

29th May 2014

Our ref: GE9752/GR04/140529

Ian McFaul
Linden Homes Southern
Linden House
14 Bartram Road
Totton
Southampton
Hampshire
SO40 9PP



Geo-Environmental

Dear Ian,

RE: Havant Retail Park, Portsdown Hill Road, Havant

Further to completion of the Supplementary Ground Investigation Report, GE9752-SGIR-140425, we write in relation to the foundation recommendations for the proposed development on this site.

The site comprises a former chalk pit, which was subsequently partially infilled. The intrusive investigations undertaken have demonstrated that Made Ground was present to depths of approximately 9m below ground level (bgl) in the area of the deepest portion of the former quarry. The depth of Made Ground was found to vary significantly over short distances and this was considered to be due to the presence of bench steps within the floor of the chalk pit.

The Made Ground encountered comprised an un-engineered soil mass and was unsuitable as a bearing stratum for shallow foundations. Alternative construction solutions, such as ground improvement, were considered and ruled out due to not satisfying the engineering and environmental risk mitigation requirements for protection of human health, built environment and/or groundwater. As such, a piled foundation solution was recommended for the specific plots located over the area of deep Made Ground. The plots affected comprise Plots 1-3, 11-16, and 39-45 and are shown on the enclosed plan, which is an extract of Figure 11 from the above referenced report.

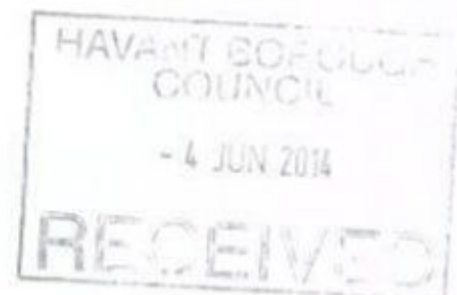
The Chalk strata beneath the site comprise a Principal Aquifer and the site is located within Zone 1 of a groundwater abstraction source protection zone. As such, it is considered that continuous flight auger (CFA) piles are likely to be acceptable due to the short construction time, the pile bore being full of arisings or concrete at all times during construction and concrete being pumped into the bore under pressure from the base up thereby closing any potential migration pathways between Made Ground and the aquifer beneath the site. This form of pile construction tends to be the Environment Agency's preferred solution in these types of conditions.

It is understood that a specific planning condition relates to the use of piled foundations on this site and as such it is recommended that a copy of the above referenced report and this letter are forwarded to the Case Officer at the Planning Authority for them to assess with their Statutory Consultees.

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We trust we have interpreted your request correctly. Should you have any queries please do not hesitate to contact us.

Yours sincerely
For and on Behalf of Geo-Environmental



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Enc Fig 11 from GE9752-SGIR-140425