



Consulting Civil Engineers

Ref: CS/C1358

Spencer Stent
Stonehurst Properties Ltd
Evergreens
Level Mare Lane
Eastergate
West Sussex
PO20 3SA

13th May 2020

Re: Chantry Mead, Barnham – Drainage Strategy Statement

Dear Spencer

The below will outline the proposed drainage strategy that should be adopted for the above application site.

Foul Water

Foul water from the proposed development will discharge into the foul water drain located within Chantry Mead. It will be necessary to approach Southern Water and apply for approval to connect under a Section 106 application.

Surface Water

Infiltration testing to BRE 365 was undertaken on site in March 2020 which confirmed a soakage rate of **2.37x10⁻⁵m/s**. Testing for groundwater was also undertaken which confirmed that no groundwater was present up to 1.5mbgl. This report is attached.

Based on the soakage and groundwater testing results, it is proposed to utilise geocellular soakaway units to the rear of each property at a depth of approximately 0.9m in line with the depth of the infiltration test. The soakaways will be designed to cater for the 1 in 100 + 40% for climate change in line with current standards.

The new parking areas are to be constructed with infiltrating porous blocks or other porous surfacing which will discharge groundwater directly into the ground and will provide a level of improvement to water quality.

All SuDS features are to be designed and constructed in accordance with Ciria C753 The SuDS Manual and in accordance with the Surface Water Design Checklist as supplied by Arun District Council.

I trust that the above is clear. Please do not hesitate to contact me should you require any additional information.

Yours sincerely



Christopher Slade FIHE

Managing Director



Enc: Soakaway Test Report to BRE 365

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



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23rd March 2020**Re: 87 Barnham Road, Barnham – Soakaway Testing – Infiltration Test Result Summary**

Dear Spencer

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. Throughout the test the borehole remained dry.

The testing commenced at 09.30 on 17th March with three tests being undertaken in accordance with BRE 365.

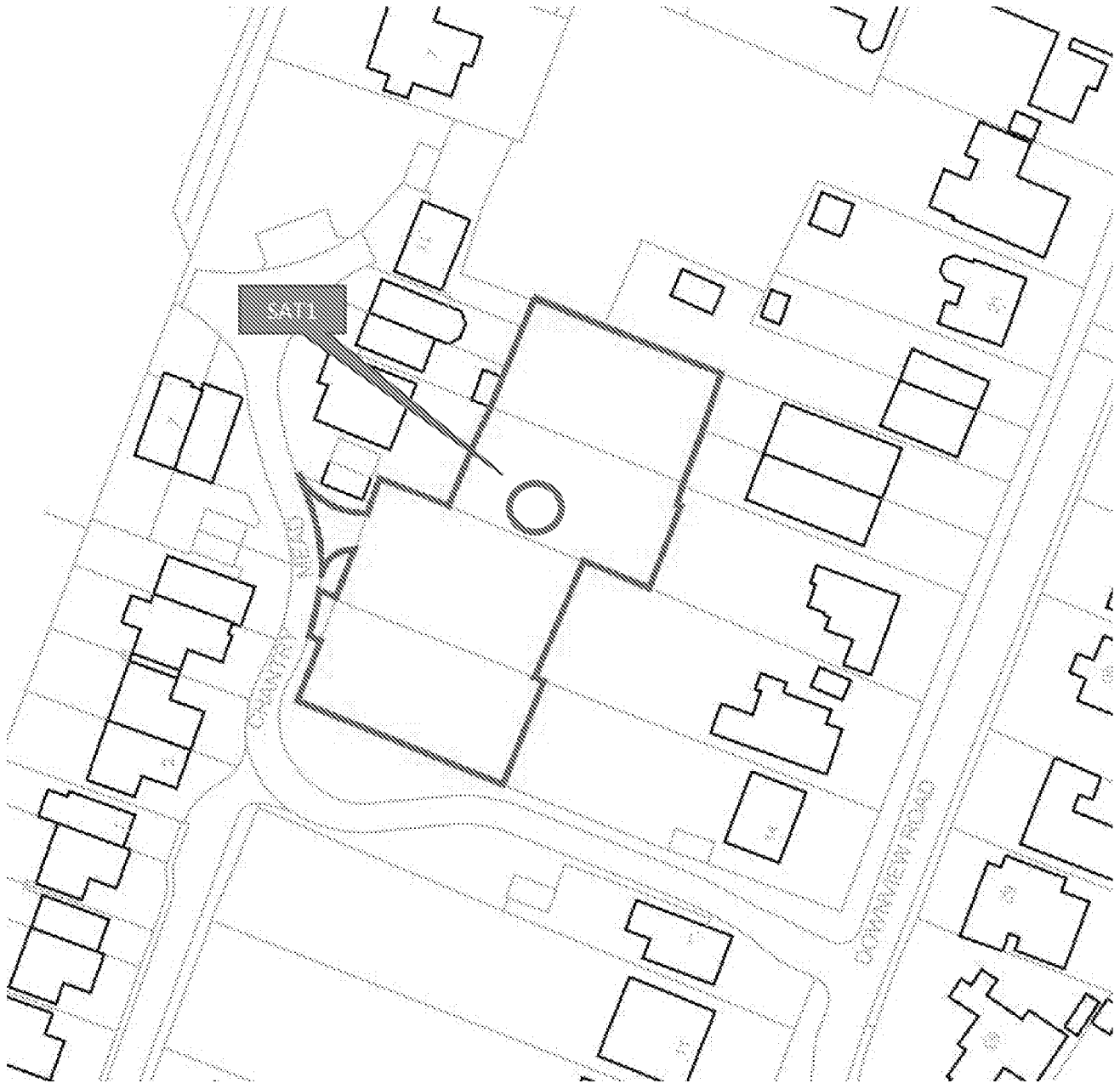
2. BRE 365 Soakaway Test Findings

Testing of the sub soils which was noted as sandy clays with flints at the base produced a BRE 365 design infiltration rate of **2.37x10⁻⁵m/s** at a depth of 0.90m. This rate was the slowest taken from all three tests. This is considered a moderate to good rate and will likely be suitable for most infiltration devices.

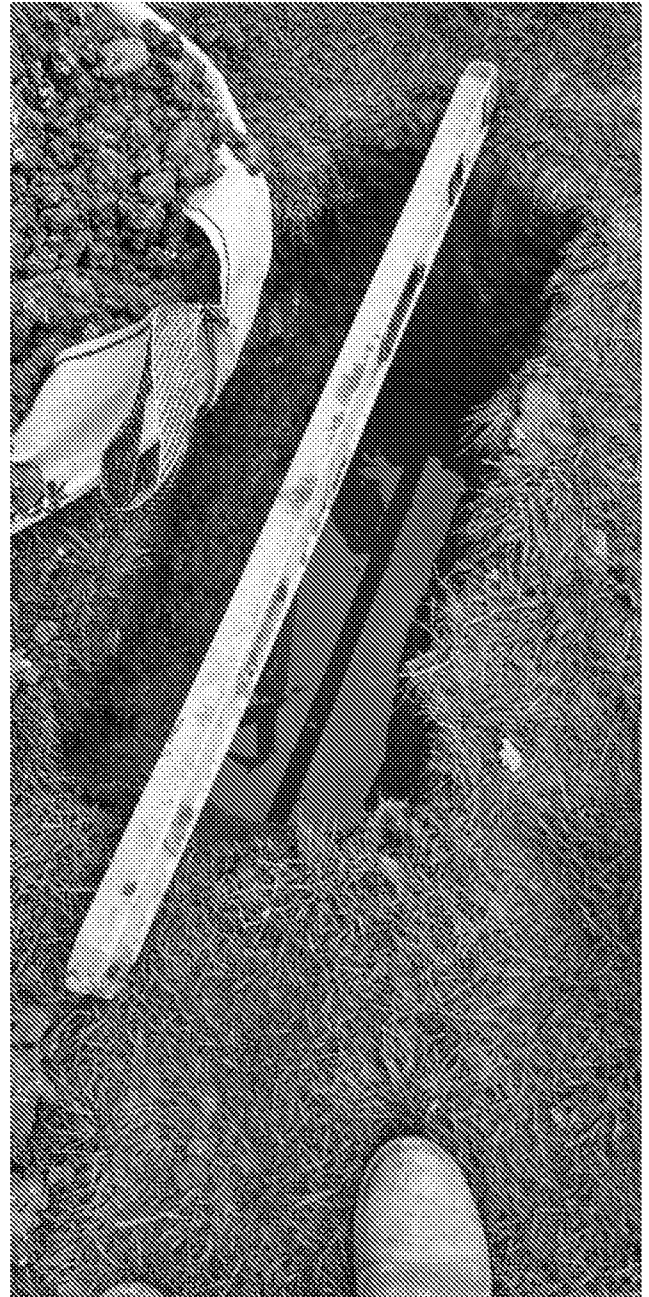
3. BRE 365 Soakaway Test Results

Test Pit No	Infiltration Rate (1-3 Tests)			Depth of Test	Soil Type
SAT1	4.06x10 ⁻⁵ m/s	3.04x10 ⁻⁵ m/s	2.37x10⁻⁵m/s	0.90m	Sandy clays with flint

Appendix A – Soakaway Test Location Plan



Appendix B – Site Photographs





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Appendix C – Soakaway Test Results



Job: Chantry Mead, Barnham - 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	=	0.9
Trial pit length	=	1

a_{p50} =

1.32

 m/squared

t_{p75-25} =

2520

 seconds

V_{p75-25} =

0.135

 m/cubed

F =

4.06E-05



Job: Chantry Mead, Barnham - 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	=	<table border="1"><tr><td>0.3</td></tr></table>	0.3
0.3			
Trial pit depth	=	<table border="1"><tr><td>0.9</td></tr></table>	0.9
0.9			
Trial pit length	=	<table border="1"><tr><td>1</td></tr></table>	1
1			

a_{p50} = 1.32 m/squared

t_{p75-25} = 3360 seconds

V_{p75-25} = 0.135 m/cubed

F =

3.04E-05



Job: Chantry Mead, Barnham - 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	=	<table border="1"><tr><td>0.3</td></tr></table>	0.3
0.3			
Trial pit depth	=	<table border="1"><tr><td>0.9</td></tr></table>	0.9
0.9			
Trial pit length	=	<table border="1"><tr><td>1</td></tr></table>	1
1			

a_{p50} = 1.32 m/squared

t_{p75-25} = 4320 seconds

V_{p75-25} = 0.135 m/cubed

F =

2.37E-05
