Appendix 6

Existing Flow Path Plan

the Civil Engineering Practice

-20m 0 20m 40m 60m 80m

Scale 1:2000

TITLE
Wicks Farm, Ford Lane, Arundel
Existing Flow Paths

SCALE
1:2000@A3

DRG. No.
3

Appendix 7

Proposed Site Layout Plan

the Civil Engineering Practice

N

6m margin

Reservoir 3.4m water depth 19,000m3
Volume between
Outer radius 10, Inner radius 7.0 k

Polytunnel 30m (9.6m, 28x 2m
648 ft x 78ft
0.47 ha

Polytunnel 30m (9.6m, 28x 2m
648 ft x 78ft
0.47 ha

10.6m margin

Parking 21 cars

Ancillary Building
64 x 30m

yard

Ancillary Building
64 x 30m

yard

Digestate Lagoon
Planning Permission WSCC/015/07/F

AD Plant
Planning Permission WSCC/008/16/F
and variation WSCC/061/18/F

-20m 0 20m 40m 60m 80m

Scale 1:2000

TITLE
Indicative Site Layout

SCALE
1:2000 @ A3

DRG. No.
4

Appendix 8

Preliminary Surface Water Drainage Calculations & Drainage Plan

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.400
Area (ha)	9.740	Urban	0.000
SAAR (mm)	700	Region Number	Region 7

Results l/s

QBAR Rural	33.1
QBAR Urban	33.1
Q100 years	105.7
Q1 year	28.2
Q30 years	75.1
Q100 years	105.7

©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	2.723	0.223	12.9	297.8	O K
30 min Summer	2.793	0.293	13.0	396.0	O K
60 min Summer	2.865	0.365	13.0	497.6	O K
120 min Summer	2.933	0.433	13.0	594.9	O K
180 min Summer	2.965	0.465	13.0	642.4	Flood Risk
240 min Summer	2.982	0.482	13.0	667.0	Flood Risk
360 min Summer	2.996	0.496	13.0	687.2	Flood Risk
480 min Summer	2.997	0.497	13.0	689.8	Flood Risk
600 min Summer	2.997	0.497	13.0	688.5	Flood Risk
720 min Summer	2.994	0.494	13.0	684.5	Flood Risk
960 min Summer	2.985	0.485	13.0	671.0	Flood Risk
1440 min Summer	2.956	0.456	13.0	629.2	Flood Risk
2160 min Summer	2.905	0.405	13.0	554.8	O K
2880 min Summer	2.856	0.356	13.0	484.1	O K
4320 min Summer	2.772	0.272	13.0	367.0	O K
5760 min Summer	2.714	0.214	12.9	286.7	O K
7200 min Summer	2.678	0.178	12.7	236.6	O K
8640 min Summer	2.660	0.160	11.7	212.4	O K
10080 min Summer	2.647	0.147	10.6	194.8	O K
15 min Winter	2.749	0.249	13.0	334.2	O K
30 min Winter	2.828	0.328	13.0	444.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	125.353	0.0	277.8	19
30 min Summer	84.267	0.0	380.0	33
60 min Summer	54.074	0.0	512.1	62
120 min Summer	33.506	0.0	637.0	122
180 min Summer	24.949	0.0	712.4	182
240 min Summer	20.093	0.0	765.5	242
360 min Summer	14.773	0.0	844.7	360
480 min Summer	11.871	0.0	905.1	432
600 min Summer	10.010	0.0	953.9	492
720 min Summer	8.703	0.0	994.9	556
960 min Summer	6.973	0.0	1061.8	684
1440 min Summer	5.093	0.0	1159.6	954
2160 min Summer	3.711	0.0	1292.5	1360
2880 min Summer	2.961	0.0	1374.0	1732
4320 min Summer	2.150	0.0	1489.7	2464
5760 min Summer	1.711	0.0	1595.8	3120
7200 min Summer	1.432	0.0	1668.3	3816
8640 min Summer	1.240	0.0	1730.4	4496
10080 min Summer	1.098	0.0	1780.8	5240
15 min Winter	125.353	0.0	313.5	18
30 min Winter	84.267	0.0	427.6	33

©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	2.909	0.409	13.0	560.4	O K
120 min Winter	2.986	0.486	13.0	672.3	Flood Risk
180 min Winter	3.022	0.522	13.0	726.8	Flood Risk
240 min Winter	3.042	0.542	13.0	755.4	Flood Risk
360 min Winter	3.059	0.559	13.0	781.8	Flood Risk
480 min Winter	3.063	0.563	13.0	787.6	Flood Risk
600 min Winter	3.060	0.560	13.0	782.3	Flood Risk
720 min Winter	3.054	0.554	13.0	773.8	Flood Risk
960 min Winter	3.041	0.541	13.0	754.3	Flood Risk
1440 min Winter	3.001	0.501	13.0	695.5	Flood Risk
2160 min Winter	2.922	0.422	13.0	580.0	O K
2880 min Winter	2.845	0.345	13.0	469.0	O K
4320 min Winter	2.727	0.227	12.9	303.6	O K
5760 min Winter	2.668	0.168	12.3	223.5	O K
7200 min Winter	2.646	0.146	10.5	194.0	O K
8640 min Winter	2.632	0.132	9.3	175.0	O K
10080 min Winter	2.622	0.122	8.3	161.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	54.074	0.0	574.8	62
120 min Winter	33.506	0.0	714.6	120
180 min Winter	24.949	0.0	799.0	178
240 min Winter	20.093	0.0	858.4	236
360 min Winter	14.773	0.0	947.1	348
480 min Winter	11.871	0.0	1014.7	458
600 min Winter	10.010	0.0	1069.2	558
720 min Winter	8.703	0.0	1115.1	580
960 min Winter	6.973	0.0	1189.8	732
1440 min Winter	5.093	0.0	1298.0	1040
2160 min Winter	3.711	0.0	1448.4	1468
2880 min Winter	2.961	0.0	1540.2	1848
4320 min Winter	2.150	0.0	1671.1	2512
5760 min Winter	1.711	0.0	1788.0	3112
7200 min Winter	1.432	0.0	1869.5	3816
8640 min Winter	1.240	0.0	1939.6	4496
10080 min Winter	1.098	0.0	1997.4	5240

©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

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)	19.100	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.300

Time (mins) From:	To:	Area (ha)
0	4	1.300

©1982-2017 XP Solutions

Model Details

Storage is Online Cover Level (m) 3.250

Tank or Pond Structure

Invert Level (m) 2.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	1300.0	0.750	1568.2

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0169-1300-0600-1300
Design Head (m)	0.600
Design Flow (l/s)	13.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	169
Invert Level (m)	2.500
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.600	13.0
Flush-Flo™	0.256	13.0
Kick-Flo®	0.467	11.5
Mean Flow over Head Range	-	10.4

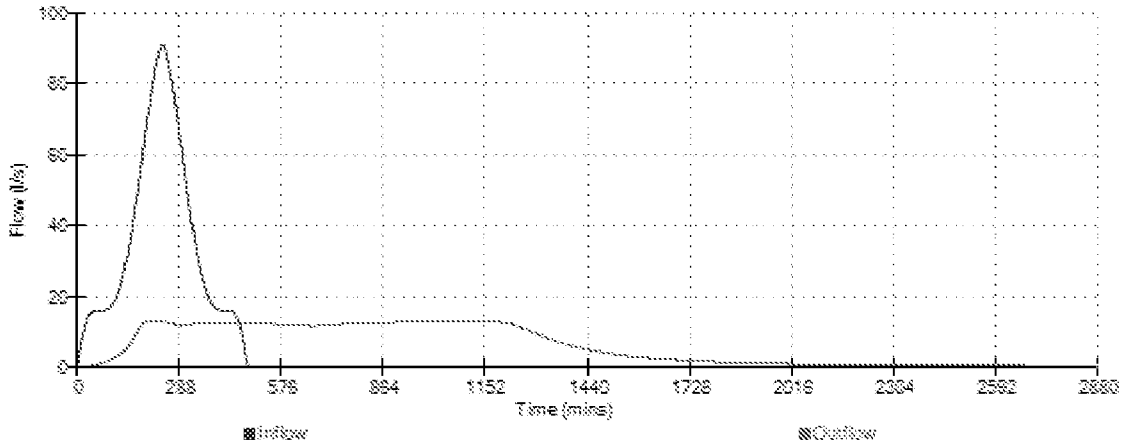
The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

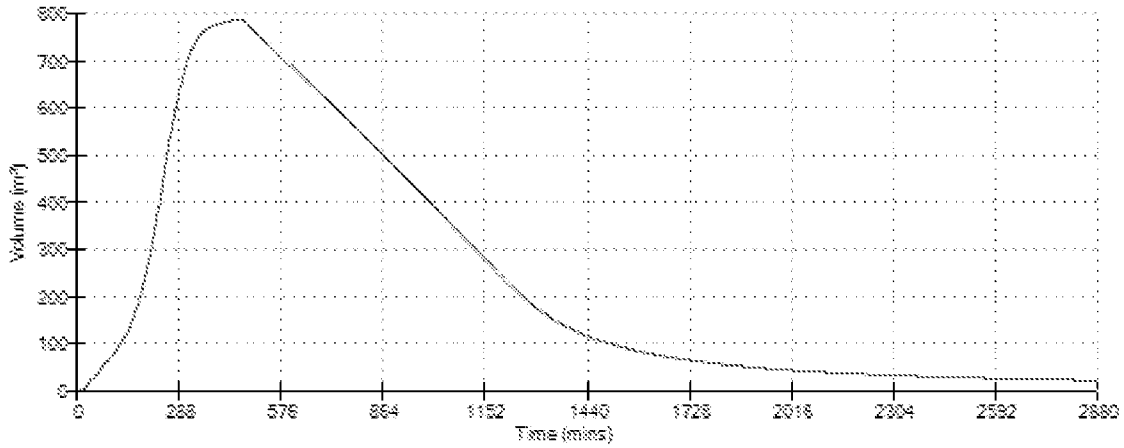
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	6.0	1.200	18.1	3.000	28.0	7.000	42.0
0.200	12.8	1.400	19.4	3.500	30.2	7.500	43.5
0.300	12.9	1.600	20.7	4.000	32.2	8.000	44.9
0.400	12.4	1.800	21.9	4.500	34.0	8.500	46.3
0.500	11.9	2.000	23.0	5.000	35.8	9.000	47.7
0.600	13.0	2.200	24.1	5.500	37.5	9.500	49.0
0.800	14.9	2.400	25.1	6.000	39.1		
1.000	16.6	2.600	26.1	6.500	40.5		

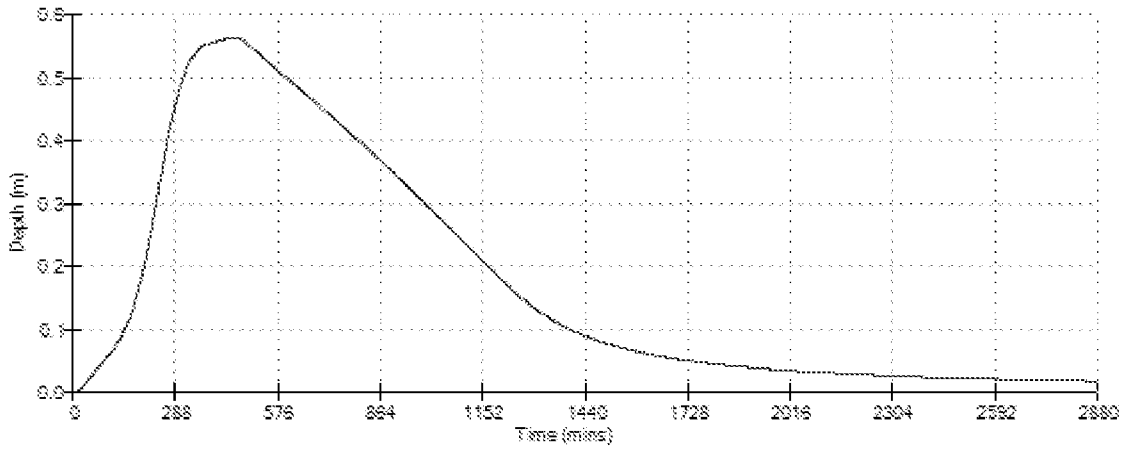
©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

Event: 480 min Winter







©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	0.321	0.321	20.0	1313.8	O K
30 min Summer	0.427	0.427	20.0	1758.9	O K
60 min Summer	0.540	0.540	20.0	2240.8	O K
120 min Summer	0.655	0.655	20.0	2741.8	O K
180 min Summer	0.720	0.720	20.0	3028.3	O K
240 min Summer	0.763	0.763	20.0	3216.7	O K
360 min Summer	0.819	0.819	20.0	3467.4	O K
480 min Summer	0.856	0.856	20.0	3633.1	O K
600 min Summer	0.881	0.881	20.0	3746.4	O K
720 min Summer	0.899	0.899	20.0	3825.4	O K
960 min Summer	0.919	0.919	20.0	3916.3	O K
1440 min Summer	0.925	0.925	20.0	3945.6	O K
2160 min Summer	0.910	0.910	20.0	3877.9	O K
2880 min Summer	0.890	0.890	20.0	3785.3	O K
4320 min Summer	0.841	0.841	20.0	3564.5	O K
5760 min Summer	0.787	0.787	20.0	3322.7	O K
7200 min Summer	0.730	0.730	20.0	3069.8	O K
8640 min Summer	0.668	0.668	20.0	2797.9	O K
10080 min Summer	0.612	0.612	20.0	2553.6	O K
15 min Winter	0.359	0.359	20.0	1472.2	O K
30 min Winter	0.477	0.477	20.0	1971.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	124.633	0.0	1049.6	17
30 min Summer	83.789	0.0	1396.8	32
60 min Summer	53.779	0.0	2100.5	62
120 min Summer	33.337	0.0	2581.7	122
180 min Summer	24.832	0.0	2840.0	182
240 min Summer	20.006	0.0	2990.4	242
360 min Summer	14.706	0.0	3125.1	362
480 min Summer	11.818	0.0	3114.7	482
600 min Summer	9.966	0.0	3071.2	602
720 min Summer	8.665	0.0	3028.3	720
960 min Summer	6.943	0.0	2949.1	960
1440 min Summer	5.071	0.0	2809.0	1428
2160 min Summer	3.696	0.0	5375.7	1772
2880 min Summer	2.949	0.0	5564.4	2136
4320 min Summer	2.142	0.0	5193.9	2944
5760 min Summer	1.705	0.0	6886.9	3800
7200 min Summer	1.427	0.0	7196.7	4616
8640 min Summer	1.235	0.0	7460.8	5368
10080 min Summer	1.093	0.0	7663.8	6152
15 min Winter	124.633	0.0	1178.3	17
30 min Winter	83.789	0.0	1530.2	32

©1982-2017 XP Solutions

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	0.603	0.603	20.0	2513.2	O K
120 min Winter	0.732	0.732	20.0	3080.0	O K
180 min Winter	0.805	0.805	20.0	3404.2	O K
240 min Winter	0.852	0.852	20.0	3616.1	O K
360 min Winter	0.916	0.916	20.0	3902.4	O K
480 min Winter	0.958	0.958	20.0	4095.2	O K
600 min Winter	0.988	0.988	20.0	4230.3	O K
720 min Winter	1.009	1.009	20.1	4327.1	O K
960 min Winter	1.035	1.035	20.3	4446.9	O K
1440 min Winter	1.051	1.051	20.5	4520.1	O K
2160 min Winter	1.033	1.033	20.3	4437.2	O K
2880 min Winter	1.005	1.005	20.0	4309.4	O K
4320 min Winter	0.939	0.939	20.0	4007.4	O K
5760 min Winter	0.862	0.862	20.0	3660.8	O K
7200 min Winter	0.781	0.781	20.0	3297.1	O K
8640 min Winter	0.689	0.689	20.0	2891.1	O K
10080 min Winter	0.599	0.599	20.0	2499.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	53.779	0.0	2347.9	62
120 min Winter	33.337	0.0	2850.4	120
180 min Winter	24.832	0.0	3081.0	180
240 min Winter	20.006	0.0	3172.8	240
360 min Winter	14.706	0.0	3162.0	356
480 min Winter	11.818	0.0	3122.8	474
600 min Winter	9.966	0.0	3088.3	590
720 min Winter	8.665	0.0	3058.1	706
960 min Winter	6.943	0.0	3005.8	934
1440 min Winter	5.071	0.0	2921.7	1382
2160 min Winter	3.696	0.0	5902.3	1992
2880 min Winter	2.949	0.0	5897.5	2252
4320 min Winter	2.142	0.0	5413.6	3196
5760 min Winter	1.705	0.0	7713.1	4096
7200 min Winter	1.427	0.0	8057.2	5040
8640 min Winter	1.235	0.0	8352.1	5872
10080 min Winter	1.093	0.0	8594.0	6560

©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

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)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 5.670

Time (mins) From:	To:	Area (ha)
0	2	5.670

Time Area Diagram

Total Area (ha) 0.000

Time (mins) From:	To:	Area (ha)
0	4	0.000

©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

Model Details

Storage is Online Cover Level (m) 2.000

Tank or Pond Structure

Invert Level (m) 0.000

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	4000.0	2.000	5199.5

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0199-2000-1000-2000
Design Head (m)	1.000
Design Flow (l/s)	20.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	199
Invert Level (m)	0.000
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	20.0
Flush-Flo™	0.340	20.0
Kick-Flo®	0.721	17.1
Mean Flow over Head Range	-	16.8

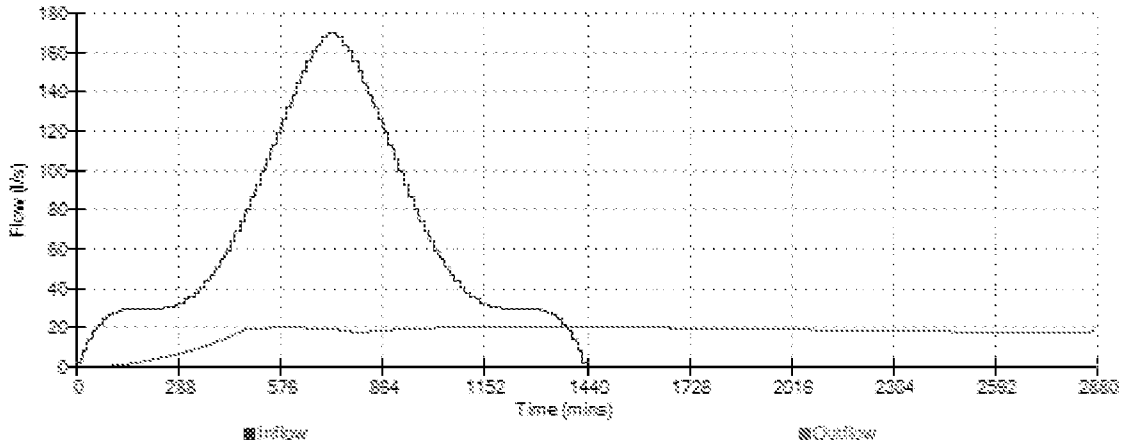
The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

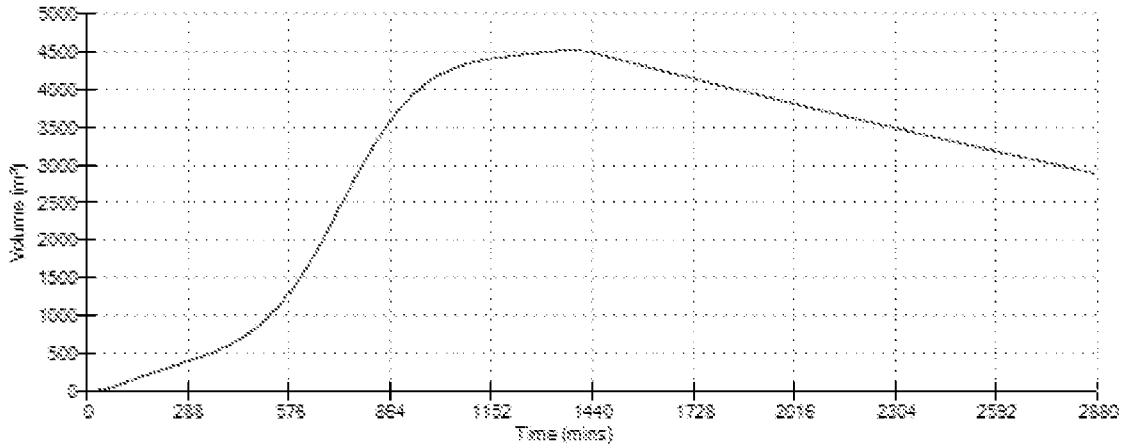
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	6.9	1.200	21.8	3.000	33.8	7.000	51.0
0.200	18.7	1.400	23.5	3.500	36.4	7.500	52.7
0.300	19.9	1.600	25.0	4.000	38.9	8.000	54.4
0.400	19.9	1.800	26.5	4.500	41.1	8.500	56.0
0.500	19.5	2.000	27.8	5.000	43.3	9.000	57.6
0.600	19.0	2.200	29.1	5.500	45.3	9.500	59.1
0.800	18.0	2.400	30.4	6.000	47.3		
1.000	20.0	2.600	31.6	6.500	49.2		

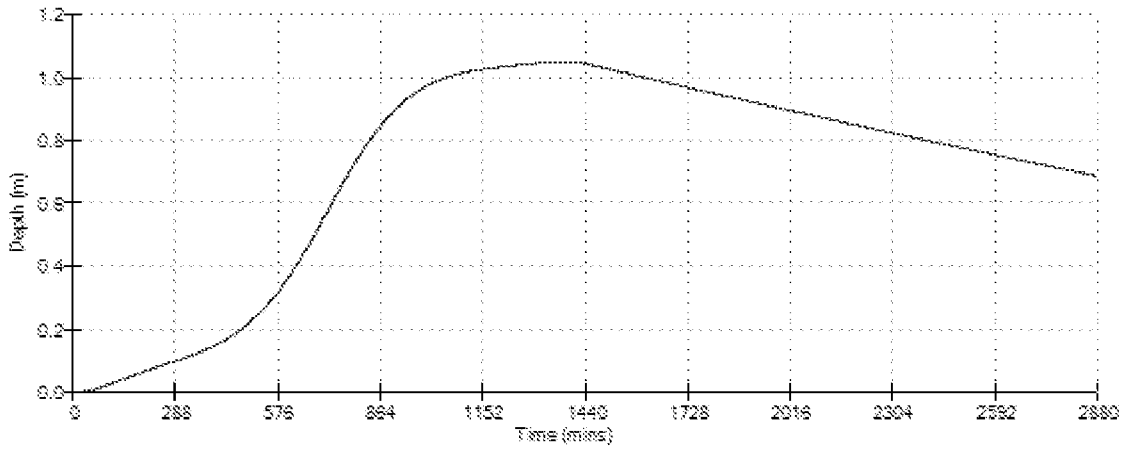
©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

Event: 1440 min Winter







©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	0.393	0.393	32.9	1615.1	O K
30 min Summer	0.521	0.521	32.9	2159.8	O K
60 min Summer	0.656	0.656	32.9	2745.1	O K
120 min Summer	0.791	0.791	32.9	3344.1	O K
180 min Summer	0.866	0.866	32.9	3678.6	O K
240 min Summer	0.913	0.913	32.9	3892.7	O K
360 min Summer	0.973	0.973	32.9	4162.9	O K
480 min Summer	1.009	1.009	32.9	4327.4	O K
600 min Summer	1.031	1.031	32.9	4426.9	O K
720 min Summer	1.043	1.043	32.9	4484.3	O K
960 min Summer	1.050	1.050	32.9	4518.8	O K
1440 min Summer	1.038	1.038	32.9	4462.6	O K
2160 min Summer	1.008	1.008	32.9	4321.6	O K
2880 min Summer	0.969	0.969	32.9	4147.2	O K
4320 min Summer	0.881	0.881	32.9	3747.6	O K
5760 min Summer	0.782	0.782	32.9	3301.7	O K
7200 min Summer	0.691	0.691	32.9	2900.8	O K
8640 min Summer	0.611	0.611	32.9	2549.8	O K
10080 min Summer	0.539	0.539	32.9	2238.1	O K
15 min Winter	0.439	0.439	32.9	1810.5	O K
30 min Winter	0.582	0.582	32.9	2422.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	124.633	0.0	1392.6	19
30 min Summer	83.789	0.0	1886.8	34
60 min Summer	53.779	0.0	2675.6	64
120 min Summer	33.337	0.0	3319.3	124
180 min Summer	24.832	0.0	3698.9	184
240 min Summer	20.006	0.0	3958.7	242
360 min Summer	14.706	0.0	4326.3	362
480 min Summer	11.818	0.0	4582.4	482
600 min Summer	9.966	0.0	4759.1	602
720 min Summer	8.665	0.0	4870.3	720
960 min Summer	6.943	0.0	4906.6	960
1440 min Summer	5.071	0.0	4651.7	1212
2160 min Summer	3.696	0.0	6842.2	1580
2880 min Summer	2.949	0.0	7248.9	1992
4320 min Summer	2.142	0.0	7761.8	2848
5760 min Summer	1.705	0.0	8541.0	3624
7200 min Summer	1.427	0.0	8929.3	4392
8640 min Summer	1.235	0.0	9255.2	5104
10080 min Summer	1.093	0.0	9513.0	5848
15 min Winter	124.633	0.0	1568.9	19
30 min Winter	83.789	0.0	2104.8	33

©1982-2017 XP Solutions

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	0.732	0.732	32.9	3080.8	O K
120 min Winter	0.885	0.885	32.9	3762.9	O K
180 min Winter	0.968	0.968	32.9	4142.6	O K
240 min Winter	1.021	1.021	32.9	4383.8	O K
360 min Winter	1.089	1.089	32.9	4695.1	O K
480 min Winter	1.131	1.131	32.9	4891.1	O K
600 min Winter	1.158	1.158	32.9	5016.1	O K
720 min Winter	1.174	1.174	32.9	5094.8	O K
960 min Winter	1.189	1.189	32.9	5164.1	O K
1440 min Winter	1.178	1.178	32.9	5111.6	O K
2160 min Winter	1.135	1.135	32.9	4910.6	O K
2880 min Winter	1.084	1.084	32.9	4671.4	O K
4320 min Winter	0.961	0.961	32.9	4107.9	O K
5760 min Winter	0.814	0.814	32.9	3443.5	O K
7200 min Winter	0.671	0.671	32.9	2812.4	O K
8640 min Winter	0.549	0.549	32.9	2283.3	O K
10080 min Winter	0.447	0.447	32.9	1845.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	53.779	0.0	3000.5	62
120 min Winter	33.337	0.0	3709.9	122
180 min Winter	24.832	0.0	4121.8	180
240 min Winter	20.006	0.0	4399.1	240
360 min Winter	14.706	0.0	4772.1	356
480 min Winter	11.818	0.0	4996.4	472
600 min Winter	9.966	0.0	5097.8	588
720 min Winter	8.665	0.0	5092.9	700
960 min Winter	6.943	0.0	4990.2	924
1440 min Winter	5.071	0.0	4764.6	1344
2160 min Winter	3.696	0.0	7653.0	1684
2880 min Winter	2.949	0.0	8094.6	2136
4320 min Winter	2.142	0.0	8532.5	3068
5760 min Winter	1.705	0.0	9568.9	3920
7200 min Winter	1.427	0.0	10007.5	4680
8640 min Winter	1.235	0.0	10377.0	5360
10080 min Winter	1.093	0.0	10675.2	6048

©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

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)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 7.000

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	2	3.500	2	4	3.500

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

Model Details

Storage is Online Cover Level (m) 2.000

Tank or Pond Structure

Invert Level (m) 0.000

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	4000.0	2.000	5199.5

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0244-3300-1200-3300
Design Head (m)	1.200
Design Flow (l/s)	33.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	244
Invert Level (m)	0.000
Minimum Outlet Pipe Diameter (mm)	300
Suggested Manhole Diameter (mm)	1800

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	32.9
Flush-Flo™	0.419	32.9
Kick-Flo®	0.870	28.2
Mean Flow over Head Range	-	27.7

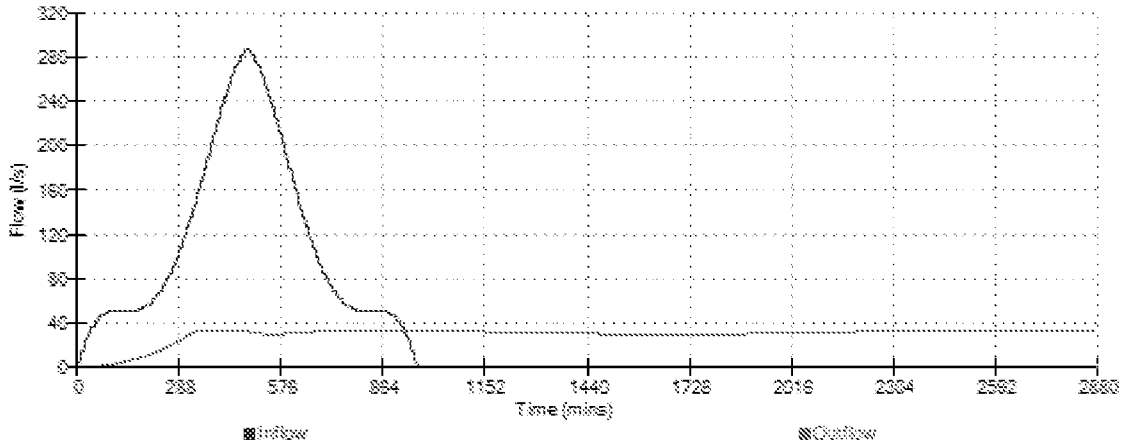
The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

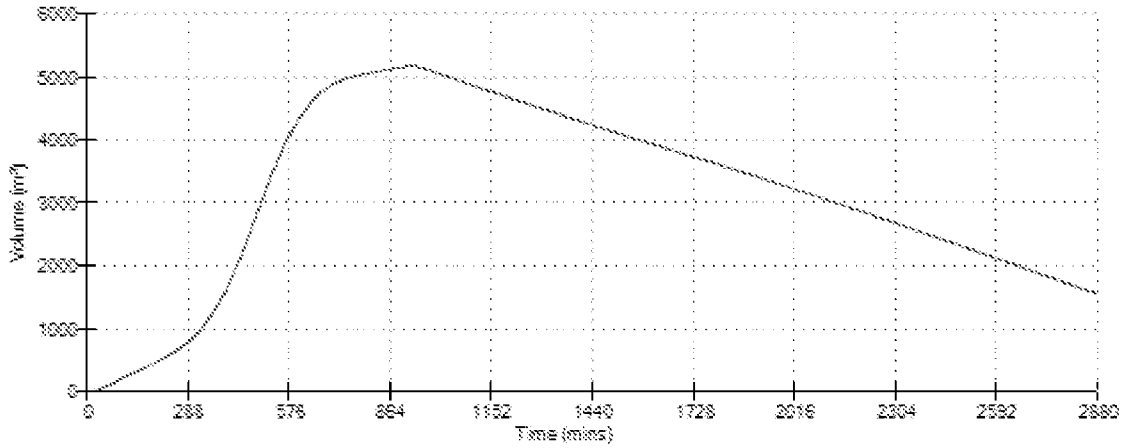
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	8.0	1.200	32.9	3.000	51.2	7.000	77.2
0.200	24.9	1.400	35.5	3.500	55.2	7.500	79.9
0.300	32.3	1.600	37.8	4.000	58.9	8.000	82.4
0.400	32.9	1.800	40.0	4.500	62.3	8.500	84.9
0.500	32.8	2.000	42.1	5.000	65.6	9.000	87.3
0.600	32.3	2.200	44.1	5.500	68.7	9.500	89.6
0.800	30.1	2.400	46.0	6.000	71.7		
1.000	30.2	2.600	47.8	6.500	74.5		

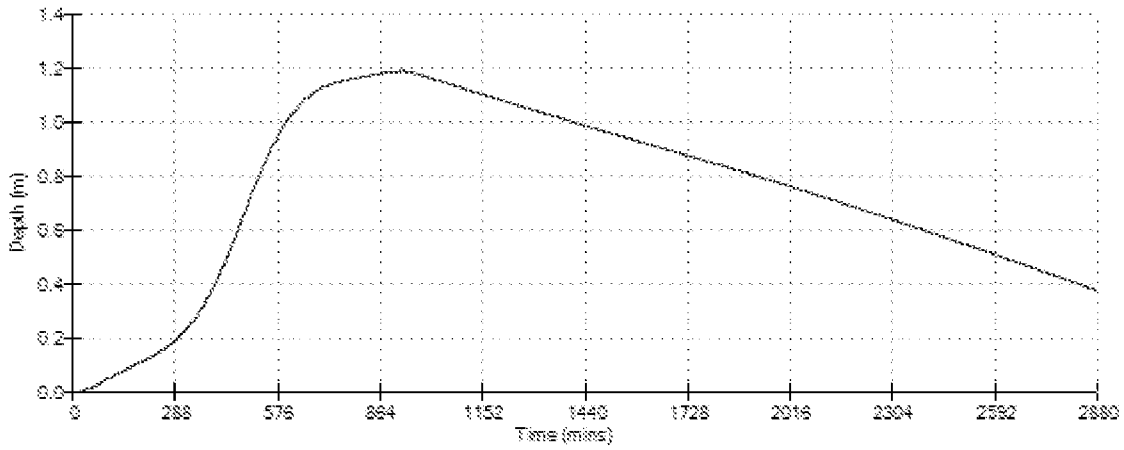
©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

Event: 960 min Winter







©1982-2017 XP Solutions

ARUN DISTRICT COUNCIL F/6/20/DOC

N

Prismoidal Volume Calculations

Summary of Total Volumes of Cut/Fill:

PGM1 (Existing) model: DEC 2018 SURVEY.DGM
PGM2 (Proposed) model: COMPENSATORY STORAGE.DGM

PGM2 surface relative to PGM1 surface

	Cut	Fill
Total Gross:	465m³	0.0
Nett:	465m³	

Prismoidal Volume Calculations

Summary of Total Volumes of Cut/Fill:

PGM1 (Existing) model: DEC 2018 SURVEY.DGM
PGM2 (Proposed) model: SMALL AREA OF POND.DGM

PGM2 surface relative to PGM1 surface

	Cut	Fill
Total Gross:	0m³	447m³
Nett:		447m³

the Civil Engineering Practice

6m margin

Existing contour level

3.040

reservoir 4m water depth 14,000m3
750mm freeboard.
Outer slope 1:2, inner slope 1:2.5.

6m margin

Polytunnel 33x 10.5m, 25x 3m.
346.5 x 75m.
2.60 ha.

6m margin

6m margin

10.5m margin

10.5m margin

Polytunnel 32x 10.5m, 25x 3m.
336 x 75m.
2.52 ha.

Hydrobrake
restricted to 13l/s
discharging to swale

Exceedance flow from
pond to offline swale

Catchpit

9.1m margin

Pond Storage
Volume 741m³
Bed @ 4.3m
Top of Water @ 5.45m

Parking 21 cars

6m margin

Ancillary Building
54 x 30m
FFL 5.8 AOD Minimum

6m margin

Ancillary Building
54 x 30m
FFL 5.8 AOD Minimum

Swale

Pond Storage
Volume 93m³
Bed @ 4.3m
Top of Water @ 5.45m

Car Park
Permeable surface
Voided subbase

Digestate Lagoon
Planning Permission WSCC/019/17F

AD Plant
Planning Permission WSCC/026/16/F
and variation WSCC/061/16/F

-20m 0 20m 40m 60m 80m

Scale 1:2000

TITLE
Preliminary Surface Water Drainage Plan

SCALE
1:2000 @ A3

DRG. No
5

ARUN DISTRICT COUNCIL F/6/20/DOC

Appendix 9

Outline Drainage Maintenance Schedule

Maintenance Schedule

Project	Wicks Farm, Ford Lane
Project Number	22979

By Martin Kempshall

Date 11/01/19

[redacted]

1 Indicative Schedule of Maintenance

1.1 Once appointed the Contractor will prepare a site specific method statement for the control of silt and other pollutants during construction. CIRIA Report C532, :Control of water pollution from construction sites˘, provides further guidance on this.

1.2 The Contractor will maintain the proposed drainage system during construction and until the handing over of the site. Upon completion the maintenance will be passed on to the property owner.

1.3 The following maintenance schedule details the typical tasks to be undertaken at different intervals and is based on the maintenance requirements outline in Chapter 32 of CIRIA document C753 :The SuDS Manual˘

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment and debris from silt trap chambers, channel drains and inlet chambers	6 monthly
	Litter and debris removal ¯ catch pits, flow control manhole	Monthly or as required
	Surface and Foul water pipe work ¯ jetting / rodding	Every 2 years or as required
	Manage other vegetation and remove nuisance plants ¯ aesthetics	As required
	Visual Inspection of permeable parking for defects and settlement	Annually
	Sweeping/brushing of permeable parking	Twice Annually
Corrective Maintenance	Remove debris/blockages to silt traps / channel drains	As required
	Repairs to access chambers / manhole covers	As required
	Replace any broken permeable blocks/surface, remedial works to any depressions or rutting	As required
	Inspect inlet, outlet from downpipe and gullies for blockages, standing water and clear	As required

Indicative Schedule of Maintenance for the Proposed Drainage System

ARUN DISTRICT COUNCIL F/6/20/DOC

Inspection / Action Required	Frequency	Gullies, Channels and Gutters	Catchpits/ Flow Control Manhole	Permeable Surface	Surface Water Pipework	Pond / Infiltration Basin
Clearance	After leaf fall in Autumn / Checked Monthly	V	V			
Litter / Debris removal	6 Months	V	V	V		
Grass Cutting	Fortnightly in Summer, 4-6 weekly in Winter, or as required.					V
Weed Control	As required					V
Sediment Management	1-2 Years					V
Vacuum sweeping /brushing	5-10 Years (Refer to Manufacturers Maintenance Guidelines)			V		

Drainage System Maintenance Summary

Appendix 10

Compensatory Flood Storage – Outline Cut/Fill Areas

N

KEY

1.00m	PRIMARY FILL
	SECONDARY FILL
1.00m	PRIMARY CUT
	SECONDARY CUT
0.00m	ZERO CUT/FILL

the Civil Engineering Practice

Prismoidal Volume Calculations

Summary of Total Volumes of Cut/Fill:

PGM1 (Existing) model: DEC 2018 SURVEY.DGM
PGM2 (Proposed) model: COMPENSATORY STORAGE.DGM

PGM2 surface relative to PGM1 surface

	Cut	Fill
Total Gross:	465m³	0.0
Nett:	465m³	

Prismoidal Volume Calculations

Summary of Total Volumes of Cut/Fill:

PGM1 (Existing) model: DEC 2018 SURVEY.DGM
PGM2 (Proposed) model: SMALL AREA OF POND.DGM

PGM2 surface relative to PGM1 surface

	Cut	Fill
Total Gross:	0m³	447m³
Nett:		447m³

6m margin

reservoir 4m water depth 14,000m3.
750mm freeboard.
Outer slope 1:2, inner slope 1:2.5.

3.040

6m margin

Polytunnel 33x 10.5m, 25x 3m.
346.5 x 75m.
2.60 ha.

6m margin

6m margin

10.5m margin

10.5m margin

-10m 0 10m 20m 30m 40m

Scale 1:1000

TITLE

Isopachyte
Compensatory Flood Storage
Outline Cut / Fill Areas

SCALE: 1:1000 @ A3

DRG. No: 6

ARUN DISTRICT COUNCIL F/6/20/DOC