

Reside Developments

F.A.O Andrew Munton

Via email only: [REDACTED]

10th August 2020

Our Ref.: 18158/LR

Dear Andrew

Re: Land West of Fontwell Avenue, Eastergate, Chichester, West Sussex PO20 3RX

Soils Limited have been asked by Reside Developments to provide comment in response to a request by the Local Authority for further geotechnical evidence to ascertain the safety of using soakaways at the above location and the required easements from buildings and highways.

Summary of Geology and Investigation

The BGS 1:50,000 geology maps show the site to be situated on Lambeth Group bedrock with overlying Head superficial deposits. However, previous investigations undertaken by Soils Limited (letter reports ref. 16695/LR, dated June 2018; 18158/FLR Rev 1.02, dated February 2020) have proved the absence of Lambeth Group in the areas investigated and encountered superficial Head deposits to depths ranging between 1.35m to 2.50m bgl. Head deposits were underlain by chalk, which persisted to the full investigatory depth of 4.00m bgl within the windowless sampler boreholes constructed in December 2017.

From the results of the windowless sampler boreholes undertaken the chalk, where encountered, was recovered as unstructured material (equivalent to Grade Dm in accordance with CIRIA C574) and as a result suitable intact samples for laboratory density testing were not available. The lighter clay material encountered at the base of the trial pits, excavated as part of the infiltration testing, may also be interpreted as a transition into chalk and, again, this material was not considered to be structured.

Soakaway Distances and CIRIA C574

As the investigations undertaken indicate the upper horizon of the chalk is Grade Dm, structureless and matrix dominated it is considered that such material would support inter-granular flow rather than fracture flow that would tend to occur within structured chalk. CIRIA C574 also identifies that the risk of new dissolution features tends to occur where high volumes of water are discharged down a fissure leading to accelerated dissolution. No evidence of dissolution features has been highlighted on the site or in the vicinity of the site

and, on this basis, some mitigation of risks is evident and a degree of flexibility on the standard 10m distance for low density chalk is considered reasonable.

With regards to highways, the guidance requires that soakaways are located a minimum distance of 5m.

Proposed Drainage Layout

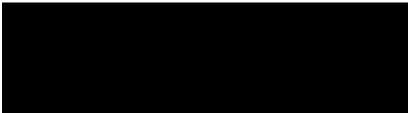
The proposed drainage layout includes a combination of crate filled trench-style soakaways and permeable paving with the latter simulating natural drainage which mitigates the focused drainage point effect on the underlying chalk formation and reduces the overall size required for the crate soakaways. Crate filled soakaways with distances of between >10m and 8m from proposed structures are proposed.

Conclusions

It is understood that the worst-case 10m offset distances can be adhered to within the north of the site and within other areas of the site. Due to the nature of the chalk encountered (structureless Dm), along with appropriate use of permeable paving to reduce the required size and focused drainage effect of the crate soakaways, it is considered that the drainage proposal of crate soakaways located between 8 and 10m from proposed structures and / or highways is reasonable.

Should you have any further questions please do not hesitate to contact the undersigned.

Yours sincerely,



Tim Rudkin BSc. (Hons.), MSc., FGS.

Geo-Environmental Engineer



For and on behalf of Soils Limited