

Consulting Civil & Structural Engineers

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**Calculation Sheet**

Ref: 4097

Date: 12/02/2020

Project: Development off Stansty Road, Wrexham

Sheet No. 6

Calculations By: SJ

Checked By:

Member Ref	Calculations	Output
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PARKING AREA SOAKAWAYS**Catchment areas**

Plots 3-6 = 210m^2 total area - assume 2 No. PC soakaways 110m^2 to each

Spaces 1 – 19 = 483m^2 total area - assume 3 No. PC soakaways 161m^2 to each

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Sheet No. 7

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plots 3-6 Car Park PC MH Soakaway Design

Catchment Area **105 m²** per unit
 Storm **100** Year
 Basic Data:- Ratio R= **0.4** M5-60= **20**

Basic Dimensions Diameter 2.40 m
 Overall Depth 2.50 m
 Incoming Pipe Depth 0.50 m
 Effective Storage Depth 2.00 m

Void Ratio 1.00 Store Vol. 9.05 m³
 Perc Area 8.80 m²
 Perc Rate 1.000E-05 m/sec

Climate Change allowance 40 %

Duration Mins	M100 (mm)	Inflow (m ³)	Outflow (m ³)	Storage Req'd (m ³)
5	19.12	2.01	0.03	1.98
10	28.56	3.00	0.05	2.95
15	34.54	3.63	0.08	3.55
30	45.35	4.76	0.16	4.60
60	56.71	5.95	0.32	5.64
120	68.49	7.19	0.63	6.56
240	80.31	8.43	1.27	7.17
360	87.51	9.19	1.90	7.29
600	97.38	10.23	3.17	7.06
1440	116.13	12.19	7.60	4.59

Rainfall calculated using FSR
 method

Use 2.4m dia x 2.5m deep PC Soakaway chambers

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Parking Bays 1-19 PC MH Soakaway Design

Catchment Area **161 m²** per unit
 Storm **100** Year
 Basic Data:- Ratio R= **0.4** M5-60= **20**

Basic Dimensions Diameter 2.40 m
 Overall Depth 3.20 m
 Incoming Pipe Depth 0.60 m
 Effective Storage Depth 2.60 m

Void Ratio 1.00 Store Vol. 11.76 m³
 Perc Area 11.44 m²
 Perc Rate 1.000E-05 m/sec

Climate Change allowance 40 %

Duration Mins	M100 (mm)	Inflow (m ³)	Outflow (m ³)	Storage Req'd (m ³)
5	19.12	3.08	0.03	3.04
10	28.56	4.60	0.07	4.53
15	34.54	5.56	0.10	5.46
30	45.35	7.30	0.21	7.10
60	56.71	9.13	0.41	8.72
120	68.49	11.03	0.82	10.20
240	80.31	12.93	1.65	11.28
360	87.51	14.09	2.47	11.62
600	97.38	15.68	4.12	11.56
1440	116.13	18.70	9.88	8.82

Rainfall calculated using FSR
 method

Use 2.4m dia x 3.2m deep PC Soakaway chambers