

Lanes Group plc - CCTV Report - Defect Grade Summary

The defect codes and observations used in this report are colour coded and fall into four main categories. Please refer to the descriptions below:

Structural Observations/Defects:

These codes/observations relate to the structural integrity of the drain or sewer and include defects such as cracks, fractures, moderate joint defects, holes, breaks and surface wear.

- **Grade 3:** Best practice suggests a medium term repair schedule is planned due to possible deterioration.
- **Grade 4:** Best practice suggests a repair schedule is planned in the short term to avoid potential collapse or increased damage.
- **Grade 5:** Best practice suggests an immediate repair schedule as the risk of collapse or further structural damage is very high.

Service Observations/Defects:

These codes/observations relate to the hydraulic efficiency of the drain or sewer, its capability to meet its service requirements, loss of capacity, potential for blockage/s and water tightness.

- **Grade 3:** Best practice suggests a medium term maintenance schedule is planned.
- **Grade 4:** Best practice suggests a repair schedule is planned in the short term to avoid potential blockages and/or flooding.
- **Grade 5:** Best practice suggests an immediate maintenance schedule is implemented as the risk of blockages and/or flooding is very high.

Miscellaneous Observations/Defects

These codes/observations relate to general items concerning the drain or sewer and cover changes to size, shape and materials, general remarks and photographs, vermin and abandoned surveys. These items should be considered individually by referring to the remarks presented in the section reports.

Construction Observations/Defects

These codes/observations relate to the general construction of the drain or sewer and covers connections/junctions, Lining and sealing defects, Node points and point repairs. These items should be considered individually by referring to the remarks presented in the section reports.

Thank you for choosing Lanes Group plc



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NOTES / LEGEND

1) Key to Abbreviations and symbols:

- GL = Cover level of manhole / chamber (m)
- Depth = D = Depth to outlet pipe (m)
- PI = Percutaneous
- Man = Manhole (with manhole number)
- G = Gully
- AP / RE = Access Point / Rending Eye
- RWP = Rain Water Pipe
- G = Gully
- Q = Flow direction
- IC = Inspection chamber
- VC = Ventilated clay
- CL = Cast Iron
- Conc = Concrete
- 150 VC = 150mm Diameter (mm), material & flow direction
- UTL = Unable to survey
- UTS = Unable to survey
- SW = Survey Abandoned
- UN = Unknown
- ST = Storm
- DIS = Downstream
- US = Upstream
- F = Foul Water
- SW = Surface Water

Field combined pipe: —

Surface water pipe: —

Manhole location is based on survey marks and is approximate only. No topographical survey was carried out.

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01	Drawn	Checked	Approved	Date
02	Drawn	Checked	Approved	Date
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ENGINE BUILDING LIMITED
UNIT E, STAFFORD PARK 12
TELFORD, TF3 3BJ

Drawn: Lanes Group plc, Project: PS10547, Rev: 001

Lanes Group plc

Head Office: MANCHESTER ROYAL INFIRMARY
OXFORD ROAD, MANCHESTER
M13 9WL

Project: DRAINAGE SURVEY

Drawing Title: DRAINAGE LAYOUT

Drawing Status: SURVEY

Project No.	PS10547	Drawn By	CD
Drawn By	CD/10547	Checked By	PS
Date	10/12/2013	Approved By	AM
Scale	1:200		

Drawing Number: PS10547 / D / 001

Rev: 00

Appendix J Existing Brownfield Runoff Calculations

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File 220-096 EXISTING BROWNF...	Checked by	
Micro Drainage		Network 2020.1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.360	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)	400

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.148	4-8	0.057

Total Area Contributing (ha) = 0.205

Total Pipe Volume (m³) = 1.193

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
S1.000	10.000	0.100	100.0	0.205	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.001	10.000	0.100	100.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.002	10.000	0.100	100.0	0.000	0.00	0.0	0.600	o	225	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	50.00	5.13	38.575	0.205	0.0	0.0	0.0	1.31	52.0	27.8
S1.001	50.00	5.25	38.475	0.205	0.0	0.0	0.0	1.31	52.0	27.8
S1.002	50.00	5.38	38.375	0.205	0.0	0.0	0.0	1.31	52.0	27.8

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Manhole Schedules for Storm

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)
S1	40.000	1.425	Open Manhole	1200	S1.000	38.575	225				
S2	40.000	1.525	Open Manhole	1200	S1.001	38.475	225	S1.000	38.475	225	
S3	40.000	1.625	Open Manhole	1200	S1.002	38.375	225	S1.001	38.375	225	
S	40.000	1.725	Open Manhole	1200		OUTFALL		S1.002	38.275	225	

No coordinates have been specified, layout information cannot be produced.

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PIPELINE SCHEDULES for Storm

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	225	S1	40.000	38.575	1.200	Open Manhole	1200
S1.001	o	225	S2	40.000	38.475	1.300	Open Manhole	1200
S1.002	o	225	S3	40.000	38.375	1.400	Open Manhole	1200

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	10.000	100.0	S2	40.000	38.475	1.300	Open Manhole	1200
S1.001	10.000	100.0	S3	40.000	38.375	1.400	Open Manhole	1200
S1.002	10.000	100.0	S	40.000	38.275	1.500	Open Manhole	1200

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.205	0.205	0.205
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.205	0.205	0.205

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Network Classifications for Storm

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
S1.000	S1	225	1.200	1.300	standard	1200	0	1.200	Unclassified
S1.001	S2	225	1.300	1.400	standard	1200	0	1.300	Unclassified
S1.002	S3	225	1.400	1.500	standard	1200	0	1.400	Unclassified

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)
S1.002	S	40.000	38.275	36.000	1200	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1
Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.360		

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Appendix K Preliminary Storage Estimate

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<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 27 minutes. <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Control (l/s)</th><th>Max Σ Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>8.660</td><td>0.660</td><td>0.0</td><td>16.0</td><td>16.0</td><td>32.6</td><td>O K</td></tr><tr><td>30 min Summer</td><td>8.833</td><td>0.833</td><td>0.0</td><td>16.0</td><td>16.0</td><td>41.2</td><td>O K</td></tr><tr><td>60 min Summer</td><td>8.879</td><td>0.879</td><td>0.0</td><td>16.0</td><td>16.0</td><td>43.4</td><td>O K</td></tr><tr><td>120 min Summer</td><td>8.808</td><td>0.808</td><td>0.0</td><td>16.0</td><td>16.0</td><td>39.9</td><td>O K</td></tr><tr><td>180 min Summer</td><td>8.687</td><td>0.687</td><td>0.0</td><td>16.0</td><td>16.0</td><td>33.9</td><td>O K</td></tr><tr><td>240 min Summer</td><td>8.553</td><td>0.553</td><td>0.0</td><td>16.0</td><td>16.0</td><td>27.3</td><td>O K</td></tr><tr><td>360 min Summer</td><td>8.351</td><td>0.351</td><td>0.0</td><td>16.0</td><td>16.0</td><td>17.4</td><td>O K</td></tr><tr><td>480 min Summer</td><td>8.238</td><td>0.238</td><td>0.0</td><td>15.7</td><td>15.7</td><td>11.8</td><td>O K</td></tr><tr><td>600 min Summer</td><td>8.187</td><td>0.187</td><td>0.0</td><td>15.0</td><td>15.0</td><td>9.2</td><td>O K</td></tr><tr><td>720 min Summer</td><td>8.166</td><td>0.166</td><td>0.0</td><td>13.3</td><td>13.3</td><td>8.2</td><td>O K</td></tr><tr><td>960 min Summer</td><td>8.141</td><td>0.141</td><td>0.0</td><td>10.9</td><td>10.9</td><td>7.0</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>8.116</td><td>0.116</td><td>0.0</td><td>8.1</td><td>8.1</td><td>5.7</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>8.096</td><td>0.096</td><td>0.0</td><td>5.9</td><td>5.9</td><td>4.7</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>8.084</td><td>0.084</td><td>0.0</td><td>4.7</td><td>4.7</td><td>4.2</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>8.071</td><td>0.071</td><td>0.0</td><td>3.4</td><td>3.4</td><td>3.5</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>8.062</td><td>0.062</td><td>0.0</td><td>2.7</td><td>2.7</td><td>3.1</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>8.057</td><td>0.057</td><td>0.0</td><td>2.3</td><td>2.3</td><td>2.8</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>8.053</td><td>0.053</td><td>0.0</td><td>2.0</td><td>2.0</td><td>2.6</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>8.049</td><td>0.049</td><td>0.0</td><td>1.8</td><td>1.8</td><td>2.4</td><td>O K</td></tr><tr><td>15 min Winter</td><td>8.765</td><td>0.765</td><td>0.0</td><td>16.0</td><td>16.0</td><td>37.8</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>118.613</td><td>0.0</td><td>46.4</td><td>21</td></tr><tr><td>30 min Summer</td><td>79.413</td><td>0.0</td><td>62.2</td><td>31</td></tr><tr><td>60 min Summer</td><td>50.812</td><td>0.0</td><td>79.6</td><td>50</td></tr><tr><td>120 min Summer</td><td>31.468</td><td>0.0</td><td>98.6</td><td>84</td></tr><tr><td>180 min Summer</td><td>23.466</td><td>0.0</td><td>110.3</td><td>118</td></tr><tr><td>240 min Summer</td><td>18.940</td><td>0.0</td><td>118.7</td><td>146</td></tr><tr><td>360 min Summer</td><td>13.882</td><td>0.0</td><td>130.5</td><td>204</td></tr><tr><td>480 min Summer</td><td>11.143</td><td>0.0</td><td>139.7</td><td>258</td></tr><tr><td>600 min Summer</td><td>9.389</td><td>0.0</td><td>147.1</td><td>314</td></tr><tr><td>720 min Summer</td><td>8.158</td><td>0.0</td><td>153.4</td><td>374</td></tr><tr><td>960 min Summer</td><td>6.531</td><td>0.0</td><td>163.8</td><td>492</td></tr><tr><td>1440 min Summer</td><td>4.764</td><td>0.0</td><td>179.2</td><td>736</td></tr><tr><td>2160 min Summer</td><td>3.468</td><td>0.0</td><td>195.7</td><td>1100</td></tr><tr><td>2880 min Summer</td><td>2.766</td><td>0.0</td><td>208.1</td><td>1468</td></tr><tr><td>4320 min Summer</td><td>2.007</td><td>0.0</td><td>226.4</td><td>2176</td></tr><tr><td>5760 min Summer</td><td>1.596</td><td>0.0</td><td>240.2</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.336</td><td>0.0</td><td>251.2</td><td>3600</td></tr><tr><td>8640 min Summer</td><td>1.154</td><td>0.0</td><td>260.5</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.020</td><td>0.0</td><td>268.6</td><td>5032</td></tr><tr><td>15 min Winter</td><td>118.613</td><td>0.0</td><td>52.0</td><td>22</td></tr></table>								Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	8.660	0.660	0.0	16.0	16.0	32.6	O K	30 min Summer	8.833	0.833	0.0	16.0	16.0	41.2	O K	60 min Summer	8.879	0.879	0.0	16.0	16.0	43.4	O K	120 min Summer	8.808	0.808	0.0	16.0	16.0	39.9	O K	180 min Summer	8.687	0.687	0.0	16.0	16.0	33.9	O K	240 min Summer	8.553	0.553	0.0	16.0	16.0	27.3	O K	360 min Summer	8.351	0.351	0.0	16.0	16.0	17.4	O K	480 min Summer	8.238	0.238	0.0	15.7	15.7	11.8	O K	600 min Summer	8.187	0.187	0.0	15.0	15.0	9.2	O K	720 min Summer	8.166	0.166	0.0	13.3	13.3	8.2	O K	960 min Summer	8.141	0.141	0.0	10.9	10.9	7.0	O K	1440 min Summer	8.116	0.116	0.0	8.1	8.1	5.7	O K	2160 min Summer	8.096	0.096	0.0	5.9	5.9	4.7	O K	2880 min Summer	8.084	0.084	0.0	4.7	4.7	4.2	O K	4320 min Summer	8.071	0.071	0.0	3.4	3.4	3.5	O K	5760 min Summer	8.062	0.062	0.0	2.7	2.7	3.1	O K	7200 min Summer	8.057	0.057	0.0	2.3	2.3	2.8	O K	8640 min Summer	8.053	0.053	0.0	2.0	2.0	2.6	O K	10080 min Summer	8.049	0.049	0.0	1.8	1.8	2.4	O K	15 min Winter	8.765	0.765	0.0	16.0	16.0	37.8	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	118.613	0.0	46.4	21	30 min Summer	79.413	0.0	62.2	31	60 min Summer	50.812	0.0	79.6	50	120 min Summer	31.468	0.0	98.6	84	180 min Summer	23.466	0.0	110.3	118	240 min Summer	18.940	0.0	118.7	146	360 min Summer	13.882	0.0	130.5	204	480 min Summer	11.143	0.0	139.7	258	600 min Summer	9.389	0.0	147.1	314	720 min Summer	8.158	0.0	153.4	374	960 min Summer	6.531	0.0	163.8	492	1440 min Summer	4.764	0.0	179.2	736	2160 min Summer	3.468	0.0	195.7	1100	2880 min Summer	2.766	0.0	208.1	1468	4320 min Summer	2.007	0.0	226.4	2176	5760 min Summer	1.596	0.0	240.2	2936	7200 min Summer	1.336	0.0	251.2	3600	8640 min Summer	1.154	0.0	260.5	4400	10080 min Summer	1.020	0.0	268.6	5032	15 min Winter	118.613	0.0	52.0	22
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																																																																	
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2160 min Summer	8.096	0.096	0.0	5.9	5.9	4.7	O K																																																																																																																																																																																																																																																																																	
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Date 29/10/2020 15:25 File 220-096 Prelim Storage ...			Designed by NickMcGorry Checked by				
Micro Drainage			Source Control 2020.1				
<u>Summary of Results for 100 year Return Period (+40%)</u>							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	8.956	0.956	0.0	16.0	16.0	47.2	O K
60 min Winter	8.998	0.998	0.0	16.0	16.0	49.3	O K
120 min Winter	8.874	0.874	0.0	16.0	16.0	43.2	O K
180 min Winter	8.674	0.674	0.0	16.0	16.0	33.3	O K
240 min Winter	8.466	0.466	0.0	16.0	16.0	23.0	O K
360 min Winter	8.224	0.224	0.0	15.6	15.6	11.1	O K
480 min Winter	8.168	0.168	0.0	13.5	13.5	8.3	O K
600 min Winter	8.147	0.147	0.0	11.5	11.5	7.2	O K
720 min Winter	8.133	0.133	0.0	10.0	10.0	6.6	O K
960 min Winter	8.115	0.115	0.0	8.0	8.0	5.7	O K
1440 min Winter	8.096	0.096	0.0	5.9	5.9	4.7	O K
2160 min Winter	8.080	0.080	0.0	4.3	4.3	3.9	O K
2880 min Winter	8.071	0.071	0.0	3.4	3.4	3.5	O K
4320 min Winter	8.059	0.059	0.0	2.5	2.5	2.9	O K
5760 min Winter	8.053	0.053	0.0	2.0	2.0	2.6	O K
7200 min Winter	8.048	0.048	0.0	1.7	1.7	2.4	O K
8640 min Winter	8.044	0.044	0.0	1.4	1.4	2.2	O K
10080 min Winter	8.042	0.042	0.0	1.3	1.3	2.1	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
30 min Winter	79.413	0.0	69.7	32			
60 min Winter	50.812	0.0	89.2	52			
120 min Winter	31.468	0.0	110.5	90			
180 min Winter	23.466	0.0	123.6	126			
240 min Winter	18.940	0.0	133.0	154			
360 min Winter	13.882	0.0	146.2	202			
480 min Winter	11.143	0.0	156.5	254			
600 min Winter	9.389	0.0	164.8	314			
720 min Winter	8.158	0.0	171.8	372			
960 min Winter	6.531	0.0	183.4	494			
1440 min Winter	4.764	0.0	200.7	730			
2160 min Winter	3.468	0.0	219.2	1100			
2880 min Winter	2.766	0.0	233.0	1460			
4320 min Winter	2.007	0.0	253.6	2140			
5760 min Winter	1.596	0.0	269.0	2896			
7200 min Winter	1.336	0.0	281.4	3624			
8640 min Winter	1.154	0.0	291.8	4280			
10080 min Winter	1.020	0.0	300.8	5024			
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Micro Drainage		Source Control 2020.1

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Shortest Storm (mins)	15
Ratio R	0.360	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.209

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To: (ha)		From: To: (ha)		From: To: (ha)	
0 4 0.070		4 8 0.070		8 12 0.070	

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Model Details

Storage is Online Cover Level (m) 10.000

Cellular Storage Structure

Invert Level (m) 8.000 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 ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	52.0	52.0	1.001	0.0	82.4
1.000	52.0	82.4			

Hydro-Brake® Optimum Outflow Control

Unit Reference MD-SHE-0180-1600-1000-1600
Design Head (m) 1.000
Design Flow (l/s) 16.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 180
Invert Level (m) 8.000
Minimum Outlet Pipe Diameter (mm) 225
Suggested Manhole Diameter (mm) 1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	16.0
Flush-Flo™	0.324	16.0
Kick-Flo®	0.706	13.6
Mean Flow over Head Range	-	13.6

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	6.3	1.200	17.4	3.000	27.0	7.000	40.7
0.200	15.4	1.400	18.8	3.500	29.1	7.500	42.1
0.300	16.0	1.600	20.0	4.000	31.0	8.000	43.4
0.400	15.9	1.800	21.2	4.500	32.9	8.500	44.7
0.500	15.6	2.000	22.3	5.000	34.6	9.000	45.9
0.600	15.0	2.200	23.3	5.500	36.2	9.500	47.2
0.800	14.4	2.400	24.3	6.000	37.7		
1.000	16.0	2.600	25.2	6.500	39.2		

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Appendix L LLFA Correspondence

John Speers

From: e.ainsworth@manchester.gov.uk on behalf of
floodriskmanagement@manchester.gov.uk
Sent: 28 July 2020 16:42
To: Richard Gadsden
Subject: Re: Manchester Royal Infirmary
Attachments: Manchester City Council - SuDS Requirement for Developers 2019.pdf

Hi Richard,

For a Brownfield site development that is situated within a Critical Drainage Area, the proposal should offer a reduction in surface water runoff rate in line with the Manchester Trafford and Salford Strategic Flood Risk Assessment, i.e. at least a 50% reduction in runoff rate compared to the existing rates with an aim to reduce to Greenfield runoff rates wherever practicable.

Attached are developer guidance notes for Manchester.

Kind regards

Flood Risk Management
Highways Service, Growth and Neighbourhoods Directorate
Manchester City Council
Tel: 0161 219 6295
Email: floodriskmanagement@manchester.gov.uk
Web: <http://www.manchester.gov.uk/>

POSTAL ADDRESS: Manchester City Council, Public Realm, The Neighbourhood Service, PO Box 532, Town Hall, Manchester M60 2LA

From: Richard Gadsden <RichardGadsden@ajpstructeng.com>
To: "floodriskmanagement@manchester.gov.uk" <floodriskmanagement@manchester.gov.uk>,
Date: 21/07/2020 15:20
Subject: Manchester Royal Infirmary

Good afternoon,

I am currently looking at a proposed development at Manchester Royal Infirmary

Attached is an existing and a proposed site plan

The address is Oxford Rd, Manchester M13 9WL

OS X (Eastings) 385178
OS Y (Northings) 396099

We are currently working up a detailed design for the proposed drainage but being that there are no watercourses running through the site or within the immediate vicinity, and infiltration looks unlikely, we intend to discharge the drainage into the existing separate surface and foul water systems.

Could you please confirm what betterment you would expect to see being provided on the existing brownfield run-off rates?

Any further information that you require please just let me know.

Regards

Richard Gadsden
Engineer
Alan Johnston Partnership LLP

Please be aware that we are currently working remotely. My direct line is 07800 818 263

4th Floor, 1 Dale Street | Liverpool, L2 2ET | Tel: 0151 227 1462 | richardgadsden@ajpstructeng.com | www.ajpstructeng.com



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