

IGSL Limited

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29, Willington Crescent  
Templeogue

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**Infiltration Test Report**

**Project No. 22679**

**July 2020**



Report



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## Document Verification

Project: 29, Wellington Crescent, Templeogue

Project No. 22679

Revision	Date	Title		
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**Report on Infiltration Testing  
At  
29, Willington Crescent, Templeogue  
On behalf of  
Lohan and Donnelly, Consulting  
Engineers**

**Report no. 22679**

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### **1.0 Introduction**

The proposed new residential development at 29, Willington Crescent, Templeogue will include a system for the storage and discharge of run-off water. An investigation was, therefore, carried out to ascertain the suitability of the sub-soils for soakaway purposes.

This report describes the testing procedures and from the information obtained, discusses ground conditions in relation to the dispersion of storm water run-off.

### **2.0 Sub-soil conditions**

The exploratory pit revealed made ground to a depth of 0.75 metres. This material was composed largely of gravelly silt intermixed with demolition waste. Underlying the made ground was brown and grey gravelly clay containing cobbles.

The pit was terminated in firm to stiff grey sandy gravelly clay at a depth of 1.85 metres. The pit remained dry to the excavated depth.

### **3.0 Infiltration Testing**

The infiltration test was performed in accordance with BRE Digest 365 'Soakaway Design'.

To obtain a measure of the infiltration rate of the sub-soils, water is poured into the test pit, and records taken of the fall in water level against time. This procedure is repeated twice more to ensure saturation of the sub-soils.

The infiltration rate is the volume of water dispersed per unit exposed area per unit of time, and is generally expressed as metres/minute or metres/second.

In this test there was no measurable fall in water level over a period of 60 minutes at the first saturation stage. No further testing was considered practical or necessary.

#### **4.0 Principles of Soakaway Design**

Soakaways are generally designed in accordance with "BRE Digest 365 - Design of soakaways".

The digest suggests that a soakaway should be designed to accommodate the immediate storm-water run-off and permit infiltration into the surrounding ground sufficiently quickly to provide the necessary capacity to receive run-off from a subsequent storm.

The required soakaway capacity is obtained by calculating the inflow and outflow for a range of storm durations and choosing the storm period which gives the maximum storage requirement.

Rainfall statistics are obtained from Met Eireann and calculations are usually carried out for a 50 year return period.

#### **5.0 Conclusions**

Since there was no measurable fall in water level over the first saturation stage, the sub-soils are considered unsuitable for soakaway purposes. It will, therefore, be necessary to discharge run-off water to an existing surface water system.

Appendix 1 Trial Pit Record



# TRIAL PIT RECORD

REPORT NUMBER

22679

**CONTRACT** 29 Wellington Crescent

**TRIAL PIT NO.** SA01  
**SHEET** Sheet 1 of 1

**LOGGED BY** K. Kinsella

**CO-ORDINATES**

**DATE STARTED** 23/07/2020  
**DATE COMPLETED** 23/07/2020

**CLIENT ENGINEER** Shane Mongey  
Lohan & Donnelly Consulting Engineers

**GROUND LEVEL (m)**

**EXCAVATION METHOD** 3T Excavator

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples			Vane Test (KPa)	Hand Penetrometer (KPa)
						Sample Ref	Type	Depth		
0.0	Brown TOPSOIL with roots		0.15							
	MADE GROUND: Firm brown sandy gravelly SILT with occasional angular to subrounded cobbles up to 120mm, contains red brick		0.75			AA135848	B	0.50-0.60		
1.0	Firm brownish grey sandy gravelly CLAY with rare subangular to subrounded cobbles up to 100mm		1.35			AA135849	B	1.20-1.30		
	Firm to stiff grey sandy gravelly CLAY with rare subangular to subrounded cobbles up to 100mm		1.85			AA135850	B	1.60-1.70		
2.0	End of Trial Pit at 1.85m									
3.0										
4.0										

**Groundwater Conditions**  
Dry

**Stability**  
Stable

**General Remarks**  
Soak test location

IGSL TP LOG 22679.GPJ IGSL.GDT 27/7/20

Appendix 2 Infiltration Test Results



# Soakaway Design f-value from field tests

IGSL

Contract: 29 Willington Crescent, Templeogue

Contract No. 22679

Test No. SA01

Engineer Lohan & Donnelly Consulting Engineers

Date: 23.07.2020

## Summary of ground conditions

from:	to	Description	Ground water
0.00	0.15	Brown TOPSOIL with roots	No water
0.15	0.75	Firm brown sandy gravelly SILT with occasional cobbles, contains red brick	
0.75	1.35	Firm brownish grey sandy gravelly CLAY with rare cobbles	
1.35	1.85	Firm grey sandy gravelly CLAY with rare cobbles	

## Field Data

Depth to Water (m)	Elapsed Time (min)
1.360	0.00
1.360	1.00
1.360	2.00
1.360	3.00
1.360	4.00
1.360	5.00
1.360	6.00
1.360	7.00
1.360	8.00
1.360	9.00
1.360	10.00
1.360	12.00
1.360	14.00
1.360	16.00
1.360	18.00
1.360	20.00
1.360	25.00
1.360	30.00
1.360	40.00
1.360	50.00
1.360	60.00

## Field Test

Depth of Pit (D)	1.85	m
Width of Pit (B)	0.30	m
Length of Pit (L)	1.80	m

Initial depth to Water =	1.36	m
Final depth to water =	1.360	m
Elapsed time (mins)=	60.00	

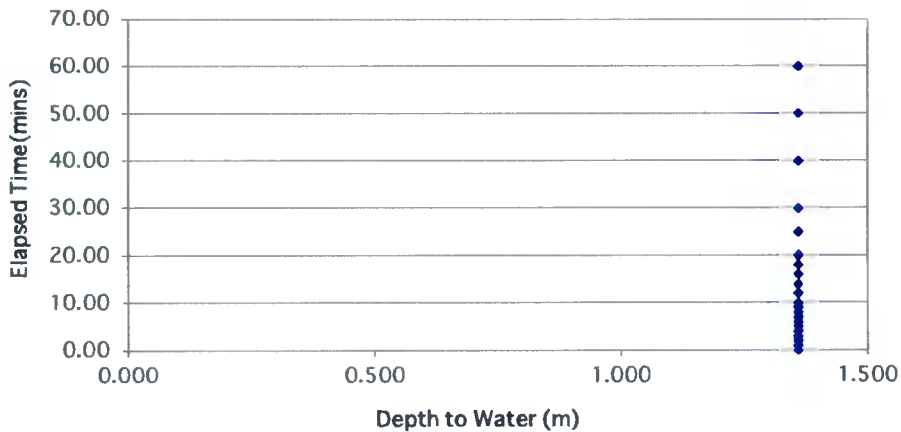
Top of permeable soil		m
Base of permeable soil		m

Base area=	0.54	m <sup>2</sup>
*Av. side area of permeable stratum over test period	2.058	m <sup>2</sup>
Total Exposed area =	2.598	m <sup>2</sup>

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec

Depth of water vs Elapsed Time (mins)



29. Willington Crescent, Templeogue – Infiltration Test

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Appendix 3 Site Plans