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DBFL Consulting Engineers

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Ormond House
Upper Ormond Quay
Dublin 7

Date 23/11/2023 18:01
File MCC office.CASX

Designed by mokokak
Checked by

Micro
Drainage

InnovyzeSource Control 2020.1

Cascade Summary of Results for 220084 - Source Control Catchment
1B_29.3litrespersec.SRCX

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
8640 min Summer	55.031	0.331	0.0	27.0	27.0	66.3	O K
10080 min Summer	55.014	0.314	0.0	24.9	24.9	62.7	O K
15 min Winter	55.032	0.332	0.0	27.1	27.1	66.4	O K
30 min Winter	55.156	0.456	0.0	29.0	29.0	91.2	O K
60 min Winter	55.281	0.581	0.0	29.2	29.2	116.1	O K
120 min Winter	55.404	0.704	0.0	29.2	29.2	140.7	O K
180 min Winter	55.469	0.769	0.0	29.2	29.2	153.8	O K
240 min Winter	55.510	0.810	0.0	29.2	29.2	162.0	O K
360 min Winter	55.555	0.855	0.0	29.2	29.2	170.9	O K
480 min Winter	55.572	0.872	0.0	29.2	29.2	174.3	O K
600 min Winter	55.580	0.880	0.0	29.2	29.2	176.0	O K
720 min Winter	55.581	0.881	0.0	29.2	29.2	176.3	O K
960 min Winter	55.566	0.866	0.0	29.2	29.2	173.1	O K
1440 min Winter	55.497	0.797	0.0	29.2	29.2	159.4	O K
2160 min Winter	55.369	0.669	0.0	29.2	29.2	133.9	O K
2880 min Winter	55.255	0.555	0.0	29.2	29.2	111.0	O K
4320 min Winter	55.102	0.402	0.0	28.6	28.6	80.4	O K
5760 min Winter	55.033	0.333	0.0	27.2	27.2	66.5	O K
7200 min Winter	55.006	0.306	0.0	23.9	23.9	61.2	O K
8640 min Winter	54.987	0.287	0.0	21.2	21.2	57.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
8640 min Summer	1.194	0.0	3766.9	4416
10080 min Summer	1.069	0.0	3932.0	5144
15 min Winter	83.784	0.0	335.4	18
30 min Winter	58.213	0.0	542.1	32
60 min Winter	38.020	0.0	790.0	62
120 min Winter	24.094	0.0	1050.3	120
180 min Winter	18.291	0.0	1221.3	176
240 min Winter	15.014	0.0	1353.7	234
360 min Winter	11.333	0.0	1556.4	344
480 min Winter	9.271	0.0	1713.3	442
600 min Winter	7.928	0.0	1843.3	476
720 min Winter	6.975	0.0	1955.2	550
960 min Winter	5.696	0.0	2142.9	702
1440 min Winter	4.280	0.0	2432.5	984
2160 min Winter	3.214	0.0	2795.0	1384
2880 min Winter	2.621	0.0	3052.1	1756
4320 min Winter	1.963	0.0	3440.3	2464
5760 min Winter	1.597	0.0	3769.0	3000
7200 min Winter	1.361	0.0	4023.7	3744
8640 min Winter	1.194	0.0	4241.5	4496

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Cascade Summary of Results for 220084 - Source Control Catchment
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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
10080 min Winter	54.974	0.274	0.0	19.1	19.1	54.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Winter	1.069	0.0	4428.7	5192

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<u>Cascade Model Details for 220084 - Source Control Catchment</u> <u>1B_29.3litrespersec.SRCX</u> Storage is Online Cover Level (m) 57.700 <u>Cellular Storage Structure</u> Invert Level (m) 54.700 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 1.00 Infiltration Coefficient Side (m/hr) 0.00000 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr><tr><td>0.000</td><td>200.0</td><td>0.0</td><td>1.001</td><td>0.0</td><td>0.0</td></tr><tr><td>1.000</td><td>200.0</td><td>0.0</td><td></td><td></td><td></td></tr></table> <u>Hydro-Brake® Optimum Outflow Control</u> Unit Reference MD-SHE-0230-2930-1320-2930 Design Head (m) 1.320 Design Flow (l/s) 29.3 Flush-Flo™ Calculated Objective Minimise upstream storage Application Surface Sump Available Yes Diameter (mm) 230 Invert Level (m) 54.800 Minimum Outlet Pipe Diameter (mm) 300 Suggested Manhole Diameter (mm) 1800 <table><tr><th>Control Points</th><th>Head (m)</th><th>Flow (l/s)</th></tr><tr><td>Design Point (Calculated)</td><td>1.320</td><td>29.3</td></tr><tr><td>Flush-Flo™</td><td>0.427</td><td>29.2</td></tr><tr><td>Kick-Flo®</td><td>0.921</td><td>24.7</td></tr><tr><td>Mean Flow over Head Range</td><td>-</td><td>24.9</td></tr></table> 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 <table><tr><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th></tr><tr><td>0.100</td><td>7.7</td><td>1.200</td><td>28.0</td><td>3.000</td><td>43.5</td><td>7.000</td><td>65.5</td></tr><tr><td>0.200</td><td>23.1</td><td>1.400</td><td>30.1</td><td>3.500</td><td>46.8</td><td>7.500</td><td>67.7</td></tr><tr><td>0.300</td><td>28.6</td><td>1.600</td><td>32.1</td><td>4.000</td><td>49.9</td><td>8.000</td><td>69.9</td></tr><tr><td>0.400</td><td>29.2</td><td>1.800</td><td>34.0</td><td>4.500</td><td>52.9</td><td>8.500</td><td>72.0</td></tr><tr><td>0.500</td><td>29.1</td><td>2.000</td><td>35.7</td><td>5.000</td><td>55.6</td><td>9.000</td><td>74.0</td></tr><tr><td>0.600</td><td>28.7</td><td>2.200</td><td>37.4</td><td>5.500</td><td>58.3</td><td>9.500</td><td>76.0</td></tr><tr><td>0.800</td><td>27.2</td><td>2.400</td><td>39.0</td><td>6.000</td><td>60.8</td><td></td><td></td></tr><tr><td>1.000</td><td>25.7</td><td>2.600</td><td>40.6</td><td>6.500</td><td>63.2</td><td></td><td></td></tr></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	200.0	0.0	1.001	0.0	0.0	1.000	200.0	0.0				Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	1.320	29.3	Flush-Flo™	0.427	29.2	Kick-Flo®	0.921	24.7	Mean Flow over Head Range	-	24.9	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	7.7	1.200	28.0	3.000	43.5	7.000	65.5	0.200	23.1	1.400	30.1	3.500	46.8	7.500	67.7	0.300	28.6	1.600	32.1	4.000	49.9	8.000	69.9	0.400	29.2	1.800	34.0	4.500	52.9	8.500	72.0	0.500	29.1	2.000	35.7	5.000	55.6	9.000	74.0	0.600	28.7	2.200	37.4	5.500	58.3	9.500	76.0	0.800	27.2	2.400	39.0	6.000	60.8			1.000	25.7	2.600	40.6	6.500	63.2		
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