

Ref: CS/C1340

Kieran Napthine
Tyrone House
Norton Lane
Norton
Chichester
PO20 3NH

31st March 2020

Re: Tyrone House, Norton – Soakaway Testing – Infiltration Test Result Summary

Dear Kieran

The following investigation was carried out at the above location.

1. Site Works

The purpose of the investigation was to supply soakaway test data in general accordance with BRE document 365 (Soakaway Design) at one location which would be the approximate intended location for a possible infiltration device to serve an extension to an existing dwelling.

The appended drawing illustrates the position of the test pit. The BRE365 pit was excavated to a depth of 0.9m in line with the approximate depth of the proposed soakaway.

In addition to the soakaway test, a deeper borehole was dug adjacent to the soakaway pit. It was noted that water seepage was present at 0.7mbgl which then rose and stabilised at 0.60mbgl. Based on this traditional soakaway will be ineffective and an alternative design will need to be sought.

Following on from the high groundwater it was decided to reduce the depth of the soakaway test from 0.9m deep to 0.50m deep should an alternative shallower system be pursued.

The testing commenced at 09:30 on 6th March with three tests being undertaken in accordance with BRE 365.

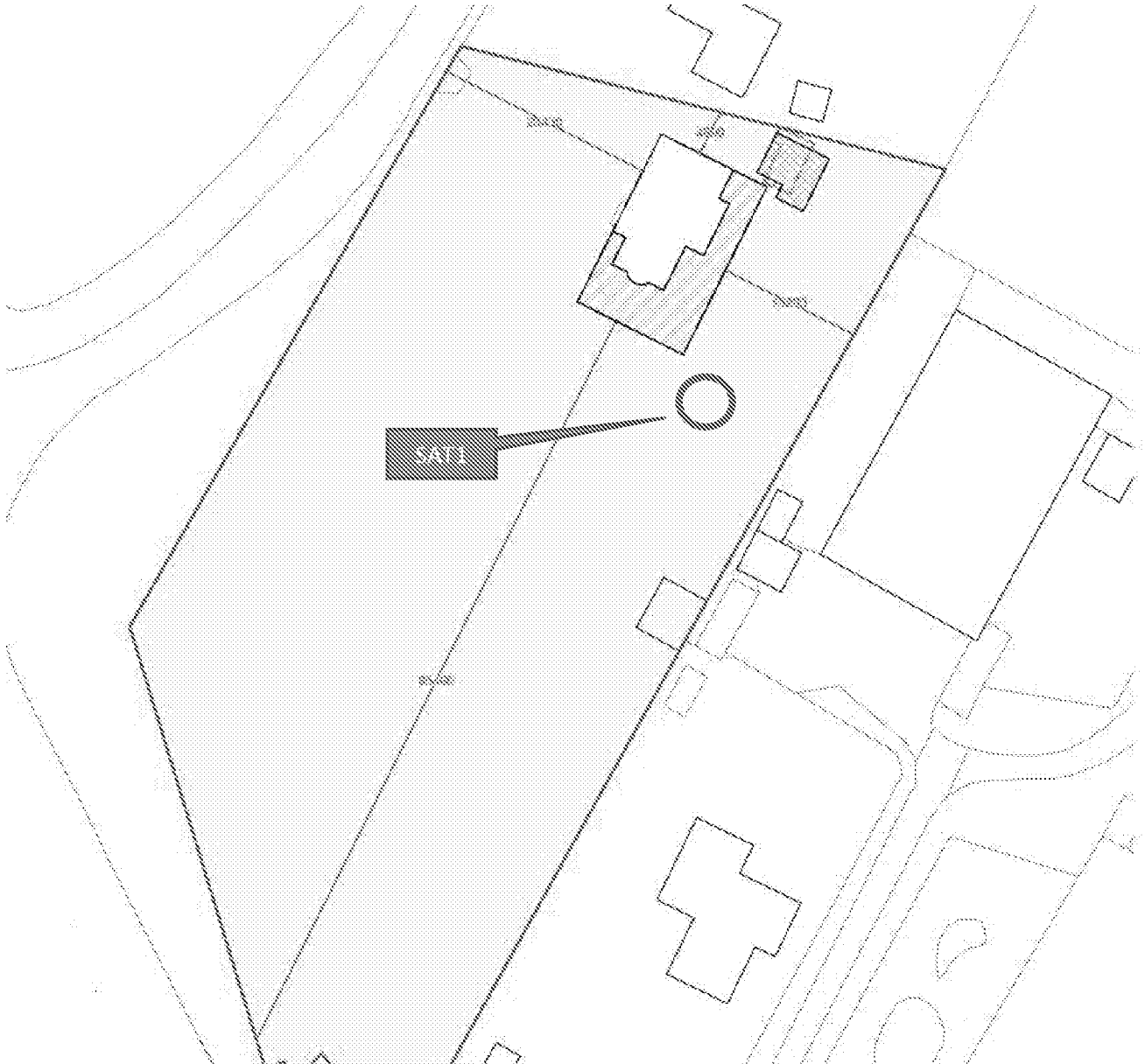
2. BRE 365 Soakaway Test Findings

Testing of the sub soils which was noted as clays produced a BRE 365 design infiltration rate of **9.65x10⁻⁵m/s** at a depth of 0.50m. This rate was the slowest taken from all three tests. This is considered a poor rate but will likely be suitable for shallow infiltration devices i.e. porous paving providing a large contact surface.

3. BRE 365 Soakaway Test Results

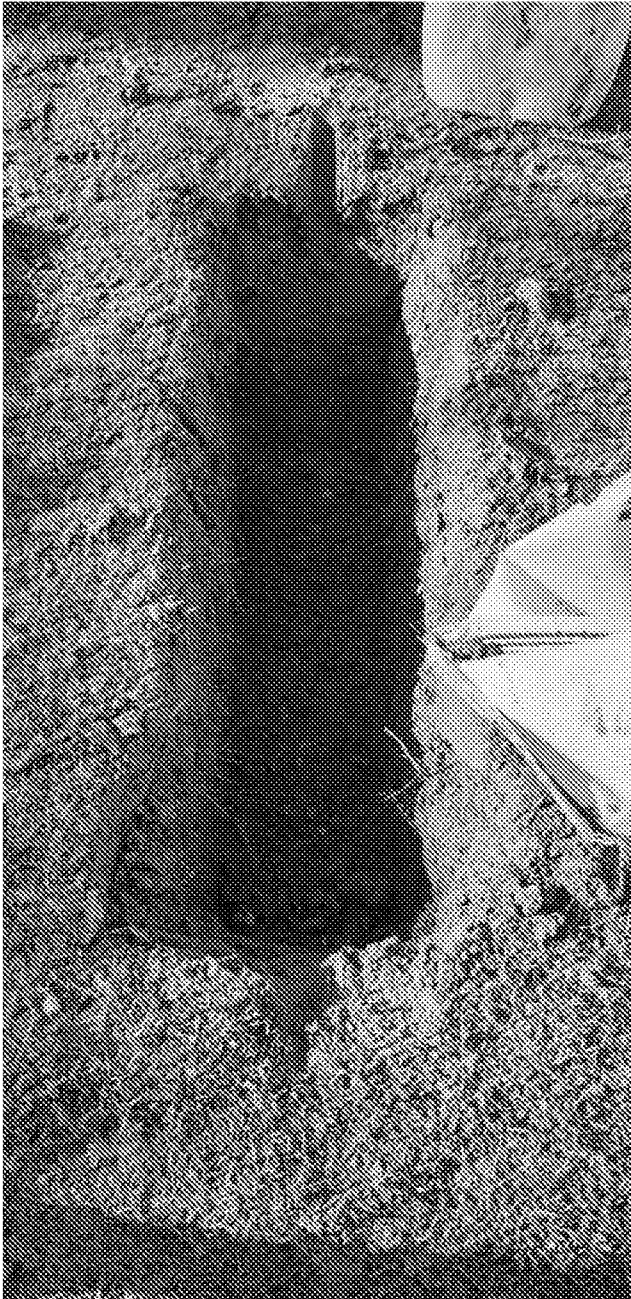
Test Pit No	Infiltration Rate (1-3 Tests)			Depth of Test	Soil Type
SAT1	1.42x10 ⁻⁵ m/s	1.13x10 ⁻⁵ m/s	9.65x10⁻⁶m/s	0.50m	Clay

Appendix A – Soakaway Test Location Plan



Richard Cobden House, Lion Street, Chichester, West Sussex, PO19 1LW

Appendix B – Site Photographs



Appendix C – Soakaway Test Results



Job: Tyrone House, Norton - Test 1

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.5
Trial pit length	=	1

a_{p50} = 0.8 m/squared

t_{p75-25} = 6600 seconds

V_{p75-25} = 0.075 m/cubed

F = 1.42E-05



Job: Tyrone House, Norton - Test 2

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.5
Trial pit length	=	1

a_{p50} = 0.8 m/squared

t_{p75-25} = 8280 seconds

V_{p75-25} = 0.075 m/cubed

F = 1.13E-05



Job: Tyrone House, Norton - Test 3

Infiltration Calculator

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

V_{p75-25} = Effective storage volume between 75% and 25% effective depth

a_{p50} = Internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} = The time for the water level to fall from 75% to 25% effective depth

f = Infiltration rate

Trial pit width	=	0.3
Trial pit depth	=	0.5
Trial pit length	=	1

a_{p50} = 0.8 m/squared

t_{p75-25} = 9720 seconds

V_{p75-25} = 0.075 m/cubed

F = 9.65E-06