




Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1158 minutes.

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
15 min Summer	99.637	0.037	0.0	0.3	0.3	31.3	O K
30 min Summer	99.648	0.048	0.0	0.4	0.4	40.8	O K
60 min Summer	99.659	0.059	0.0	0.5	0.5	50.4	O K
120 min Summer	99.670	0.070	0.0	0.6	0.6	59.6	O K
180 min Summer	99.675	0.075	0.0	0.7	0.7	64.4	O K
240 min Summer	99.679	0.079	0.0	0.7	0.7	67.4	O K
360 min Summer	99.683	0.083	0.0	0.7	0.7	71.0	O K
480 min Summer	99.685	0.085	0.0	0.7	0.7	72.9	O K
600 min Summer	99.686	0.086	0.0	0.7	0.7	73.9	O K
720 min Summer	99.687	0.087	0.0	0.7	0.7	74.2	O K
960 min Summer	99.687	0.087	0.0	0.7	0.7	74.7	O K
1440 min Summer	99.688	0.088	0.0	0.7	0.7	74.9	O K
2160 min Summer	99.687	0.087	0.0	0.7	0.7	74.1	O K
2880 min Summer	99.685	0.085	0.0	0.7	0.7	72.5	O K
4320 min Summer	99.680	0.080	0.0	0.7	0.7	68.3	O K
5760 min Summer	99.675	0.075	0.0	0.7	0.7	64.1	O K
7200 min Summer	99.670	0.070	0.0	0.6	0.6	60.1	O K
8640 min Summer	99.666	0.066	0.0	0.6	0.6	56.6	O K
10080 min Summer	99.663	0.063	0.0	0.6	0.6	53.5	O K
15 min Winter	99.641	0.041	0.0	0.3	0.3	35.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	139.635	0.0	14.5	19
30 min Summer	91.435	0.0	20.9	34
60 min Summer	57.005	0.0	37.2	64
120 min Summer	34.324	0.0	46.3	124
180 min Summer	25.168	0.0	51.6	182
240 min Summer	20.074	0.0	55.1	242
360 min Summer	14.562	0.0	60.2	362
480 min Summer	11.594	0.0	63.8	480
600 min Summer	9.707	0.0	66.4	600
720 min Summer	8.393	0.0	68.5	686
960 min Summer	6.666	0.0	71.5	790
1440 min Summer	4.811	0.0	74.5	1038
2160 min Summer	3.466	0.0	99.9	1448
2880 min Summer	2.744	0.0	104.4	1848
4320 min Summer	1.972	0.0	108.4	2640
5760 min Summer	1.558	0.0	127.9	3456
7200 min Summer	1.297	0.0	132.3	4184
8640 min Summer	1.117	0.0	135.2	4928
10080 min Summer	0.983	0.0	136.4	5656
15 min Winter	139.635	0.0	17.0	19

.	Nestle Ave	
.	Block B 1,2,3,9	
.	Canal catchment	

Date 8.08.17	Designed by JH	
File Block B 1239.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Summary of Results for 100 year Return Period (+40%)

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	99.653	0.053	0.0	0.5	0.5	45.7	O K
60 min Winter	99.666	0.066	0.0	0.6	0.6	56.4	O K
120 min Winter	99.678	0.078	0.0	0.7	0.7	66.8	O K
180 min Winter	99.685	0.085	0.0	0.7	0.7	72.3	O K
240 min Winter	99.689	0.089	0.0	0.7	0.7	75.7	O K
360 min Winter	99.693	0.093	0.0	0.8	0.8	79.8	O K
480 min Winter	99.696	0.096	0.0	0.8	0.8	82.2	O K
600 min Winter	99.698	0.098	0.0	0.8	0.8	83.5	O K
720 min Winter	99.698	0.098	0.0	0.8	0.8	84.1	O K
960 min Winter	99.698	0.098	0.0	0.8	0.8	84.1	O K
1440 min Winter	99.698	0.098	0.0	0.8	0.8	83.6	O K
2160 min Winter	99.695	0.095	0.0	0.8	0.8	81.3	O K
2880 min Winter	99.691	0.091	0.0	0.7	0.7	78.1	O K
4320 min Winter	99.683	0.083	0.0	0.7	0.7	71.2	O K
5760 min Winter	99.676	0.076	0.0	0.7	0.7	64.7	O K
7200 min Winter	99.669	0.069	0.0	0.6	0.6	59.1	O K
8640 min Winter	99.664	0.064	0.0	0.6	0.6	54.4	O K
10080 min Winter	99.659	0.059	0.0	0.6	0.6	50.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	24.2	33
60 min Winter	57.005	0.0	42.7	62
120 min Winter	34.324	0.0	52.8	122
180 min Winter	25.168	0.0	58.6	180
240 min Winter	20.074	0.0	62.6	238
360 min Winter	14.562	0.0	68.1	354
480 min Winter	11.594	0.0	72.0	468
600 min Winter	9.707	0.0	75.0	578
720 min Winter	8.393	0.0	77.3	688
960 min Winter	6.666	0.0	80.6	886
1440 min Winter	4.811	0.0	83.5	1098
2160 min Winter	3.466	0.0	112.6	1556
2880 min Winter	2.744	0.0	117.7	1992
4320 min Winter	1.972	0.0	122.2	2852
5760 min Winter	1.558	0.0	143.9	3640
7200 min Winter	1.297	0.0	148.9	4400
8640 min Winter	1.117	0.0	152.3	5184
10080 min Winter	0.983	0.0	153.9	5856

. Nestle Ave
 . Block B 1,2,3,9
 . Canal catchment



Date 8.08.17 Designed by JH

File Block B 1239.srcx Checked by JB

XP Solutions Source Control 2016.1

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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.120

Time (mins)		Area
From:	To:	(ha)

0	4	0.120
---	---	-------

. . .	Nestle Ave Block B 1,2,3,9 Canal catchment	
-------------	--	---

Date 8.08.17	Designed by JH	
File Block B 1239.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

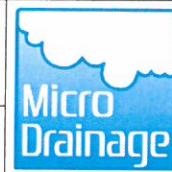
Invert Level (m) 99.600 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	900.0	0.0	0.101	0.0	0.0
0.100	900.0	0.0			

Orifice Outflow Control

Diameter (m) 0.040 Discharge Coefficient 0.500 Invert Level (m) 99.600

Nestles Ave
Block B4
Canal catchment



Date 8.08.17
File Block B4.srcx

Designed by JH
Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 288 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	99.636	0.036	0.0	0.3	0.3	7.7	O K
30 min Summer	99.646	0.046	0.0	0.4	0.4	9.9	O K
60 min Summer	99.656	0.056	0.0	0.5	0.5	11.9	O K
120 min Summer	99.663	0.063	0.0	0.6	0.6	13.4	O K
180 min Summer	99.665	0.065	0.0	0.6	0.6	13.8	O K
240 min Summer	99.665	0.065	0.0	0.6	0.6	14.0	O K
360 min Summer	99.666	0.066	0.0	0.6	0.6	14.1	O K
480 min Summer	99.666	0.066	0.0	0.6	0.6	14.1	O K
600 min Summer	99.666	0.066	0.0	0.6	0.6	14.0	O K
720 min Summer	99.665	0.065	0.0	0.6	0.6	13.9	O K
960 min Summer	99.663	0.063	0.0	0.6	0.6	13.4	O K
1440 min Summer	99.659	0.059	0.0	0.5	0.5	12.5	O K
2160 min Summer	99.653	0.053	0.0	0.5	0.5	11.4	O K
2880 min Summer	99.649	0.049	0.0	0.4	0.4	10.5	O K
4320 min Summer	99.643	0.043	0.0	0.4	0.4	9.1	O K
5760 min Summer	99.639	0.039	0.0	0.3	0.3	8.2	O K
7200 min Summer	99.635	0.035	0.0	0.3	0.3	7.6	O K
8640 min Summer	99.633	0.033	0.0	0.2	0.2	7.0	O K
10080 min Summer	99.631	0.031	0.0	0.2	0.2	6.6	O K
15 min Winter	99.640	0.040	0.0	0.3	0.3	8.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	6.2	19
30 min Summer	91.435	0.0	8.5	33
60 min Summer	57.005	0.0	11.8	62
120 min Summer	34.324	0.0	14.4	120
180 min Summer	25.168	0.0	15.9	162
240 min Summer	20.074	0.0	17.0	192
360 min Summer	14.562	0.0	18.5	254
480 min Summer	11.594	0.0	19.7	322
600 min Summer	9.707	0.0	20.6	390
720 min Summer	8.393	0.0	21.4	458
960 min Summer	6.666	0.0	22.7	590
1440 min Summer	4.811	0.0	24.4	850
2160 min Summer	3.466	0.0	27.4	1232
2880 min Summer	2.744	0.0	28.9	1612
4320 min Summer	1.972	0.0	30.7	2336
5760 min Summer	1.558	0.0	33.3	3064
7200 min Summer	1.297	0.0	34.5	3816
8640 min Summer	1.117	0.0	35.5	4576
10080 min Summer	0.983	0.0	36.2	5248
15 min Winter	139.635	0.0	7.0	18

. . .	Nestles Ave Block B4 Canal catchment
-------------	--



Date 8.08.17	Designed by JH
File Block B4.srcx	Checked by JB

XP Solutions Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

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	99.652	0.052	0.0	0.5	0.5	11.1	O K
60 min Winter	99.663	0.063	0.0	0.6	0.6	13.4	O K
120 min Winter	99.671	0.071	0.0	0.6	0.6	15.1	O K
180 min Winter	99.673	0.073	0.0	0.6	0.6	15.6	O K
240 min Winter	99.673	0.073	0.0	0.6	0.6	15.7	O K
360 min Winter	99.674	0.074	0.0	0.6	0.6	15.7	O K
480 min Winter	99.673	0.073	0.0	0.6	0.6	15.5	O K
600 min Winter	99.671	0.071	0.0	0.6	0.6	15.2	O K
720 min Winter	99.669	0.069	0.0	0.6	0.6	14.8	O K
960 min Winter	99.666	0.066	0.0	0.6	0.6	14.0	O K
1440 min Winter	99.659	0.059	0.0	0.5	0.5	12.6	O K
2160 min Winter	99.652	0.052	0.0	0.5	0.5	11.0	O K
2880 min Winter	99.646	0.046	0.0	0.4	0.4	9.9	O K
4320 min Winter	99.639	0.039	0.0	0.3	0.3	8.4	O K
5760 min Winter	99.635	0.035	0.0	0.3	0.3	7.4	O K
7200 min Winter	99.632	0.032	0.0	0.2	0.2	6.7	O K
8640 min Winter	99.629	0.029	0.0	0.2	0.2	6.1	O K
10080 min Winter	99.626	0.026	0.0	0.2	0.2	5.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	9.6	33
60 min Winter	57.005	0.0	13.4	62
120 min Winter	34.324	0.0	16.3	118
180 min Winter	25.168	0.0	18.0	172
240 min Winter	20.074	0.0	19.1	198
360 min Winter	14.562	0.0	20.9	272
480 min Winter	11.594	0.0	22.2	348
600 min Winter	9.707	0.0	23.2	422
720 min Winter	8.393	0.0	24.1	492
960 min Winter	6.666	0.0	25.5	634
1440 min Winter	4.811	0.0	27.5	894
2160 min Winter	3.466	0.0	30.8	1276
2880 min Winter	2.744	0.0	32.4	1668
4320 min Winter	1.972	0.0	34.5	2420
5760 min Winter	1.558	0.0	37.3	3168
7200 min Winter	1.297	0.0	38.7	3888
8640 min Winter	1.117	0.0	39.9	4592
10080 min Winter	0.983	0.0	40.6	5352

. Nestles Ave
 . Block B4
 . Canal catchment



Date 8.08.17 Designed by JH
 File Block B4.srcx Checked by JB

XP Solutions Source Control 2016.1


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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.030

Time (mins)		Area
From:	To:	(ha)
0	4	0.030

.	Nestles Ave	
.	Block B4	
.	Canal catchment	

Date 8.08.17	Designed by JH	
File Block B4.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Model Details

Storage is Online Cover Level (m) 100.000


Cellular Storage Structure

Invert Level (m) 99.600 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	225.0	0.0	0.101	0.0	0.0
0.100	225.0	0.0			

Orifice Outflow Control

Diameter (m) 0.040 Discharge Coefficient 0.500 Invert Level (m) 99.600

. . .	Nestle Ave Block B 5,6,7 Canal catchment	
Date 8.08.17 File Block B 567.srcx	Designed by JH Checked by JB	

XP Solutions Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1303 minutes.

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	99.637	0.037	0.0	0.3	0.3	49.3	O K
30 min Summer	99.648	0.048	0.0	0.5	0.5	64.4	O K
60 min Summer	99.659	0.059	0.0	0.7	0.7	79.6	O K
120 min Summer	99.670	0.070	0.0	0.9	0.9	94.3	O K
180 min Summer	99.676	0.076	0.0	1.0	1.0	102.1	O K
240 min Summer	99.679	0.079	0.0	1.0	1.0	106.9	O K
360 min Summer	99.684	0.084	0.0	1.1	1.1	112.7	O K
480 min Summer	99.686	0.086	0.0	1.1	1.1	116.1	O K
600 min Summer	99.687	0.087	0.0	1.1	1.1	117.8	O K
720 min Summer	99.688	0.088	0.0	1.1	1.1	118.6	O K
960 min Summer	99.689	0.089	0.0	1.1	1.1	119.5	O K
1440 min Summer	99.689	0.089	0.0	1.1	1.1	120.4	O K
2160 min Summer	99.689	0.089	0.0	1.1	1.1	119.8	O K
2880 min Summer	99.687	0.087	0.0	1.1	1.1	117.9	O K
4320 min Summer	99.683	0.083	0.0	1.0	1.0	112.5	O K
5760 min Summer	99.679	0.079	0.0	1.0	1.0	106.7	O K
7200 min Summer	99.675	0.075	0.0	1.0	1.0	101.2	O K
8640 min Summer	99.671	0.071	0.0	0.9	0.9	96.4	O K
10080 min Summer	99.668	0.068	0.0	0.9	0.9	92.3	O K
15 min Winter	99.641	0.041	0.0	0.4	0.4	55.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	139.635	0.0	19.2	19
30 min Summer	91.435	0.0	28.3	34
60 min Summer	57.005	0.0	53.2	64
120 min Summer	34.324	0.0	67.0	124
180 min Summer	25.168	0.0	75.1	182
240 min Summer	20.074	0.0	80.6	242
360 min Summer	14.562	0.0	88.3	362
480 min Summer	11.594	0.0	93.8	482
600 min Summer	9.707	0.0	97.9	600
720 min Summer	8.393	0.0	101.0	712
960 min Summer	6.666	0.0	105.5	806
1440 min Summer	4.811	0.0	109.8	1042
2160 min Summer	3.466	0.0	151.5	1448
2880 min Summer	2.744	0.0	158.1	1848
4320 min Summer	1.972	0.0	163.1	2676
5760 min Summer	1.558	0.0	197.7	3456
7200 min Summer	1.297	0.0	204.0	4184
8640 min Summer	1.117	0.0	208.0	4936
10080 min Summer	0.983	0.0	209.2	5744
15 min Winter	139.635	0.0	22.8	19

. . .	Nestle Ave Block B 5,6,7 Canal catchment
-------------	--



Date 8.08.17	Designed by JH
File Block B 567.srcx	Checked by JB

XP Solutions Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

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
30 min Winter	99.653	0.053	0.0	0.6	0.6	72.0	O K
60 min Winter	99.666	0.066	0.0	0.8	0.8	89.1	O K
120 min Winter	99.678	0.078	0.0	1.0	1.0	105.6	O K
180 min Winter	99.685	0.085	0.0	1.1	1.1	114.5	O K
240 min Winter	99.689	0.089	0.0	1.1	1.1	119.9	O K
360 min Winter	99.694	0.094	0.0	1.1	1.1	126.7	O K
480 min Winter	99.697	0.097	0.0	1.2	1.2	130.7	O K
600 min Winter	99.699	0.099	0.0	1.2	1.2	133.0	O K
720 min Winter	99.700	0.100	0.0	1.2	1.2	134.3	O K
960 min Winter	99.700	0.100	0.0	1.2	1.2	134.8	O K
1440 min Winter	99.700	0.100	0.0	1.2	1.2	134.4	O K
2160 min Winter	99.698	0.098	0.0	1.2	1.2	131.8	O K
2880 min Winter	99.695	0.095	0.0	1.1	1.1	127.5	O K
4320 min Winter	99.687	0.087	0.0	1.1	1.1	117.8	O K
5760 min Winter	99.681	0.081	0.0	1.0	1.0	108.6	O K
7200 min Winter	99.675	0.075	0.0	1.0	1.0	100.7	O K
8640 min Winter	99.670	0.070	0.0	0.9	0.9	94.4	O K
10080 min Winter	99.666	0.066	0.0	0.8	0.8	89.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	33.0	34
60 min Winter	57.005	0.0	61.5	64
120 min Winter	34.324	0.0	77.1	122
180 min Winter	25.168	0.0	86.0	180
240 min Winter	20.074	0.0	92.1	238
360 min Winter	14.562	0.0	100.6	354
480 min Winter	11.594	0.0	106.6	468
600 min Winter	9.707	0.0	111.1	580
720 min Winter	8.393	0.0	114.5	690
960 min Winter	6.666	0.0	119.5	894
1440 min Winter	4.811	0.0	124.1	1110
2160 min Winter	3.466	0.0	171.4	1560
2880 min Winter	2.744	0.0	178.9	2016
4320 min Winter	1.972	0.0	184.5	2852
5760 min Winter	1.558	0.0	222.8	3640
7200 min Winter	1.297	0.0	230.1	4400
8640 min Winter	1.117	0.0	234.7	5184
10080 min Winter	0.983	0.0	236.3	5952

. Nestle Ave
 . Block B 5,6,7
 . Canal catchment



Date 8.08.17 Designed by JH

File Block B 567.srcx Checked by JB

XP Solutions Source Control 2016.1

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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.189

Time (mins)		Area
From:	To:	(ha)

0	4	0.189
---	---	-------

.	Nestle Ave	
.	Block B 5,6,7	
.	Canal catchment	

Date 8.08.17	Designed by JH	
File Block B 567.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 99.600 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	1420.0	0.0	0.101	0.0	0.0
0.100	1420.0	0.0			

Orifice Outflow Control

Diameter (m) 0.050 Discharge Coefficient 0.500 Invert Level (m) 99.600

Nestle Ave
Block B8
Canal catchment



Date 8.08.17
File Block B8.srcx

Designed by JH
Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 546 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	99.640	0.040	0.0	0.2	0.2	10.6	O K
30 min Summer	99.652	0.052	0.0	0.3	0.3	13.8	O K
60 min Summer	99.663	0.063	0.0	0.4	0.4	16.8	O K
120 min Summer	99.674	0.074	0.0	0.4	0.4	19.6	O K
180 min Summer	99.678	0.078	0.0	0.4	0.4	20.8	O K
240 min Summer	99.681	0.081	0.0	0.4	0.4	21.4	O K
360 min Summer	99.682	0.082	0.0	0.4	0.4	21.8	O K
480 min Summer	99.683	0.083	0.0	0.4	0.4	22.0	O K
600 min Summer	99.683	0.083	0.0	0.4	0.4	22.1	O K
720 min Summer	99.683	0.083	0.0	0.4	0.4	22.1	O K
960 min Summer	99.682	0.082	0.0	0.4	0.4	21.9	O K
1440 min Summer	99.680	0.080	0.0	0.4	0.4	21.2	O K
2160 min Summer	99.675	0.075	0.0	0.4	0.4	19.9	O K
2880 min Summer	99.670	0.070	0.0	0.4	0.4	18.6	O K
4320 min Summer	99.661	0.061	0.0	0.4	0.4	16.2	O K
5760 min Summer	99.654	0.054	0.0	0.3	0.3	14.3	O K
7200 min Summer	99.649	0.049	0.0	0.3	0.3	12.9	O K
8640 min Summer	99.645	0.045	0.0	0.3	0.3	11.8	O K
10080 min Summer	99.642	0.042	0.0	0.3	0.3	11.1	O K
15 min Winter	99.645	0.045	0.0	0.3	0.3	11.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	7.8	19
30 min Summer	91.435	0.0	10.7	34
60 min Summer	57.005	0.0	15.7	64
120 min Summer	34.324	0.0	19.1	122
180 min Summer	25.168	0.0	21.1	182
240 min Summer	20.074	0.0	22.5	240
360 min Summer	14.562	0.0	24.6	344
480 min Summer	11.594	0.0	26.1	394
600 min Summer	9.707	0.0	27.4	454
720 min Summer	8.393	0.0	28.4	518
960 min Summer	6.666	0.0	29.9	654
1440 min Summer	4.811	0.0	32.1	924
2160 min Summer	3.466	0.0	37.0	1324
2880 min Summer	2.744	0.0	39.0	1728
4320 min Summer	1.972	0.0	41.4	2468
5760 min Summer	1.558	0.0	45.3	3224
7200 min Summer	1.297	0.0	47.0	3896
8640 min Summer	1.117	0.0	48.2	4664
10080 min Summer	0.983	0.0	49.1	5352
15 min Winter	139.635	0.0	8.9	19

. . .	Nestle Ave Block B8 Canal catchment
-------------	---



Date 8.08.17 File Block B8.srcx	Designed by JH Checked by JB
------------------------------------	---------------------------------

XP Solutions Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

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	99.658	0.058	0.0	0.3	0.3	15.4	O K
60 min Winter	99.671	0.071	0.0	0.4	0.4	18.9	O K
120 min Winter	99.683	0.083	0.0	0.4	0.4	22.0	O K
180 min Winter	99.688	0.088	0.0	0.5	0.5	23.5	O K
240 min Winter	99.691	0.091	0.0	0.5	0.5	24.2	O K
360 min Winter	99.693	0.093	0.0	0.5	0.5	24.7	O K
480 min Winter	99.693	0.093	0.0	0.5	0.5	24.8	O K
600 min Winter	99.693	0.093	0.0	0.5	0.5	24.7	O K
720 min Winter	99.693	0.093	0.0	0.5	0.5	24.6	O K
960 min Winter	99.691	0.091	0.0	0.5	0.5	24.2	O K
1440 min Winter	99.686	0.086	0.0	0.4	0.4	22.9	O K
2160 min Winter	99.678	0.078	0.0	0.4	0.4	20.7	O K
2880 min Winter	99.670	0.070	0.0	0.4	0.4	18.7	O K
4320 min Winter	99.658	0.058	0.0	0.3	0.3	15.5	O K
5760 min Winter	99.649	0.049	0.0	0.3	0.3	13.1	O K
7200 min Winter	99.644	0.044	0.0	0.3	0.3	11.6	O K
8640 min Winter	99.640	0.040	0.0	0.2	0.2	10.6	O K
10080 min Winter	99.637	0.037	0.0	0.2	0.2	9.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	12.2	33
60 min Winter	57.005	0.0	17.7	62
120 min Winter	34.324	0.0	21.6	120
180 min Winter	25.168	0.0	23.8	178
240 min Winter	20.074	0.0	25.4	234
360 min Winter	14.562	0.0	27.7	344
480 min Winter	11.594	0.0	29.4	444
600 min Winter	9.707	0.0	30.8	476
720 min Winter	8.393	0.0	31.9	550
960 min Winter	6.666	0.0	33.7	704
1440 min Winter	4.811	0.0	36.1	998
2160 min Winter	3.466	0.0	41.6	1428
2880 min Winter	2.744	0.0	43.8	1820
4320 min Winter	1.972	0.0	46.6	2592
5760 min Winter	1.558	0.0	50.8	3336
7200 min Winter	1.297	0.0	52.7	3968
8640 min Winter	1.117	0.0	54.2	4736
10080 min Winter	0.983	0.0	55.2	5448

. Nestle Ave
 . Block B8
 . Canal catchment



Date 8.08.17 Designed by JH

File Block B8.srcx Checked by JB

XP Solutions Source Control 2016.1

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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.041

Time (mins)		Area
From:	To:	(ha)
0	4	0.041

. Nestle Ave
 . Block B8
 . Canal catchment

Date 8.08.17 Designed by JH
 File Block B8.srcx Checked by JB



XP Solutions Source Control 2016.1

Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

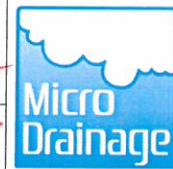
Invert Level (m) 99.600 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	280.0	0.0	0.101	0.0	0.0
0.100	280.0	0.0			

Orifice Outflow Control

Diameter (m) 0.031 Discharge Coefficient 0.500 Invert Level (m) 99.600

Nestles Ave *CATCHMENT SPLIT*
 Block B podium *INTO 2.*
 Canal Catchment *CANALS REPRESENT*



Date 8.08.17

Designed by JH *OUTLET ONLY.*

File Block B podium.srcx

Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 740 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	99.640	0.040	0.0	0.4	0.4	30.2	O K
30 min Summer	99.652	0.052	0.0	0.6	0.6	39.3	O K
60 min Summer	99.663	0.063	0.0	0.8	0.8	48.3	O K
120 min Summer	99.674	0.074	0.0	1.0	1.0	56.4	O K
180 min Summer	99.679	0.079	0.0	1.0	1.0	60.4	O K
240 min Summer	99.682	0.082	0.0	1.0	1.0	62.5	O K
360 min Summer	99.685	0.085	0.0	1.1	1.1	64.4	O K
480 min Summer	99.686	0.086	0.0	1.1	1.1	65.1	O K
600 min Summer	99.686	0.086	0.0	1.1	1.1	65.5	O K
720 min Summer	99.687	0.087	0.0	1.1	1.1	65.9	O K
960 min Summer	99.687	0.087	0.0	1.1	1.1	66.1	O K
1440 min Summer	99.686	0.086	0.0	1.1	1.1	65.4	O K
2160 min Summer	99.683	0.083	0.0	1.0	1.0	63.1	O K
2880 min Summer	99.680	0.080	0.0	1.0	1.0	60.4	O K
4320 min Summer	99.673	0.073	0.0	1.0	1.0	55.2	O K
5760 min Summer	99.667	0.067	0.0	0.9	0.9	51.1	O K
7200 min Summer	99.663	0.063	0.0	0.8	0.8	47.8	O K
8640 min Summer	99.659	0.059	0.0	0.7	0.7	45.1	O K
10080 min Summer	99.656	0.056	0.0	0.7	0.7	42.7	O K
15 min Winter	99.644	0.044	0.0	0.5	0.5	33.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	16.7	19
30 min Summer	91.435	0.0	24.0	34
60 min Summer	57.005	0.0	39.4	64
120 min Summer	34.324	0.0	48.8	122
180 min Summer	25.168	0.0	54.3	182
240 min Summer	20.074	0.0	58.1	242
360 min Summer	14.562	0.0	63.6	360
480 min Summer	11.594	0.0	67.7	420
600 min Summer	9.707	0.0	70.9	480
720 min Summer	8.393	0.0	73.5	542
960 min Summer	6.666	0.0	77.6	672
1440 min Summer	4.811	0.0	82.6	940
2160 min Summer	3.466	0.0	100.6	1344
2880 min Summer	2.744	0.0	105.6	1732
4320 min Summer	1.972	0.0	111.0	2508
5760 min Summer	1.558	0.0	125.6	3240
7200 min Summer	1.297	0.0	130.0	4032
8640 min Summer	1.117	0.0	133.1	4752
10080 min Summer	0.983	0.0	134.7	5448
15 min Winter	139.635	0.0	19.5	19

. . .	Nestles Ave Block B podium Canal Catchment
-------------	--



Date 8.08.17 File Block B podium.srcx	Designed by JH Checked by JB
--	---------------------------------

XP Solutions Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

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
30 min Winter	99.658	0.058	0.0	0.7	0.7	44.0	O K
60 min Winter	99.671	0.071	0.0	0.9	0.9	54.0	O K
120 min Winter	99.683	0.083	0.0	1.0	1.0	63.3	O K
180 min Winter	99.689	0.089	0.0	1.1	1.1	67.9	O K
240 min Winter	99.693	0.093	0.0	1.1	1.1	70.3	O K
360 min Winter	99.696	0.096	0.0	1.2	1.2	72.8	O K
480 min Winter	99.697	0.097	0.0	1.2	1.2	73.6	O K
600 min Winter	99.697	0.097	0.0	1.2	1.2	73.6	O K
720 min Winter	99.697	0.097	0.0	1.2	1.2	73.7	O K
960 min Winter	99.697	0.097	0.0	1.2	1.2	73.4	O K
1440 min Winter	99.694	0.094	0.0	1.1	1.1	71.2	O K
2160 min Winter	99.688	0.088	0.0	1.1	1.1	66.8	O K
2880 min Winter	99.682	0.082	0.0	1.0	1.0	62.2	O K
4320 min Winter	99.672	0.072	0.0	0.9	0.9	54.6	O K
5760 min Winter	99.665	0.065	0.0	0.8	0.8	49.4	O K
7200 min Winter	99.660	0.060	0.0	0.7	0.7	45.4	O K
8640 min Winter	99.655	0.055	0.0	0.6	0.6	42.2	O K
10080 min Winter	99.652	0.052	0.0	0.6	0.6	39.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	27.9	33
60 min Winter	57.005	0.0	45.0	62
120 min Winter	34.324	0.0	55.6	120
180 min Winter	25.168	0.0	61.7	178
240 min Winter	20.074	0.0	66.0	236
360 min Winter	14.562	0.0	72.2	348
480 min Winter	11.594	0.0	76.8	454
600 min Winter	9.707	0.0	80.4	540
720 min Winter	8.393	0.0	83.3	566
960 min Winter	6.666	0.0	87.8	720
1440 min Winter	4.811	0.0	93.5	1022
2160 min Winter	3.466	0.0	113.4	1448
2880 min Winter	2.744	0.0	119.1	1848
4320 min Winter	1.972	0.0	125.4	2636
5760 min Winter	1.558	0.0	141.2	3400
7200 min Winter	1.297	0.0	146.2	4176
8640 min Winter	1.117	0.0	149.8	4928
10080 min Winter	0.983	0.0	151.8	5648

. Nestles Ave
 . Block B podium
 . Canal Catchment



Date 8.08.17 Designed by JH

File Block B podium.srcx Checked by JB

XP Solutions Source Control 2016.1


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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.116

Time (mins)		Area
From:	To:	(ha)
0	4	0.116

. . .	Nestles Ave Block B podium Canal Catchment	
-------------	--	---

Date 8.08.17	Designed by JH	
File Block B podium.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 99.600 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	800.0	0.0	0.101	0.0	0.0
0.100	800.0	0.0			

Orifice Outflow Control


Diameter (m) 0.050 Discharge Coefficient 0.500 Invert Level (m) 99.600

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 1124 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	99.637	0.037	0.0	0.3	0.3	42.8	O K
30 min Summer	99.648	0.048	0.0	0.5	0.5	55.8	O K
60 min Summer	99.659	0.059	0.0	0.7	0.7	68.9	O K
120 min Summer	99.670	0.070	0.0	0.9	0.9	81.5	O K
180 min Summer	99.675	0.075	0.0	1.0	1.0	87.9	O K
240 min Summer	99.678	0.078	0.0	1.0	1.0	91.8	O K
360 min Summer	99.682	0.082	0.0	1.0	1.0	96.4	O K
480 min Summer	99.684	0.084	0.0	1.1	1.1	98.8	O K
600 min Summer	99.685	0.085	0.0	1.1	1.1	99.9	O K
720 min Summer	99.686	0.086	0.0	1.1	1.1	100.4	O K
960 min Summer	99.686	0.086	0.0	1.1	1.1	101.2	O K
1440 min Summer	99.687	0.087	0.0	1.1	1.1	101.7	O K
2160 min Summer	99.686	0.086	0.0	1.1	1.1	100.6	O K
2880 min Summer	99.684	0.084	0.0	1.1	1.1	98.4	O K
4320 min Summer	99.679	0.079	0.0	1.0	1.0	93.0	O K
5760 min Summer	99.675	0.075	0.0	1.0	1.0	87.6	O K
7200 min Summer	99.671	0.071	0.0	0.9	0.9	82.8	O K
8640 min Summer	99.667	0.067	0.0	0.9	0.9	78.9	O K
10080 min Summer	99.664	0.064	0.0	0.8	0.8	75.4	O K
15 min Winter	99.641	0.041	0.0	0.4	0.4	47.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	18.1	19
30 min Summer	91.435	0.0	26.7	34
60 min Summer	57.005	0.0	48.5	64
120 min Summer	34.324	0.0	60.9	124
180 min Summer	25.168	0.0	68.1	182
240 min Summer	20.074	0.0	73.0	242
360 min Summer	14.562	0.0	80.2	362
480 min Summer	11.594	0.0	85.3	480
600 min Summer	9.707	0.0	89.2	598
720 min Summer	8.393	0.0	92.3	644
960 min Summer	6.666	0.0	96.6	760
1440 min Summer	4.811	0.0	101.1	1010
2160 min Summer	3.466	0.0	134.5	1424
2880 min Summer	2.744	0.0	140.7	1820
4320 min Summer	1.972	0.0	146.1	2636
5760 min Summer	1.558	0.0	173.2	3400
7200 min Summer	1.297	0.0	178.9	4112
8640 min Summer	1.117	0.0	182.6	4920
10080 min Summer	0.983	0.0	184.0	5648
15 min Winter	139.635	0.0	21.4	19

. . .	Nestle Ave Block E Canal Catchment	
Date 8.08.17 File Block E.srcx	Designed by JH Checked by JB	
XP Solutions	Source Control 2016.1	

Summary of Results for 100 year Return Period (+40%)

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	99.653	0.053	0.0	0.6	0.6	62.4	O K
60 min Winter	99.666	0.066	0.0	0.8	0.8	77.1	O K
120 min Winter	99.678	0.078	0.0	1.0	1.0	91.2	O K
180 min Winter	99.684	0.084	0.0	1.1	1.1	98.6	O K
240 min Winter	99.688	0.088	0.0	1.1	1.1	103.1	O K
360 min Winter	99.693	0.093	0.0	1.1	1.1	108.5	O K
480 min Winter	99.695	0.095	0.0	1.2	1.2	111.5	O K
600 min Winter	99.696	0.096	0.0	1.2	1.2	113.0	O K
720 min Winter	99.697	0.097	0.0	1.2	1.2	113.6	O K
960 min Winter	99.697	0.097	0.0	1.2	1.2	113.5	O K
1440 min Winter	99.697	0.097	0.0	1.2	1.2	113.0	O K
2160 min Winter	99.694	0.094	0.0	1.1	1.1	109.7	O K
2880 min Winter	99.690	0.090	0.0	1.1	1.1	105.3	O K
4320 min Winter	99.682	0.082	0.0	1.0	1.0	96.1	O K
5760 min Winter	99.675	0.075	0.0	1.0	1.0	87.9	O K
7200 min Winter	99.670	0.070	0.0	0.9	0.9	81.5	O K
8640 min Winter	99.665	0.065	0.0	0.8	0.8	76.4	O K
10080 min Winter	99.662	0.062	0.0	0.8	0.8	72.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	31.2	33
60 min Winter	57.005	0.0	55.9	62
120 min Winter	34.324	0.0	69.8	122
180 min Winter	25.168	0.0	77.9	180
240 min Winter	20.074	0.0	83.5	238
360 min Winter	14.562	0.0	91.4	354
480 min Winter	11.594	0.0	97.1	466
600 min Winter	9.707	0.0	101.4	576
720 min Winter	8.393	0.0	104.7	682
960 min Winter	6.666	0.0	109.5	788
1440 min Winter	4.811	0.0	114.3	1082
2160 min Winter	3.466	0.0	152.1	1536
2880 min Winter	2.744	0.0	159.1	1964
4320 min Winter	1.972	0.0	165.5	2808
5760 min Winter	1.558	0.0	195.1	3576
7200 min Winter	1.297	0.0	201.6	4328
8640 min Winter	1.117	0.0	205.9	5104
10080 min Winter	0.983	0.0	207.8	5848

. Nestle Ave
 . Block E
 . Canal Catchment



Date 8.08.17 Designed by JH

File Block E.srcx Checked by JB

XP Solutions Source Control 2016.1

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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.164

Time (mins)	Area
From:	To: (ha)

0	4 0.164
---	---------

.	Nestle Ave	
.	Block E	
.	Canal Catchment	

Date 8.08.17	Designed by JH	
File Block E.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 99.600 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	1233.0	0.0	0.101	0.0	0.0
0.100	1233.0	0.0			

Orifice Outflow Control

Diameter (m) 0.050 Discharge Coefficient 0.500 Invert Level (m) 99.600

Nestles Ave
Block F3/4
Canal catchment



Date 8.08.17

Designed by JH

File Block F3 4.srcx

Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

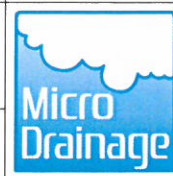
Half Drain Time : 1025 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	99.637	0.037	0.0	0.3	0.3	27.1	O K
30 min Summer	99.648	0.048	0.0	0.4	0.4	35.3	O K
60 min Summer	99.659	0.059	0.0	0.5	0.5	43.5	O K
120 min Summer	99.669	0.069	0.0	0.6	0.6	51.3	O K
180 min Summer	99.675	0.075	0.0	0.7	0.7	55.4	O K
240 min Summer	99.678	0.078	0.0	0.7	0.7	57.8	O K
360 min Summer	99.682	0.082	0.0	0.7	0.7	60.5	O K
480 min Summer	99.684	0.084	0.0	0.7	0.7	61.8	O K
600 min Summer	99.684	0.084	0.0	0.7	0.7	62.3	O K
720 min Summer	99.685	0.085	0.0	0.7	0.7	62.6	O K
960 min Summer	99.685	0.085	0.0	0.7	0.7	63.0	O K
1440 min Summer	99.685	0.085	0.0	0.7	0.7	63.0	O K
2160 min Summer	99.684	0.084	0.0	0.7	0.7	61.9	O K
2880 min Summer	99.681	0.081	0.0	0.7	0.7	60.1	O K
4320 min Summer	99.676	0.076	0.0	0.7	0.7	55.9	O K
5760 min Summer	99.670	0.070	0.0	0.6	0.6	52.0	O K
7200 min Summer	99.666	0.066	0.0	0.6	0.6	48.4	O K
8640 min Summer	99.661	0.061	0.0	0.6	0.6	45.4	O K
10080 min Summer	99.658	0.058	0.0	0.5	0.5	42.8	O K
15 min Winter	99.641	0.041	0.0	0.3	0.3	30.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	13.6	19
30 min Summer	91.435	0.0	19.6	34
60 min Summer	57.005	0.0	33.7	64
120 min Summer	34.324	0.0	41.8	122
180 min Summer	25.168	0.0	46.5	182
240 min Summer	20.074	0.0	49.7	242
360 min Summer	14.562	0.0	54.3	362
480 min Summer	11.594	0.0	57.7	480
600 min Summer	9.707	0.0	60.3	584
720 min Summer	8.393	0.0	62.3	626
960 min Summer	6.666	0.0	65.2	744
1440 min Summer	4.811	0.0	68.3	998
2160 min Summer	3.466	0.0	88.2	1408
2880 min Summer	2.744	0.0	92.4	1816
4320 min Summer	1.972	0.0	96.7	2596
5760 min Summer	1.558	0.0	111.7	3400
7200 min Summer	1.297	0.0	115.6	4112
8640 min Summer	1.117	0.0	118.3	4848
10080 min Summer	0.983	0.0	119.5	5552
15 min Winter	139.635	0.0	16.0	19

.
.
.

Nestles Ave
Block F3/4
Canal catchment



Date 8.08.17

Designed by JH

File Block F3 4.srcx

Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
30 min Winter	99.653	0.053	0.0	0.5	0.5	39.5	O K
60 min Winter	99.666	0.066	0.0	0.6	0.6	48.7	O K
120 min Winter	99.678	0.078	0.0	0.7	0.7	57.6	O K
180 min Winter	99.684	0.084	0.0	0.7	0.7	62.2	O K
240 min Winter	99.688	0.088	0.0	0.7	0.7	64.9	O K
360 min Winter	99.692	0.092	0.0	0.7	0.7	68.1	O K
480 min Winter	99.694	0.094	0.0	0.8	0.8	69.8	O K
600 min Winter	99.696	0.096	0.0	0.8	0.8	70.6	O K
720 min Winter	99.696	0.096	0.0	0.8	0.8	70.8	O K
960 min Winter	99.696	0.096	0.0	0.8	0.8	70.6	O K
1440 min Winter	99.695	0.095	0.0	0.8	0.8	69.9	O K
2160 min Winter	99.691	0.091	0.0	0.7	0.7	67.3	O K
2880 min Winter	99.687	0.087	0.0	0.7	0.7	64.0	O K
4320 min Winter	99.678	0.078	0.0	0.7	0.7	57.4	O K
5760 min Winter	99.670	0.070	0.0	0.6	0.6	51.6	O K
7200 min Winter	99.663	0.063	0.0	0.6	0.6	46.8	O K
8640 min Winter	99.658	0.058	0.0	0.5	0.5	43.0	O K
10080 min Winter	99.654	0.054	0.0	0.5	0.5	40.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
30 min Winter	91.435	0.0	22.7	33
60 min Winter	57.005	0.0	38.5	62
120 min Winter	34.324	0.0	47.5	122
180 min Winter	25.168	0.0	52.8	180
240 min Winter	20.074	0.0	56.4	238
360 min Winter	14.562	0.0	61.6	352
480 min Winter	11.594	0.0	65.3	466
600 min Winter	9.707	0.0	68.1	574
720 min Winter	8.393	0.0	70.3	678
960 min Winter	6.666	0.0	73.5	772
1440 min Winter	4.811	0.0	76.9	1070
2160 min Winter	3.466	0.0	99.5	1516
2880 min Winter	2.744	0.0	104.2	1960
4320 min Winter	1.972	0.0	109.2	2768
5760 min Winter	1.558	0.0	125.6	3576
7200 min Winter	1.297	0.0	130.0	4320
8640 min Winter	1.117	0.0	133.1	5016
10080 min Winter	0.983	0.0	134.8	5752

. Nestles Ave
 . Block F3/4
 . Canal catchment



Date 8.08.17 Designed by JH

File Block F3 4.srcx Checked by JB

XP Solutions Source Control 2016.1

Rainfall Details

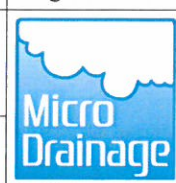
Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.104

Time (mins)	Area
From:	To: (ha)
0	4 0.104

. Nestles Ave
 . Block F3/4
 . Canal catchment



Date 8.08.17 Designed by JH
 File Block F3 4.srcx Checked by JB

XP Solutions Source Control 2016.1

Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 99.600 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	778.0	0.0	0.101	0.0	0.0
0.100	778.0	0.0			

Orifice Outflow Control

Diameter (m) 0.040 Discharge Coefficient 0.500 Invert Level (m) 99.600

Nestle Ave
GC 1
Canal catchment



Date 8.08.17
File GC1.srcx

Designed by JH
Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 123 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	30.071	0.221	0.0	13.5	13.5	104.8	O K
30 min Summer	30.128	0.278	0.0	13.5	13.5	132.1	O K
60 min Summer	30.171	0.321	0.0	13.5	13.5	152.6	O K
120 min Summer	30.186	0.336	0.0	13.5	13.5	159.8	O K
180 min Summer	30.182	0.332	0.0	13.5	13.5	157.6	O K
240 min Summer	30.171	0.321	0.0	13.5	13.5	152.4	O K
360 min Summer	30.145	0.295	0.0	13.5	13.5	140.1	O K
480 min Summer	30.119	0.269	0.0	13.5	13.5	127.6	O K
600 min Summer	30.094	0.244	0.0	13.5	13.5	115.7	O K
720 min Summer	30.071	0.221	0.0	13.5	13.5	104.8	O K
960 min Summer	30.032	0.182	0.0	13.4	13.4	86.6	O K
1440 min Summer	29.983	0.133	0.0	13.1	13.1	63.2	O K
2160 min Summer	29.953	0.103	0.0	10.5	10.5	48.8	O K
2880 min Summer	29.935	0.085	0.0	8.8	8.8	40.4	O K
4320 min Summer	29.914	0.064	0.0	6.6	6.6	30.5	O K
5760 min Summer	29.902	0.052	0.0	5.3	5.3	24.7	O K
7200 min Summer	29.893	0.043	0.0	4.5	4.5	20.6	O K
8640 min Summer	29.887	0.037	0.0	3.9	3.9	17.5	O K
10080 min Summer	29.882	0.032	0.0	3.4	3.4	15.1	O K
15 min Winter	30.099	0.249	0.0	13.5	13.5	118.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	113.7	18
30 min Summer	91.435	0.0	148.9	32
60 min Summer	57.005	0.0	185.8	60
120 min Summer	34.324	0.0	223.7	104
180 min Summer	25.168	0.0	246.1	134
240 min Summer	20.074	0.0	261.7	168
360 min Summer	14.562	0.0	284.8	234
480 min Summer	11.594	0.0	302.3	300
600 min Summer	9.707	0.0	316.5	364
720 min Summer	8.393	0.0	328.3	428
960 min Summer	6.666	0.0	347.8	548
1440 min Summer	4.811	0.0	376.4	768
2160 min Summer	3.466	0.0	406.8	1128
2880 min Summer	2.744	0.0	429.5	1496
4320 min Summer	1.972	0.0	462.9	2208
5760 min Summer	1.558	0.0	487.8	2944
7200 min Summer	1.297	0.0	507.7	3672
8640 min Summer	1.117	0.0	524.3	4408
10080 min Summer	0.983	0.0	538.8	5144
15 min Winter	139.635	0.0	127.3	18

. Nestle Ave
 . GC 1
 . Canal catchment




Date 8.08.17 Designed by JH
 File GC1.srcx Checked by JB

XP Solutions Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

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
30 min Winter	30.165	0.315	0.0	13.5	13.5	149.7	O K
60 min Winter	30.218	0.368	0.0	13.5	13.5	174.8	O K
120 min Winter	30.239	0.389	0.0	13.5	13.5	184.9	O K
180 min Winter	30.230	0.380	0.0	13.5	13.5	180.3	O K
240 min Winter	30.214	0.364	0.0	13.5	13.5	172.7	O K
360 min Winter	30.173	0.323	0.0	13.5	13.5	153.6	O K
480 min Winter	30.132	0.282	0.0	13.5	13.5	134.1	O K
600 min Winter	30.094	0.244	0.0	13.5	13.5	115.8	O K
720 min Winter	30.060	0.210	0.0	13.5	13.5	99.7	O K
960 min Winter	30.007	0.157	0.0	13.3	13.3	74.8	O K
1440 min Winter	29.961	0.111	0.0	11.3	11.3	52.9	O K
2160 min Winter	29.933	0.083	0.0	8.5	8.5	39.4	O K
2880 min Winter	29.917	0.067	0.0	6.8	6.8	31.8	O K
4320 min Winter	29.899	0.049	0.0	5.0	5.0	23.0	O K
5760 min Winter	29.888	0.038	0.0	4.0	4.0	17.9	O K
7200 min Winter	29.880	0.030	0.0	3.3	3.3	14.4	O K
8640 min Winter	29.875	0.025	0.0	2.8	2.8	11.8	O K
10080 min Winter	29.871	0.021	0.0	2.5	2.5	9.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	166.8	32
60 min Winter	57.005	0.0	208.1	60
120 min Winter	34.324	0.0	250.6	116
180 min Winter	25.168	0.0	275.7	146
240 min Winter	20.074	0.0	293.2	184
360 min Winter	14.562	0.0	319.1	256
480 min Winter	11.594	0.0	338.7	326
600 min Winter	9.707	0.0	354.4	390
720 min Winter	8.393	0.0	367.8	452
960 min Winter	6.666	0.0	389.5	566
1440 min Winter	4.811	0.0	421.7	792
2160 min Winter	3.466	0.0	455.7	1148
2880 min Winter	2.744	0.0	481.1	1504
4320 min Winter	1.972	0.0	518.5	2236
5760 min Winter	1.558	0.0	546.3	2944
7200 min Winter	1.297	0.0	568.6	3680
8640 min Winter	1.117	0.0	587.3	4408
10080 min Winter	0.983	0.0	603.4	5120

.	Nestle Ave	
.	GC 1	
.	Canal catchment	

Date 8.08.17	Designed by JH	
File GC1.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------


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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.435

Time (mins)	Area
From:	To: (ha)
0	4 0.435

	Nestle Ave	
	GC 1	
	Canal catchment	

Date 8.08.17	Designed by JH
File GC1.srcx	Checked by JB

XP Solutions Source Control 2016.1

Model Details

Storage is Online Cover Level (m) 31.130

Cellular Storage Structure

Invert Level (m) 29.850 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	500.0	0.0	0.401	0.0	0.0
0.400	500.0	0.0			

Hydro-Brake Optimum® Outflow Control

Unit Reference MD-SHE-0173-1350-0500-1350
 Design Head (m) 0.500
 Design Flow (l/s) 13.5
 Flush-Flo™ Calculated
 Objective Minimise upstream storage
 Application Surface
 Sump Available Yes
 Diameter (mm) 173
 Invert Level (m) 29.810
 Minimum Outlet Pipe Diameter (mm) 225
 Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.500	13.5
Flush-Flo™	0.249	13.5
Kick-Flo®	0.409	12.3
Mean Flow over Head Range	-	10.5

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	6.1	1.200	20.5	3.000	31.8	7.000	47.8
0.200	13.3	1.400	22.0	3.500	34.2	7.500	49.5
0.300	13.4	1.600	23.5	4.000	36.5	8.000	51.2
0.400	12.5	1.800	24.8	4.500	38.6	8.500	52.8
0.500	13.5	2.000	26.1	5.000	40.7	9.000	54.3
0.600	14.7	2.200	27.4	5.500	42.3	9.500	55.8
0.800	16.9	2.400	28.5	6.000	44.2		
1.000	18.8	2.600	29.6	6.500	46.1		

Nestles Ave
PP1
Canal Catchment



Date 8.08.17
File PP1.srcx

Designed by JH
Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 270 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ (l/s)	Max Outflow Volume (m ³)	Status
15 min Summer	30.899	0.084	0.0	0.5	0.5	9.0	O K
30 min Summer	30.922	0.107	0.0	0.6	0.6	12.2	O K
60 min Summer	30.943	0.128	0.0	0.7	0.7	15.2	O K
120 min Summer	30.958	0.143	0.0	0.7	0.7	17.4	O K
180 min Summer	30.963	0.148	0.0	0.7	0.7	18.1	O K
240 min Summer	30.963	0.148	0.0	0.7	0.7	18.2	O K
360 min Summer	30.963	0.148	0.0	0.7	0.7	18.2	O K
480 min Summer	30.962	0.147	0.0	0.7	0.7	18.0	O K
600 min Summer	30.960	0.145	0.0	0.7	0.7	17.7	O K
720 min Summer	30.957	0.142	0.0	0.7	0.7	17.3	O K
960 min Summer	30.951	0.136	0.0	0.7	0.7	16.4	O K
1440 min Summer	30.938	0.123	0.0	0.7	0.7	14.5	O K
2160 min Summer	30.921	0.106	0.0	0.6	0.6	12.1	O K
2880 min Summer	30.907	0.092	0.0	0.6	0.6	10.2	O K
4320 min Summer	30.888	0.073	0.0	0.5	0.5	7.5	O K
5760 min Summer	30.876	0.061	0.0	0.4	0.4	5.8	O K
7200 min Summer	30.868	0.053	0.0	0.4	0.4	4.6	O K
8640 min Summer	30.862	0.047	0.0	0.3	0.3	3.8	O K
10080 min Summer	30.859	0.044	0.0	0.3	0.3	3.3	O K
15 min Winter	30.908	0.093	0.0	0.6	0.6	10.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	9.3	19
30 min Summer	91.435	0.0	12.8	33
60 min Summer	57.005	0.0	16.5	62
120 min Summer	34.324	0.0	20.3	122
180 min Summer	25.168	0.0	22.5	180
240 min Summer	20.074	0.0	24.1	206
360 min Summer	14.562	0.0	26.3	268
480 min Summer	11.594	0.0	27.9	334
600 min Summer	9.707	0.0	29.3	404
720 min Summer	8.393	0.0	30.3	470
960 min Summer	6.666	0.0	32.1	606
1440 min Summer	4.811	0.0	34.5	878
2160 min Summer	3.466	0.0	37.0	1256
2880 min Summer	2.744	0.0	38.6	1640
4320 min Summer	1.972	0.0	40.6	2376
5760 min Summer	1.558	0.0	41.8	3064
7200 min Summer	1.297	0.0	42.5	3752
8640 min Summer	1.117	0.0	42.9	4496
10080 min Summer	0.983	0.0	43.0	5152
15 min Winter	139.635	0.0	10.7	18

. . .	Nestles Ave PP1 Canal Catchment
-------------	---------------------------------------




Date 8.08.17	Designed by JH
File PP1.srcx	Checked by JB

XP Solutions Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

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
30 min Winter	30.934	0.119	0.0	0.6	0.6	14.0	O K
60 min Winter	30.958	0.143	0.0	0.7	0.7	17.4	O K
120 min Winter	30.976	0.161	0.0	0.8	0.8	20.0	O K
180 min Winter	30.982	0.167	0.0	0.8	0.8	20.8	O K
240 min Winter	30.983	0.168	0.0	0.8	0.8	20.9	O K
360 min Winter	30.981	0.166	0.0	0.8	0.8	20.7	O K
480 min Winter	30.978	0.163	0.0	0.8	0.8	20.3	O K
600 min Winter	30.974	0.159	0.0	0.8	0.8	19.7	O K
720 min Winter	30.970	0.155	0.0	0.7	0.7	19.1	O K
960 min Winter	30.960	0.145	0.0	0.7	0.7	17.7	O K
1440 min Winter	30.941	0.126	0.0	0.7	0.7	15.0	O K
2160 min Winter	30.918	0.103	0.0	0.6	0.6	11.7	O K
2880 min Winter	30.900	0.085	0.0	0.5	0.5	9.2	O K
4320 min Winter	30.878	0.063	0.0	0.4	0.4	6.0	O K
5760 min Winter	30.865	0.050	0.0	0.4	0.4	4.2	O K
7200 min Winter	30.859	0.044	0.0	0.3	0.3	3.3	O K
8640 min Winter	30.855	0.040	0.0	0.3	0.3	2.7	O K
10080 min Winter	30.852	0.037	0.0	0.2	0.2	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	91.435	0.0	14.6	33
60 min Winter	57.005	0.0	18.8	62
120 min Winter	34.324	0.0	23.0	118
180 min Winter	25.168	0.0	25.5	174
240 min Winter	20.074	0.0	27.2	226
360 min Winter	14.562	0.0	29.7	282
480 min Winter	11.594	0.0	31.6	358
600 min Winter	9.707	0.0	33.1	434
720 min Winter	8.393	0.0	34.3	508
960 min Winter	6.666	0.0	36.3	654
1440 min Winter	4.811	0.0	39.1	936
2160 min Winter	3.466	0.0	41.9	1324
2880 min Winter	2.744	0.0	43.8	1700
4320 min Winter	1.972	0.0	46.3	2420
5760 min Winter	1.558	0.0	47.8	3112
7200 min Winter	1.297	0.0	48.8	3816
8640 min Winter	1.117	0.0	49.4	4496
10080 min Winter	0.983	0.0	49.7	5192

. . .	Nestles Ave PP1 Canal Catchment	
-------------	---------------------------------------	---

Date 8.08.17	Designed by JH	
File PP1.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

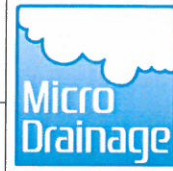
Time Area Diagram

Total Area (ha) 0.044

Time (mins)	Area
From:	To: (ha)
0	4 0.044

.
.
.

Nestles Ave
PP1
Canal Catchment



Date 8.08.17

Designed by JH

File PP1.srcx

Checked by JB

XP Solutions

Source Control 2016.1

Model Details

Storage is Online Cover Level (m) 31.360

Porous Car Park Structure

Table with 4 columns: Parameter, Value, Parameter, Value. Includes Infiltration Coefficient Base, Membrane Percolation, Max Percolation, Safety Factor, Porosity, Invert Level, Width, Length, Slope, Depression Storage, Evaporation, and Cap Volume Depth.

Orifice Outflow Control

Diameter (m) 0.034 Discharge Coefficient 0.500 Invert Level (m) 30.815

Nestles Ave
PP2
Canal catchment



Date 8.08.17
File PP2.srcx

Designed by JH
Checked by JB

XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 68 minutes.

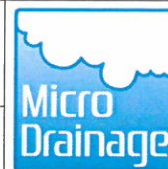
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	30.953	0.188	0.0	8.0	8.0	40.8	O K
30 min Summer	30.994	0.229	0.0	9.2	9.2	51.1	O K
60 min Summer	31.018	0.253	0.0	9.9	9.9	57.4	O K
120 min Summer	31.029	0.264	0.0	10.1	10.1	60.1	O K
180 min Summer	31.025	0.260	0.0	10.0	10.0	59.2	O K
240 min Summer	31.017	0.252	0.0	9.8	9.8	57.0	O K
360 min Summer	30.997	0.232	0.0	9.3	9.3	52.0	O K
480 min Summer	30.979	0.214	0.0	8.8	8.8	47.4	O K
600 min Summer	30.963	0.198	0.0	8.3	8.3	43.4	O K
720 min Summer	30.949	0.184	0.0	7.9	7.9	40.0	O K
960 min Summer	30.929	0.164	0.0	7.3	7.3	34.7	O K
1440 min Summer	30.904	0.139	0.0	5.8	5.8	28.6	O K
2160 min Summer	30.883	0.118	0.0	4.5	4.5	23.1	O K
2880 min Summer	30.869	0.104	0.0	3.7	3.7	19.7	O K
4320 min Summer	30.851	0.086	0.0	2.7	2.7	15.2	O K
5760 min Summer	30.840	0.075	0.0	2.2	2.2	12.2	O K
7200 min Summer	30.832	0.067	0.0	1.9	1.9	10.3	O K
8640 min Summer	30.827	0.062	0.0	1.6	1.6	9.1	O K
10080 min Summer	30.824	0.059	0.0	1.5	1.5	8.3	O K
15 min Winter	30.975	0.210	0.0	8.7	8.7	46.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	139.635	0.0	45.0	17
30 min Summer	91.435	0.0	60.1	31
60 min Summer	57.005	0.0	75.9	50
120 min Summer	34.324	0.0	92.1	84
180 min Summer	25.168	0.0	101.6	118
240 min Summer	20.074	0.0	108.3	152
360 min Summer	14.562	0.0	118.0	218
480 min Summer	11.594	0.0	125.3	280
600 min Summer	9.707	0.0	131.2	344
720 min Summer	8.393	0.0	136.1	404
960 min Summer	6.666	0.0	144.0	522
1440 min Summer	4.811	0.0	155.6	766
2160 min Summer	3.466	0.0	167.5	1128
2880 min Summer	2.744	0.0	176.0	1496
4320 min Summer	1.972	0.0	188.0	2208
5760 min Summer	1.558	0.0	196.4	2944
7200 min Summer	1.297	0.0	202.5	3672
8640 min Summer	1.117	0.0	207.3	4408
10080 min Summer	0.983	0.0	211.2	5136
15 min Winter	139.635	0.0	50.9	17

. Nestles Ave
 . PP2
 . Canal catchment

Date 8.08.17
 File PP2.srcx

Designed by JH
 Checked by JB



XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
30 min Winter	31.021	0.256	0.0	9.9	9.9	58.2	O K
60 min Winter	31.049	0.284	0.0	10.6	10.6	65.2	O K
120 min Winter	31.056	0.291	0.0	10.7	10.7	66.9	O K
180 min Winter	31.045	0.280	0.0	10.5	10.5	64.3	O K
240 min Winter	31.030	0.265	0.0	10.1	10.1	60.4	O K
360 min Winter	31.000	0.235	0.0	9.4	9.4	52.7	O K
480 min Winter	30.974	0.209	0.0	8.7	8.7	46.2	O K
600 min Winter	30.953	0.188	0.0	8.0	8.0	40.8	O K
720 min Winter	30.936	0.171	0.0	7.5	7.5	36.6	O K
960 min Winter	30.914	0.149	0.0	6.4	6.4	31.1	O K
1440 min Winter	30.889	0.124	0.0	4.9	4.9	24.7	O K
2160 min Winter	30.868	0.103	0.0	3.6	3.6	19.3	O K
2880 min Winter	30.855	0.090	0.0	2.9	2.9	16.1	O K
4320 min Winter	30.837	0.072	0.0	2.1	2.1	11.5	O K
5760 min Winter	30.828	0.063	0.0	1.7	1.7	9.3	O K
7200 min Winter	30.823	0.058	0.0	1.4	1.4	8.0	O K
8640 min Winter	30.820	0.055	0.0	1.2	1.2	7.1	O K
10080 min Winter	30.817	0.052	0.0	1.1	1.1	6.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
30 min Winter	91.435	0.0	67.8	31
60 min Winter	57.005	0.0	85.5	56
120 min Winter	34.324	0.0	103.7	90
180 min Winter	25.168	0.0	114.4	128
240 min Winter	20.074	0.0	121.8	162
360 min Winter	14.562	0.0	132.7	230
480 min Winter	11.594	0.0	140.9	296
600 min Winter	9.707	0.0	147.5	356
720 min Winter	8.393	0.0	153.1	418
960 min Winter	6.666	0.0	162.0	538
1440 min Winter	4.811	0.0	175.0	780
2160 min Winter	3.466	0.0	188.5	1148
2880 min Winter	2.744	0.0	198.2	1528
4320 min Winter	1.972	0.0	211.9	2248
5760 min Winter	1.558	0.0	221.6	2944
7200 min Winter	1.297	0.0	228.8	3680
8640 min Winter	1.117	0.0	234.5	4400
10080 min Winter	0.983	0.0	239.1	5144

. Nestles Ave
 . PP2
 . Canal catchment

Date 8.08.17 Designed by JH
 File PP2.srcx Checked by JB



XP Solutions Source Control 2016.1


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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.187

Time (mins)		Area
From:	To:	(ha)
0	4	0.187

.	Nestles Ave	
.	PP2	
.	Canal catchment	

Date 8.08.17	Designed by JH	
File PP2.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Model Details


Storage is Online Cover Level (m) 31.360

Porous Car Park Structure

Infiltration Coefficient Base (m/hr) 0.00000	Width (m) 15.0	
Membrane Percolation (mm/hr) 1000	Length (m) 52.7	
Max Percolation (l/s) 219.6	Slope (1:X) 1000.0	
Safety Factor 2.0	Depression Storage (mm) 5	
Porosity 0.32	Evaporation (mm/day) 3	
Invert Level (m) 30.765	Cap Volume Depth (m) 0.300	

Orifice Outflow Control

Diameter (m) 0.113 Discharge Coefficient 0.500 Invert Level (m) 30.765

.	Nestles Ave	
.	PP3	
.	Canal catchment	

Date 8.08.17	Designed by JH
File PP3.srcx	Checked by JB

XP Solutions	Source Control 2016.1
--------------	-----------------------

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 58 minutes.

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	31.021	0.251	0.0	19.9	19.9	89.6	O K
30 min Summer	31.070	0.300	0.0	22.6	22.6	110.6	Flood Risk
60 min Summer	31.098	0.328	0.0	24.0	24.0	123.1	Flood Risk
120 min Summer	31.109	0.339	0.0	24.5	24.5	127.6	Flood Risk
180 min Summer	31.101	0.331	0.0	24.1	24.1	124.3	Flood Risk
240 min Summer	31.088	0.318	0.0	23.5	23.5	118.6	Flood Risk
360 min Summer	31.061	0.291	0.0	22.1	22.1	106.9	Flood Risk
480 min Summer	31.038	0.268	0.0	20.8	20.8	96.7	O K
600 min Summer	31.018	0.248	0.0	19.7	19.7	88.2	O K
720 min Summer	31.003	0.233	0.0	18.5	18.5	81.7	O K
960 min Summer	30.981	0.211	0.0	16.0	16.0	72.0	O K
1440 min Summer	30.951	0.181	0.0	12.8	12.8	59.0	O K
2160 min Summer	30.924	0.154	0.0	9.8	9.8	47.1	O K
2880 min Summer	30.906	0.136	0.0	8.0	8.0	39.5	O K
4320 min Summer	30.882	0.112	0.0	6.0	6.0	28.9	O K
5760 min Summer	30.868	0.098	0.0	4.9	4.9	22.9	O K
7200 min Summer	30.860	0.090	0.0	4.2	4.2	19.6	O K
8640 min Summer	30.855	0.085	0.0	3.6	3.6	17.2	O K
10080 min Summer	30.851	0.081	0.0	3.2	3.2	15.6	O K
15 min Winter	31.049	0.279	0.0	21.4	21.4	101.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	139.635	0.0	99.7	17
30 min Summer	91.435	0.0	132.7	31
60 min Summer	57.005	0.0	167.0	48
120 min Summer	34.324	0.0	202.4	82
180 min Summer	25.168	0.0	223.2	116
240 min Summer	20.074	0.0	237.6	150
360 min Summer	14.562	0.0	258.9	214
480 min Summer	11.594	0.0	275.0	276
600 min Summer	9.707	0.0	287.8	338
720 min Summer	8.393	0.0	298.6	398
960 min Summer	6.666	0.0	316.0	520
1440 min Summer	4.811	0.0	341.6	766
2160 min Summer	3.466	0.0	368.0	1128
2880 min Summer	2.744	0.0	387.1	1500
4320 min Summer	1.972	0.0	414.3	2208
5760 min Summer	1.558	0.0	433.5	2944
7200 min Summer	1.297	0.0	448.1	3672
8640 min Summer	1.117	0.0	459.6	4408
10080 min Summer	0.983	0.0	469.0	5136
15 min Winter	139.635	0.0	112.5	17

. Nestles Ave
 . PP3
 . Canal catchment



Date 8.08.17
 File PP3.srcx

Designed by JH
 Checked by JB


XP Solutions

Source Control 2016.1

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m ³)	Status
30 min Winter	31.105	0.335	0.0	24.3	24.3	125.8	Flood Risk
60 min Winter	31.135	0.365	0.0	25.7	25.7	139.1	Flood Risk
120 min Winter	31.140	0.370	0.0	26.0	26.0	141.0	Flood Risk
180 min Winter	31.123	0.353	0.0	25.2	25.2	133.7	Flood Risk
240 min Winter	31.101	0.331	0.0	24.1	24.1	124.3	Flood Risk
360 min Winter	31.061	0.291	0.0	22.1	22.1	106.8	Flood Risk
480 min Winter	31.029	0.259	0.0	20.3	20.3	92.8	O K
600 min Winter	31.005	0.235	0.0	18.7	18.7	82.6	O K
720 min Winter	30.988	0.218	0.0	16.9	16.9	75.3	O K
960 min Winter	30.963	0.193	0.0	14.1	14.1	64.3	O K
1440 min Winter	30.932	0.162	0.0	10.7	10.7	50.6	O K
2160 min Winter	30.905	0.135	0.0	7.8	7.8	38.9	O K
2880 min Winter	30.885	0.115	0.0	6.3	6.3	30.5	O K
4320 min Winter	30.865	0.095	0.0	4.6	4.6	21.4	O K
5760 min Winter	30.855	0.085	0.0	3.7	3.7	17.4	O K
7200 min Winter	30.849	0.079	0.0	3.1	3.1	15.0	O K
8640 min Winter	30.843	0.073	0.0	2.6	2.6	12.8	O K
10080 min Winter	30.838	0.068	0.0	2.3	2.3	11.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
30 min Winter	91.435	0.0	149.4	31
60 min Winter	57.005	0.0	187.9	50
120 min Winter	34.324	0.0	227.6	88
180 min Winter	25.168	0.0	250.8	124
240 min Winter	20.074	0.0	267.0	160
360 min Winter	14.562	0.0	290.9	226
480 min Winter	11.594	0.0	308.9	290
600 min Winter	9.707	0.0	323.4	350
720 min Winter	8.393	0.0	335.5	412
960 min Winter	6.666	0.0	355.1	538
1440 min Winter	4.811	0.0	383.8	780
2160 min Winter	3.466	0.0	413.7	1148
2880 min Winter	2.744	0.0	435.4	1528
4320 min Winter	1.972	0.0	466.3	2208
5760 min Winter	1.558	0.0	488.3	2936
7200 min Winter	1.297	0.0	505.1	3672
8640 min Winter	1.117	0.0	518.6	4408
10080 min Winter	0.983	0.0	529.7	5136

. . .	Nestles Ave PP3 Canal catchment	
-------------	---------------------------------------	---

Date 8.08.17	Designed by JH	
File PP3.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------


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)	20.100	Shortest Storm (mins)	15
Ratio R	0.406	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.407

Time (mins)	Area
From:	To: (ha)
0	4 0.407

. . .	Nestles Ave PP3 Canal catchment	
-------------	---------------------------------------	---

Date 8.08.17	Designed by JH	
File PP3.srcx	Checked by JB	

XP Solutions	Source Control 2016.1
--------------	-----------------------

Model Details

Storage is Online Cover Level (m) 31.360

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	15.0
Membrane Percolation (mm/hr)	1000	Length (m)	90.6
Max Percolation (l/s)	377.5	Slope (1:X)	1000.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.32	Evaporation (mm/day)	3
Invert Level (m)	30.770	Cap Volume Depth (m)	0.370

Orifice Outflow Control

Diameter (m) 0.167 Discharge Coefficient 0.500 Invert Level (m) 30.770