



Archibald Shaw

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**RESIDENTIAL DEVELOPMENT
BOUND LANE
HAYLING ISLAND
PO11 9HU**

**FLOOD RISK ASSESSMENT
WITH DRAINAGE STATEMENT**

**CONTENTS**

- 1.0 Executive Summary
- 2.0 Flood Risk Assessment
- 3.0 Foul Water Drainage Design
- 4.0 Surface Water Drainage Design

**APPENDICES**

- A1. Surface Water Calculations in Summary
- A2. Design Drawings

**REFERENCES**

- 1. Geotechnical Report by Ground Management Ltd dated 2 December 2016

Issue	Copies	Distribution	Format	Date	Status
1	1	M Gadd Esq	By email: michael@plotlife.com	28 March 2017	Planning

1.0 EXECUTIVE SUMMARY

- 1.1 With reference to the Environment Agency's web site the proposed residential development site is confirmed as having a low risk of flooding from groundwater, rivers or the sea.
- 1.2 Foul and surface water drainage design has been undertaken in accordance with Sewers for Adoption 7th Edition, The Building Regulations 2000 Approved Document Part H, and best practice as covered by CIRIA C609: Sustainable Drainage Systems.
- 1.3 Foul water drainage proposals include for the provision of a 150mm diameter carrier drain beneath the estate access road which connect ten dwellings with the adopted foul water sewer beneath Bound Lane.
- 1.4 The surface water drainage design retains all storm waters on site by discharging rear roof waters into discrete soakaways with front roofed areas and pavement waters directed into porous pavement substructures. These designs meet and exceed the current national design guidance to retain on site all storm waters from a worst case M100 + 30% event.

2.0 FLOOD RISK ASSESSMENT**2.1 Desk Top and Site Based Research****2.1.1** The flood risk assessment comprised:

Site Information	YES	NO
Review of Information supplied by Client	✓	
Site walkover	✓	
Preliminary discussion with owner/occupier	✓	

Public Domain Information	YES	NO
Geological Mapping	✓	
Statutory Services Information	✓	
Local Authority enquiry		✓
Strategic Flood Risk Assessment	✓	
Topographic site survey	✓	
Internet data	✓	
Anecdotal flooding information	✓	
Aerial photographs	✓	
LIDAR Survey		✓
Historic mapping		✓

Key: NA = Not applicable
 NR = No records available
 AR = Awaiting response

2.2 Response to Enquiries**2.2.1 Environment Agency**

2.2.1.1 The Environment Agency's flood mapping indicates the site has a very low risk of surface water, river and sea flooding.

3.0 FOUL WATER DRAINAGE DESIGN

- 3.1 The on-site foul water drainage system is designed to accommodate 6 DWF peak flows from all dwellings, with the carrier drain system gravitating to the local adopted foul water sewer beneath Bound Lane.
- 3.2 General arrangement details of the foul water drainage proposals are shown within the appendix on drawing 28476/201/C3.

4.0 SURFACE WATER DRAINAGE DESIGN

- 4.1 The proposed surface water drainage design features porous roadways which will attenuate and discharge storm waters to local subsoils. Rear roof waters will be managed in a similar manner via discrete soakaways.
- 4.2 Geotechnical investigations and testing undertaken by Ground Management Ltd ¹ reported that local subsoil infiltration coefficients varied between 1.5 E-^6 and $7.1 \text{ E-}^6 \text{ m/s}$. An infiltration coefficient of $4.5 \text{ E-}^6 \text{ m/s}$ was selected for design.
- 4.3 Groundwaters were recorded in the order of 2.5m to 2.4m below local surface levels at the time of site investigations in September 2016. In addition to this we understand that over the winter period groundwaters were recorded up to 2.2m below ground level.
- 4.4 Further to advice received from Hampshire County Council a minimum design freeboard of 800mm was adopted between all infiltration structures and the maximum recorded groundwater level of 2.2m below ground level.
- 4.5 The table below summarizes the required minimum freeboard and that provided.

Structure	(1) Freeboard provided (mm)	(2) Freeboard required (mm)	(1) equal or greater than (2)
SA1	800	800	✓
SA2	800	800	✓
SA3	800	800	✓
SA4	800	800	✓
SA5	800	800	✓
Roadway	1300	800	✓

Table 4.1

- 4.6 Peak storm water elevations within designed soakaways and porous roadways are summarised below:

Return Period	Structure * 1	Water Elevation * 2 (mm)
1 year	SA1	185
	Roadway	32
30 years	SA1	445
	Roadway	89
100 years	SA1	586
	Roadway	130
100 years + 30%	SA1	800
	Roadway	185

Table 4.2

Notes

1. 80m² is the greatest roof area served which has been used in the depth of all discrete soakaways.
2. Water elevation is given above base of structure.

5.0 DESIGN OUTCOME

- 5.1 With reference to the Environment Agency's flood mapping the site has a very low risk of surface water, river and sea flooding.
- 5.2 All design storms up to and including the M100 +30% event will be comfortably accommodated on site. During such an event the porous roadway will retain an estimate freeboard of 315mm (500 – 185) and the discrete soakaways a freeboard of 600mm (1400 – 800).
- 5.3 General arrangement details of the foul water and surface water drainage proposals are shown within the appendix.

Prepared by: Eur Ing Vincent Carpenter BSc (Hons) CEng MICE FCIWEM MIHT MIOD

Date: 28 March 2017

APPENDICES

- A1. Surface Water Calculations in Summary
- A2. Design Drawings

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 1 PERMEABLE ROAD 10 UNITS	
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Micro Drainage	Source Control W.11.2	

Summary of Results for 1 year Return Period

Half Drain Time : 70 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	0.6	0.6	100.0088	0.0088	3.7	O K
30 Summer	1.1	1.1	100.0153	0.0153	6.3	O K
60 Summer	1.5	1.5	100.0208	0.0207	8.7	O K
120 Summer	1.8	1.8	100.0253	0.0252	10.6	O K
180 Summer	2.0	2.0	100.0273	0.0272	11.5	O K
240 Summer	2.1	2.1	100.0287	0.0287	12.1	O K
360 Summer	2.1	2.1	100.0293	0.0292	12.3	O K
480 Summer	2.1	2.1	100.0287	0.0287	12.1	O K
600 Summer	2.0	2.0	100.0283	0.0282	11.8	O K
720 Summer	2.0	2.0	100.0273	0.0272	11.4	O K
960 Summer	1.8	1.8	100.0253	0.0252	10.6	O K
1440 Summer	1.6	1.6	100.0222	0.0222	9.3	O K
2160 Summer	1.3	1.3	100.0182	0.0183	7.7	O K
2880 Summer	1.1	1.1	100.0157	0.0158	6.6	O K
4320 Summer	0.9	0.9	100.0127	0.0128	5.3	O K
5760 Summer	0.8	0.8	100.0107	0.0108	4.4	O K
7200 Summer	0.7	0.7	100.0092	0.0093	3.8	O K
8640 Summer	0.6	0.6	100.0082	0.0083	3.4	O K
10080 Summer	0.5	0.5	100.0072	0.0073	3.0	O K
15 Winter	0.8	0.8	100.0113	0.0113	4.8	O K
30 Winter	1.3	1.3	100.0188	0.0187	7.8	O K
60 Winter	1.8	1.8	100.0247	0.0247	10.4	O K
120 Winter	2.1	2.1	100.0293	0.0292	12.3	O K
180 Winter	2.2	2.2	100.0313	0.0312	13.1	O K
240 Winter	2.3	2.3	100.0318	0.0317	13.3	O K
360 Winter	2.2	2.2	100.0307	0.0307	12.9	O K
480 Winter	2.1	2.1	100.0293	0.0292	12.3	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	29.65	22
30 Summer	19.73	35
60 Summer	12.80	62
120 Summer	8.16	90
180 Summer	6.24	124
240 Summer	5.15	158
360 Summer	3.90	224
480 Summer	3.20	288
600 Summer	2.74	352
720 Summer	2.42	414
960 Summer	1.98	536
1440 Summer	1.50	782
2160 Summer	1.13	1148
2880 Summer	0.93	1504
4320 Summer	0.70	2212
5760 Summer	0.58	2944
7200 Summer	0.50	3672
8640 Summer	0.44	4400
10080 Summer	0.39	5144
15 Winter	29.65	22
30 Winter	19.73	35
60 Winter	12.80	60
120 Winter	8.16	94
180 Winter	6.24	132
240 Winter	5.15	168
360 Winter	3.90	238
480 Winter	3.20	304

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Micro Drainage	Source Control W.11.2	

Summary of Results for 1 year Return Period

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
600 Winter	2.0	2.0	100.0277	0.0277	11.6	O K
720 Winter	1.9	1.9	100.0263	0.0262	10.9	O K
960 Winter	1.7	1.7	100.0232	0.0232	9.8	O K
1440 Winter	1.4	1.4	100.0192	0.0192	8.0	O K
2160 Winter	1.1	1.1	100.0153	0.0153	6.3	O K
2880 Winter	0.9	0.9	100.0127	0.0128	5.3	O K
4320 Winter	0.7	0.7	100.0098	0.0098	4.0	O K
5760 Winter	0.6	0.6	100.0078	0.0078	3.3	O K
7200 Winter	0.5	0.5	100.0068	0.0068	2.7	O K
8640 Winter	0.4	0.4	100.0058	0.0058	2.4	O K
10080 Winter	0.4	0.4	100.0052	0.0053	2.1	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	2.74	368
720 Winter	2.42	432
960 Winter	1.98	558
1440 Winter	1.50	798
2160 Winter	1.13	1152
2880 Winter	0.93	1504
4320 Winter	0.70	2208
5760 Winter	0.58	3000
7200 Winter	0.50	3552
8640 Winter	0.44	4488
10080 Winter	0.39	5032

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Micro Drainage	Source Control W.11.2	

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	1	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.350	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.180

Time from:	(mins) to:	Area (ha)	Time from:	(mins) to:	Area (ha)
0	4	0.060	4	8	0.120

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1 IN 1
PERMEABLE ROAD 10 UNITSDate MAR 2017
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Micro Drainage

Source Control W.11.2

Porous Car Park Details

Infil Coef - Base (m/hr)	0.016200	Invert Level (m)	100.000
Membrane Percolation (mm/hr)	1000	Cover Level (m)	100.500
Safety Factor	1.5	Slope (1:x)	0.0
Porosity	0.35	Max Percolation (l/s)	333.3
Length (m)	120.0	Depression Storage (mm)	5
Width (m)	10.0	Evaporation (mm/day)	3

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Micro Drainage	Source Control W.11.2	

Summary of Results for 30 year Return Period

Half Drain Time : 93 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	2.9	2.9	100.0403	0.0402	17.0	O K
30 Summer	3.6	3.6	100.0547	0.0548	23.0	O K
60 Summer	3.6	3.6	100.0677	0.0678	28.4	O K
120 Summer	3.6	3.6	100.0758	0.0758	31.9	O K
180 Summer	3.6	3.6	100.0788	0.0788	33.0	O K
240 Summer	3.6	3.6	100.0788	0.0788	33.1	O K
360 Summer	3.6	3.6	100.0768	0.0768	32.2	O K
480 Summer	3.6	3.6	100.0723	0.0723	30.4	O K
600 Summer	3.6	3.6	100.0677	0.0678	28.5	O K
720 Summer	3.6	3.6	100.0632	0.0633	26.5	O K
960 Summer	3.6	3.6	100.0547	0.0548	23.0	O K
1440 Summer	3.2	3.2	100.0447	0.0447	18.9	O K
2160 Summer	2.6	2.6	100.0362	0.0362	15.2	O K
2880 Summer	2.2	2.2	100.0307	0.0307	12.9	O K
4320 Summer	1.7	1.7	100.0238	0.0237	9.9	O K
5760 Summer	1.4	1.4	100.0198	0.0198	8.2	O K
7200 Summer	1.2	1.2	100.0167	0.0168	7.0	O K
8640 Summer	1.1	1.1	100.0147	0.0148	6.1	O K
10080 Summer	1.0	1.0	100.0133	0.0133	5.5	O K
15 Winter	3.4	3.4	100.0468	0.0468	19.7	O K
30 Winter	3.6	3.6	100.0638	0.0638	26.8	O K
60 Winter	3.6	3.6	100.0788	0.0788	33.1	O K
120 Winter	3.6	3.6	100.0878	0.0878	36.8	O K
180 Winter	3.6	3.6	100.0892	0.0893	37.5	O K
240 Winter	3.6	3.6	100.0882	0.0883	37.0	O K
360 Winter	3.6	3.6	100.0823	0.0823	34.6	O K
480 Winter	3.6	3.6	100.0748	0.0748	31.4	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	72.68	21
30 Summer	48.36	35
60 Summer	30.81	62
120 Summer	19.04	96
180 Summer	14.19	130
240 Summer	11.47	164
360 Summer	8.49	232
480 Summer	6.85	298
600 Summer	5.80	362
720 Summer	5.06	424
960 Summer	4.07	542
1440 Summer	3.00	782
2160 Summer	2.20	1148
2880 Summer	1.77	1504
4320 Summer	1.30	2212
5760 Summer	1.04	2944
7200 Summer	0.88	3672
8640 Summer	0.76	4408
10080 Summer	0.68	5144
15 Winter	72.68	21
30 Winter	48.36	35
60 Winter	30.81	62
120 Winter	19.04	104
180 Winter	14.19	140
240 Winter	11.47	178
360 Winter	8.49	252
480 Winter	6.85	320

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Summary of Results for 30 year Return Period

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
600 Winter	3.6	3.6	100.0667	0.0668	28.1	O K
720 Winter	3.6	3.6	100.0598	0.0598	25.1	O K
960 Winter	3.5	3.5	100.0492	0.0492	20.7	O K
1440 Winter	2.8	2.8	100.0393	0.0392	16.4	O K
2160 Winter	2.1	2.1	100.0297	0.0297	12.6	O K
2880 Winter	1.8	1.8	100.0247	0.0247	10.3	O K
4320 Winter	1.3	1.3	100.0182	0.0183	7.6	O K
5760 Winter	1.1	1.1	100.0147	0.0148	6.1	O K
7200 Winter	0.9	0.9	100.0123	0.0123	5.1	O K
8640 Winter	0.8	0.8	100.0107	0.0108	4.4	O K
10080 Winter	0.7	0.7	100.0092	0.0093	4.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	5.80	384
720 Winter	5.06	446
960 Winter	4.07	554
1440 Winter	3.00	798
2160 Winter	2.20	1172
2880 Winter	1.77	1520
4320 Winter	1.30	2248
5760 Winter	1.04	2976
7200 Winter	0.88	3680
8640 Winter	0.76	4376
10080 Winter	0.68	5240

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Micro Drainage	Source Control W.11.2	

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	30	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.350	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.180

Time (mins)	Area	Time (mins)	Area
from: to:	(ha)	from: to:	(ha)
0 4	0.060	4 8	0.120

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Micro Drainage	Source Control W.11.2	

Porous Car Park Details

Infil Coef - Base (m/hr)	0.016200	Invert Level (m)	100.000
Membrane Percolation (mm/hr)	1000	Cover Level (m)	100.500
Safety Factor	1.5	Slope (1:x)	0.0
Porosity	0.35	Max Percolation (l/s)	333.3
Length (m)	120.0	Depression Storage (mm)	5
Width (m)	10.0	Evaporation (mm/day)	3

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Micro Drainage	Source Control W.11.2	

Summary of Results for 100 year Return Period

Half Drain Time : 131 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	3.6	3.6	100.0563	0.0563	23.7	O K
30 Summer	3.6	3.6	100.0778	0.0778	32.6	O K
60 Summer	3.6	3.6	100.0973	0.0973	40.8	O K
120 Summer	3.6	3.6	100.1093	0.1093	45.9	O K
180 Summer	3.6	3.6	100.1123	0.1123	47.1	O K
240 Summer	3.6	3.6	100.1123	0.1123	47.1	O K
360 Summer	3.6	3.6	100.1093	0.1093	45.9	O K
480 Summer	3.6	3.6	100.1042	0.1043	43.7	O K
600 Summer	3.6	3.6	100.0983	0.0983	41.2	O K
720 Summer	3.6	3.6	100.0918	0.0918	38.5	O K
960 Summer	3.6	3.6	100.0792	0.0793	33.3	O K
1440 Summer	3.6	3.6	100.0598	0.0598	25.1	O K
2160 Summer	3.3	3.3	100.0452	0.0452	19.1	O K
2880 Summer	2.8	2.8	100.0382	0.0382	16.0	O K
4320 Summer	2.1	2.1	100.0293	0.0292	12.2	O K
5760 Summer	1.7	1.7	100.0238	0.0237	10.0	O K
7200 Summer	1.5	1.5	100.0202	0.0203	8.5	O K
8640 Summer	1.3	1.3	100.0178	0.0178	7.4	O K
10080 Summer	1.1	1.1	100.0157	0.0158	6.6	O K
15 Winter	3.6	3.6	100.0652	0.0653	27.4	O K
30 Winter	3.6	3.6	100.0898	0.0898	37.6	O K
60 Winter	3.6	3.6	100.1123	0.1123	47.0	O K
120 Winter	3.6	3.6	100.1267	0.1268	53.3	O K
180 Winter	3.6	3.6	100.1283	0.1283	54.0	O K
240 Winter	3.6	3.6	100.1273	0.1273	53.5	O K
360 Winter	3.6	3.6	100.1213	0.1213	50.9	O K
480 Winter	3.6	3.6	100.1123	0.1123	47.1	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	94.18	21
30 Summer	63.26	35
60 Summer	40.51	64
120 Summer	25.00	110
180 Summer	18.55	140
240 Summer	14.91	174
360 Summer	10.98	242
480 Summer	8.82	310
600 Summer	7.43	376
720 Summer	6.46	440
960 Summer	5.17	566
1440 Summer	3.77	798
2160 Summer	2.75	1148
2880 Summer	2.19	1504
4320 Summer	1.59	2212
5760 Summer	1.26	2944
7200 Summer	1.06	3672
8640 Summer	0.92	4408
10080 Summer	0.81	5136
15 Winter	94.18	21
30 Winter	63.26	35
60 Winter	40.51	64
120 Winter	25.00	118
180 Winter	18.55	150
240 Winter	14.91	188
360 Winter	10.98	264
480 Winter	8.82	336

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Summary of Results for 100 year Return Period

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
600 Winter	3.6	3.6	100.1022	0.1023	42.9	O K
720 Winter	3.6	3.6	100.0918	0.0918	38.6	O K
960 Winter	3.6	3.6	100.0732	0.0733	30.8	O K
1440 Winter	3.5	3.5	100.0492	0.0492	20.7	O K
2160 Winter	2.7	2.7	100.0378	0.0377	15.8	O K
2880 Winter	2.2	2.2	100.0307	0.0307	12.8	O K
4320 Winter	1.6	1.6	100.0222	0.0222	9.4	O K
5760 Winter	1.3	1.3	100.0178	0.0178	7.5	O K
7200 Winter	1.1	1.1	100.0153	0.0153	6.3	O K
8640 Winter	0.9	0.9	100.0127	0.0128	5.4	O K
10080 Winter	0.8	0.8	100.0113	0.0113	4.8	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	7.43	406
720 Winter	6.46	472
960 Winter	5.17	596
1440 Winter	3.77	798
2160 Winter	2.75	1164
2880 Winter	2.19	1524
4320 Winter	1.59	2252
5760 Winter	1.26	2992
7200 Winter	1.06	3728
8640 Winter	0.92	4488
10080 Winter	0.81	5152

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 100 PERMEABLE ROAD 10 UNITS	
Date MAR 2017 File PERMEABLE PAVEMENT 10 u...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	100	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.350	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.180

Time (mins)	Area (ha)	Time (mins)	Area (ha)
from: to:		from: to:	
0 4	0.060	4 8	0.120

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 100 PERMEABLE ROAD 10 UNITS	
Date MAR 2017	Designed By PF	
File PERMEABLE PAVEMENT 10 u...	Checked By	
Micro Drainage	Source Control W.11.2	

Porous Car Park Details

Infil Coef - Base (m/hr)	0.016200	Invert Level (m)	100.000
Membrane Percolation (mm/hr)	1000	Cover Level (m)	100.500
Safety Factor	1.5	Slope (1:x)	0.0
Porosity	0.35	Max Percolation (l/s)	333.3
Length (m)	120.0	Depression Storage (mm)	5
Width (m)	10.0	Evaporation (mm/day)	3

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 100 +30% PERMEABLE ROAD 10 UNITS	
Date MAR 2017	Designed By PF	
File PERMEABLE PAVEMENT 10 u...	Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 182 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	3.6	3.6	100.0782	0.0783	32.9	O K
30 Summer	3.6	3.6	100.1073	0.1073	45.1	O K
60 Summer	3.6	3.6	100.1348	0.1348	56.5	O K
120 Summer	3.6	3.6	100.1543	0.1542	64.7	O K
180 Summer	3.6	3.6	100.1582	0.1582	66.4	O K
240 Summer	3.6	3.6	100.1582	0.1582	66.5	O K
360 Summer	3.6	3.6	100.1563	0.1562	65.5	O K
480 Summer	3.6	3.6	100.1507	0.1508	63.3	O K
600 Summer	3.6	3.6	100.1442	0.1443	60.6	O K
720 Summer	3.6	3.6	100.1367	0.1368	57.5	O K
960 Summer	3.6	3.6	100.1223	0.1223	51.3	O K
1440 Summer	3.6	3.6	100.0953	0.0953	40.1	O K
2160 Summer	3.6	3.6	100.0658	0.0658	27.7	O K
2880 Summer	3.6	3.6	100.0498	0.0497	20.9	O K
4320 Summer	2.8	2.8	100.0382	0.0382	16.0	O K
5760 Summer	2.2	2.2	100.0313	0.0312	13.1	O K
7200 Summer	1.9	1.9	100.0267	0.0267	11.1	O K
8640 Summer	1.7	1.7	100.0232	0.0232	9.7	O K
10080 Summer	1.5	1.5	100.0208	0.0207	8.6	O K
15 Winter	3.6	3.6	100.0898	0.0898	37.7	O K
30 Winter	3.6	3.6	100.1227	0.1228	51.6	O K
60 Winter	3.6	3.6	100.1543	0.1542	64.8	O K
120 Winter	3.6	3.6	100.1777	0.1777	74.7	O K
180 Winter	3.6	3.6	100.1833	0.1832	77.0	O K
240 Winter	3.6	3.6	100.1817	0.1817	76.3	O K
360 Winter	3.6	3.6	100.1768	0.1767	74.3	O K
480 Winter	3.6	3.6	100.1683	0.1682	70.7	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	122.43	22
30 Summer	82.24	36
60 Summer	52.66	64
120 Summer	32.50	122
180 Summer	24.12	158
240 Summer	19.39	190
360 Summer	14.27	254
480 Summer	11.46	324
600 Summer	9.66	390
720 Summer	8.40	458
960 Summer	6.72	590
1440 Summer	4.91	840
2160 Summer	3.57	1188
2880 Summer	2.85	1504
4320 Summer	2.07	2212
5760 Summer	1.64	2944
7200 Summer	1.38	3672
8640 Summer	1.19	4408
10080 Summer	1.06	5136
15 Winter	122.43	22
30 Winter	82.24	36
60 Winter	52.66	64
120 Winter	32.50	120
180 Winter	24.12	174
240 Winter	19.39	206
360 Winter	14.27	276
480 Winter	11.46	352

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 100 +30% PERMEABLE ROAD 10 UNITS	
Date MAR 2017	Designed By PF	
File PERMEABLE PAVEMENT 10 u...	Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 100 year Return Period (+30%)

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
600 Winter	3.6	3.6	100.1578	0.1578	66.2	O K
720 Winter	3.6	3.6	100.1462	0.1463	61.4	O K
960 Winter	3.6	3.6	100.1233	0.1233	51.7	O K
1440 Winter	3.6	3.6	100.0827	0.0828	34.8	O K
2160 Winter	3.5	3.5	100.0488	0.0487	20.6	O K
2880 Winter	2.9	2.9	100.0397	0.0397	16.7	O K
4320 Winter	2.1	2.1	100.0293	0.0292	12.3	O K
5760 Winter	1.7	1.7	100.0232	0.0232	9.8	O K
7200 Winter	1.4	1.4	100.0198	0.0197	8.2	O K
8640 Winter	1.2	1.2	100.0173	0.0173	7.1	O K
10080 Winter	1.1	1.1	100.0153	0.0153	6.3	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	9.66	426
720 Winter	8.40	498
960 Winter	6.72	634
1440 Winter	4.91	880
2160 Winter	3.57	1168
2880 Winter	2.85	1528
4320 Winter	2.07	2252
5760 Winter	1.64	2992
7200 Winter	1.38	3720
8640 Winter	1.19	4448
10080 Winter	1.06	5232

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 100 +30% PERMEABLE ROAD 10 UNITS	
Date MAR 2017	Designed By PF	
File PERMEABLE PAVEMENT 10 u...	Checked By	
Micro Drainage	Source Control W.11.2	

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	100	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+30
Ratio-R	0.350	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.180

Time (mins)	Area (ha)	Time (mins)	Area (ha)
from:	to:	from:	to:
0	4	0.060	
		4	8
		0.120	

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 100 +30% PERMEABLE ROAD 10 UNITS	
Date MAR 2017	Designed By PF	
File PERMEABLE PAVEMENT 10 u...	Checked By	
Micro Drainage	Source Control W.11.2	

Porous Car Park Details

Infil Coef - Base (m/hr)	0.016200	Invert Level (m)	100.000
Membrane Percolation (mm/hr)	1000	Cover Level (m)	100.500
Safety Factor	1.5	Slope (1:x)	0.0
Porosity	0.35	Max Percolation (l/s)	333.3
Length (m)	120.0	Depression Storage (mm)	5
Width (m)	10.0	Evaporation (mm/day)	3

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 1 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017	Designed By PF	
File 80 sq m CONTRIBUTING 1.4M ...	Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 1 year Return Period

Half Drain Time : 431 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	0.0	0.0	100.0543	0.0543	0.4	O K
30 Summer	0.0	0.0	100.0728	0.0728	0.5	O K
60 Summer	0.0	0.0	100.0943	0.0943	0.7	O K
120 Summer	0.0	0.0	100.1178	0.1178	0.9	O K
180 Summer	0.0	0.0	100.1318	0.1318	1.0	O K
240 Summer	0.0	0.0	100.1397	0.1398	1.0	O K
360 Summer	0.0	0.0	100.1492	0.1493	1.1	O K
480 Summer	0.0	0.0	100.1553	0.1552	1.2	O K
600 Summer	0.0	0.0	100.1592	0.1592	1.2	O K
720 Summer	0.0	0.0	100.1622	0.1622	1.2	O K
960 Summer	0.0	0.0	100.1653	0.1652	1.2	O K
1440 Summer	0.0	0.0	100.1647	0.1647	1.2	O K
2160 Summer	0.0	0.0	100.1582	0.1582	1.2	O K
2880 Summer	0.0	0.0	100.1493	0.1493	1.1	O K
4320 Summer	0.0	0.0	100.1298	0.1298	1.0	O K
5760 Summer	0.0	0.0	100.1103	0.1103	0.8	O K
7200 Summer	0.0	0.0	100.0938	0.0938	0.7	O K
8640 Summer	0.0	0.0	100.0803	0.0803	0.6	O K
10080 Summer	0.0	0.0	100.0683	0.0683	0.5	O K
15 Winter	0.0	0.0	100.0612	0.0613	0.5	O K
30 Winter	0.0	0.0	100.0817	0.0818	0.6	O K
60 Winter	0.0	0.0	100.1062	0.1063	0.8	O K
120 Winter	0.0	0.0	100.1338	0.1338	1.0	O K
180 Winter	0.0	0.0	100.1497	0.1497	1.1	O K
240 Winter	0.0	0.0	100.1598	0.1597	1.2	O K
360 Winter	0.0	0.0	100.1712	0.1712	1.3	O K
480 Winter	0.0	0.0	100.1772	0.1772	1.3	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	28.17	22
30 Summer	19.18	37
60 Summer	12.80	66
120 Summer	8.41	126
180 Summer	6.56	184
240 Summer	5.47	244
360 Summer	4.21	318
480 Summer	3.50	384
600 Summer	3.03	450
720 Summer	2.70	518
960 Summer	2.25	658
1440 Summer	1.73	942
2160 Summer	1.33	1348
2880 Summer	1.11	1760
4320 Summer	0.85	2516
5760 Summer	0.71	3280
7200 Summer	0.61	3968
8640 Summer	0.54	4672
10080 Summer	0.49	5352
15 Winter	28.17	22
30 Winter	19.18	37
60 Winter	12.80	66
120 Winter	8.41	124
180 Winter	6.56	180
240 Winter	5.47	238
360 Winter	4.21	346
480 Winter	3.50	442

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 1 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 1 year Return Period

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
600 Winter	0.0	0.0	100.1813	0.1812	1.4	O K
720 Winter	0.0	0.0	100.1837	0.1837	1.4	O K
960 Winter	0.0	0.0	100.1858	0.1857	1.4	O K
1440 Winter	0.0	0.0	100.1813	0.1812	1.4	O K
2160 Winter	0.0	0.0	100.1677	0.1677	1.3	O K
2880 Winter	0.0	0.0	100.1513	0.1513	1.1	O K
4320 Winter	0.0	0.0	100.1182	0.1183	0.9	O K
5760 Winter	0.0	0.0	100.0892	0.0893	0.7	O K
7200 Winter	0.0	0.0	100.0667	0.0668	0.5	O K
8640 Winter	0.0	0.0	100.0518	0.0518	0.4	O K
10080 Winter	0.0	0.0	100.0462	0.0463	0.3	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	3.03	480
720 Winter	2.70	558
960 Winter	2.25	716
1440 Winter	1.73	1016
2160 Winter	1.33	1456
2880 Winter	1.11	1880
4320 Winter	0.85	2684
5760 Winter	0.71	3400
7200 Winter	0.61	4040
8640 Winter	0.54	4592
10080 Winter	0.49	5248

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 1 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	1	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.300	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.008

Time (mins)	Area (ha)	Time (mins)	Area (ha)
from: to:		from: to:	
0 4	0.000	4 8	0.008

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 1 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017	Designed By PF	
File 80 sq m CONTRIBUTING 1.4M ...	Checked By	
Micro Drainage	Source Control W.11.2	

Infiltration Trench Details

Infil Coef - Base (m/hr)	0.016200	Length (m)	3.0
Infil Coef - Sides (m/hr)	0.016200	Invert Level (m)	100.000
Safety Factor	1.5	Cover Level (m)	101.400
Porosity	1.00	Slope (1:x)	0.0
Width (m)	2.5		

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 30 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 30 year Return Period

Half Drain Time : 838 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	0.0	0.0	100.1352	0.1353	1.0	O K
30 Summer	0.0	0.0	100.1833	0.1832	1.4	O K
60 Summer	0.0	0.0	100.2357	0.2357	1.8	O K
120 Summer	0.0	0.0	100.2902	0.2902	2.2	O K
180 Summer	0.0	0.0	100.3197	0.3197	2.4	O K
240 Summer	0.0	0.0	100.3387	0.3387	2.5	O K
360 Summer	0.0	0.0	100.3622	0.3622	2.7	O K
480 Summer	0.0	0.0	100.3747	0.3747	2.8	O K
600 Summer	0.0	0.0	100.3802	0.3802	2.9	O K
720 Summer	0.0	0.0	100.3837	0.3837	2.9	O K
960 Summer	0.0	0.0	100.3862	0.3862	2.9	O K
1440 Summer	0.0	0.0	100.3842	0.3842	2.9	O K
2160 Summer	0.0	0.0	100.3712	0.3712	2.8	O K
2880 Summer	0.0	0.0	100.3552	0.3552	2.7	O K
4320 Summer	0.0	0.0	100.3212	0.3212	2.4	O K
5760 Summer	0.0	0.0	100.2892	0.2892	2.2	O K
7200 Summer	0.0	0.0	100.2592	0.2592	1.9	O K
8640 Summer	0.0	0.0	100.2318	0.2317	1.7	O K
10080 Summer	0.0	0.0	100.2073	0.2072	1.6	O K
15 Winter	0.0	0.0	100.1517	0.1517	1.1	O K
30 Winter	0.0	0.0	100.2057	0.2057	1.5	O K
60 Winter	0.0	0.0	100.2653	0.2652	2.0	O K
120 Winter	0.0	0.0	100.3272	0.3272	2.5	O K
180 Winter	0.0	0.0	100.3612	0.3612	2.7	O K
240 Winter	0.0	0.0	100.3837	0.3837	2.9	O K
360 Winter	0.0	0.0	100.4127	0.4127	3.1	O K
480 Winter	0.0	0.0	100.4292	0.4292	3.2	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	68.99	23
30 Summer	47.08	38
60 Summer	30.81	68
120 Summer	19.53	126
180 Summer	14.75	186
240 Summer	12.05	246
360 Summer	9.05	366
480 Summer	7.38	484
600 Summer	6.29	588
720 Summer	5.52	634
960 Summer	4.49	764
1440 Summer	3.35	1028
2160 Summer	2.49	1448
2880 Summer	2.02	1852
4320 Summer	1.50	2684
5760 Summer	1.21	3464
7200 Summer	1.03	4248
8640 Summer	0.90	5016
10080 Summer	0.81	5752
15 Winter	68.99	23
30 Winter	47.08	37
60 Winter	30.81	66
120 Winter	19.53	124
180 Winter	14.75	184
240 Winter	12.05	242
360 Winter	9.05	356
480 Winter	7.38	470

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 30 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 30 year Return Period

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
600 Winter	0.0	0.0	100.4382	0.4382	3.3	O K
720 Winter	0.0	0.0	100.4427	0.4427	3.3	O K
960 Winter	0.0	0.0	100.4437	0.4437	3.3	O K
1440 Winter	0.0	0.0	100.4397	0.4397	3.3	O K
2160 Winter	0.0	0.0	100.4192	0.4192	3.1	O K
2880 Winter	0.0	0.0	100.3932	0.3932	2.9	O K
4320 Winter	0.0	0.0	100.3397	0.3397	2.5	O K
5760 Winter	0.0	0.0	100.2902	0.2902	2.2	O K
7200 Winter	0.0	0.0	100.2458	0.2457	1.8	O K
8640 Winter	0.0	0.0	100.2063	0.2062	1.5	O K
10080 Winter	0.0	0.0	100.1718	0.1718	1.3	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	6.29	580
720 Winter	5.52	688
960 Winter	4.49	868
1440 Winter	3.35	1100
2160 Winter	2.49	1560
2880 Winter	2.02	2020
4320 Winter	1.50	2860
5760 Winter	1.21	3696
7200 Winter	1.03	4472
8640 Winter	0.90	5272
10080 Winter	0.81	6048

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 30 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	30	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.300	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.008

Time from:	(mins) to:	Area (ha)	Time from:	(mins) to:	Area (ha)
0	4	0.000	4	8	0.008

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1 IN 30 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017	Designed By PF	
File 80 sq m CONTRIBUTING 1.4M ...	Checked By	
Micro Drainage	Source Control W.11.2	

Infiltration Trench Details

Infil Coef - Base (m/hr)	0.016200	Length (m)	3.0
Infil Coef - Sides (m/hr)	0.016200	Invert Level (m)	100.000
Safety Factor	1.5	Cover Level (m)	101.400
Porosity	1.00	Slope (1:x)	0.0
Width (m)	2.5		

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One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1:100 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 100 year Return Period

Half Drain Time : 1002 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	0.0	0.0	100.1758	0.1757	1.3	O K
30 Summer	0.0	0.0	100.2407	0.2407	1.8	O K
60 Summer	0.0	0.0	100.3122	0.3122	2.3	O K
120 Summer	0.0	0.0	100.3852	0.3852	2.9	O K
180 Summer	0.0	0.0	100.4232	0.4232	3.2	O K
240 Summer	0.0	0.0	100.4482	0.4482	3.4	O K
360 Summer	0.0	0.0	100.4792	0.4792	3.6	O K
480 Summer	0.0	0.0	100.4957	0.4957	3.7	O K
600 Summer	0.0	0.0	100.5042	0.5042	3.8	O K
720 Summer	0.0	0.0	100.5072	0.5072	3.8	O K
960 Summer	0.0	0.0	100.5087	0.5087	3.8	O K
1440 Summer	0.0	0.0	100.5032	0.5032	3.8	O K
2160 Summer	0.0	0.0	100.4852	0.4852	3.6	O K
2880 Summer	0.0	0.0	100.4632	0.4632	3.5	O K
4320 Summer	0.0	0.0	100.4207	0.4207	3.2	O K
5760 Summer	0.0	0.0	100.3817	0.3817	2.9	O K
7200 Summer	0.0	0.0	100.3457	0.3457	2.6	O K
8640 Summer	0.0	0.0	100.3127	0.3127	2.3	O K
10080 Summer	0.0	0.0	100.2832	0.2832	2.1	O K
15 Winter	0.0	0.0	100.1967	0.1967	1.5	O K
30 Winter	0.0	0.0	100.2697	0.2697	2.0	O K
60 Winter	0.0	0.0	100.3507	0.3507	2.6	O K
120 Winter	0.0	0.0	100.4337	0.4337	3.3	O K
180 Winter	0.0	0.0	100.4777	0.4777	3.6	O K
240 Winter	0.0	0.0	100.5067	0.5067	3.8	O K
360 Winter	0.0	0.0	100.5443	0.5442	4.1	O K
480 Winter	0.0	0.0	100.5658	0.5658	4.2	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	89.23	23
30 Summer	61.54	38
60 Summer	40.51	68
120 Summer	25.63	126
180 Summer	19.23	186
240 Summer	15.63	246
360 Summer	11.65	366
480 Summer	9.44	484
600 Summer	8.01	604
720 Summer	7.00	704
960 Summer	5.65	812
1440 Summer	4.17	1060
2160 Summer	3.07	1476
2880 Summer	2.46	1880
4320 Summer	1.81	2724
5760 Summer	1.45	3520
7200 Summer	1.23	4320
8640 Summer	1.07	5096
10080 Summer	0.95	5848
15 Winter	89.23	23
30 Winter	61.54	37
60 Winter	40.51	66
120 Winter	25.63	126
180 Winter	19.23	184
240 Winter	15.63	242
360 Winter	11.65	358
480 Winter	9.44	472

Archibald Shaw Limited		Page 2
One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1:100 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 100 year Return Period

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
600 Winter	0.0	0.0	100.5783	0.5783	4.3	O K
720 Winter	0.0	0.0	100.5843	0.5843	4.4	O K
960 Winter	0.0	0.0	100.5863	0.5863	4.4	O K
1440 Winter	0.0	0.0	100.5773	0.5773	4.3	O K
2160 Winter	0.0	0.0	100.5522	0.5522	4.1	O K
2880 Winter	0.0	0.0	100.5197	0.5197	3.9	O K
4320 Winter	0.0	0.0	100.4547	0.4547	3.4	O K
5760 Winter	0.0	0.0	100.3957	0.3957	3.0	O K
7200 Winter	0.0	0.0	100.3432	0.3432	2.6	O K
8640 Winter	0.0	0.0	100.2962	0.2962	2.2	O K
10080 Winter	0.0	0.0	100.2547	0.2547	1.9	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	8.01	584
720 Winter	7.00	694
960 Winter	5.65	900
1440 Winter	4.17	1126
2160 Winter	3.07	1584
2880 Winter	2.46	2048
4320 Winter	1.81	2940
5760 Winter	1.45	3752
7200 Winter	1.23	4608
8640 Winter	1.07	5360
10080 Winter	0.95	6152

Archibald Shaw Limited		Page 3
One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1:100 S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	100	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.300	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.008

Time from:	(mins) to:	Area (ha)	Time from:	(mins) to:	Area (ha)
0	4	0.000	4	8	0.008

Archibald Shaw Limited		Page 4
One Little London	BOUND LANE HAYLING	
Chichester	1:100	
Sussex PO19 1PP	S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017	Designed By PF	
File 80 sq m CONTRIBUTING 1.4M ...	Checked By	
Micro Drainage	Source Control W.11.2	

Infiltration Trench Details

Infil Coef - Base (m/hr)	0.016200	Length (m)	3.0
Infil Coef - Sides (m/hr)	0.016200	Invert Level (m)	100.000
Safety Factor	1.5	Cover Level (m)	101.400
Porosity	1.00	Slope (1:x)	0.0
Width (m)	2.5		

Archibald Shaw Limited		Page 1
One Little London Chichester Sussex PO19 1PP	BOUND LANE HAYLING 1:100 +30% S.AWAY 80 SQ M 1.4m deep	
Date MAR-2017 File 80 sq m CONTRIBUTING 1.4M ...	Designed By PF Checked By	
Micro Drainage	Source Control W.11.2	

Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 1189 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	0.0	0.0	100.2288	0.2287	1.7	O K
30 Summer	0.0	0.0	100.3137	0.3137	2.4	O K
60 Summer	0.0	0.0	100.4082	0.4082	3.1	O K
120 Summer	0.0	0.0	100.5057	0.5057	3.8	O K
180 Summer	0.0	0.0	100.5573	0.5572	4.2	O K
240 Summer	0.0	0.0	100.5923	0.5923	4.4	O K
360 Summer	0.0	0.0	100.6373	0.6373	4.8	O K
480 Summer	0.0	0.0	100.6638	0.6638	5.0	O K
600 Summer	0.0	0.0	100.6788	0.6788	5.1	O K
720 Summer	0.0	0.0	100.6873	0.6873	5.2	O K
960 Summer	0.0	0.0	100.6918	0.6918	5.2	O K
1440 Summer	0.0	0.0	100.6898	0.6898	5.2	O K
2160 Summer	0.0	0.0	100.6733	0.6733	5.0	O K
2880 Summer	0.0	0.0	100.6498	0.6498	4.9	O K
4320 Summer	0.0	0.0	100.6023	0.6023	4.5	O K
5760 Summer	0.0	0.0	100.5587	0.5587	4.2	O K
7200 Summer	0.0	0.0	100.5177	0.5177	3.9	O K
8640 Summer	0.0	0.0	100.4802	0.4802	3.6	O K
10080 Summer	0.0	0.0	100.4457	0.4457	3.3	O K
15 Winter	0.0	0.0	100.2568	0.2567	1.9	O K
30 Winter	0.0	0.0	100.3522	0.3522	2.6	O K
60 Winter	0.0	0.0	100.4582	0.4582	3.4	O K
120 Winter	0.0	0.0	100.5687	0.5687	4.3	O K
180 Winter	0.0	0.0	100.6283	0.6283	4.7	O K
240 Winter	0.0	0.0	100.6688	0.6688	5.0	O K
360 Winter	0.0	0.0	100.7223	0.7223	5.4	O K
480 Winter	0.0	0.0	100.7548	0.7548	5.7	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	116.00	23
30 Summer	80.00	38
60 Summer	52.66	68
120 Summer	33.32	128
180 Summer	25.00	186
240 Summer	20.31	246
360 Summer	15.14	366
480 Summer	12.27	486
600 Summer	10.41	604
720 Summer	9.10	724
960 Summer	7.35	864
1440 Summer	5.42	1114
2160 Summer	3.99	1516
2880 Summer	3.20	1932
4320 Summer	2.35	2768
5760 Summer	1.89	3576
7200 Summer	1.59	4392
8640 Summer	1.39	5184
10080 Summer	1.24	5952
15 Winter	116.00	23
30 Winter	80.00	37
60 Winter	52.66	66
120 Winter	33.32	126
180 Winter	25.00	184
240 Winter	20.31	242
360 Winter	15.14	358
480 Winter	12.27	474

One Little London
Chichester
Sussex PO19 1PP

BOUND LANE HAYLING
1:100 +30%
S.AWAY 80 SQ M 1.4m deep



Date MAR-2017
File 80 sq m CONTRIBUTING 1.4M ...

Designed By PF
Checked By

Micro Drainage

Source Control W.11.2

Summary of Results for 100 year Return Period (+30%)

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
600 Winter	0.0	0.0	100.7748	0.7748	5.8	O K
720 Winter	0.0	0.0	100.7873	0.7873	5.9	O K
960 Winter	0.0	0.0	100.7973	0.7973	6.0	O K
1440 Winter	0.0	0.0	100.7913	0.7913	5.9	O K
2160 Winter	0.0	0.0	100.7698	0.7698	5.8	O K
2880 Winter	0.0	0.0	100.7358	0.7358	5.5	O K
4320 Winter	0.0	0.0	100.6643	0.6643	5.0	O K
5760 Winter	0.0	0.0	100.5978	0.5978	4.5	O K
7200 Winter	0.0	0.0	100.5368	0.5367	4.0	O K
8640 Winter	0.0	0.0	100.4817	0.4817	3.6	O K
10080 Winter	0.0	0.0	100.4322	0.4322	3.2	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	10.41	588
720 Winter	9.10	698
960 Winter	7.35	916
1440 Winter	5.42	1158
2160 Winter	3.99	1624
2880 Winter	3.20	2080
4320 Winter	2.35	2984
5760 Winter	1.89	3856
7200 Winter	1.59	4680
8640 Winter	1.39	5528
10080 Winter	1.24	6256

One Little London
Chichester
Sussex PO19 1PP

BOUND LANE HAYLING
1:100 +30%
S.AWAY 80 SQ M 1.4m deep



Date MAR-2017

Designed By PF

File 80 sq m CONTRIBUTING 1.4M ...

Checked By

Micro Drainage

Source Control W.11.2

Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	100	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+30
Ratio-R	0.300	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.008

Time from:	(mins) to:	Area (ha)	Time from:	(mins) to:	Area (ha)
0	4	0.000	4	8	0.008

One Little London
Chichester
Sussex PO19 1PP

BOUND LANE HAYLING
1:100 +30%
S.AWAY 80 SQ M 1.4m deep

Date MAR-2017

Designed By PF

File 80 sq m CONTRIBUTING 1.4M ...

Checked By

Micro Drainage

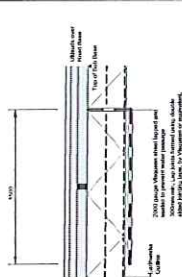
Source Control W.11.2

Infiltration Trench Details

Infil Coef - Base (m/hr)	0.016200	Length (m)	3.0
Infil Coef - Sides (m/hr)	0.016200	Invert Level (m)	100.000
Safety Factor	1.5	Cover Level (m)	101.400
Porosity	1.00	Slope (1:x)	0.0
Width (m)	2.5		

NOTES

1. The drawings to be used in conjunction with all relevant Architectural and Engineering drawings and specifications.
2. Dimensions are in millimetres unless noted otherwise.
3. All dimensions are to be taken from the centre line of the road.
4. All dimensions are to be taken from the centre line of the road.
5. All dimensions are to be taken from the centre line of the road.
6. All dimensions are to be taken from the centre line of the road.
7. All dimensions are to be taken from the centre line of the road.
8. All dimensions are to be taken from the centre line of the road.

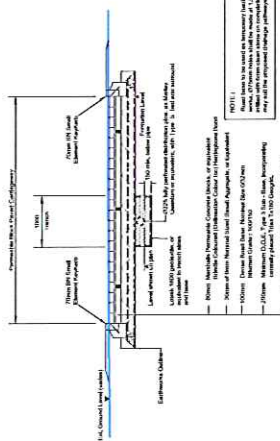


PROJECT: HARBOR TOWN CENTRAL ACCESS
 DRAWN BY: ARCHITECTURAL
 CHECKED BY: ARCHITECTURAL
 DATE: 10/10/2016

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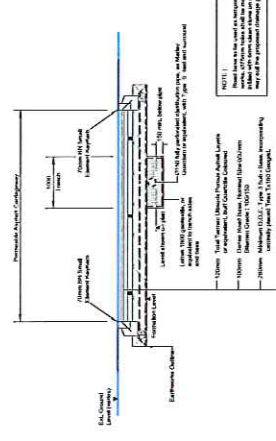
CLIENT: Millam Homes
 PROJECT: Housing Development
 Bound Lane, Hayling Island

SECTION	DATE	REVISION
SECTION A-A	10/10/2016	1
SECTION B-B	10/10/2016	1
SECTION C-C	10/10/2016	1
SECTION D-D	10/10/2016	1
SECTION E-E	10/10/2016	1
SECTION F-F	10/10/2016	1
SECTION G-G	10/10/2016	1
SECTION H-H	10/10/2016	1
SECTION I-I	10/10/2016	1
SECTION J-J	10/10/2016	1
SECTION K-K	10/10/2016	1
SECTION L-L	10/10/2016	1
SECTION M-M	10/10/2016	1
SECTION N-N	10/10/2016	1
SECTION O-O	10/10/2016	1
SECTION P-P	10/10/2016	1
SECTION Q-Q	10/10/2016	1
SECTION R-R	10/10/2016	1
SECTION S-S	10/10/2016	1
SECTION T-T	10/10/2016	1
SECTION U-U	10/10/2016	1
SECTION V-V	10/10/2016	1
SECTION W-W	10/10/2016	1
SECTION X-X	10/10/2016	1
SECTION Y-Y	10/10/2016	1
SECTION Z-Z	10/10/2016	1



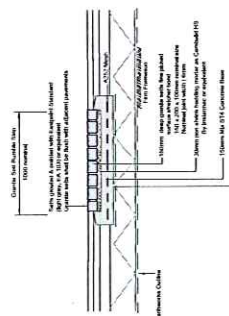
SECTION A-A

Scale 1:20



SECTION B-B

Scale 1:20



SECTION THROUGH RUMBLE STRIP

Scale 1:25