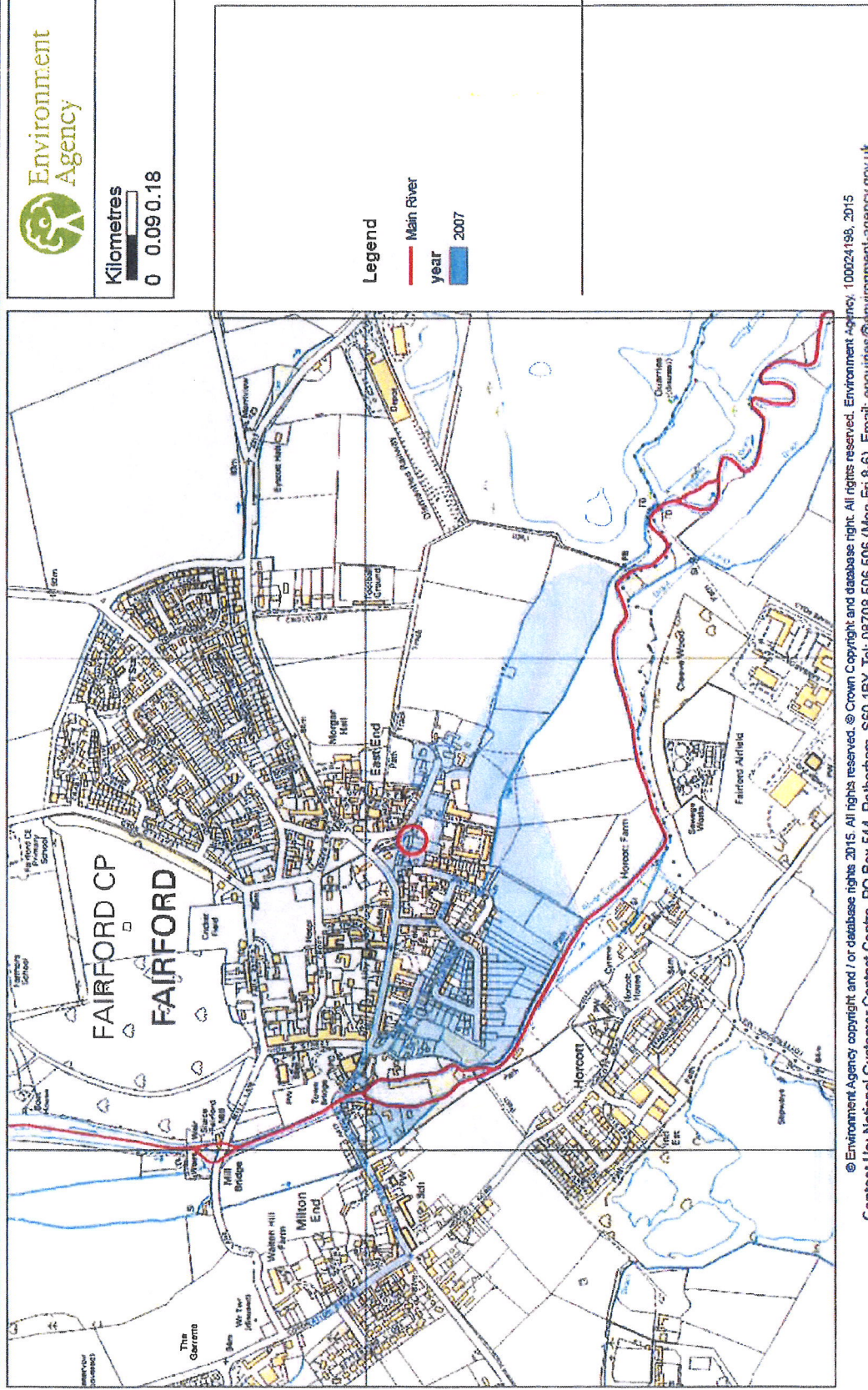
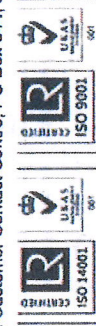


**Historic Flood Map centred on: Land south of Wick House, Fairford  
Created on 25/01/2019 REF: THM\_116396**





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Contact Us: National Customer Contact Centre, PO Box 544, Rotherham, S60 1BY. Tel: 08708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk


Ambiental Living Environmental Assessment  
Sussex Innovation Centre,  
Science Park Square,  
Brighton, BN1 9SB





## Appendix IV - Initial Soakaway Calculations


AEA - Ambiental		Page 1			
Science Park Square	4373				
Brighton	SF Planning				
East Sussex	Wick House				
Date 25/02/2019	Designed by ND				
File Proposed 100 yr +CC (40...	Checked by				
Innovyze	Source Control 2018.1				
<b>Summary of Results for 100 year Return Period (+40%)</b>					
Half Drain Time : 782 minutes.					
<b>Storm Event</b>	<b>Max Level (m)</b>	<b>Max Depth (m)</b>	<b>Max Infiltration (L/s)</b>	<b>Max Volume (m³)</b>	<b>Status</b>
15 min Summer	62.430	0.430	1.1	3.1	O K
30 min Summer	62.609	0.559	1.1	4.2	O K
60 min Summer	62.738	0.668	1.1	4.9	O K
120 min Summer	62.857	0.807	1.1	5.7	O K
180 min Summer	62.919	0.863	1.1	6.1	O K
240 min Summer	62.949	0.893	1.1	6.4	O K
360 min Summer	62.969	0.919	1.1	6.6	O K
480 min Summer	62.978	0.925	1.1	6.6	O K
600 min Summer	62.969	0.919	1.1	6.5	O K
720 min Summer	62.962	0.912	1.1	6.5	O K
960 min Summer	62.946	0.896	1.1	6.4	O K
1440 min Summer	62.906	0.856	1.1	6.1	O K
2160 min Summer	62.849	0.793	1.1	5.6	O K
2880 min Summer	62.795	0.735	1.1	5.2	O K
4320 min Summer	62.686	0.686	1.1	4.5	O K
5760 min Summer	62.602	0.552	1.1	3.9	O K
7200 min Summer	62.531	0.481	1.1	3.4	O K
8640 min Summer	62.468	0.418	1.1	3.0	O K
10080 min Summer	62.414	0.364	1.1	2.6	O K
15 min Winter	62.632	0.462	1.1	3.4	O K
<b>Storm Event</b>	<b>Rain (mm/hr)</b>	<b>Flooded Volume (m³)</b>	<b>Time-Peak (mins)</b>		
15 min Summer	138.153	1.0	19		
30 min Summer	91.715	1.0	34		
60 min Summer	56.718	1.0	64		
120 min Summer	34.246	1.0	122		
180 min Summer	25.149	1.0	132		
240 min Summer	21.076	1.0	242		
360 min Summer	14.585	1.0	360		
480 min Summer	11.622	1.0	480		
600 min Summer	8.736	1.0	550		
720 min Summer	6.424	1.0	606		
960 min Summer	4.697	1.0	730		
1440 min Summer	3.029	1.0	996		
2160 min Summer	2.450	1.0	1408		
2880 min Summer	2.766	1.0	1820		
4320 min Summer	1.989	1.0	2636		
5760 min Summer	1.573	1.0	3406		
7200 min Summer	1.311	1.0	4194		
8640 min Summer	1.129	1.0	4928		
10080 min Summer	1.094	1.0	5656		
15 min Winter	138.153	1.0	19		
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AEA - Ambiental		Page 3
Science Park Square	4373	
Brighton	SF Planning	
East Sussex	Southern Dwelling	
Date 25/02/2019	Designed by ND	
File Proposed 100 yr +CC (40...	Checked by	
Innovyze	Source Control 2018.1	
<u>Rainfall Details</u>		
Rainfall Model	FSR	Winter Storms Yes
Return Period (years)	100	Cv (Summer) 0.750
Region	England and Wales	Cv (Winter) 0.840
ME-63 (mm)	20.300	Shortest Storm (mins) 15
Ratio R	0.900	Longest Storm (mins) 10380
Summer Storms	Yes	Climate Change % +40
<u>Time Area Diagram</u>		
Total Area (ha) 0.011		
Time (mins) Area		
From: To: (ha)		
0 4 0.011		
<u>Time Area Diagram</u>		
Total Area (ha) 0.003		
Time (mins) Area		
From: To: (ha)		
0 4 0.003		
<u>Time Area Diagram</u>		
Total Area (ha) 0.003		
Time (mins) Area		
From: To: (ha)		
0 4 0.003		
©1982-2018 Innovyze		


AEA - Ambiental		Page 2			
Science Park Square	4373				
Brighton	SF Planning				
East Sussex	Southern Dwelling				
Date 25/02/2019	Designed by ND				
File Proposed 100 yr +CC (40...	Checked by				
Innovyze	Source Control 2018.1				
<u>Summary of Results for 100 year Return Period (+40%)</u>					
<b>Storm Event</b>	<b>Max Level (m)</b>	<b>Max Depth (m)</b>	<b>Max Infiltration (L/s)</b>	<b>Max Volume (m³)</b>	<b>Status</b>
30 min Winter	82.741	0.691	0.1	4.1	O K
60 min Winter	82.921	0.851	0.1	5.1	O K
120 min Winter	83.090	1.001	0.1	5.9	O K
180 min Winter	83.239	1.073	0.1	6.4	O K
240 min Winter	83.262	1.122	0.1	6.6	Flood Risk
360 min Winter	83.272	1.152	0.1	6.8	Flood Risk
480 min Winter	83.215	1.165	0.1	6.9	Flood Risk
600 min Winter	83.214	1.164	0.1	6.9	Flood Risk
720 min Winter	83.204	1.154	0.1	6.9	Flood Risk
960 min Winter	83.182	1.132	0.1	6.7	Flood Risk
1440 min Winter	83.130	1.081	0.1	6.4	O K
2160 min Winter	83.036	0.986	0.1	5.9	O K
2880 min Winter	82.947	0.897	0.1	5.2	O K
4320 min Winter	82.756	0.746	0.1	4.4	O K
5760 min Winter	82.672	0.622	0.1	3.7	O K
7200 min Winter	82.570	0.520	0.1	3.1	O K
8640 min Winter	82.454	0.434	0.1	2.6	O K
10080 min Winter	82.412	0.362	0.1	2.1	O K
<b>Storm Event</b>	<b>Rain (mm/hr)</b>	<b>Flooded Volume (m³)</b>	<b>Time-Peak (mins)</b>		
30 min Winter	93.735	1.0	33		
60 min Winter	56.712	1.0	62		
120 min Winter	34.246	1.0	122		
180 min Winter	25.149	1.0	183		
240 min Winter	21.078	1.0	235		
360 min Winter	14.595	1.0	352		
480 min Winter	11.622	1.0	462		
600 min Winter	9.738	1.0	573		
720 min Winter	8.424	1.0	675		
960 min Winter	6.657	1.0	754		
1440 min Winter	4.839	1.0	1066		
2160 min Winter	3.450	1.0	1516		
2880 min Winter	2.766	1.0	1960		
4320 min Winter	1.989	1.0	2608		
5760 min Winter	1.573	1.0	3632		
7200 min Winter	1.311	1.0	4400		
8640 min Winter	1.129	1.0	5192		
10080 min Winter	0.994	1.0	5952		
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AEA - Ambiental		Page 3
Science Park Square	4373	
Brighton	SF Planning	
East Sussex	Wick House	
Date 25/02/2019	Designed by ND	
File Proposed 100 yr +CC (40...	Checked by	
Innovyze	Source Control 2018.1	
<u>Rainfall Details</u>		
Rainfall Model	FSR	Winter Storms Yes
Return Period (years)	100	Cv (Summer) 0.750
Region	England and Wales	Cv (Winter) 0.840
MS-63 (mm)	20.300	Shortest Storm (mins) 15
Ratio R	0.400	Longest Storm (mins) 10360
Summer Storms	Yes	Climate Change % +40
<u>Time Area Diagram</u>		
Total Area (ha) 0.012		
Time (mins) Area		
From: To: (ha)		
0 4 0.012		
<u>Time Area Diagram</u>		
Total Area (ha) 0.004		
Time (mins) Area		
From: To: (ha)		
0 4 0.004		
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AEA - Ambiental		Page 2			
Science Park Square	4373				
Brighton	SF Planning				
East Sussex	Wick House				
Date 25/02/2019	Designed by ND				
File Proposed 100 yr +CC (40...	Checked by				
Innovyze	Source Control 2016.1				
<u>Summary of Results for 100 year Return Period (+40%)</u>					
<b>Storm Event</b>	<b>Max Level (m)</b>	<b>Max Depth (m)</b>	<b>Max Infiltration (l/s)</b>	<b>Max Volume (m<sup>3</sup>)</b>	<b>Status</b>
30 min Winter	82.678	0.629	1.1	4.3	OK
60 min Winter	82.624	0.774	1.1	5.5	OK
120 min Winter	82.959	0.509	1.1	6.3	OK
180 min Winter	83.025	0.575	1.1	6.9	OK
240 min Winter	83.061	1.111	1.1	7.2	OK
360 min Winter	83.097	1.147	1.1	7.5	OK
<b>480 max Winter</b>	<b>83.109</b>	<b>1.259</b>	<b>1.1</b>	<b>7.8</b>	<b>OK</b>
600 min Winter	83.107	1.257	1.1	7.5	OK
720 min Winter	83.098	1.249	1.1	7.5	OK
960 min Winter	83.076	1.326	1.1	7.3	OK
1440 min Winter	83.026	0.976	1.1	7.1	OK
2160 min Winter	82.939	0.889	1.1	6.3	OK
2880 min Winter	82.657	0.807	1.1	5.7	OK
4320 min Winter	82.716	0.666	1.1	4.7	OK
5760 min Winter	82.599	0.549	1.1	3.5	OK
7200 min Winter	82.502	0.452	1.1	3.2	OK
8640 min Winter	82.421	0.371	1.1	2.6	OK
10080 min Winter	82.352	0.302	1.1	2.2	OK
<b>Storm Event</b>	<b>Rain (mm/hr)</b>	<b>Flooded Volume (m<sup>3</sup>)</b>	<b>Time-Peak (mins)</b>		
30 min Winter	92.725	0.0	33		
60 min Winter	56.712	0.0	62		
120 min Winter	39.246	0.0	122		
180 min Winter	25.149	0.0	183		
240 min Winter	21.078	0.0	238		
360 min Winter	14.585	0.0	352		
<b>480 max Winter</b>	<b>11.622</b>	<b>0.0</b>	<b>464</b>		
600 min Winter	9.738	0.0	572		
720 min Winter	8.424	0.0	672		
960 min Winter	6.657	0.0	761		
1440 min Winter	4.329	0.0	1069		
2160 min Winter	2.450	0.0	1516		
2880 min Winter	2.766	0.0	1960		
4320 min Winter	1.389	0.0	2812		
5760 min Winter	1.579	0.0	3632		
7200 min Winter	1.311	0.0	4403		
8640 min Winter	1.129	0.0	5184		
10080 min Winter	1.954	0.0	5952		
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AEA - Ambiental		Page 4																		
Science Park Square	4373																			
Brighton	SF Planning																			
East Sussex	Wick House																			
Date 25/02/2019	Designed by MD																			
File Proposed 100 yr +CC (40...	Checked by																			
Innovyze	Source Control 2018.1																			
<u>Model Details</u>																				
Storage is Online Cover Level (m) 83.250																				
<u>Cellular Storage Structure</u>																				
Invert Level (m) 82.050 Safety Factor 2.1																				
Infiltration Coefficient Base (m/hr) 0.04602 Porosity 3.95																				
Infiltration Coefficient Side (m/hr) 0.04602																				
<table border="1"> <thead> <tr> <th>Depth (m)</th> <th>Area (m<sup>2</sup>)</th> <th>Inf. Area (m<sup>2</sup>)</th> <th>Depth (m)</th> <th>Area (m<sup>2</sup>)</th> <th>Inf. Area (m<sup>2</sup>)</th> </tr> </thead> <tbody> <tr> <td>0.200</td> <td>7.5</td> <td>7.5</td> <td>1.201</td> <td>0.0</td> <td>20.7</td> </tr> <tr> <td>1.200</td> <td>7.5</td> <td>20.7</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	0.200	7.5	7.5	1.201	0.0	20.7	1.200	7.5	20.7			
Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )															
0.200	7.5	7.5	1.201	0.0	20.7															
1.200	7.5	20.7																		
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AEA - Ambiental		Page 1			
Science Park Square	4373				
Brighton	SF Planning				
East Sussex	Southern Dwelling				
Date 25/02/2019	Designed by ND				
File Proposed 100 yr +CC (40...	Checked by				
Innovyze	Source Control 2018.1				
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Half Drain Time : 772 minutes.					
<b>Storm Event</b>	<b>Max Level (m)</b>	<b>Max Depth (m)</b>	<b>Max Infiltration (l/s)</b>	<b>Max Volume (m³)</b>	<b>Status</b>
15 min Summer	62.623	0.973	1.1	2.5	C E
30 min Summer	62.666	0.816	1.1	3.7	C E
60 min Summer	62.608	0.763	1.1	4.5	C E
120 min Summer	62.938	0.888	1.1	5.3	C E
180 min Summer	63.001	0.960	1.1	5.6	C E
240 min Summer	63.033	0.963	1.1	5.8	C E
360 min Summer	63.069	1.113	1.1	6.1	C E
480 min Summer	63.069	1.119	1.1	6.1	C E
600 min Summer	63.063	1.113	1.1	6.1	C E
720 min Summer	63.057	1.107	1.1	6.1	C E
960 min Summer	63.043	0.990	1.1	5.9	C E
1440 min Summer	62.999	0.949	1.1	5.6	C E
2160 min Summer	62.931	0.861	1.1	5.2	C E
2880 min Summer	62.869	0.819	1.1	4.9	C E
4320 min Summer	62.762	0.712	1.1	4.2	C E
5760 min Summer	62.672	0.623	1.1	3.7	C E
7200 min Summer	62.596	0.546	1.1	3.2	C E
8640 min Summer	62.531	0.480	1.1	2.9	C E
11080 min Summer	62.473	0.423	1.1	2.5	C E
15 min Winter	62.531	0.530	1.1	3.1	C E
<b>Storm Event</b>	<b>Rain (mm/hr)</b>	<b>Flooded Volume (m³)</b>	<b>Time-Peak (mins)</b>		
15 min Summer	138.153	1.0	15		
30 min Summer	93.735	1.0	34		
60 min Summer	56.713	1.0	64		
120 min Summer	34.246	1.0	122		
180 min Summer	25.149	1.0	182		
240 min Summer	21.076	1.0	242		
360 min Summer	14.585	1.0	361		
480 min Summer	11.622	1.0	481		
600 min Summer	9.738	1.0	548		
720 min Summer	8.424	1.0	601		
960 min Summer	6.697	1.0	722		
1440 min Summer	4.839	1.0	984		
2160 min Summer	3.450	1.0	1408		
2880 min Summer	2.766	1.0	1821		
4320 min Summer	1.989	1.0	2636		
5760 min Summer	1.573	1.0	3408		
7200 min Summer	1.311	1.0	4184		
8640 min Summer	1.129	1.0	4936		
11080 min Summer	1.094	1.0	5656		
15 min Winter	138.153	1.0	15		
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AEA - Ambiental		Page 4																		
Science Park Square Brighton East Sussex	4373 SF Planning Southern Dwelling																			
Date 25/02/2019 File Proposed 100 yz +CC (40...	Designed by ND Checked by																			
Innovyze	Source Control 2018.1																			
<u>Model Details</u>																				
Storage is Online Cover Level (m) 82.250																				
<u>Cellular Storage Structure</u>																				
Invert Level (m) 82.050 Safety Factor 2.0																				
Infiltration Coefficient Base (m/hr) 2.03600 Porosity 1.95																				
Infiltration Coefficient Side (m/hr) 2.03600																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Depth (m)</th> <th>Area (m<sup>2</sup>)</th> <th>Inf. Area (m<sup>2</sup>)</th> <th>Depth (m)</th> <th>Area (m<sup>2</sup>)</th> <th>Inf. Area (m<sup>2</sup>)</th> </tr> </thead> <tbody> <tr> <td>0.100</td> <td>6.3</td> <td>6.3</td> <td>1.201</td> <td>0.0</td> <td>18.3</td> </tr> <tr> <td>1.200</td> <td>6.3</td> <td>18.3</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	0.100	6.3	6.3	1.201	0.0	18.3	1.200	6.3	18.3			
Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )															
0.100	6.3	6.3	1.201	0.0	18.3															
1.200	6.3	18.3																		
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