDE INFORMATION REFERENCE PLAN

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Scale: 1:500 Drawn: A Rain Checked:

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Project: SPINNINGFIELDS DRAINAGE

Title: DEVELOPMENT WIDE
SURFACE WATER
NETWORK

CAPITA SYMONDS
STRUCTURES
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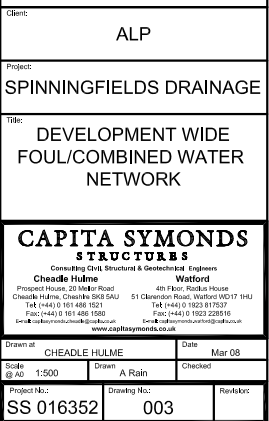
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Appendix A.2

Spinningfields Masterplan – Drainage Network Calculations and Manchester Ship Canal Flood Level Information

- 1 in 1 year
- 1 in 30 year
- 1 in 100 year plus a climate change allowance of 20%
- Details of the surcharge details for the Manchester Ship Canal for the 1 in 100year event to allow accurate surcharging of the outfall from the development to be accounted for.

Curtins		Page 1
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File SPINNINGFIELDS SITE WIDE NETWORK - JAN 20...	Checked by	
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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Spinningfields Site Wide SW Prop.SWS

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	Foul Sewage (l/s/ha)	0.000	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	18.000	Volumetric Runoff Coeff.	0.750	Min Design Depth for Optimisation (m)	1.200
Ratio R	0.358	PIMP (%)	100	Min Vel for Auto Design only (m/s)	1.00
Maximum Rainfall (mm/hr)	0	Add Flow / Climate Change (%)	0	Min Slope for Optimisation (1:X)	1000
Maximum Time of Concentration (mins)	30	Minimum Backdrop Height (m)	0.200		

Designed with Level Inverts

Network Design Table for Spinningfields Site Wide SW Prop.SWS

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
S1.000	39.040	0.210	185.9	0.230	2.00	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)
S1.000	0.00	2.57	32.210	0.230	0.0	0.0	0.0	1.15	81.3	0.0

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Network Design Table for Spinningfields Site Wide SW Prop.SWS

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
S1.007	13.210	0.250	52.8	0.050	0.00	0.0	0.600	o	525	Pipe/Conduit	
S1.008	12.530	0.290	43.2	0.000	0.00	0.0	0.600	o	525	Pipe/Conduit	
S3.000	41.900	0.310	135.2	0.630	2.00	0.0	0.600	o	450	Pipe/Conduit	
S3.001	20.240	0.140	144.6	0.340	0.00	0.0	0.600	o	450	Pipe/Conduit	
S3.002	9.000	0.420	21.4	0.080	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.009	7.850	0.100	78.5	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.010	74.920	0.034	2203.5	0.820	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.011	7.540	0.005	1508.0	0.000	0.00	0.0	0.600	o	750	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)
S1.007	0.00	3.87	28.700	1.250	0.0	0.0	0.0	3.09	668.1	0.0
S1.008	0.00	3.93	28.450	1.250	0.0	0.0	0.0	3.41	739.2	0.0
S3.000	0.00	2.40	27.020	0.630	0.0	0.0	0.0	1.75	277.9	0.0
S3.001	0.00	2.60	26.710	0.970	0.0	0.0	0.0	1.69	268.6	0.0
S3.002	0.00	2.63	26.570	1.050	0.0	0.0	0.0	4.41	700.9	0.0
S1.009	0.00	3.97	26.150	2.300	0.0	0.0	0.0	3.16	1396.3	0.0
S1.010	0.00	6.10	26.050	3.120	0.0	0.0	0.0	0.59	259.2	0.0
S1.011	0.00	6.28	26.016	3.120	0.0	0.0	0.0	0.71	314.4	0.0

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Network Design Table for Spinningfields Site Wide SW Prop.SWS

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
S1.012	11.120	0.121	91.9	0.100	0.00	0.0	0.600	o	750	Pipe/Conduit	
S4.000	18.960	0.275	68.9	0.170	2.00	0.0	0.600	o	300	Pipe/Conduit	
S4.001	10.720	0.260	41.2	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.013	11.210	0.273	41.1	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.014	31.910	0.637	50.1	0.160	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.015	16.540	0.330	50.1	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
S5.000	41.420	0.275	150.6	0.030	2.00	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)
S1.012	0.00	6.34	26.011	3.220	0.0	0.0	0.0	2.92	1290.0	0.0
S4.000	0.00	2.17	26.425	0.170	0.0	0.0	0.0	1.90	134.0	0.0
S4.001	0.00	2.24	26.150	0.170	0.0	0.0	0.0	2.46	173.6	0.0
S1.013	0.00	6.38	25.890	3.390	0.0	0.0	0.0	4.37	1932.7	0.0
S1.014	0.00	6.52	25.617	3.550	0.0	0.0	0.0	3.96	1749.3	0.0
S1.015	0.00	6.59	24.980	3.550	0.0	0.0	0.0	3.96	1748.8	0.0
S5.000	0.00	2.54	26.150	0.030	0.0	0.0	0.0	1.28	90.4	0.0

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Network Design Table for Spinningfields Site Wide SW Prop.SWS

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
S6.004	26.270	0.102	257.5	0.190	0.00	0.0	0.600	o	450	Pipe/Conduit	
S6.005	45.700	0.490	93.3	0.130	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.020	30.610	0.224	136.7	0.140	0.00	0.0	0.600	o	900	Pipe/Conduit	
S1.021	39.760	2.423	16.4	0.000	0.00	0.0	0.600	o	1050	Pipe/Conduit	
S1.022	4.500	0.003	1500.0	0.000	0.00	0.0	0.600	o	1050	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)
S6.004	0.00	3.67	24.992	1.030	0.0	0.0	0.0	1.26	200.7	0.0
S6.005	0.00	4.03	24.890	1.160	0.0	0.0	0.0	2.11	334.9	0.0
S1.020	0.00	8.34	24.400	5.690	0.0	0.0	0.0	2.68	1704.2	0.0
S1.021	0.00	8.42	24.176	5.690	0.0	0.0	0.0	8.53	7383.8	0.0
S1.022	0.00	8.50	21.753	5.690	0.0	0.0	0.0	0.88	762.6	0.0

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Manhole Schedules for Spinningfields Site Wide SW Prop.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S35	26.800	2.400	Open Manhole	1950	S1.020	24.400	900	S1.019	24.400	525	
								S6.005	24.400	450	
S36	27.590	3.414	Open Manhole	1950	S1.021	24.176	1050	S1.020	24.176	900	
S37	25.500	3.747	Open Manhole	1950	S1.022	21.753	1050	S1.021	21.753	1050	
S1rwell 001	25.500	3.750	Open Manhole	2400		OUTFALL		S1.022	21.750	1050	

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PIPELINE SCHEDULES for Spinningfields Site Wide SW Prop.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	300	S1	34.675	32.210	2.165	Open Manhole	1200
S1.001	o	300	S2	34.100	32.000	1.800	Open Manhole	1200
S1.002	o	450	S3	33.500	31.040	2.010	Open Manhole	1350
S2.000	oo	225	S4	33.903	31.236	2.442	Open Manhole	1350
S2.001	o	300	S5	33.600	31.142	2.158	Open Manhole	1350
S1.003	o	450	S6	33.000	31.000	1.550	Open Manhole	1350
S1.004	o	450	S7	32.599	30.599	1.550	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	39.040	185.9	S2	34.100	32.000	1.800	Open Manhole	1200
S1.001	59.460	61.9	S3	33.500	31.040	2.160	Open Manhole	1350
S1.002	11.730	293.2	S6	33.000	31.000	1.550	Open Manhole	1350
S2.000	23.840	253.6	S5	33.600	31.142	2.233	Open Manhole	1350
S2.001	19.860	139.9	S6	33.000	31.000	1.700	Open Manhole	1350
S1.003	17.590	43.9	S7	32.599	30.599	1.550	Open Manhole	1350
S1.004	15.250	43.7	S8	32.250	30.250	1.550	Open Manhole	1500

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PIPELINE SCHEDULES for Spinningfields Site Wide SW Prop.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.005	o	525	S8	32.250	30.250	1.475	Open Manhole	1500
S1.006	o	525	S9	32.010	29.000	2.485	Open Manhole	1500
S1.007	o	525	S10	31.120	28.700	1.895	Open Manhole	1500
S1.008	o	525	S11	30.900	28.450	1.925	Open Manhole	1500
S3.000	o	450	S12	30.900	27.020	3.430	Open Manhole	1350
S3.001	o	450	S13	30.900	26.710	3.740	Open Manhole	1350
S3.002	o	450	S14	30.900	26.570	3.880	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.005	7.230	5.8	S9	32.010	29.000	2.485	Open Manhole	1500
S1.006	42.890	143.0	S10	31.120	28.700	1.895	Open Manhole	1500
S1.007	13.210	52.8	S11	30.900	28.450	1.925	Open Manhole	1500
S1.008	12.530	43.2	S15	30.900	28.160	2.215	Open Manhole	1800
S3.000	41.900	135.2	S13	30.900	26.710	3.740	Open Manhole	1350
S3.001	20.240	144.6	S14	30.900	26.570	3.880	Open Manhole	1350
S3.002	9.000	21.4	S15	30.900	26.150	4.300	Open Manhole	1800

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PIPELINE SCHEDULES for Spinningfields Site Wide SW Prop.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.014	o	750	S22	28.400	25.617	2.033	Open Manhole	1800
S1.015	o	750	S23	27.650	24.980	1.920	Open Manhole	1800
S5.000	o	300	S24	27.870	26.150	1.420	Open Manhole	1200
S1.016	o	750	S25	27.650	24.650	2.250	Open Manhole	1800
S1.017	o	750	S26	27.600	24.592	2.258	Open Manhole	1800
S1.018	o	750	S27	27.450	24.519	2.181	Open Manhole	1800
S1.019	oo	525	S28	27.425	24.500	2.475	Open Manhole	1950

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.014	31.910	50.1	S23	27.650	24.980	1.920	Open Manhole	1800
S1.015	16.540	50.1	S25	27.650	24.650	2.250	Open Manhole	1800
S5.000	41.420	150.6	S25	27.650	25.875	1.475	Open Manhole	1800
S1.016	35.810	617.4	S26	27.600	24.592	2.258	Open Manhole	1800
S1.017	38.560	528.2	S27	27.450	24.519	2.181	Open Manhole	1800
S1.018	17.660	929.5	S28	27.425	24.500	2.175	Open Manhole	1950
S1.019	17.500	175.0	S35	26.800	24.400	1.950	Open Manhole	1950

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PIPELINE SCHEDULES for Spinningfields Site Wide SW Prop.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.021	o	1050	S36	27.590	24.176	2.364	Open Manhole	1950
S1.022	o	1050	S37	25.500	21.753	2.697	Open Manhole	1950

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.021	39.760	16.4	S37	25.500	21.753	2.697	Open Manhole	1950
S1.022	4.500	1500.0	SIrwell 001	25.500	21.750	2.700	Open Manhole	2400

Surcharged Outfall Details for Spinningfields Site Wide SW Prop.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.022	SIrwell 001	25.500	21.750	21.750	2400	0
Datum (m) 21.750 Offset (mins) 0						

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Surcharged Outfall Details for Spinningfields Site Wide SW Prop.SWS

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)		
1000	2.050	2000	2.050	3000	2.050	4000	2.050	5000	2.050	6000	2.050	7000	2.050	8000	2.050	9000	2.050	10000	2.050

Simulation Criteria for Spinningfields Site Wide SW Prop.SWS

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

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

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Return Period (years) 2 Ratio R 0.358 Cv (Winter) 0.840
 Region England and Wales Profile Type Summer Storm Duration (mins) 30

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS

Synthetic Rainfall Details

```
Margin for Flood Risk Warning (mm) 300.0 DTS Status   ON Inertia Status OFF
Analysis Timestep      Fine DVD Status OFF
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									Water	Surcharged	Flooded				Pipe
	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume	Flow /	Overflow	Flow	
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)	Cap.	(l/s)	(l/s)	Status
S1.000	S1	15 Summer	2	+0%	30/15 Summer				32.385	-0.125	0.000	0.61		45.8	OK
S1.001	S2	15 Summer	2	+0%	30/15 Summer	100/15 Summer			32.179	-0.121	0.000	0.65		86.7	OK

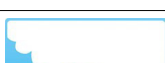
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<u>2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS</u>														
<table> <thead> <tr> <th></th><th>US/MH</th><th>Level</th></tr> <tr> <th>PN</th><th>Name</th><th>Exceeded</th></tr> </thead> <tbody> <tr> <td>S1.000</td><td>S1</td><td></td></tr> <tr> <td>S1.001</td><td>S2</td><td>3</td></tr> </tbody> </table>				US/MH	Level	PN	Name	Exceeded	S1.000	S1		S1.001	S2	3
	US/MH	Level												
PN	Name	Exceeded												
S1.000	S1													
S1.001	S2	3												
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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS

										Water	Surcharged	Flooded			Pipe
	US/MH			Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume	Flow /	Overflow	Flow
PN	Name	Storm		Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)	Cap.	(l/s)	(l/s)
S1.002	S3	15	Summer	2	+0%	100/15	Summer			31.301	-0.189	0.000	0.63		85.2
S2.000	S4	15	Summer	2	+0%	2/15	Summer			31.516	0.055	0.000	1.15		68.4
S2.001	S5	15	Summer	2	+0%	30/15	Summer			31.379	-0.063	0.000	0.96		78.2
S1.003	S6	15	Summer	2	+0%	100/15	Summer			31.213	-0.237	0.000	0.45		160.2
S1.004	S7	15	Summer	2	+0%	100/15	Summer			30.842	-0.207	0.000	0.55		181.9
S1.005	S8	15	Summer	2	+0%	100/15	Winter			30.417	-0.358	0.000	0.21		184.3
S1.006	S9	15	Summer	2	+0%	100/15	Summer			29.270	-0.255	0.000	0.51		181.9
S1.007	S10	15	Summer	2	+0%	100/15	Summer			28.962	-0.263	0.000	0.48		183.9
S1.008	S11	15	Summer	2	+0%	100/15	Summer			28.701	-0.274	0.000	0.45		187.2
S3.000	S12	15	Summer	2	+0%	30/15	Summer			27.254	-0.216	0.000	0.52		129.7
S3.001	S13	15	Summer	2	+0%	30/15	Summer			27.021	-0.139	0.000	0.78		165.1
S3.002	S14	15	Winter	2	+0%	30/15	Summer			26.895	-0.125	0.000	0.43		156.6
S1.009	S15	15	Winter	2	+0%	30/15	Summer			26.864	-0.036	0.000	0.52		315.0
S1.010	S16	15	Winter	2	+0%	2/15	Summer			26.842	0.042	0.000	1.11		381.9
S1.011	S17	15	Winter	2	+0%	30/15	Summer	100/15	Winter	26.738	-0.028	0.000	1.12		330.5
S1.012	S18	15	Winter	2	+0%	30/15	Summer			26.413	-0.348	0.000	0.56		339.7
S4.000	S19	15	Summer	2	+0%	100/15	Summer			26.539	-0.186	0.000	0.31		35.7
S4.001	S20	15	Summer	2	+0%	30/15	Winter			26.259	-0.191	0.000	0.28		35.8
S1.013	S21	15	Winter	2	+0%	100/15	Summer			26.230	-0.410	0.000	0.42		347.0
S1.014	S22	15	Winter	2	+0%	30/15	Winter			25.893	-0.474	0.000	0.29		362.2
S1.015	S23	15	Winter	2	+0%	30/15	Summer	100/30	Winter	25.440	-0.290	0.000	0.40		362.9
S5.000	S24	15	Summer	2	+0%	100/15	Summer			26.204	-0.246	0.000	0.07		6.3
S1.016	S25	30	Summer	2	+0%	30/15	Summer			25.400	0.000	0.000	0.94		372.6
S1.017	S26	15	Winter	2	+0%	2/15	Winter			25.342	0.000	0.000	0.89		386.3
S1.018	S27	60	Summer	2	+0%	30/15	Summer			25.269	0.000	0.000	1.95		347.3

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S1.019	S28	30 Winter	2	+0%	30/15 Summer				24.905	-0.120	0.000	0.84		415.4
S6.000	S29	15 Summer	2	+0%	2/15 Summer	100/15 Summer			26.250	0.060	0.000	1.10		51.5
S6.001	S30	15 Summer	2	+0%	30/15 Summer	100/15 Summer			25.946	-0.094	0.000	0.80		74.6
S6.002	S31	15 Summer	2	+0%	30/15 Summer	100/15 Summer			25.741	-0.071	0.000	0.91		94.5
S6.003	S32	15 Winter	2	+0%	30/15 Summer				25.395	-0.187	0.000	0.62		119.7
S6.004	S33	15 Winter	2	+0%	30/15 Summer				25.311	-0.131	0.000	0.84		141.7
S6.005	S34	15 Winter	2	+0%	30/15 Summer				25.121	-0.219	0.000	0.52		156.5
S1.020	S35	30 Winter	2	+0%	100/15 Summer				24.848	-0.452	0.000	0.50		528.8
S1.021	S36	30 Winter	2	+0%					24.408	-0.818	0.000	0.11		528.4
S1.022	S37	2160 Summer	2	+0%	2/480 Summer				23.802	0.999	0.000	0.07		52.5

PN	US/MH Name	Status	Level Exceeded
S1.019	S28	OK	
S6.000	S29	SURCHARGED	4
S6.001	S30	OK	4
S6.002	S31	OK	3
S6.003	S32	OK	
S6.004	S33	OK	
S6.005	S34	OK	
S1.020	S35	OK	
S1.021	S36	OK	

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<u>2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS</u>														
<table><tr><td></td><td>US/MH</td><td></td><td>Level</td></tr><tr><td>PN</td><td>Name</td><td>Status</td><td>Exceeded</td></tr><tr><td>S1.022</td><td>S37</td><td>SURCHARGED</td><td></td></tr></table>				US/MH		Level	PN	Name	Status	Exceeded	S1.022	S37	SURCHARGED	
	US/MH		Level											
PN	Name	Status	Exceeded											
S1.022	S37	SURCHARGED												
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged	Flooded			Pipe
									Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)
S1.000	S1	15 Winter	30	+0%	30/15 Summer				32.945	0.435	0.000	0.93		69.8
S1.001	S2	15 Summer	30	+0%	30/15 Summer	100/15 Summer			32.837	0.537	0.000	1.16		156.0

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<u>30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS</u>														
<table><thead><tr><th>PN</th><th>US/MH Name</th><th>Status</th><th>Level Exceeded</th></tr></thead><tbody><tr><td>S1.000</td><td>S1</td><td>SURCHARGED</td><td></td></tr><tr><td>S1.001</td><td>S2</td><td>SURCHARGED</td><td>3</td></tr></tbody></table>			PN	US/MH Name	Status	Level Exceeded	S1.000	S1	SURCHARGED		S1.001	S2	SURCHARGED	3
PN	US/MH Name	Status	Level Exceeded											
S1.000	S1	SURCHARGED												
S1.001	S2	SURCHARGED	3											
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS

										Water	Surcharged	Flooded			Pipe
	US/MH			Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level	Depth	Volume	Flow /	Overflow	Flow
PN	Name	Storm		Period	Change	Surcharge	Flood	Overflow	Act.	(m)	(m)	(m³)	Cap.	(l/s)	(l/s)
S1.002	S3	15 Summer		30	+0%	100/15 Summer				31.490	0.000	0.000	1.15		156.2
S2.000	S4	15 Summer		30	+0%	2/15 Summer				32.171	0.710	0.000	1.89		112.9
S2.001	S5	15 Summer		30	+0%	30/15 Summer				31.746	0.304	0.000	1.76		143.9
S1.003	S6	15 Summer		30	+0%	100/15 Summer				31.314	-0.136	0.000	0.81		288.0
S1.004	S7	15 Summer		30	+0%	100/15 Summer				31.005	-0.044	0.000	1.00		332.9
S1.005	S8	15 Summer		30	+0%	100/15 Winter				30.476	-0.299	0.000	0.39		332.8
S1.006	S9	15 Summer		30	+0%	100/15 Summer				29.400	-0.125	0.000	0.93		328.9
S1.007	S10	15 Summer		30	+0%	100/15 Summer				29.088	-0.137	0.000	0.89		341.9
S1.008	S11	15 Summer		30	+0%	100/15 Summer				28.817	-0.158	0.000	0.83		342.6
S3.000	S12	15 Summer		30	+0%	30/15 Summer				27.946	0.476	0.000	0.86		213.9
S3.001	S13	15 Winter		30	+0%	30/15 Summer				27.792	0.632	0.000	1.34		283.5
S3.002	S14	15 Winter		30	+0%	30/15 Summer				27.636	0.616	0.000	0.83		304.6
S1.009	S15	15 Winter		30	+0%	30/15 Summer				27.463	0.563	0.000	0.99		599.5
S1.010	S16	15 Winter		30	+0%	2/15 Summer				27.402	0.602	0.000	2.08		716.8
S1.011	S17	15 Winter		30	+0%	30/15 Summer	100/15 Winter			27.042	0.276	0.000	2.44		719.9
S1.012	S18	15 Winter		30	+0%	30/15 Summer				26.828	0.067	0.000	1.21		735.7
S4.000	S19	15 Winter		30	+0%	100/15 Summer				26.618	-0.107	0.000	0.52		60.0
S4.001	S20	15 Winter		30	+0%	30/15 Winter				26.606	0.156	0.000	0.47		60.0
S1.013	S21	15 Winter		30	+0%	100/15 Summer				26.598	-0.042	0.000	0.89		730.6
S1.014	S22	15 Winter		30	+0%	30/15 Winter				26.406	0.039	0.000	0.59		732.3
S1.015	S23	15 Winter		30	+0%	30/15 Summer	100/30 Winter			26.202	0.472	0.000	0.79		713.5
S5.000	S24	15 Summer		30	+0%	100/15 Summer				26.225	-0.225	0.000	0.14		11.9
S1.016	S25	15 Winter		30	+0%	30/15 Summer				25.998	0.598	0.000	1.85		731.3
S1.017	S26	15 Winter		30	+0%	2/15 Winter				25.777	0.435	0.000	1.70		738.9
S1.018	S27	15 Winter		30	+0%	30/15 Summer				25.555	0.286	0.000	4.24		757.3

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)
S1.019	S28	30 Winter	30	+0%	30/15 Summer				25.318	0.293	0.000	1.52		756.1
S6.000	S29	15 Winter	30	+0%	2/15 Summer	100/15 Summer			27.348	1.158	0.000	1.42		66.6
S6.001	S30	15 Winter	30	+0%	30/15 Summer	100/15 Summer			26.975	0.935	0.000	1.18		110.6
S6.002	S31	15 Winter	30	+0%	30/15 Summer	100/15 Summer			26.670	0.858	0.000	1.54		160.0
S6.003	S32	15 Winter	30	+0%	30/15 Summer				25.795	0.213	0.000	1.09		209.4
S6.004	S33	15 Winter	30	+0%	30/15 Summer				25.633	0.191	0.000	1.50		254.9
S6.005	S34	15 Winter	30	+0%	30/15 Summer				25.415	0.075	0.000	0.91		273.1
S1.020	S35	30 Winter	30	+0%	100/15 Summer				25.076	-0.224	0.000	0.92		977.2
S1.021	S36	30 Winter	30	+0%					24.497	-0.729	0.000	0.20		977.6
S1.022	S37	2160 Summer	30	+0%	2/480 Summer				23.802	0.999	0.000	0.13		90.5

PN	US/MH Name	Status	Level Exceeded
S1.019	S28	SURCHARGED	
S6.000	S29	SURCHARGED	4
S6.001	S30	SURCHARGED	4
S6.002	S31	SURCHARGED	3
S6.003	S32	SURCHARGED	
S6.004	S33	SURCHARGED	
S6.005	S34	SURCHARGED	
S1.020	S35	OK	
S1.021	S36	OK	

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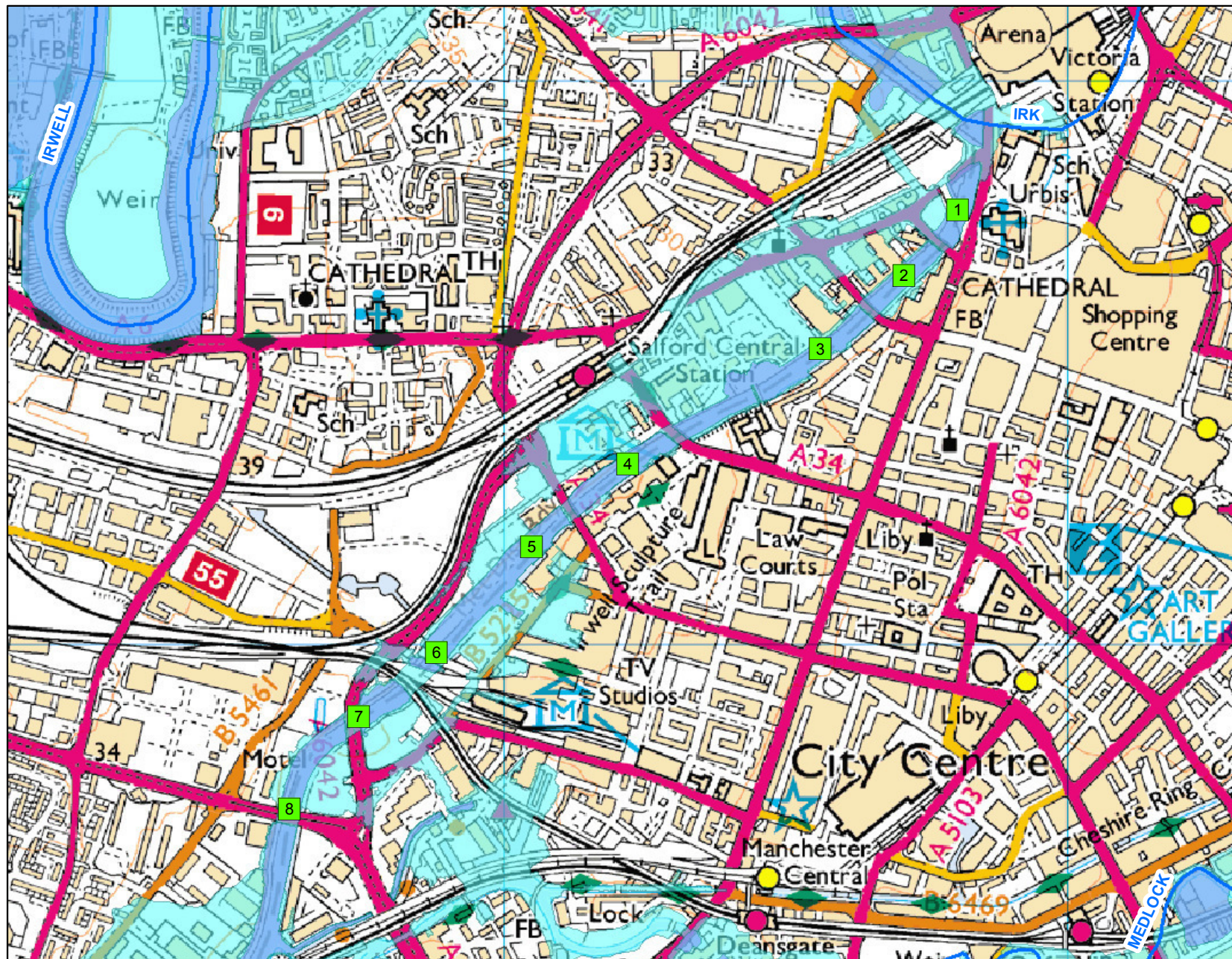
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S1.019	S28	30 Winter	100	+30%	30/15 Summer				25.978	0.953	0.000	2.23		1108.7
S6.000	S29	15 Winter	100	+30%	2/15 Summer	100/15 Summer			28.408	2.218	8.029	1.75		82.2
S6.001	S30	15 Winter	100	+30%	30/15 Summer	100/15 Summer			27.914	1.874	13.703	1.75		163.4
S6.002	S31	15 Winter	100	+30%	30/15 Summer	100/15 Summer			27.683	1.871	2.869	1.76		182.9
S6.003	S32	15 Winter	100	+30%	30/15 Summer				26.830	1.248	0.000	1.37		263.9
S6.004	S33	15 Winter	100	+30%	30/15 Summer				26.599	1.157	0.000	2.00		339.1
S6.005	S34	15 Winter	100	+30%	30/15 Summer				26.204	0.864	0.000	1.29		389.1
S1.020	S35	30 Winter	100	+30%	100/15 Summer				25.455	0.155	0.000	1.37		1461.3
S1.021	S36	30 Winter	100	+30%					24.573	-0.653	0.000	0.31		1462.9
S1.022	S37	2160 Summer	100	+30%	2/480 Summer				23.804	1.001	0.000	0.21		148.4

	US/MH		Level
PN	Name	Status	Exceeded
S1.019	S28	SURCHARGED	
S6.000	S29	FLOOD	4
S6.001	S30	FLOOD	4
S6.002	S31	FLOOD	3
S6.003	S32	SURCHARGED	
S6.004	S33	SURCHARGED	
S6.005	S34	SURCHARGED	
S1.020	S35	SURCHARGED	
S1.021	S36	OK	

Curtins		Page 37												
Merchant Exchange 17-19 Whitworth Street West Manchester, M1 5WG														
Date 01/06/2020 16:00 File SPINNINGFIELDS SITE WIDE NETWORK - JAN 20...	Designed by Dan.Eddon Checked by													
Innovyze	Network 2018.1.1													
100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Spinningfields Site Wide SW Prop.SWS														
<table><tr><td></td><td>US/MH</td><td></td><td>Level</td></tr><tr><td>PN</td><td>Name</td><td>Status</td><td>Exceeded</td></tr><tr><td>S1.022</td><td>S37</td><td>SURCHARGED</td><td></td></tr></table>				US/MH		Level	PN	Name	Status	Exceeded	S1.022	S37	SURCHARGED	
	US/MH		Level											
PN	Name	Status	Exceeded											
S1.022	S37	SURCHARGED												
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Detailed Flood map centred on River Irwell, Manchester. Created 28th April 2014 [STH2462SR]



1:10,001



Legend

-  Model Measurements
-  Main River
-  Flood Zone 3
-  Flood Zone 2

Map Reference	Model Node Reference	Easting	Northing	Data	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + Climate Change*	0.1 % AEP (1 in 1000 year)
1	ea013_Model_Grey_Irwell_00050	383809	398770	Modelled Water Level (m aod)	27.10	27.90	31.58
				Modelled Flow (cumecs)	539.039	646.572	814.289
2	ea013_Model_Grey_Irwell_00033	383713	398654	Modelled Water Level (m aod)	26.60	27.28	30.83
				Modelled Flow (cumecs)	535.315	624.878	762.036
3	ea013_Model_Grey_Irwell_00036	383565	398523	Modelled Water Level (m aod)	26.49	27.12	30.33
				Modelled Flow (cumecs)	539.311	646.83	907.575
4	ea013_Model_Grey_Irwell_00041	383223	398319	Modelled Water Level (m aod)	26.23	26.74	29.43
				Modelled Flow (cumecs)	539.489	646.664	997.939
5	ea013_Model_Grey_Irwell_00044	383052	398172	Modelled Water Level (m aod)	26.11	26.60	29.29
				Modelled Flow (cumecs)	535.584	639.134	961.003
6	ea013_Model_Grey_Irwell_00046	382883	397984	Modelled Water Level (m aod)	26.10	26.60	29.18
				Modelled Flow (cumecs)	539.432	645.908	1106.39
7	ea013_Model_Grey_Irwell_00028	382746	397870	Modelled Water Level (m aod)	25.95	26.41	28.51
				Modelled Flow (cumecs)	535.407	636.409	884.399
8	ea013_Model_Grey_Irwell_00031	382622	397706	Modelled Water Level (m aod)	25.87	26.30	28.24
				Modelled Flow (cumecs)	539.167	645.458	925.878

Model data taken from Grey Irwell SFRA 2011 study

Notes:

AEP - Annual Exceedence Probability

m aod - metres above ordnance datum

cumecs - cubic metres per second

*Climate Change Scenario - 20% increase in flow

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