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BRE 365 TEST REPORT

179 Templeville Park

Rev:a 21-5419

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1.0 INTRODUCTION

1.1 Instruction

ONCE Civil & Structural Ltd Consulting Engineers have been appointed to provide civil engineering design services for the extension and refurbishment to 179 Templeville Road, Templeogue, Dublin 6w.

The following report will address the civil engineering elements, including.

- Surface Water Strategy design, provision of SUDS.

2.0 SURFACE WATER DRAINAGE

2.1 Existing Surface Water

The existing surface water infiltrates into the existing soil.

2.2 Surface Water Policy

The proposed development will include a Soakaway situated at the back of the proposed extension to take 100% of the rainwater runoff from the road of the proposed extension (46 m²)

The drainage is designed to comply with policies and guidelines, outlined in the Greater Dublin Strategic Drainage Study (GSDSDS), the requirements of South Dublin Co. Council and SUDs Manuals C697 and C609.

2.3 Surface water design

Given the restraints of the site, it has been proposed to use a soakaway located at the rear of the property to take 100% of the rainwater runoff due to the extension. The total area contribution to the rainwater will flow from the RWP in new surface drains 100mm at a gradient of 1:100. to a soakaway, located 5 meters from the property and 3m from any site boundary line. The soakaway is to be fitted with an overflow pipe which is connected to the existing surface water drainage.



Figure 2

2.5 Soakaway

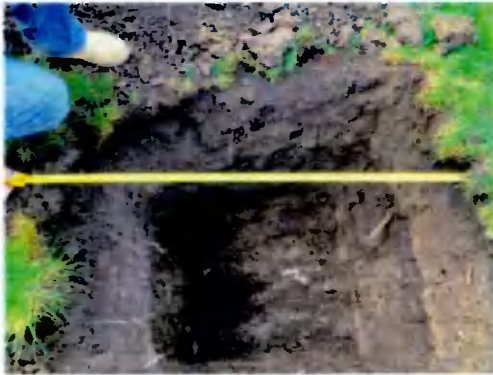
Due to the added level of runoff, it has been proposed to use a soakaway to take 100% of the Storm water Runoff from the proposed extension.

A percolation test was completed by ONCE Consultant Engineers on the 18th October 2021.

A trial hole of 1.0m dp x 1.0m x 0.9m was filled times and the rate of discharge was recorded over a 8hr period.

Results of the percolation are attached to the end of the report.

Test infiltration results 0.07438 m/hr



Test hole

Using the Wallingford Rainfall Method a soakaway of 2m x 2m x 1.0m dp was designed to comply with the storage and discharge rates for a 50 year storm return period, detailed attached below.

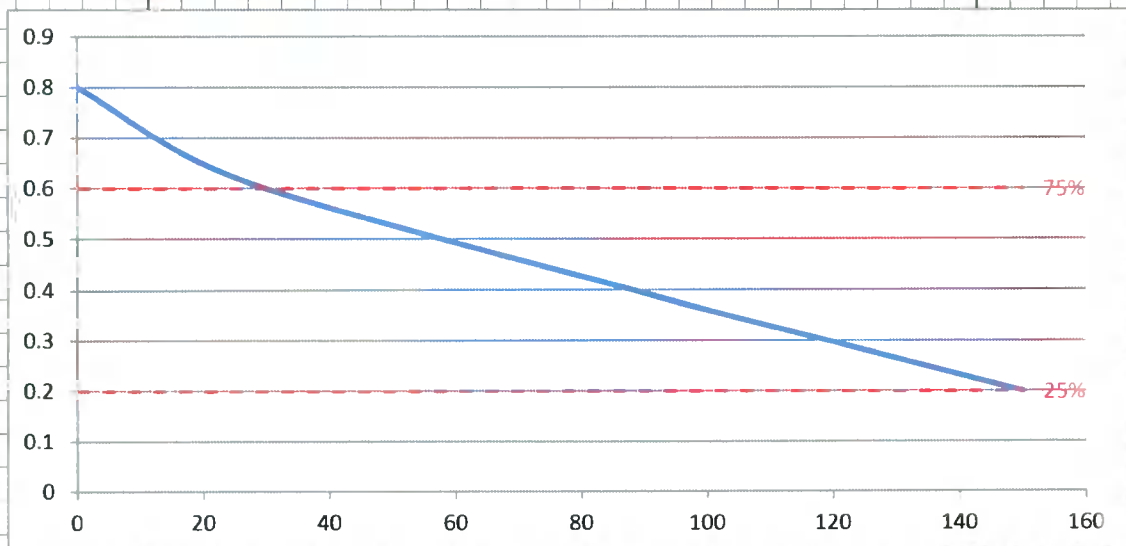
ONCE	Project:	5419	By: TON
	Calculation:	Soakaway Design	
		Infiltration Rate	
	Sheet Number:	1	Date: 19/10/2021
			Approved:

Infiltration Test (BRE 365)

Trial Pit Details

Total Pit Depth	1 m
Total Pit Length	0.9 m
Total Pit Width	1 m

Test Results		
	Time (Mins)	Water Level (From Base)
1	0	0.80
2	30	0.60
3	150	0.20
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		



Your Logo / Company Details Here	Project:	5419	By:
	Calculation:	Soakaway Design	
	Sheet Number:	2	Date:
			Approved:
Results			
Time to reach 75% depth:		30.0 mins	
Time to reach 25% depth:		150.0 mins	
Soil Infiltration Rate:		2.06612E-05 m/s	
		0.074380165 m/hr	

ONCE	Project:	5158	By:
	Calculation:	Soakaway Design	TON
	Wallingford Procedure Rainfall		Approved:
	Sheet Number:	1	Date:

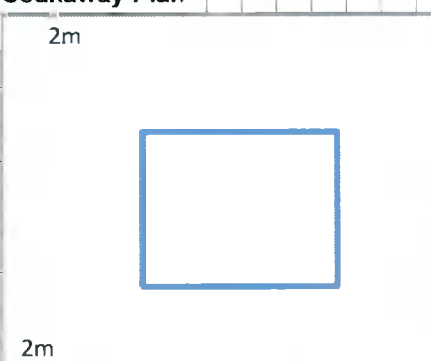
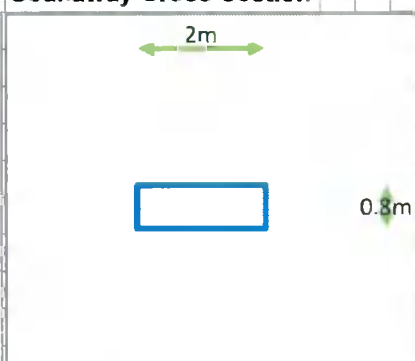
Catchment Details			
Catchment Area	46		m ²
Location			
City/Town			
M5-60	19	Override-	
r Ratio	0.29	Override-	
Runoff Coefficient		100	%

Design Storm Details			
Return Period	10		years
Climate Change Allowance	1.4		

Ground Information			
Infiltration Rate	0.074		m/hr
Factor of Safety	1.4		

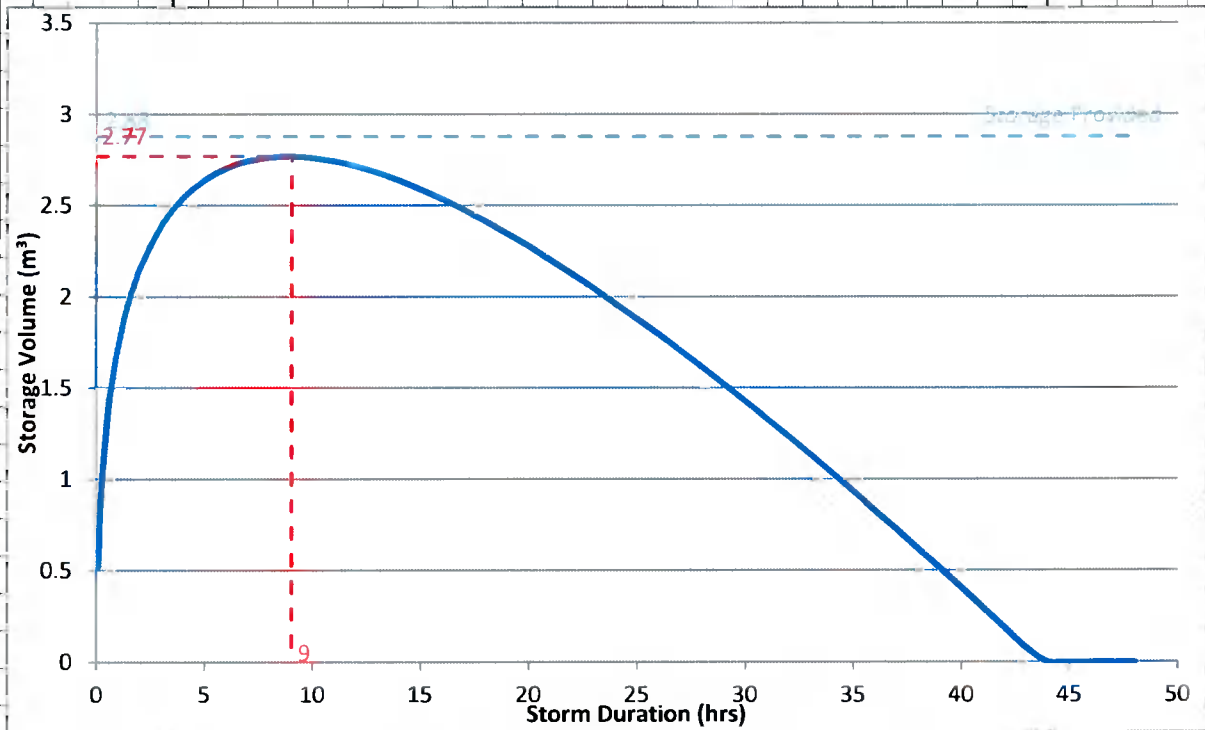
2.06E-05 m/s

Soakaway Design			
Soakaway Shape	Rectangular Trench/Pit		
Number of Soakaways	1		
Length	2.00		m
Width	2.00		m
Effective Depth	0.80		m
Backfill Porosity	90		%
Additional Outflow (If Any)	0		l/s
Base Infiltration Factor	0		

Soakaway Plan	Soakaway Cross Section
 <p>2m</p> <p>2m</p>	 <p>2m</p> <p>0.8m</p>

Your Logo / Company Details Here	Project:		By:
	Calculation:	Soakaway Design	
	Sheet Number:	1	Date:
			Approved:

Results



Maximum Storage Volume Required:	<u>2.77</u> m ³ (9hr Storm)	
Storage Volume Provided:	<u>2.88</u> m ³	Acceptable
Time of Emptying:	<u>8.2</u> Hours	Acceptable