Title – Private Garden Soakaway Sizing

Ref: SW21-142-REP-01

Introduction

Upon the instruction of Seagate Homes, the following sheets contain preliminary soakaway sizing for proposed 8 plot development at High Road, Weston.

The soakaway sizes are based upon the worst infiltration rate obtained via percolation tests undertaken by Sidebottom Richardson Cheng Ltd. Contained within their Drainage Strategy report, their project no. 37617.

SRC recorded 3 infiltration rates.

9.3×10^{-6} m/s
6.74×10^{-6} m/s
1.36×10^{-5} m/s

6.74×10^{-6} m/s will be utilized for our calculations as the lowest recorded result.

Soakaways are sized in accordance with guidance provided within BRE Digest 365.

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STRUCTURAL AND CIVIL ENGINEERING

Structural Calculations	Project: High Road, Weston	Date: April 21	Designer: APW
Project No: SW21-142	Subject: Soakaway Sizes	Sheet No: 2	Rev:

Job Details	SW 21-142 Residential Plots, High Road, Wetson - Seagte Homes							
Title	Individual Plot - 110 m² Roof area							
Calculated Infiltration Rate (m/s)								
0.00000674								
Design Rainfall - R				Soakaway Dimensions				
M5-60	Z1							
0.02	1			Polystorm crates		Number	Total Lengths	Half Effective
M10-D	Z2			Width	0.5	6	3	
0.02	1.24			Length	1	3	3	
				Depth	0.4	1	0.4	0.2
R = 0.0248 m				Internal Surface Area Not Including Base (50% depth)				
Inflow To Soakaway				2.4 m^2				
Area (m^2)	x R			Storage Volume				
110	0.0248			3.6 m^3				
Inflow = 2.728 m^3								
Outflow From Soakaway								
Internal SA (50%)		Infiltration Rate	Storm Duration (s)					
2.4		0.00000674	60	60	3600			
Outflow = 0.0582336 m^3								
Storage Required								
				Soakaway Has Been Designed For A				
Inflow -	Outflow			10 Year Storm Of 60 Minute Duration				
2.728	0.058234	2.6697664						
				Half drain time =		22.92	< 24 hours OK	
Storage Volume With 30% Free (Required)								
3.47069632				NB. Actual Storage Volume Needs To Be				
Actual Storage Volume				Greater Than Storage Volume + 30%				
3.6								

PROVIDE SOKAWAY IN FORM OF POLYSTORN CRATES 1 LAYERS DEEP (0.4m)
3 No. LONG (3m) x 6 No. WIDE (3m)

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STRUCTURAL AND CIVIL ENGINEERING

Structural Calculations	Project: High Road, Weston	Date: April 21	Designer: APW
Project No: SW21-142	Subject: Soakaway Sizes	Sheet No: 3	Rev:

Job Details	SW 21-142 Residential Plots, High Road, Wetson - Seagte Homes								
Title	Individual Plot - 140 m² Roof area								
Calculated Infiltration Rate (m/s)									
0.00000674									
Design Rainfall - R									
M5-60	Z1								
0.02	1								
M10-D	Z2								
0.02	1.24								
R =	0.0248	m							
Inflow To Soakaway									
Area (m^2)	x R								
140	0.0248								
Inflow =	3.472	m^3							
Outflow From Soakaway									
Internal SA (50%)		Infiltration Rate		Storm Duration (s)					
3		0.00000674		60	60	3600			
Outflow =	0.072792	m^3							
Storage Required									
Inflow -	Outflow								
3.472	0.072792	3.399208							
Storage Volume With 30% Free (Required)									
4.4189704									
Actual Storage Volume									
5.6									

Soakaway Dimensions				
Polystorm crates		Number	Total Lengths	Half Effective
Width	0.5	7	3.5	
Length	1	4	4	
Depth	0.4	1	0.4	0.2

Internal Surface Area Not Including Base (50% depth)
3 m^2

Storage Volume
5.6 m^3

Soakaway Has Been Designed For A
10 Year Storm Of 60 Minute Duration

Half drain time = 23.35 < 24 hours OK

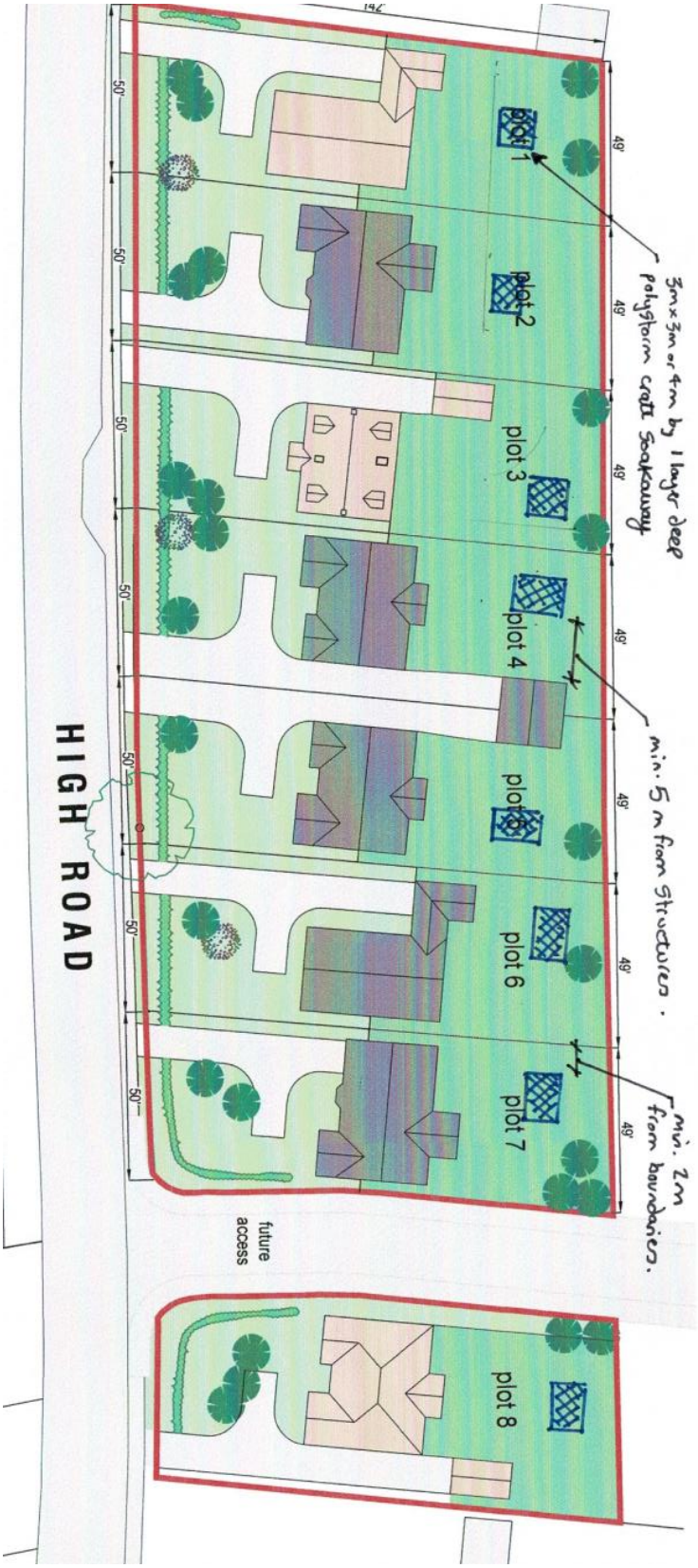
NB. Actual Storage Volume Needs To Be
Greater Than Storage Volume + 30%

PROVIDE SOKAWAY IN FORM OF POLYSTORN CRATES 1 LAYER DEEP (0.4m)
4 No. LONG (4m) x 7 No. WIDE (3.5m)

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STRUCTURAL AND CIVIL ENGINEERING

Structural Calculations	Project: High Road, Weston	Date: April 21	Designer: APW
Project No: SW21-142	Subject: Soakaway Sizes	Sheet No: 4	Rev:



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