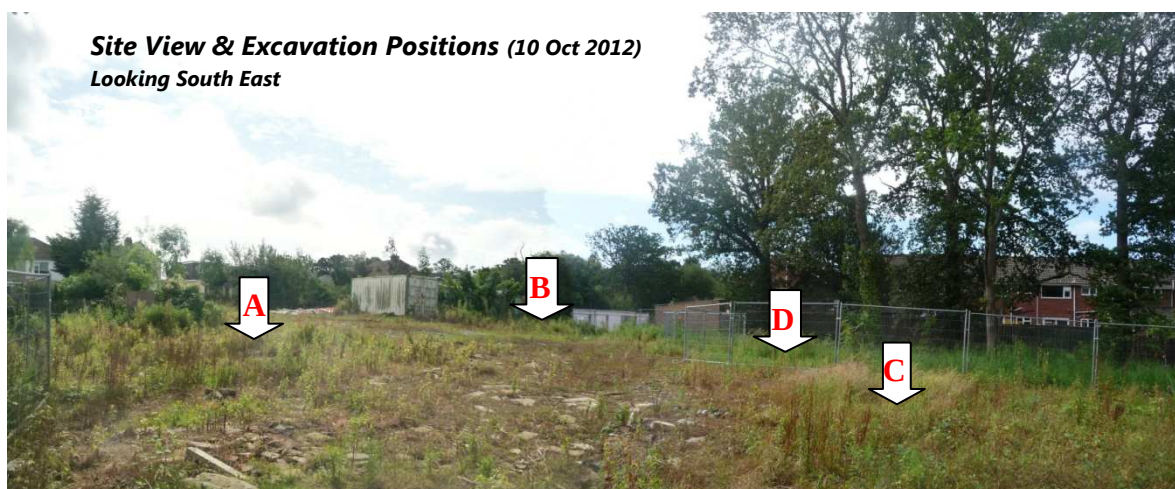


Proposed Development for Debtorbook Solutions 20 Forest Avenue Cowplain PO8 8JD Hampshire

Issue Status:

Revision	Date	Description
-	12 Oct 2012	First issue
A	25 Oct 2012	Issued in support of Planning Application

Debtorbook Solutions instructed H J Concepts Ltd to undertake a limited intrusive site based investigation to establish baseline information which included percolation tests, a trial scrape within the RPA by Plot 2 and a trial pit on the site at 20 Forest Avenue Cowplain.



Introduction

A total of 4 excavations were made on the morning of 10 October 2012 using a small JCB 8015 track driven machine with an experienced operative. The investigation was directed and reported by Philip Hamblin IEng A.M.I.C.E AMIStructE of H J Concepts Ltd. The weather was dry, warm and sunny. The previous day's weather had been extremely wet as had the week leading up to the day of the site visit. Further inclement weather was expected and as such the investigation was to be concluded within a single day

The excavations were located as follows: (see above photo)

Excavation A - Percolation excavation pit 1 located in the new proposed access drive in front of plots 1 & 2

Excavation B - Percolation excavation pit 2 located in the rear garden area of Plot 1

Excavation C - Excavation pit 3 taken to a depth of 2.0m

Excavation D - Surface scrape within area of Plot 2 carport. The principal reason for this scrape on the edge of the RPA (Root Protection Area) was to establish the extent of the made ground

The site had been previously cleared of vegetation except for a number of mature TPO registered trees and some scrub bushes. General vegetation and grass was wide spread around the site along

with a degree of general builders rubble (bricks, blocks and concrete). The site was generally soft and wet under foot with puddles of lying water.

Excavation A was taken to a depth of 1.0m below existing ground level and the soil encountered was a cohesive medium to stiff light brown silty CLAY with signs of silver grey clayey fines inter-moulded together. Initially the top layer was of organic soil and made ground, with builders debris and decomposing vegetation, which gave off a slight odour upon striking the soil.



Excavation A at commencement

Slight water seepage was noted upon early completion of the excavation, and whilst the percolation test hole was being excavated. This hole measured 300mm deep with side of 300mm, thus creating a 300mm cubic hole. This was flooded with clean water and a time noted at 9.07am. A measuring stick was inserted to allow timed measurements to be taken to establish the rate of percolation.

The excavation was left for a period of 67 minutes (approx 10.15am). During this time a number of casual observations were made. Following 67 minutes of observations the water within the percolation hole had risen and over flowed into the base of the main excavation.

This was primarily due to the water seepage at the base of the excavation. It was concluded that the percolation test would fail and as a result the excavation was backfilled for safety reasons and the fact that heavy inclement weather was forecast for the following day (11 October)



Excavation A start of percolation test



Excavation A end of percolation test



Excavation B was taken to a depth of 1.0m below existing ground level and the soil encountered was a cohesive medium to stiff light brown silty CLAY with signs of silver grey clayey fines inter-moulded together. The soil and conditions encountered were much the same as excavation A. Initially the top layer was of made ground, with builders debris and decomposing vegetation, but no odour was noticed upon striking the soil.

Slight water seepage was noted upon early completion of the excavation, whilst the percolation test hole was being excavated. This hole measured 300mm deep with sides of 300mm, thus creating a 300mm cubic hole. This was flooded with clean water and a time noted at 9.26 am. A measuring stick was inserted to allow timed measurements to be taken to establish the rate of percolation.

The excavation was then left for a period of 64 minutes (approx 10.30am). During this time a number of casual observations were made. Following the 64 minutes the water within the percolation hole had risen and over flowed into the base of the main excavation.



This was primarily due to the water seepage at the base of the excavation. It was concluded that the percolation test would fail and as a result the excavation was backfilled for safety reasons and the fact that heavy inclement weather was forecast for the following day (11 October)



Excavation C - Whilst excavation pits A & B were being allowed to run their initial course a third excavation was under taken to a maximum machine depth of 2.0m. The soil make up was as follows



0.0m – 0.30m made ground with builders debris decomposing vegetation

0.30m – 1.00m Medium to stiff light brown silty CLAY with signs of silver grey clayey fines inter-moulded together.

1.00m – 2.00m Medium to stiff red silty CLAY with silver and light brown veins inter moulded. This section of clay was crumbly in texture with some fine roots

At 2.0m the clay started to lose its redness and become stiff to very stiff and more silver in colour. Fine small tree roots were still evident at the base of the excavation and within the soil extracted.

Very minimal water seepage was noted within this excavation. The excavation sides were stable and showed no signs of failure at the time of the excavation.

The excavation was stopped at this level due to machine capacity and the stiffening of the clay soil. The excavated material was reinstated into the hole.

Excavation D



Prior to excavation



Scrape 1



Scrape 2



Scrape 3



Scrape 4



Scrape 5



Finished scrape



Side profile of excavation (250mm)

The excavator was located outside the RPA which allowed for a small grading blade to scrape back the surface vegetation. The first 2 scrapes (1 & 2) circa 50mm removed the immediate grass vegetation only, which exposed a wet lightbrown CLAY soil with no signs of tree roots. The 3rd scrape was extended deeper by a further 50mm which exposed general builders rubble (bricks and cloth material). This was then deepened by 2 further 50mm scrapes (4 & 5) which exposed further clay soil and more general made ground material. Extending the overall excavation scrape to 250mm (6) started to reveal the top of what was considered to be the original ground level with signs of decomposing long grass and top soil. Water seepage started at this level which was flowing in from the surrounding soil.

The excavation was stopped at this point due to a qualified Arborist not being present.

However whilst the car port for Plot 2 entered the RPA for tree 12 the trial excavation established that the area was covered in superficial recently deposited clay soil and builders debris.

Findings

The 3 excavated trial pits (A, B & C) all showed similar characteristics with a layer of organic soil and made ground, a medium to stiff cohesive light brown silty CLAY with silver silty CLAY inter moulded. At greater depths a layer a predominantly red medium to stiff silty CLAY with silver and light brown silty CLAY inter moulded. The CLAY stiffened with depth.

Water seepage was noted in all excavations as were small to fine roots

Due to the fines within the cohesive CLAY water retention was high and as a result percolation was non-existent, with water seepage adding to the volume of water added to the percolation test holes.

Trench side stability was good at the time the excavations were open with no signs of fissure cracking or excess water seepage through the side walls.

Excavation D verified the existence of made ground within the RPA area of Plot 2's proposed car port, thus allowing any construction of RC ground beams and heave protection to be incorporated without damaging any significant tree roots.

Recommendations

From the limited exploratory work undertaken above it is recommended that a more in-depth intrusive site Investigation and desktop study is expedited to establish:

- i. design parameters for the piled foundations
- ii. establishment of void and heave protection thicknesses
- iii. design parameters for the access road (CBR)
- iv. presence of any potential contamination
- v. presence of any methane due to decomposing vegetation matter
- vi. presence of Radon
- vii. any mitigating strategies required for the proposed development

Conclusion

From the exploratory excavations and the initial percolation test it is clear that the site sub-strata is not suitable for the construction of storm water soakaways. Therefore to enable storm water to be efficiently disposed of will require an application to Southern Water and a connection to the public storm drain. This will be primarily for the disposal of the roof storm water. As such the applicant is mindful in preparing and submitting an application to Southern Water.

It is also concluded that traditional shallow strip foundations are not suitable due to the nature of the soil and the close proximity of the mature Oak trees and guidance shown be taken from HNBC Chapter 4.2 Building Near trees.

APPENDIX A
 Site Plan indication location of Excavations
(Plan not to scale)

